

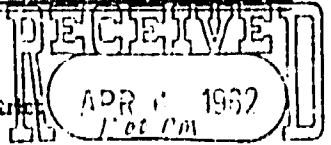
760-7

- 1. Considered 5-9- 1962
- 2. Name of Applicant County of Kato
- 3. Post Office Address _____
- 4. Amount of water claimed 1.00
- 5. Source of water supply Artesian ground water
- 6. Water to be used for municipal
Acres to be irrigated _____
- 7. Water to be diverted and used in Jackson County about
_____ miles _____ of _____
- 8. Proof of Publication Received
Not Received
- 9. Application Approved _____
Subject to _____
Not approved _____
Action deferred _____

10. Remarks:

See also 1718-2

No. 760-2
Water Division No. 2 BAD RIVER District
(Blanks to be filled by the Engineer for the W. R. C.)



STATE WATER RESOURCES COMM.
PIERRE, SOUTH DAKOTA

APPLICATION FOR PERMIT To appropriate Water within the State of South Dakota

(NOTE—Draw a line through items not applicable.)

1. Name of applicant CITY OF KADOKA, SOUTH DAKOTA
Postoffice address KADOKA, County JACKSON, State SOUTH DAKOTA

- I. If a corporation -----
 - (a) Name of same -----
 - (b) Date and place of incorporation -----
 - (c) Amount of capital stock -----
 - (d) Amount paid in -----
 - (e) Names and addresses of directors -----

(NOTE—A certified copy of articles of incorporation must accompany the application.)

II. Method of accomplishing the work and financial resources of the applicant:

- (a) Method of accomplishing work (Whether by contract, employment of others, or by direct labor)
CONTRACT
- (b) Cash on hand, \$ 8,000.00 (c) Treasury stock, \$ -----
- (d) Bonds to be issued, \$ 70,000.00 (e) Other resources, \$ -----

2. Name of diversion work KADOKA WELL NO. 2

3. Amount of water claimed 1 (ONE) cubic feet per second

4. Source of water supply PAHASAPA OR FALL RIVER-LAKOTA FORMATION

5. Location of point of diversion IN LOT 1, SHARON AND BERNAU'S 1ST ADDITION APPROX. 155' N AND 180' E OF CENTERLINE INTERSECTION OF "D" ST. & SHARON ST. IN NE 1/4 NE 1/4, S32, T2S, R22E, County. BHM.

6. Annual period or periods during which water is to be used ALL YEAR

7. To be used for:

- I. Irrigation or domestic use: Gravity, overhead sprinkling or combination system? -----
 - (a) Number of acres to be irrigated ----- acres.

(NOTE—A list of lands to be irrigated, giving each subdivision and fraction with acreage thereof, should be written here, or may be appended as a part of this application. Same must also be shown on accompanying map.)

(c) Statement as to domestic use (giving location, etc.) MUNICIPAL WATER SUPPLY FOR THE CITY OF KADOKA

II. Stockwatering, mining, milling, power, fish culture, fire protection and public recreation:

- (a) Nature of use -----
Name any of the above uses claimed
- (b) Amount of power to be generated ----- horse power.
Amount claimed for engine cooling -----
- (c) Location of plant -----
- (d) Method of developing power -----
- (e) Point where water will be returned to stream -----

MAP NO 662-2

8. Estimated cost of work:

(a) Head Gates, \$----- (b) Pumping plant, \$ 12,000.00*
 (c) Fluming, \$----- (d) Canal work, \$----- Rock, \$-----
 (e) Other structures WELL \$ 66,000.00* Total, \$-----
 *INCLUDES CONTINGENCY, FINANCING AND ENGINEERING.

9. Description of diversion works:

I. Nature of works: (Reservoir, dam, ditch, flume, pumping plant, etc.)

II. Dimensions of works.

(a) Dam: Height-----feet; length at bottom-----feet; length at top-----feet; thickness at bottom-----feet; thickness at top-----feet; slope at front water face-----; slope at back face-----
 material used in construction-----
 (b) Reservoir: Capacity when filled-----acre feet. Surface area at highwater mark-----acres.

DEPTH AT OUTLET--FEET	SURFACE AREA AT EACH DEPTH AT OUTLET--ACRES	FEET	ACRE-FEET CAPACITY

(c)* Head gate: Width-----feet; height-----feet;
 Material-----

(d) Canal: Total length-----miles.

LOCATION BELOW HEADGATE	DEPTH	BOTTOM WIDTH	WIDTH AT WATER-LINE	GRADE PER MILE
At ----- Mile	----- feet	----- feet	----- feet	----- feet
At ----- Mile	----- feet	----- feet	----- feet	----- feet
At ----- Mile	----- feet	----- feet	----- feet	----- feet
At ----- Mile	----- feet	----- feet	----- feet	----- feet
At ----- Mile	----- feet	----- feet	----- feet	----- feet
At ----- Mile	----- feet	----- feet	----- feet	----- feet

(Give dimensions where reductions in size are made.)

10. Time required for completion of work 3 years.
 11. Time required for complete application of water to the proposed beneficial use 3 years.
 12. Choice of newspaper for publication of notice of intention to appropriate KADOKA PRESS KADOKA S.D.

STATE OF SOUTH DAKOTA

County of JACKSON ss.

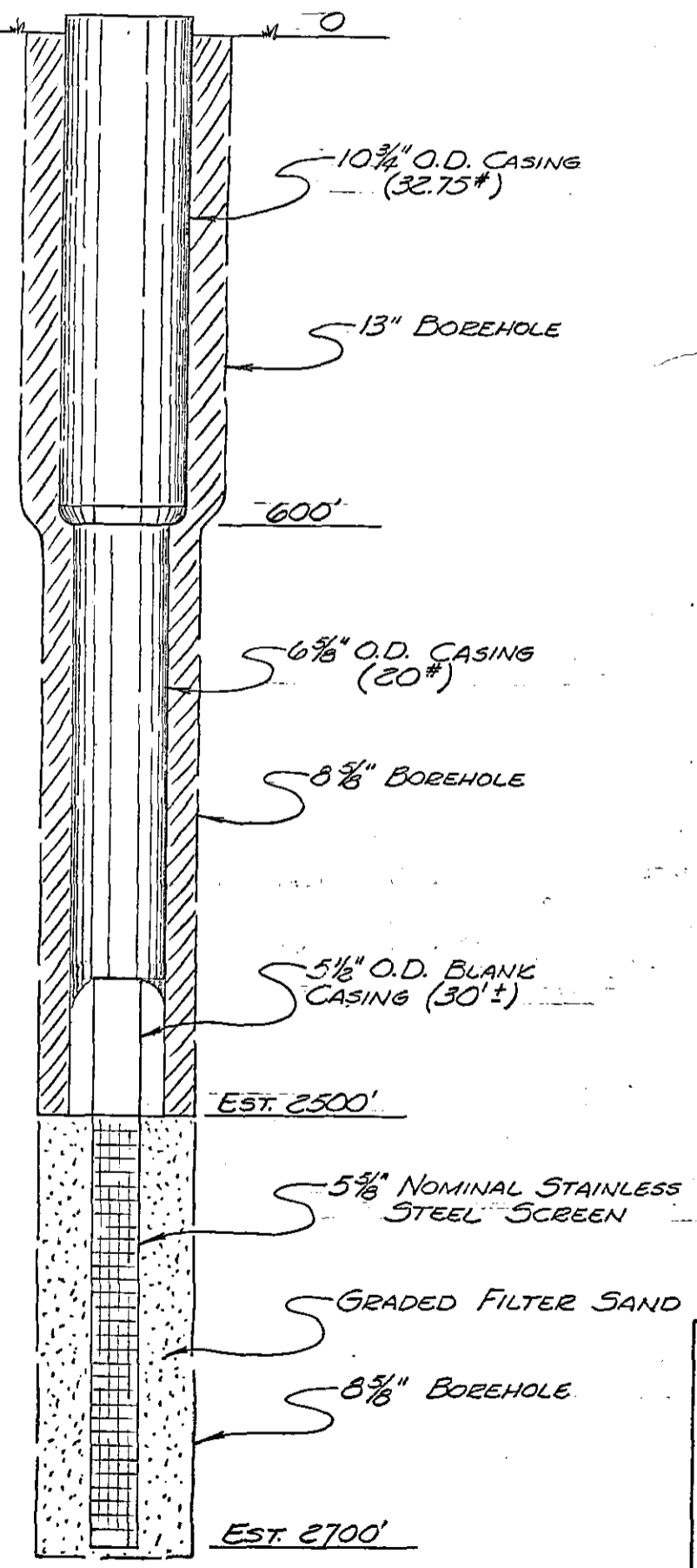
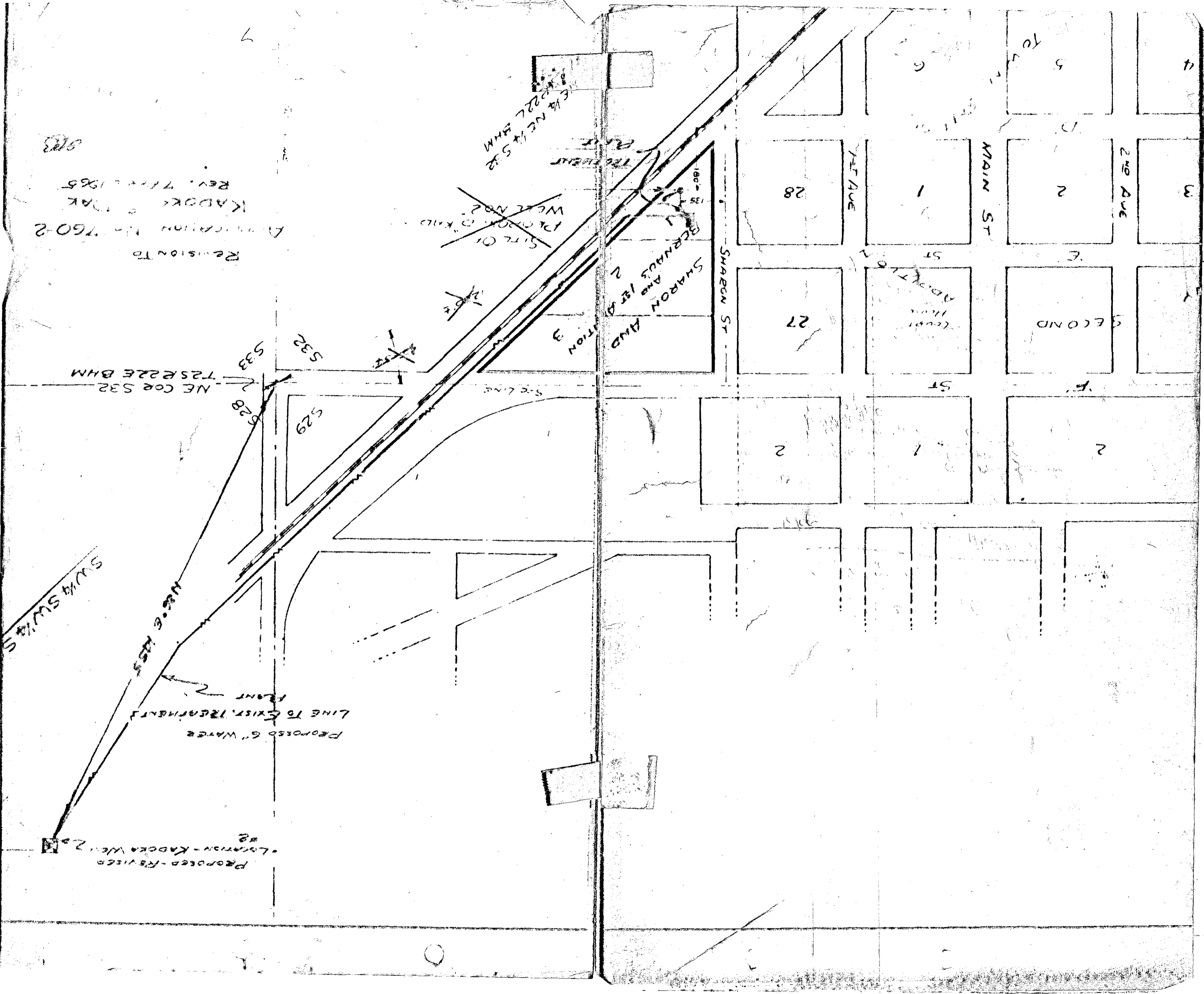
I, Mrs. Gladys Maxon, ACTING FOR THE CITY OF KADOKA, being first duly sworn on my oath depose and say: that my relation to the above described undertaking is that of owner, that I have read the above foregoing statement, examined the map accompanying the same, and that I know of my own personal knowledge that the matters therein stated and shown are true.

Signed) [Signature]
 Subscribed and sworn to before me this 5th day of May 1923.

Betty [Signature]
 Notary Public (or other qualified officer.)

*Each diversion must have a headgate or measuring device.

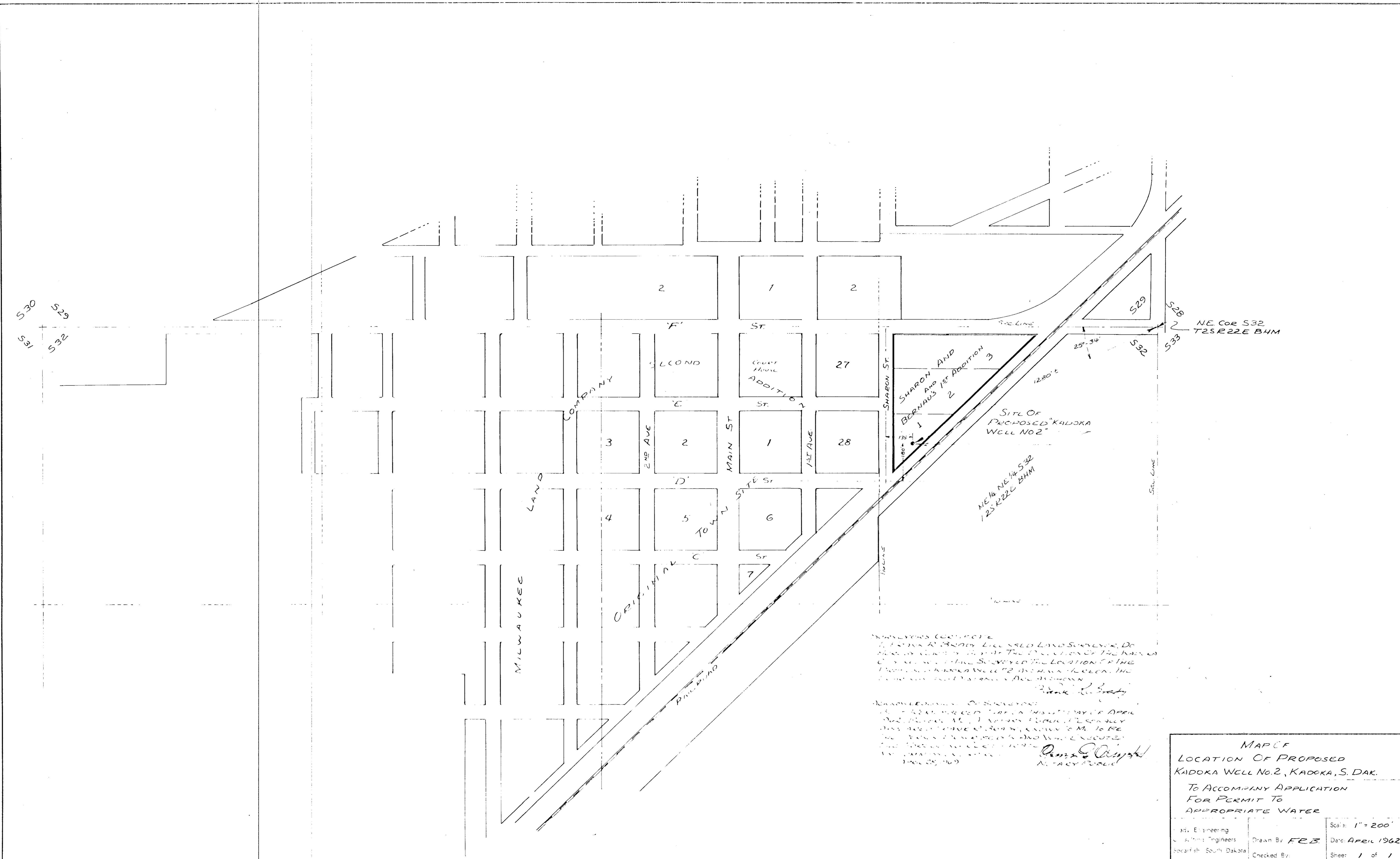
REVISION TO
 APPLICATION NO. 760-2
 KADOKA WELLS
 REV. 7/11/1965
 SRS



KADOKA WELL No. 2
 REVISED 6 APRIL 1965
 APPL. No. 760-2

BRADY ENGINEERING CO.
 CONSULTING ENGINEERS
 OPAEFISH, S.D.

MAY 1965



I, CHARLES R. BRADY, LICENSED LAND SURVEYOR, DO HEREBY CERTIFY THAT THE LOCATION OF THE KADOKA WELL NO. 2 HAS BEEN SURVEYED AND FOUND TO BE IN THE NE 1/4 NE 1/4 S32 T25R22E BHM. THE LOCATION OF THE WELL IS AS SHOWN ON THIS MAP.

WITNESSED MY HAND AND SEAL THIS 25th DAY OF APRIL 1962.

CHARLES R. BRADY
 LAND SURVEYOR

MAP OF
LOCATION OF PROPOSED
KADOKA WELL NO. 2, KADOKA, S. DAK.
TO ACCOMPANY APPLICATION
FOR PERMIT TO
APPROPRIATE WATER

Scale: 1" = 200'
 Date: APRIL 1962
 Sheet: 1 of 1

Drawn By: *FRB*
 Checked By:

Remarks by State Water Resources Commission:

STATE OF SOUTH DAKOTA }
County of HUGHES } S.S.

Pierre, South Dakota, MAY 18, 1962

This is to certify that the foregoing application was received by the Commission at 1:00 o'clock

P.m. upon the 6TH day of APRIL, 1962

State Water Resources Commission

By: [Signature]
for Chief Engineer, Executive Officer

Number of permit 760-2

Date of first receipt of application APRIL 6, 1962

Date of return to applicant for correction, amendments or changes required as follows: —, 19—

Date of receipt of corrected application —, 19—

Date from which applicant may claim right APRIL 6, 1962

Approved MAY 9, 1962, Recorded in Book 7 Page 107

This is to certify that we have examined the foregoing application for a permit to appropriate water of the State of South Dakota, and we hereby grant the same as stated hereon, subject, however, to the following limitations and conditions:

1st. The equivalent of at least one-fifth of the work above specified is to be completed on or before

NOVEMBER 9, 1963

2nd. The whole of said work is to be completed on or before MAY 9, 1967

3rd. The limit of time for proof of beneficial use of water appropriated in accordance herewith is MAY 9, 1967 EXTENSION APPROVED MAY 12, 1965

4th. The water appropriated shall be used for the purpose of MUNICIPAL USE

5th. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

6th. The amount of the appropriation herein granted shall not exceed 1.00 cubic feet per second; neither shall it exceed the capacity of the above described system of diversion works, nor the least amount of water that experience may hereafter indicate as necessary for the production of crops in the exercise of the best husbandry; and further, said appropriation must be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually

and beneficially applied for irrigation on or before MAY 9, 1965; said water to be used during the following described annual period:

Witness my hand this CONTINUOUSLY
18TH day of MAY, 1962

State Water Resources Commission

By: [Signature]
Chief Engineer, Executive Officer

Certificate of Construction issued JULY 19, 1967

Water License issued JULY 19, 1967

9. (Continued)

III. Well Specifications - SEE ATTACHED SKETCH

(a) Hole and casing 500'
 Size of drill hole or excavation 13" 9" Dept. 500-4,250'±
 Type of casing STEEL
 (wood, concrete, steel, etc.)
 Size of casing 9" 6" Thickness of casing
 Length of casing 4,050'± If collection gallery, length, size and depth of gallery

(b) Screens
 Type of perforated screen MAY USE STAINLESS STEEL SCREEN (5") IF FINISHED IN FALL RIVER-LAKOTA.
 Size of perforated screen (diameter) (length)
 Thickness of gravel pack NONE length of gravel pack

(c) Water Bearing Materials
 Distance to water 2,850' TO FALL RIVER..... Character of water bearing materials SANDSTONE
4,050' TO PAHASAPA..... LIMESTONE

Thickness of water bearing material FALL RIVER-LAKOTA, EST. 100'
PAHASAPA, EST. 450'

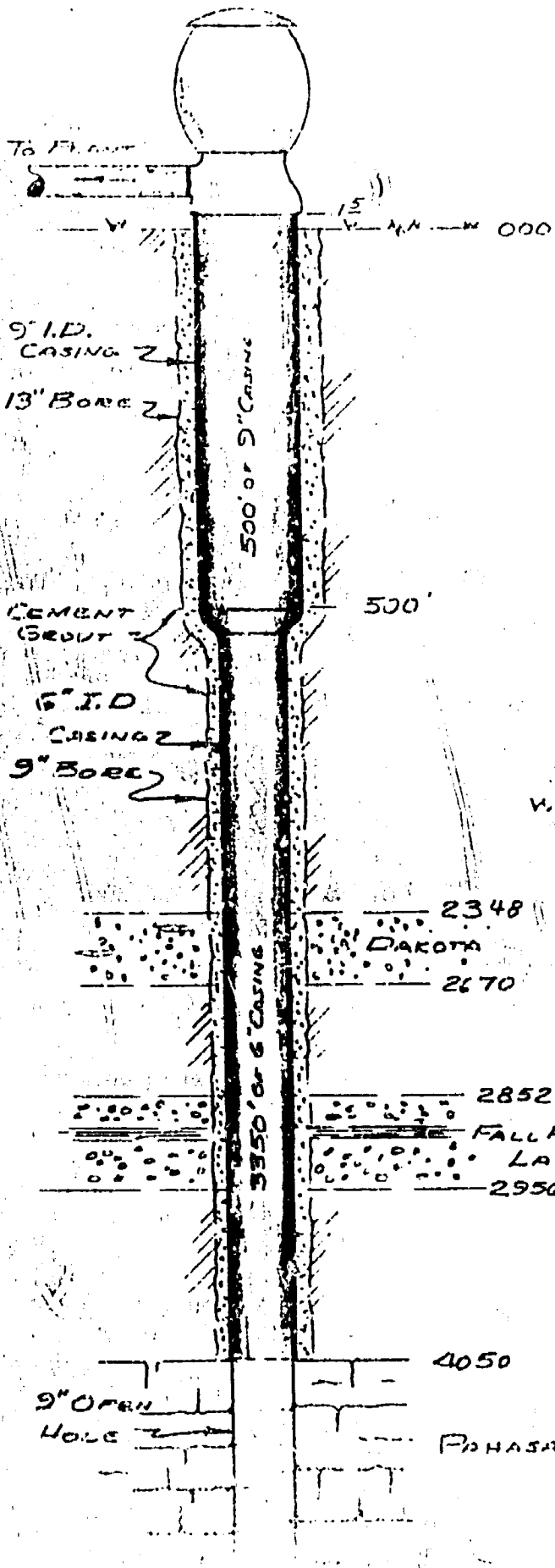
(d) Pump and Motor
 Type of pump TURBINE (centrifugal, propeller, mixed flow, etc.)
 Name of pump NOT KNOWN size EST. 8"
 Kind of motor ELECTRIC (gasoline, electric, diesel, etc.)
 Horsepower EST. 30-50 Name of Motor NOT KNOWN

(e) Complete well EST.
 Capacity 200-450 GPM at drawdown of EST. 200'-400' Estimated cost \$78,000.00

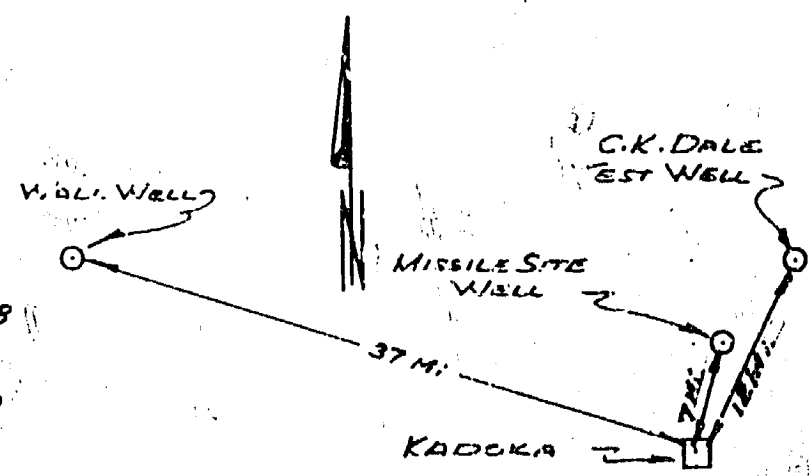
(f) Owner of land upon which well is located CITY OF KADOKA
Name
KADOKA, SOUTH DAKOTA
Address

(g) Distance to nearest existing wells APPROX. 40 MILES
 NONE INTO THESE FORMATIONS
 On same owner's property / rods. On property owned by others / ~~2000~~

NOTE: IT IS EXPECTED TO FINISH WELL IN THE PAHASAPA BUT WILL PROBABLY TEST THE FALL RIVER, LAKOTA AND IF QUANTITY AND QUALITY ARE SATISFACTORY, MAY FINISH WELL THERE.



KADOKA, S. DAK.
 PRELIMINARY
 WELL DESIGN
 OCT. 1961
 (TENTATIVE)



REFERENCE WELLS
 APPROX. LOCATION

KADOKA, SOUTH DAKOTA

PRELIMINARY ESTIMATE

DEEP WELL COST

ITEM	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	TOTAL
1. DRILLING 13" BORE	500	FEET	12.00	\$ 6,000.00
2. FURNISH AND SET 9" CASING	500	FEET	5.50	2,750.00
3. DRILLING 9" BORE	3750	FEET	8.75	32,812.50
4. ELECTRIC LOG	1	EACH	750.00	750.00
5. DRILL STEM TEST	1	EACH	600.00	600.00
6. FURNISH AND SET 6" CASING	3550	FEET	3.25	11,537.50
7. MOVE IN GROUTING EQUIPMENT	LUMP	SUM		2,200.00
8. CEMENT FOR GROUTING	900	94# BAG	1.75	1,575.00
9. FURNISH AND INSTALL TEST PUMP	LUMP	SUM		600.00
10. CLEANING, DEVELOPING AND TESTING	12	HOUR	30.00	<u>360.00</u>
ESTIMATED WELL CONSTRUCTION COST				\$59,185.00
11. FURNISH AND INSTALL PERMANENT PUMPING EQUIPMENT	LUMP	SUM		5,900.00
12. PUMP HOUSE	LUMP	SUM		750.00
13. 6" LINE TO TREATMENT PLANT	100	L.F.	4.00	<u>400.00</u>
TOTAL ESTIMATED CONSTRUCTION COST				\$66,235.00
FINANCING, 5% OF CONSTRUCTION				3,311.75
ENGINEERING, 7% OF CONSTRUCTION				4,636.45
CONTINGENCIES, 5% OF CONSTRUCTION				<u>3,311.75</u>
TOTAL ESTIMATED PROJECT COSTS				\$77,494.95

OCTOBER 1961

STATE OF SOUTH DAKOTA

WATER LICENSE No. 760-2

WHEREAS, On the 6th day of April A. D. 1962
the City of Kadoka

of Jackson County of South Dakota and State of South Dakota
duly made application (No. 760-2) to us for a permit to use 1.00
cubic feet per second of the waters of Arterial ground water
County of Jackson, State of South Dakota, for municipal
purposes; and

WHEREAS, On the 16th day of May A. D. 1962
Permit No. 760-2 was issued to said applicant for the diversion of said water, and providing for the
completion of the works of diversion therein described on or before the 9th day of
May A. D. 1967 and for the application to beneficial use of said
water on or before the 9th day of May A. D. 1967
and,

WHEREAS On the 28th day of April A. D. 1967
the holder of said permit duly made proof of the completion of adequate works for the diversion of 55
cubic feet per second of said waters, as evidenced by our Certificate No. 760-2
dated July 19, 1967 confirming the completion of works of sufficient capacity for
diverting and conveying to the place of intended use 55 cubic feet per second of water, with date of
priority of April 6, 1962 and,

WHEREAS, On the 28th day of April A. D. 1967
proof was duly made of the application to beneficial use of 55 cubic feet per second of said water;
for municipal use by the City of Kadoka

NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota,

We hereby grant and confirm to the City of Kadoka

the holder and owner of said permit No. 760-2

a water right dating from April 6, 1962 to the use of 55

cubic feet per second of the waters of Artesian ground water

in the County of Jackson and State of South Dakota, or so much thereof as may be

necessary for the purposes hereinafter mentioned, to be diverted at a point N 26° E, 1455' from

the SW Corner, Section 28, T2S, R22E

and conducted ~~to and from~~ through the city water distribution system

for the purpose of municipal use

subject, however, to the laws of the State of South Dakota applicable to a license for the use of the waters of the State, and subject, also to the local or community customs, rules and regulations which have been or may be adopted from time to time by a majority of the users from a common source of supply, canal or lateral from which such water may be taken, when such rules and regulations have for their object the economical use of such water.

WITNESS, My hand and seal of our office at Pierre, South Dakota,
this 19th day of July A. D. Nineteen
Hundred and Sixty-seven

State Water Resources Commission

By:

J.W. GRIMES- Chief Engineer, Executive Officer

STATE OF SOUTH DAKOTA

Water License No. _____

To _____

Source of Supply _____

County _____

Am't _____ c. f. s.

Point of Diversion _____

Place of Use _____

Purpose _____

Date of Priority _____

Recorded _____

in Book _____ of _____ Page _____

Permit No. 760-2

Water Division No. 2 BAIL REVER Water District

Certificate of Completion of Works

TO ALL WHOM IT MAY CONCERN:

This is to Certify, That the City of Kadoka

of _____, County of Jackson, and State

South Dakota, the holder of Permit No. 760-2, issued upon Application

No. 760-2, bearing date of priority of April 6, 1962, authorizing the diversion of

1.0 cu. ft. per second of the waters of Artesian Ground Water

County of Jackson State of South Dakota, at point N 26° E, 1455'

from the SW corner, Section 28, T28S, R22E

for Municipal

purposes, has fully complied with the provisions of the laws of the State of South Dakota relating to proof of

completion of the works of diversion set out and described in said Permit; that said works are found in satisfactory

condition for diverting and conveying to the place of intended use .55 cu. ft.

per second of water; and that the ~~laws proposed to be irrigated by the use of said water are described as follows,~~

to-wit: for municipal use by the City of Kadoka

Witness my hand this 19th day of July A. D. 1967

State Water Resources Commission

By:

J.W. GRIMES - Chief Engineer, Executive Officer

On or before April 12, 1962
(First Publication)

APPROPRIATION OF WATER

Office of State Water Resources Commission,

Pierre, S. Dak., April 6, 1962

Notice is hereby given that The City of Kadoka S. Dak., has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use 1.0 cubic feet of water per second of time from artesian ground water through the Kadoka Well #2, the point of diversion of which is to be located on the back of section in the NE 1/4 of the NE 1/4 of Section 32 Twp. 28 Range 22R. Said water to be used for the purpose of providing irrigation on the following: Municipal supplies for the City of Kadoka.

This application will be taken up by the State Water Resources Commission at their office at Pierre for consideration upon the 9th day of May, 1962, at 2:00 P.M. All interested persons may appear and be heard.

Appropriate action will be taken by the Water Resources Commission after suitable time has elapsed for the consideration of any or all information presented.

CC: L. S. Parkinsco-Publisher
Kadoka Press
Kadoka, South Dakota

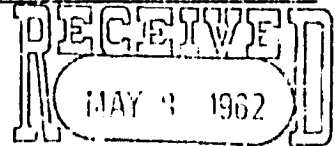
State Water Resources Commission

By:

Chief Engineer, Research Office

BURTON F. JONES
Water Right Specialist

PROOF OF PUBLICATION



STATE WATER RESOURCES COMM.
PIERRE, SOUTH DAKOTA

STATE OF SOUTH DAKOTA }
County Jackson } ss.

APPROPRIATION OF WATER

Office of State Water Resources Commission
Pierre, S. Dak. April 6, 1962
Notice is hereby given that the City of Kadoka, South Dakota, has made an application in accordance with the provisions of the water laws of South Dakota for a permit to appropriate for beneficial use 1.0 cubic feet of water per second of time from Artesian ground water through the Kadoka Well No. 2, the point of diversion of which is to be located in the NE 1/4 of the NE 1/4 of Section 32, Twp. 2S, Range 22E. Said water to be used for the purpose of providing Municipal supplies for the City of Kadoka.

This application will be taken up by the State Water Resources Commission at their office at Pierre for consideration upon the 9th day of May, 1962, at 2:00 p.m. All interested persons may appear and be heard.

Appropriate action will be taken by the Water Resources Commission after suitable time has elapsed for the consideration of any or all information presented.

State Water Resources Commission
By:
BURTON F. JONES
Water Right Specialist
Pub. Apr. 12, 19, 26, May 3.

L. G. Parkinson being duly sworn, deposes and says the annexed printed copy of Notice of Intention to Appropriate Water was taken from the Kadoka Press a newspaper which during the whole time of publication of said notice herein after stated, has been and is printed and published in the City of Kadoka, County of Jackson and State of South Dakota; that the said notice was published in said newspaper on the following dates:

- April 12, 1962
- April 19, 1962
- April 27, 1962
- May 3, 1962

in each and every issue of the full number thereof, the first publication being made on the 12th day of April 19 62 and the last publication on the 3rd day of May, 19 62, upon which days or times of publication aforesaid the newspaper was regularly published, and that during the whole time of said publication he was the printer and publisher of the said newspaper.

L. G. Parkinson

Subscribed and sworn to before me this 3rd day of May, A. D. 19 62

Notary Public

Notary Public Jackson County, S. D.

760-2-

Brady Engineering
CONSULTING ENGINEERS
148 EAST HUDSON PHONE 642-2616
SPEARFISH, SOUTH DAKOTA
3 FEBRUARY 1965

RECEIVED
FEB - 4 1965
STATE WATER RESOURCES COMM.
PIERRE, SOUTH DAKOTA

STATE OF SOUTH DAKOTA
WATER RESOURCES COMMISSION
STATE OFFICE BUILDING
PIERRE, SOUTH DAKOTA.

RE: KADOKA

GENTLEMEN:

DO YOU HAVE ANY RECORDS REGARDING THE WATER LEVEL OR PRESSURES IN THE DAKOTA FORMATION THAT WOULD INDICATE THE STATIC WATER LEVEL AT PRESENT COMPARED TO THE LEVEL AT SOME TIME IN THE PAST. IN OTHER WORDS, DO YOU HAVE INFORMATION THAT INDICATES THE RATE AT WHICH THE DAKOTA WATER LEVEL IS LOWERING? WE ARE PRIMARILY INTERESTED IN THE AREA OF KADOKA.

THE CITY OF KADOKA IS PLANNING TO DRILL A SECOND WELL. WE HAVE RECOMMENDED THE DAKOTA FORMATION RATHER THAN THE MADISON BECAUSE OF THE LOWER WATER TEMPERATURE AND LESS HARDNESS. ENCLOSED IS A COPY OF A RECENT LETTER TO THE CITY REGARDING THIS. WE SHALL BE PLEASED TO HAVE ANY COMMENTS OR SUGGESTIONS YOU MAY CARE TO MAKE.

YOURS TRULY,

BRADY ENGINEERING COMPANY


FRANK R. BRADY

FRB:LK

18 JANUARY 1955

TO: THE MAYOR AND CITY COUNCIL
KADOKA, SOUTH DAKOTA

RE: PROPOSED WELL

GENTLEMEN:

ONE OF OUR ENGINEERS, MR. FULLERTON, WAS VISITING THE OTHER DAY WITH YOUR CITY AUDITOR AND WATER SUPERINTENDENT. THEY SUGGESTED THAT WE WRITE TO THE CITY EXPLAINING WHY OUR WELL REPORT OF 1951 RECOMMENDED CONSTRUCTING THE WELL TO THE PANASAPA FORMATION, APPROXIMATELY 4200 FEET DEEP RATHER THAN TO A SHALLOWER FORMATION.

BRIEFLY REVIEWING THE REPORT, THERE ARE THREE POSSIBLE WATER PRODUCING FORMATIONS AVAILABLE AS FOLLOWS:

1. DAKOTA SANDSTONE AT ABOUT 2300 TO 2700 FEET
2. FALL RIVER SANDSTONE AT ABOUT 2000 TO 2950 FEET
3. PANASAPA LIMESTONE AT ABOUT 4000 FEET TO PROBABLY 4500 FEET AT LEAST

IF CONSIDERING THE DAKOTA SANDSTONE FIRST, THIS IS THE FORMATION FROM WHICH YOUR PRESENT WELL IS DRAWING. ANOTHER WELL INTO THIS FORMATION SHOULD BE A HALF MILE FROM YOUR PRESENT WELL TO REDUCE THE EFFECT OF EACH WELL ON THE OTHER. ANOTHER WELL INTO THE SAME FORMATION ADJACENT TO YOUR PRESENT WELL WOULD CERTAINLY REDUCE THE CAPACITY OF YOUR PRESENT WELL TO SOME EXTENT. HOWEVER, I BELIEVE THAT PROPERLY DESIGNED AND LOCATED WELL INTO THE DAKOTA FORMATION COULD PRODUCE A GOOD QUANTITY OF WATER WITHOUT AFFECTING YOUR PRESENT WELL TOO MUCH. SUCH A WELL SHOULD BE LOCATED APPROXIMATELY HALF A MILE FROM YOUR PRESENT WELL, POSSIBLY ON ADJACENT PROPERTY. THE WELL SHOULD BE FURNISHED WITH A SCREEN AND GRAVEL PACK RATHER THAN PERFORATED CASING; THIS ADDS TO THE COST BUT WILL INCREASE THE CAPACITY.

VERY ROUGHLY I HAVE ESTIMATED THE CONSTRUCTION COST OF SUCH A WELL INTO THE DAKOTA FORMATION AT ABOUT \$41,000. THE COST OF HALF A MILE OF PIPE LINE WOULD BRING THE TOTAL COST UP TO ABOUT \$56,000 WHICH IS SLIGHTLY LESS THAN WE HAD ORIGINALLY FIGURED FOR THE PANASAPA WELL. THE REASON THEY ARE SO NEARLY THE SAME IS THAT ALTHOUGH THE PANASAPA WELL IS MUCH DEEPER IT WOULD NOT REQUIRE A SCREEN NOR THE HALF MILE OF PIPE LINE; IT COULD BE BUILT ADJACENT TO THE TREATMENT PLANT.

III THE FALL RIVER FORMATION PRODUCES A GOOD QUALITY OF SOFT WATER AT WALL. THEIR FIRST WELL WITH A 3 1/2" SCREEN PRODUCED 150 GPM AND THEIR SECOND WELL WITH A SIX INCH SCREEN PRODUCES 235 GPM. HOWEVER THE HIGGLE SITE WELL SEVEN MILES FROM KADOKA PRODUCED VERY LITTLE WATER FROM THE FALL RIVER FORMATION. IT IS MUCH SOFTER THAN YOUR PRESENT WATER BUT IS HIGHER IN TOTAL SOLIDS. THE QUALITY WOULD PROBABLY BE INFERIOR TO YOUR PRESENT WATER. THE ELECTRICALS ON THE PHILIP WELL WHICH WAS DRILLED SINCE OUR ORIGINAL REPORT ALSO INDICATED THAT THE FALL RIVER WOULD NOT BE LIKELY A PRODUCER OF A BIG QUANTITY OF WATER. IT DOES NOT APPEAR THAT THE FALL RIVER FORMATION CAN BE CONSIDERED.

IIII PANASAPA FORMATION. SINCE OUR ORIGINAL REPORT, THE PHILIP WELL GIVES MORE POSITIVE INFORMATION ON THE POTENTIAL OF THE PANASAPA FORMATION. IN ALL AREAS WHERE THIS FORMATION HAS BEEN TAPPED IT HAS PRODUCED A GOOD QUANTITY OF WATER BUT THE WATER IS EXTREMELY HARD AND AT PHILIP HAS A TEMPERATURE OF 155°. I BELIEVE THE TASTE OF THE PHILIP WELL WATER IS BETTER THAN YOUR PRESENT SUPPLY BUT PROBABLY TO THE PEOPLE OF KADOKA WHO ARE USED TO YOUR PRESENT WATER THIS WOULD NOT BE SO. THE PANASAPA WATER AT EAGLE BUTTE, WHERE THE CHEMICAL ANALYSIS IS ABOUT THE SAME AS IT WOULD BE AT KADOKA, IS USED SATISFACTORILY FOR IRRIGATION.

THE MAIN ADVANTAGE OF THE PANASAPA FORMATION IS THAT A WELL INTO THIS FORMATION WOULD VERY PROBABLY HAVE A GREATER CAPACITY AND THERE WOULD PROBABLY BE VERY LITTLE PUMPING LIFT REQUIRED. THE WATER SHOULD RISE APPROXIMATELY TO THE GROUND LEVEL.

THE DISADVANTAGES OF THE PANASAPA FORMATION ARE ITS HARDNESS (ABOUT FOUR TIMES YOUR PRESENT WATER) AND ITS HIGH TEMPERATURE. PHILIP RUNS THE WATER THROUGH THEIR LAKE WHICH COOLS IT AT LITTLE COST AND THEY HAVE A SOFTENING PLANT THROUGH WHICH THEY REDUCE THE HARDNESS. IT WOULD PROBABLY BE NECESSARY FOR YOU TO INSTALL ADDITIONAL COOLING EQUIPMENT TO GET THIS WATER DOWN TO A SATISFACTORY TEMPERATURE.

RECOMMENDATIONS

IN VIEW OF THE ADDITIONAL INFORMATION GAINED FROM THE PHILIP WELL, WE BELIEVE NOW THAT KADOKA SHOULD PLAN ANOTHER WELL INTO THE DAKOTA FORMATION TO BE LOCATED ABOUT A HALF MILE FROM THE PRESENT WELL WITH A SIX INCH LINE FROM THE NEW WELL TO THE TREATMENT PLANT. THE WELL SHOULD BE OF A LARGE ENOUGH DIAMETER TO PROVIDE FOR INSTALLING A SCREEN AND GRAVEL PACK. THE LENGTH OF SCREEN AND GRAVEL PACK WOULD BE DETERMINED BY THE ELECTRIC LOG RUN AT THE TIME THE WELL IS CONSTRUCTED. THIS WILL ASSURE YOU OF THE SAME QUALITY AND TEMPERATURE OF WATER THAT THE TOWN IS USED TO AND IS EQUIPPED TO TREAT.

WE REALIZE THAT THIS IS A CHANGE FROM THE RECOMMENDATION MADE WITH OUR 1961 REPORT BUT THE PHILIP WELL HAS INDICATED THAT THE PAKASAPA FORMATION WATER WILL BE CONSIDERABLY HOTTER THAN WE EXPECTED. THIS WOULD REQUIRE ADDITIONAL COOLING EQUIPMENT AND ADDITIONAL POWER AND MAINTENANCE COSTS TO OPERATE THE COOLING EQUIPMENT. ALSO, THE TOWN OF EAGLE BUTTE IN RECENT YEARS HAS BEEN EXPERIENCING CONSIDERABLE MAINTENANCE PROBLEMS WITH THEIR WELL PUMP IN THE SAME WATER.

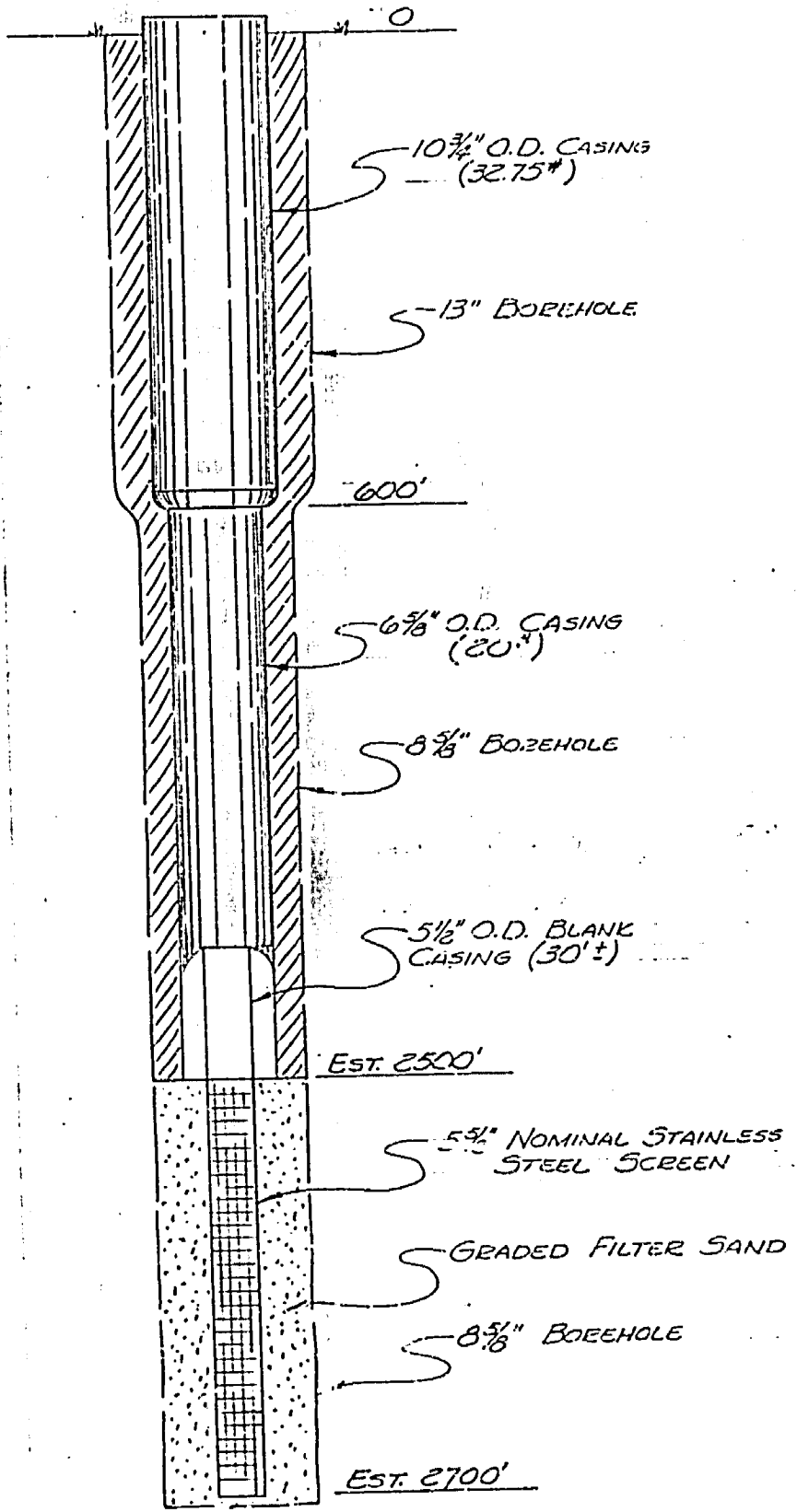
WE HOPE THAT WE WILL BE ABLE TO WORK WITH YOU ON DEVELOPING YOUR SECOND WELL AND WILL BE PLEASED TO MEET WITH THE COUNCIL AT ANY TIME ON THIS OR OTHER PROJECTS.

YOURS TRULY,

BRADY ENGINEERING COMPANY

FRANK R. BRADY

FRBILK



KADOKA WELL No. 2

REVISED 6 APRIL 1965
APPL. No. 760-2

BRADY ENGINEERING CO.
CONSULTING ENGINEERS
SPEARFISH, S.D.

February 11, 1965

Mr. Frank Brady
Brady Engineering
146 East Hudson
Spearfish, South Dakota

Dear Frank:

Reference is made to your letter of February 3, 1965, regarding information that we might have about changes in water levels in the Dakota Formation.

The Water Resources Commission initiated a program to record artesian well levels on an annual basis in 1959 and now does this work in cooperation with the U. S. Geological Survey. Recently a short report pertaining to this program was prepared for the Commission. A copy of this report is enclosed for your information. You will note that Kadoka is in the large area where this program has not yet started.

Historically, the water table from the Dakota Formation dropped approximately 100 feet between 1910 and 1920 due to the large number of wells drilled into the formation prior to 1910 and due to the number of wild and uncontrolled wells that resulted from these early wells. This decline in pressure or water level has been much slower since that time and present development in this formation should not result in an acceleration of this decline.

We appreciated receiving a copy of your January 18, 1965 letter to the City of Kadoka, South Dakota.

Sincerely,

Donald Driscoll
Deputy Chief Engineer

DD:Js
Enc.

Brady Engineering

CONSULTING ENGINEERS

SOUTH HIGHWAY 14 PHONE 642-2656

SPEARFISH, SOUTH DAKOTA

8 APRIL 1965

RECEIVED
APR 9 1965

STATE WATER RESOURCES COMM.
PIERRE, SOUTH DAKOTA

MR. JOSEPH GRIMES, DIRECTOR
WATER RESOURCES COMMISSION
STATE OFFICE BUILDING
PIERRE, SOUTH DAKOTA

RE: KADOLA WELL No. 2
APPLICATION No. 760-2

DEAR MR. GRIMES:

IN APRIL OF 1962 THE CITY OF KADOKA SUBMITTED AN APPLICATION FOR PERMIT TO APPROPRIATE WATER. THE APPLICATION WAS APPROVED 9 MAY 1962. FINANCIALLY THE CITY HAS BEEN UNABLE TO PROCEED WITH THIS WELL UNTIL RECENTLY A BOND ISSUE WAS APPROVED. WE REQUEST FOR THE CITY OF KADOKA AN EXTENSION OF TIME OF ONE YEAR FOR COMPLETION OF THE WELL AND APPLICATION OF WATER TO BENEFICIAL USE.

* ALSO, THE PROPOSED LOCATION OF THE WELL AND THE FORMATION FROM WHICH THE WATER WILL BE DRAWN HAS BEEN CHANGED FROM THE ORIGINAL APPLICATION. THE REASONS FOR THIS CHANGE ARE AS DISCUSSED IN THE ENCLOSED LETTER TO THE CITY. THE REVISED LOCATION OF THE WELL IS AS SHOWN ON THE TWO ENCLOSED COPIES OF PART OF THE ORIGINAL APPLICATION MAP. THE NEW LOCATION WILL BE IN THE SW¹/₄ SW¹/₄ S28, T2S, R22E, BHM, N 26° E OF THE SOUTH WEST CORNER OF SAID SECTION.

TENTATIVELY OUR PLAN NOW WILL BE TO FINISH THE WELL IN THE DAKOTA FORMATION AT AN APPROXIMATE DEPTH OF 2700 FEET AS SHOWN ON THE ENCLOSED SKETCH. THE ELECTRIC LOG AND DRILLING SAMPLES MAY VARY THIS SOMEWHAT.

THE CITY HAS A 50 HP LAYNE & BOWLER SUBMERSIBLE PUMP THAT THEY EXPECT TO USE IN THE WELL.

WE ASSUME THAT THE CITY'S APPLICATION #760-2, ^{MAY} BE REVISED TO THE EXTENT INDICATED HEREIN. IF YOU NEED ADDITIONAL INFORMATION PLEASE ADVISE. WE WILL SUBMIT A COPY OF THE DETAILED PLANS AND SPECIFICATIONS AS SOON AS THEY ARE COMPLETED. THE CITY HOPES TO COMPLETE THIS WELL EARLY THIS SUMMER.

YOURS TRULY,

BRADY ENGINEERING COMPANY

Frank R. Brady
FRANK R. BRADY

FRB:LK

ENCL:

* Letter same as for
That mentioned in Brady
Correspondance of Feb 3.
One copy put on Reference
shelf. RDS

APPLICATION FOR EXTENSION OF TIME FOR COMPLETING WORKS

To the State Water Resources Commission
Pierre, South Dakota

26 APRIL 1965
(date)

Dear Sirs:

I hereby request that an extension of time from 3 YEARS
to 5 YEARS be granted me for the completion of works to be done under Permit No.
760-2 and that the time for proof of beneficial use of water be extended to 5 YEARS

Said works are located in JACKSON County and are described
as follows:

Location of headworks: In the SW 1/4 of the SW 1/4
of Section 28 Township 2 S Range 22E

E., B.H.M.

The water is to be used for the purpose of MUNICIPAL WATER SUPPLY FOR CITY OF KADOKA.

The extension of time for the completion of these works is requested for the following reasons:

THE CITY WAS UNABLE TO PROVIDE THE FINANCING UNTIL RECENTLY WHEN A BOND
ISSUE WAS APPROVED.

CITY OF KADOKA, SOUTH DAKOTA

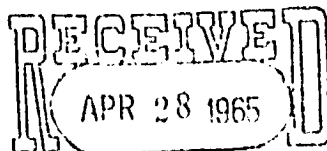
APPROVED: MAY 12, 1965

[Signature], CITY ENGINEER

State Water Resources Commission

Holder of Permit No. 760-2

By: [Signature]
for Chief Engineer, Executive Officer



STATE WATER RESOURCES COMMISSION
PIERRE, SOUTH DAKOTA

8 APRIL 1965

MR. JOSEPH GRIMES, DIRECTOR
WATER RESOURCES COMMISSION
STATE OFFICE BUILDING
PIERRE, SOUTH DAKOTA

RE: KADOKA WELL No. 2
APPLICATION No. 760-2

DEAR MR. GRIMES:

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WE ASSUME THAT THE CITY'S APPLICATION #760-2, BE REVISED TO THE EXTENT INDICATED HEREIN. IF YOU NEED ADDITIONAL INFORMATION PLEASE ADVISE. WE WILL SUBMIT A COPY OF THE DETAILED PLANS AND SPECIFICATIONS AS SOON AS THEY ARE COMPLETED. THE CITY HOPES TO COMPLETE THIS WELL EARLY THIS SUMMER.

YOURS TRULY,
BRADY ENGINEERING COMPANY

FRANK R. BRADY

FRB:lk

ENCL 1

Permit No. 760-2

Water Division No. 2 - Bad River Water District

Certificate of Examination of Works

Report of Examining Engineer

To the State Water Resources Commission, Pierre, South Dakota:

Dear Sirs: I hereby certify that in accordance with your letter of authorization dated _____

I have this day made a thorough examination of the diversion works constructed by _____

City of Kadoka of Jackson

_____ County, South Dakota, holder of Permit No. 760-2, issued

upon Application No. 760-2, bearing date of priority of May 9, 1962, authorizing the

diversion of 1.00 cu. ft. per second of the waters of Ground Water for Municipal

purposes. I have to report on the condition of the same as follows:

The diversion works comprise: A well approximately 2200' deep with direct coupled submersible pump and motor - Motor is Plunger 9" rated at 50 H.P. Pump is Layne & Bowler submersible 4 stage 8" DRIC all bronze trail No. 634-1604. System includes pump house, transit line, 50,000 gals. elevated storage tank, cooling, filtering, & treatment equipment and city distribution system. and the system is in the following condition:

Good

The point of diversion is located N 26° E 1455' from the SW corner of Section 28, T25, R22E

The works are capable of diverting and conveying to the place of use 0.557 cu. ft. per second of water, which is to be used for Municipal Purposes

The legal subdivisions to be irrigated are: None

_____ comprising a total of _____ acres of land.

The domestic use intended comprises _____

The utilization for power, mining, or other beneficial uses comprises: _____

Witness my hand, this 28th day of April, A. D. 1962.

—SEAL—

Richard D. Schreyer
Examining Engineer
Water Right Specialist
Water Resources Comm.

760-2

Water Rights Division - DENR
Conversation File Documentation

NAME OF PERSON OR FILE: City of Kadoka

ADDRESS: _____ COUNTY: Jackson

DATE: 1/11/93 TELEPHONE: _____

RE: Discussion with Jay Larson, Schmucker, Paul & Nohr (Consultants)

COMMENTS:

Jay Larson, engineering consultant for the Town of Kadoka called regarding permitting for the town. The Town has constructed a replacement well in the NE1/4 NE1/4 Section 32 authorized by Partial Vested Water Right No. 1718-2, however, they want to keep the old well for standby purposes. I told Mr. Larson this would require that a water permit be obtained for the additional diversion point and any additional appropriation of water (if necessary). Mr. Larson thought they might apply for an additional appropriation of water to account for those peak water use days.

Also, Mr. Larson wanted to get resolved a discrepancy on Water Right No. 760-2. This water right was initially permitted for 1.0 cfs in the NE1/4 NE1/4 Section 32, however, the well was constructed and licensed (in 1967) for 0.55 cfs in the SW1/4 SW1/4 Section 28. This is the main well used by the Town of Kadoka. I told Mr. Larson that SDCL 46-5-4.1 allows any license issued prior to January 1, 1983 is hereby cured, legalized and validated as fully as if the license had been issued in full compliance with all existing provision of this title.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

NAME: Eric Heuband



DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov



MAR 13 2014

760-2
2282-2
2283-2

Patty Ulmen, Finance Officer
City of Kadoka
PO Box 58
Kadoka SD 57543

Dear Ms. Ulmen:

Enclosed is Water License No. 2283-2 for the City of Kadoka. This is the final water right document completing the process of obtaining a Water Right. Included with the license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the wells authorized by Water Right No. 2283-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

The applicable portions of Water Right No. 760-2 and Water Permit No. 2282-2 were incorporated into Water License No. 2283-2. As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures