

THE STATE OF KANSAS



WATER RESOURCES RECEIVED
AUG 05 2024
14:30
KS Dept. of Agriculture

KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

File Number 51286
This item to be completed by the Division of Water Resources.

**APPLICATION FOR PERMIT TO
APPROPRIATE WATER FOR BENEFICIAL USE**
Filing Fee Must Accompany the Application
(Please refer to Fee Schedule attached to this application form.)

To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture,
1320 Research Park Drive, Manhattan, Kansas 66502:

1. Name of Applicant (Please Print): Glover Real Estate LLC (Bobby Glover) (email: bobbyglover97@gmail.com)
Address: 2479 Hwy 400
City: McCune State KS Zip Code 66753
Telephone Number: (843) 384-0888

2. The source of water is: surface water in Neosho River (stream)
OR groundwater in _____ (drainage basin)

Certain streams in Kansas have minimum target flows established by law or may be subject to administration when water is released from storage for use by water assurance district members. If your application is subject to these regulations on the date we receive your application, you will be sent the appropriate form to complete and return to the Division of Water Resources.

3. The maximum quantity of water desired is 266 acre-feet OR _____ gallons per calendar year, to be diverted at a maximum rate of 10,000 gallons per minute OR _____ cubic feet per second.

Once your application has been assigned a priority, the requested maximum rate of diversion and maximum requested quantity of water under that priority number can **NOT** be increased. Please be certain your requested maximum rate of diversion and maximum quantity of water are appropriate and reasonable for your proposed project and are in agreement with the Division of Water Resources' requirements.

4. The water is intended to be appropriated for (Check use intended):
(a) Artificial Recharge (b) Irrigation (c) Recreational (d) Water Power
(e) Industrial (f) Municipal (g) Stockwatering (h) Sediment Control
(i) Domestic (j) Dewatering (k) Hydraulic Dredging (l) Fire Protection
(m) Thermal Exchange (n) Contamination Remediation

YOU **MUST** COMPLETE AND ATTACH ADDITIONAL DIVISION OF WATER RESOURCES FORM(S) PROVIDING INFORMATION TO SUBSTANTIATE YOUR REQUEST FOR THE AMOUNT OF WATER FOR THE INTENDED USE REFERENCED ABOVE.

For Office Use Only:
F.O. 1 GMD - Meets K.A.R. 5-3-1 (YES/NO) Use REC Source G County LB By KJN Date 8/7/24
Code REG Fee \$ 200 TR # _____ Receipt Date 8-5-24 Check # 1225

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File No. _____

KS Dept. of Agriculture

5. The location of the proposed wells, pump sites or other works for diversion of water is:

Note: For the application to be accepted, the point of diversion location must be described to at least a 10 acre tract, unless you specifically request a 60 day period of time in which to locate the site within a specifically described, minimal legal quarter section of land.

(A) One in the SE quarter of the SW quarter of the SW quarter of Section 27, more particularly described as being near a point 107 feet North and 4,022 feet West of the Southeast corner of said section, in Township 32 South, Range 21 East, Labette County, Kansas.

(B) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____, _____ County, Kansas.

(C) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____, _____ County, Kansas.

(D) One in the _____ quarter of the _____ quarter of the _____ quarter of Section _____, more particularly described as being near a point _____ feet North and _____ feet West of the Southeast corner of said section, in Township _____ South, Range _____, _____ County, Kansas.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter (1/4) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

A battery of wells is defined as two or more wells connected to a common pump by a manifold; or not more than four wells in the same local source of supply within a 300 foot radius circle which are being operated by pumps not to exceed a total maximum diversion rate of 800 gallons per minute and which supply water to a common distribution system.

6. The owner of the point of diversion, if other than the applicant is (please print):

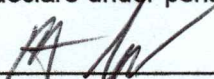
(name, address and telephone number)

(name, address and telephone number)

You must provide evidence of legal access to, or control of, the point of diversion from the landowner or the landowner's authorized representative. Provide a copy of a recorded deed, lease, easement or other document with this application. In lieu thereof, you may sign the following sworn statement:

I have legal access to, or control of, the point of diversion described in this application from the landowner or the landowner's authorized representative. I declare under penalty of perjury that the foregoing is true and correct.

Executed on 8-1, 2024.



Applicant's Signature

The applicant must provide the required information or signature irrespective of whether they are the landowner. Failure to complete this portion of the application will cause it to be unacceptable for filing and the application will be returned to the applicant.

7. The proposed project for diversion of water will consist of one (1) direct diversion pump site
(number of wells, pumps or dams, etc.)
and will be completed (by) following approval
(Month/Day/Year - each was or will be completed)

8. The first actual application of water for the proposed beneficial use was or is estimated to be following approval
(Mo/Day/Year)

AUG 05 2024

File No. _____

9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?
 Yes No If "yes", a check valve shall be required.

All chemigation safety requirements must be met including a chemigation permit and reporting requirements.

10. If you are planning to impound water, please contact the Division of Water Resources for assistance, prior to submitting the application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir.

Have you also made an application for a permit for construction of this dam and reservoir with the Division of Water Resources? Yes No

- If yes, show the Water Structures permit number here Floodplain fill permit pending
- If no, explain here why a Water Structures permit is not required _____

11. The application must be supplemented by a U.S.G.S. topographic map, aerial photograph or a detailed plat showing the following information. On the topographic map, aerial photograph, or plat, identify the center of the section, the section lines or the section corners and show the appropriate section, township and range numbers. Also, please show the following information:

- (a) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) should be plotted as described in Paragraph No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section.
- (b) If the application is for groundwater, please show the location of any existing water wells of any kind within 1/2 mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within 1/2 mile, please advise us.
- (c) If the application is for surface water, the names and addresses of the landowner(s) 1/2 mile downstream and 1/2 mile upstream from your property lines must be shown.
- (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.
- (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use.

A 7.5 minute U.S.G.S. topographic map may be obtained by providing the section, township and range numbers to: Kansas Geological Survey, 1930 Constant, Campus West, University of Kansas, Lawrence, Kansas 66047.

12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application.

Storage application for the wetland cell capture of surface runoff from the contributing drainage area.

The storage application and this direct diversion application are being filed together.

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File No. _____

KS Dept. of Agriculture

- 13. Furnish the following well information if the proposed appropriation is for the use of groundwater. If the well has not been completed, give information obtained from test holes, if available.

Information below is from: Test holes Well as completed Drillers log attached

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled	_____	_____	_____	_____
Total depth of well	_____	_____	_____	_____
Depth to water bearing formation	_____	_____	_____	_____
Depth to static water level	_____	_____	_____	_____
Depth to bottom of pump intake pipe	_____	_____	_____	_____

- 14. The relationship of the applicant to the proposed place where the water will be used is that of owner / operator
(owner, tenant, agent or otherwise)

- 15. The owner(s) of the property where the water is used, if other than the applicant, is (please print):

_____ (name, address and telephone number)

_____ (name, address and telephone number)

- 16. The undersigned states that the information set forth above is true to the best of his/her knowledge and that this application is submitted in good faith.

Dated at MCCUNE, Kansas, this 15th day of AUGUST, 2024.
(month) (year)

[Signature]
(Applicant Signature)

By ROBERT GLOVER
(Agent or Officer Signature)

(Agent or Officer - Please Print)

AUG 05 2024

FEE SCHEDULE

KS Dept. of Agriculture

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic use, shall be (see paragraph No. 2 below if requesting storage):

ACRE-FEET	FEE
0-100	\$200.00
101-320	\$300.00
More than 320	\$300.00 plus \$20.00 for each additional 100 acre-feet or any part thereof.

2. The fee for an application in which storage is requested, except for domestic use, shall be:

ACRE-FEET	FEE
0-250	\$200.00
More than 250	\$200.00 plus \$20.00 for each additional 250 acre-feet of storage or any part thereof.

Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for a permit to appropriate water for water power or dewatering purposes shall be \$100.00 plus \$200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of \$400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of \$200.00.

MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE

ATTENTION

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

CONVERSION FACTORS

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet

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**RECREATIONAL USE
SUPPLEMENTAL SHEET**

File No. _____

Name of Applicant (Please Print): Glover Real Estate LLC (Bobby Glover)

1. Please indicate type of recreational use (boating, fishing, swimming, etc.): Construction of low level wetland dikes to seasonally impound shallow water for wildlife use.
2. Please summarize how the water will be used and justify the quantity of water requested: Constructed wetland storage at the auxiliary spillway elevation = 88.68 acre-feet
Proposed Neosho River direct diversion = 266 acre-feet (3 times the auxiliary spillway volume). Water from the river will be pumped into adjacent wetland cell.
Excess will be released into the river when lowering or emptying wetland cells.

3. Please complete the following table showing estimated future water requirements:

ESTIMATED FUTURE WATER DIVERTED/STORED	
NEXT 5 YEARS	WATER TO BE DIVERTED (ACRE-FEET OR GALLONS)
Year 1	266 acre-feet
Year 2	266 acre-feet
Year 3	266 acre-feet
Year 4	266 acre-feet
Year 5	266 acre-feet

Please attach any additional information, tables, or curves showing past, present and estimated future water requirements to substantiate the amount of water requested.

4. Please designate the legal description of the location where the water is to be used by providing the fractional part of the Section, Township and Range.

SW 1/4 Sec 27, T-32S; R-21E (see plan sheets)

You may attach any additional information you believe will assist in informing the Division of the need for your request.

WATER RESOURCES
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AUG 05 2024

KS Dept. of Agriculture

8-1-24
(Date)

Kansas Department of Agriculture
Division of Water Resources
Earl D. Lewis, Jr., Chief Engineer
1320 Research Park Drive
Manhattan, Kansas 66502

Re: Application
File No. _____

Minimum Desirable Streamflow

I understand that a Minimum Desirable Streamflow requirement has been established by the legislature for the source of supply to which the above referenced application applies.

I understand that diversion of water pursuant to this application will be subject to regulation any time Minimum Desirable Streamflow requirements are not being met.

I also understand that if this application is approved, there could be times, as determined by the Division of Water Resources, when I would not be allowed to divert water. I realize that this could affect the economics of my decision to appropriate water.

I am aware of the above factors, and with the knowledge thereof, request that the Division of Water Resources proceed with processing and approval, if possible, of the above referenced application.

[Signature]
Signature of Applicant

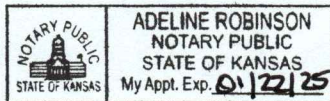
State of Kansas)
County of Labette) ss

ROBERT GLOVER
(Print Applicant's Name)

I hereby certify that the foregoing instrument was signed in my presence and sworn to before me this 1 day of August, 2024.

Adeline Robinson
Notary Public

My Commission Expires:



Glover Real Estate LLC (Tori)

Wetland Development (As Constructed)

July 30, 2024

Prepared By:

Brian W. Severin, P.E.

Director of Technical Services

bseverin@eocene.com

785.207.0201



Design Report

Project Information

- Name: Glover Real Estate LLC (Tori)
- Practice: Wetland Development (As Constructed)
- Legal: SW 1/4 Section 27, Township 32 South; Range21 East
- Location: Labette County, Kansas

Project Description

The project is located along the Neosho River. The wetland development includes two wetland cells with water control structures. The dike structures were constructed May/June 2024 (prior to securing permits). The low-level dikes will provide additional water storage and create diverse topography within the degraded wetland area. The dikes will increase water storage capacity and maintain hydrology at times throughout the year. The project will not hydraulically affect adjacent landowners, as the permanent pools will be confined to the landowner's property.

Design

The wetland cells have the following approximate drainage area: Dike 1 (42 acres) and Dike 2 (93 acres). The contributing hydrology into the wetland cells is direct rainfall, overland flow runoff, and seasonal flood events. The low-level dikes are expected to overtop during flood events. The dikes were constructed with a minimum profile to reduce damage during these events. Average annual rainfall and seasonal flooding is expected to maintain wetland hydrology in the cell at most times throughout the year. However (permit pending), the cells will be supplemented with pumped surface water from the Neosho River.

Permitting and Permissions

The following permits will be required for the as constructed and operation activities. Pertinent information for the permits has been supplied on the permit applications.

- Kansas Department of Agriculture, Division of Water Resources: DWR 1-100 Water Appropriation for Beneficial Use (Direct Diversion – Pump Site)
- Kansas Department of Agriculture, Division of Water Resources: DWR 1-100 Water Appropriation for Beneficial Use (Natural Flow – Surface Water Storage)

- Kansas Department of Agriculture, Division of Water Resources: DWR 2-200 Floodplain Fill
 - The as constructed wetland project will require a variance to K.A.R 5-45-12. Levees and floodplain fills; setback. Portions of Dike 1 and Dike 2 do not meet the required 100-ft setback from the adjacent riverbank. See plan sheets for additional detail.

Dike 1 (Sta 0+00 – 1+25) averages 55 feet of setback from the riverbank, with the closest setback distance being 45 feet (Sta 0+50). Dike 1 is a small ditch plug with earthfill below the adjacent riverbank and field elevations. The riverbank is stable and vegetated. Google Earth imagery over the past 20+ years shows little to no erosion and/or advancement of the riverbank.

Dike 2 (Sta 40+85 – 41+80) averages 90 feet of setback from the creek, with the closest setback distance being 75 feet (Sta 41+25). The riverbank is stable and vegetated. Google Earth imagery over the past 20+ years shows little to no erosion and/or advancement of the riverbank.

Survey

The as constructed wetland development was surveyed by Scott Williams, ModernAg, Inc using survey grade GPS equipment. The master benchmark was surveyed in latitude and longitude coordinates and elevation post processed using NOAA – Online Positioning User Service (OPUS). All other survey points were collected in local reference to the master benchmark. Additional permanent benchmarks were established and are described on the Plan Sheets. LiDAR topographic data was compared to the survey data and elevation corrected for planning and design use.

Appendix

The attached Appendix includes Plan Sheets, KDA-DWR Report, and Permit Documentation.



Project: Glover Real Estate LLC (Tori)

Practice: Wetland Developmet (As Constructed)

Location: SW 1/4 Sec 27, T-32S; R-21E

Labette County, Kansas

Index to Drawings

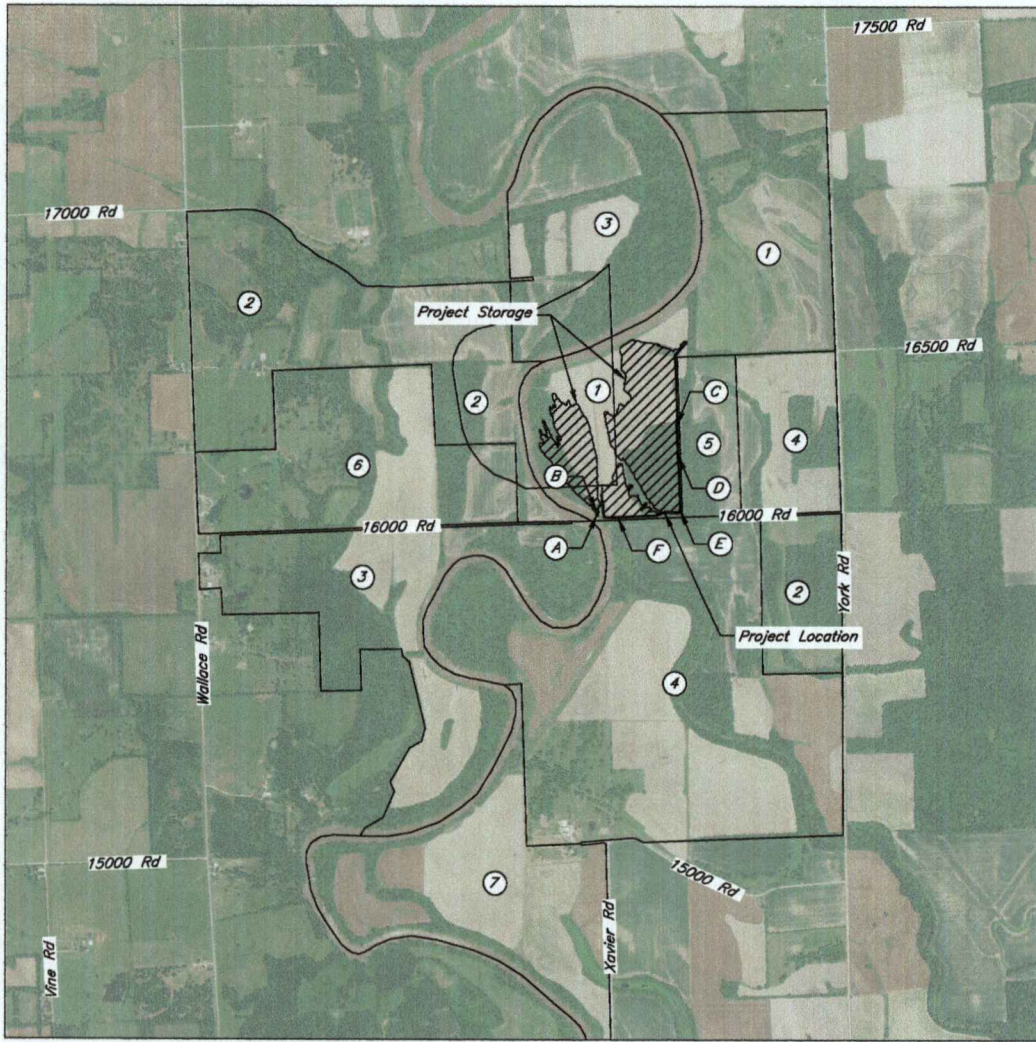
Sheet No.	Description
1	Cover Sheet
2	Location Map and Adjacent Landowners
3	Orthographic Plan Map
4	Plan View and Storage Tables
5	Dike 1 Profile and Cross Sections
6	Dike 2 Profile
7	Dike 2 Profile
8	Dike 2 Cross Sections
9	Dike 2 Cross Sections
10	Base Flood Analysis
11	Base Flood Analysis

Brian W. Severin, P.E. July 2024
Designed by Date



Approved by Date

Before any investigation or construction activity, the excavator is responsible for calling Kansas One-Call at 800-344-7233 (800-DIG-SAFE) or 811



The approximate project location is 4 miles north and 0.5 mile east of Oswego, Kansas.

Upstream and Downstream Landowners

- 1) Project Location
Glover Real Estate LLC
% Bobby Glover
2479 Hwy 400
McCune, Kansas 66753
- 2) Dawty, Steve; Sara
15202 E 430 Rd
Claremore, Oklahoma 74017
- 3) TLD Land LLC
16027 Wallace Rd
Oswego, Kansas 67356
- 4) Eck, Kenneth A
7 Nebraska St
Oswego, Kansas 67356
- 5) Bowin Living Trust, Richard A; Sherry L
6800 NW 125 St
McCune, Kansas 66753
- 6) Dickinson Tr, Tori L
16027 Wallace Rd
Oswego, Kansas 67356
- 7) Eck, Francis N
20 Ohio St
Oswego, Kansas 67356

Points of Diversion

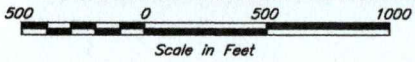
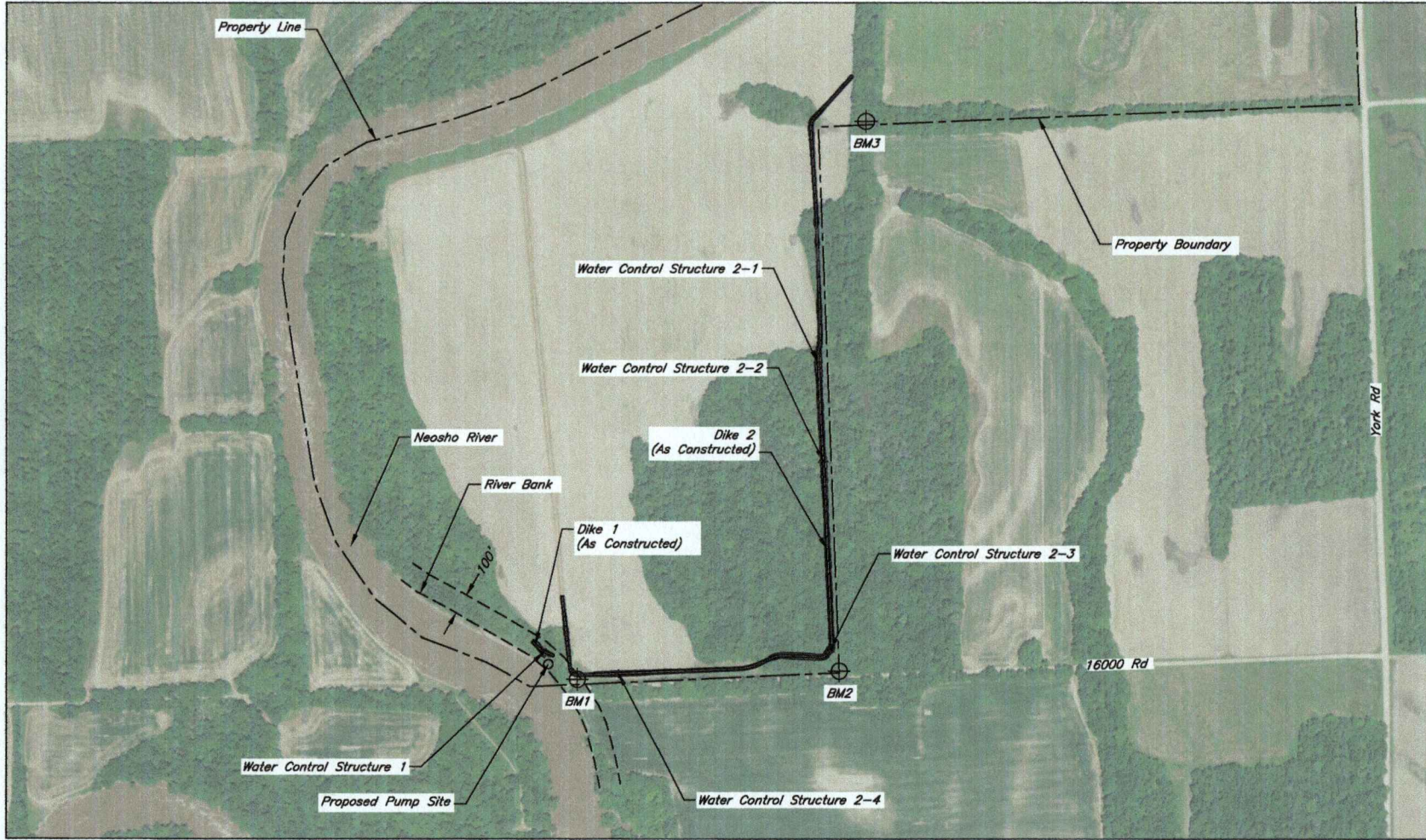
- A) Pump Site - Direct Diversion
- B) Water Control Structure 1 - Storage
- C) Water Control Structure 2-1 - Storage
- D) Water Control Structure 2-2 - Storage
- E) Water Control Structure 2-3 - Storage
- F) Water Control Structure 2-4 - Storage

Date	07/24
Designed	B. Severin
Drawn	B. Severin
Checked	M. Miller
Approved	B. Severin

Glover Real Estate LLC (Tori)
Wetland Development (As Constructed)
SW 1/4 Sec 27, T-32S; R-21E
Labette County, Kansas



Location Map and Adjacent Landowners



Benchmark Table				
Benchmark	Northing	Easting	Survey Elevation	Description
BM1	0.00	0.00	820.12	Top of rebar; N37:13:22.3 / W95:5:56.9
BM2	0.18	1261.14	817.75	Top of rebar next to property line corner post
BM3	2647.85	1473.46	818.88	Top of WRP survey marker

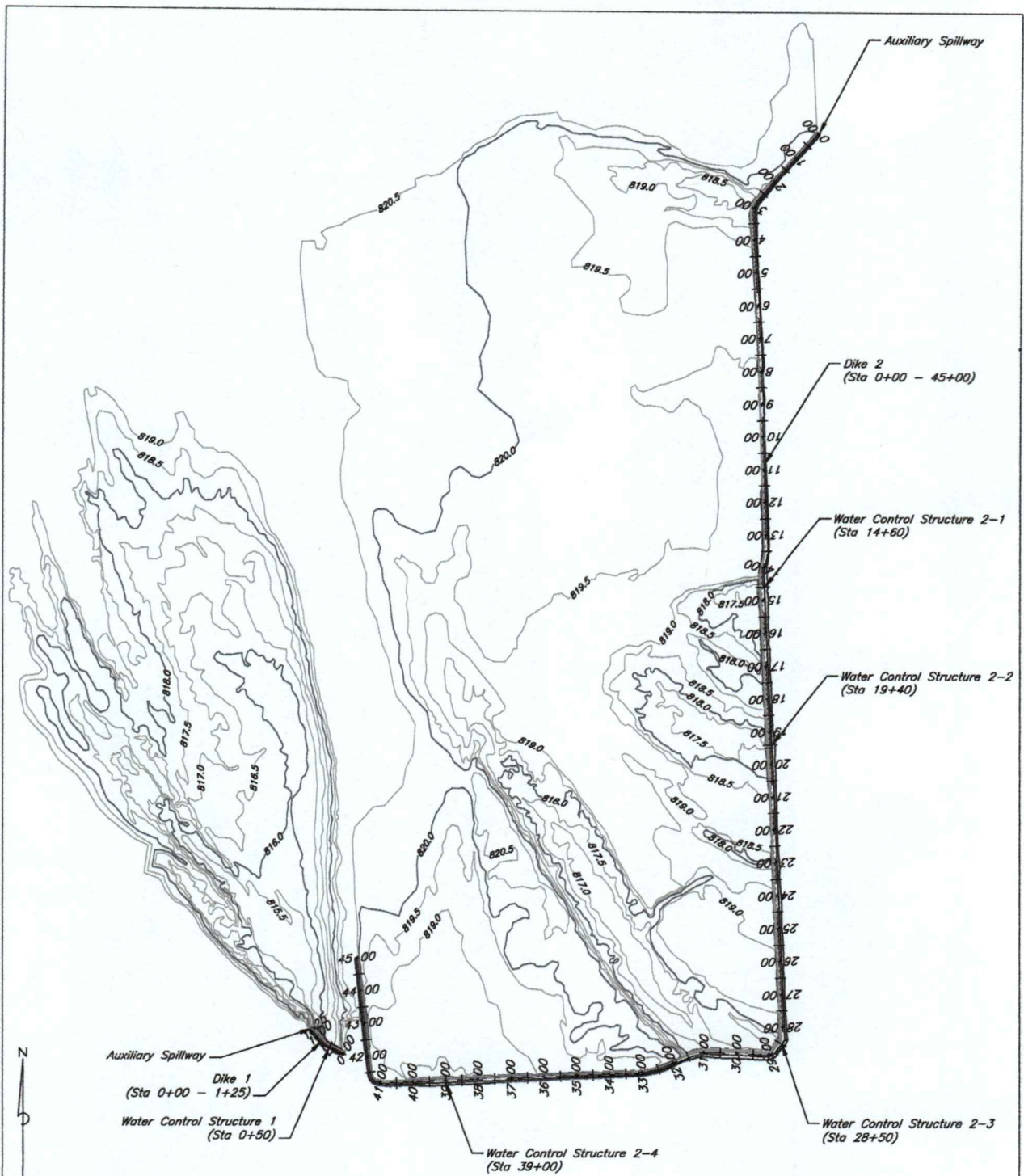
Survey Area:
Local Coordinate Reference
to Longitude / Latitude BM1

Orthographic Plan Map

Date 07/24
Designed B. Severin
Drawn B. Severin
Checked M. Miller
Approved B. Severin

Glover Real Estate LLC (Tori)
Wetland Development (As Constructed)
SW 1/4 Sec 27, T-32S; R-21E
Labette County, Kansas





Scale: 1" = 300'
 Contours: 0.5-ft LIDAR (Elevation Adjusted to OPUS Solution for BM1)

Elevation (ft)	Area (ac)	Total Storage (ac-ft)	Total Storage + Net Evaporation (ac-ft)
815.5	1.02	0.00	0.00
816.0	3.36	1.09	2.50
816.5	7.13	3.72	6.69
817.0	11.14	8.28	12.93
817.5	14.51	14.70	20.74
818.0	18.78	23.02	30.84
ASW 818.5	22.76	33.40	42.89
TOD 819.0	25.75	45.53	56.26

Elevation (ft)	Area (ac)	Total Storage (ac-ft)	Total Storage + Net Evaporation (ac-ft)
817.0	0.85	0.00	0.00
817.5	2.90	0.94	2.14
818.0	6.08	3.18	5.71
818.5	10.46	7.32	11.67
819.0	20.76	15.12	23.77
819.5	38.48	29.93	45.96
ASW 820.0	62.91	55.28	81.49
TOD 820.5	81.09	91.28	125.06

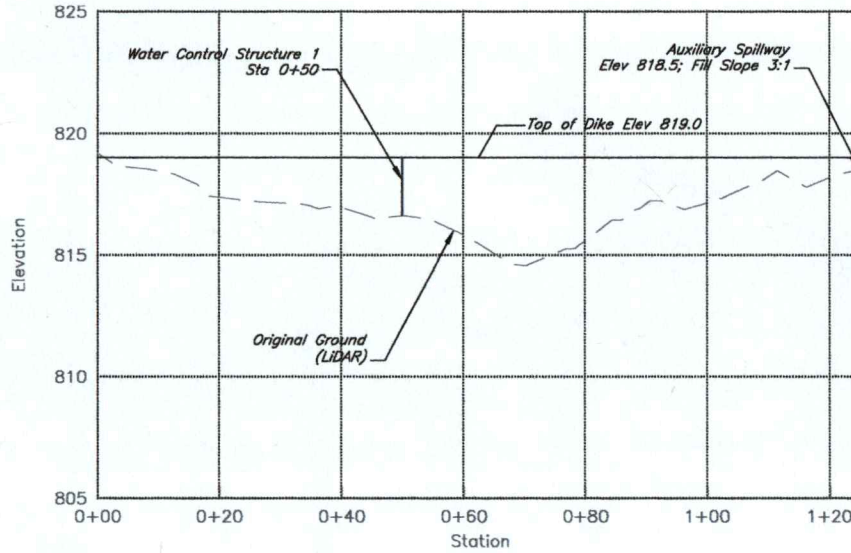
Plan View and Storage Tables

Sheet 4 of 11

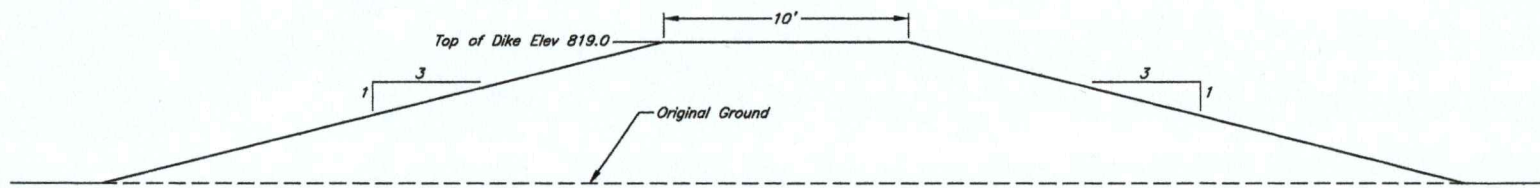


Glover Real Estate LLC (Tori)
 Wetland Development (As Constructed)
 SW 1/4 Sec 27, T-32S; R-21E
 Labette County, Kansas

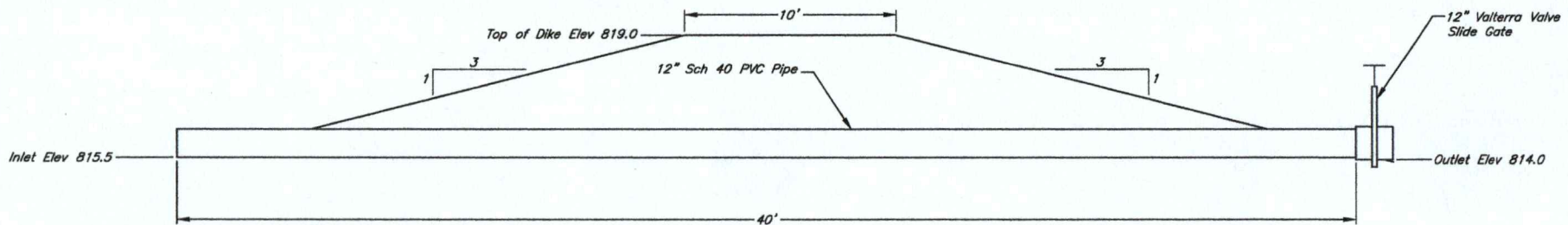
Designed	<u>B Severin</u>	Date	<u>07/24</u>
Drawn	<u>B Severin</u>		<u>07/24</u>
Checked	<u>M Miller</u>		<u>07/24</u>
Approved	<u>B Severin</u>		<u>07/24</u>



Profile View of Dike 1



Typical Dike 1 (Station 0+00 - 1+25) Cross Section

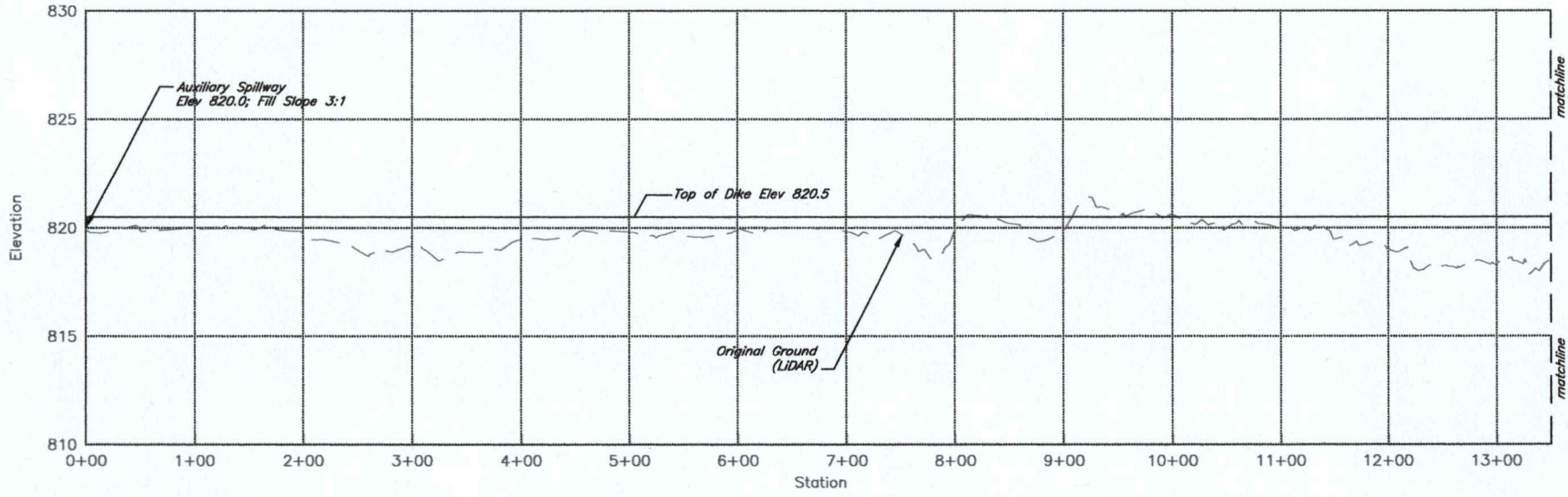


Dike 1 Slide Gate Structure (Station 0+50) Cross Section

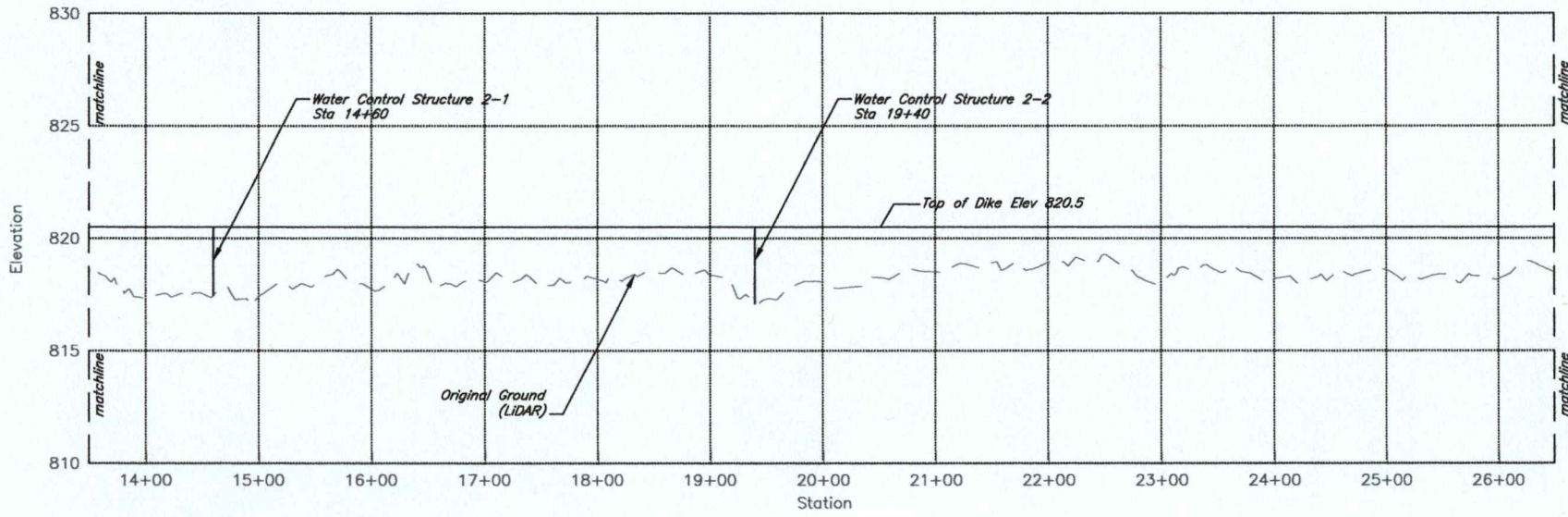
Dike 1 Profile and Cross Sections

Date	07/24
Designed	B. Severin
Drawn	B. Severin
Checked	M. Miller
Approved	B. Severin

Glover Real Estate LLC (Tori)
 Wetland Development (As Constructed)
 SW 1/4 Sec 27, T-32S; R-21E
 Labette County, Kansas



Profile View of Dike 2



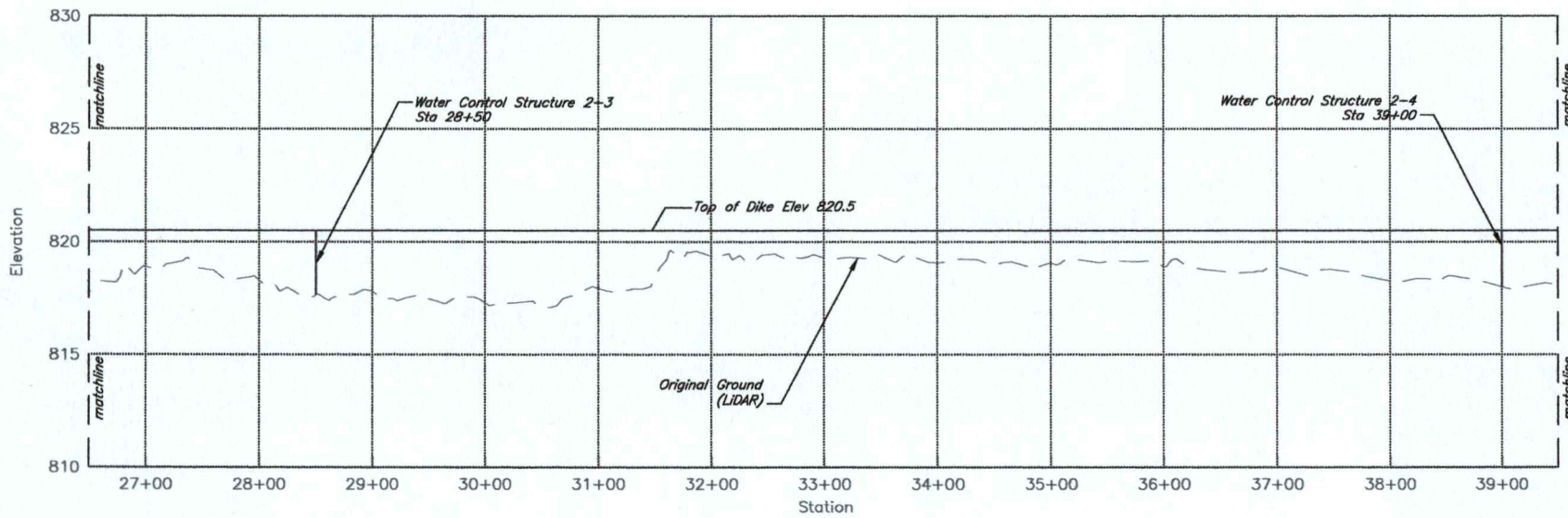
Profile View of Dike 2

Dike 2 Profile

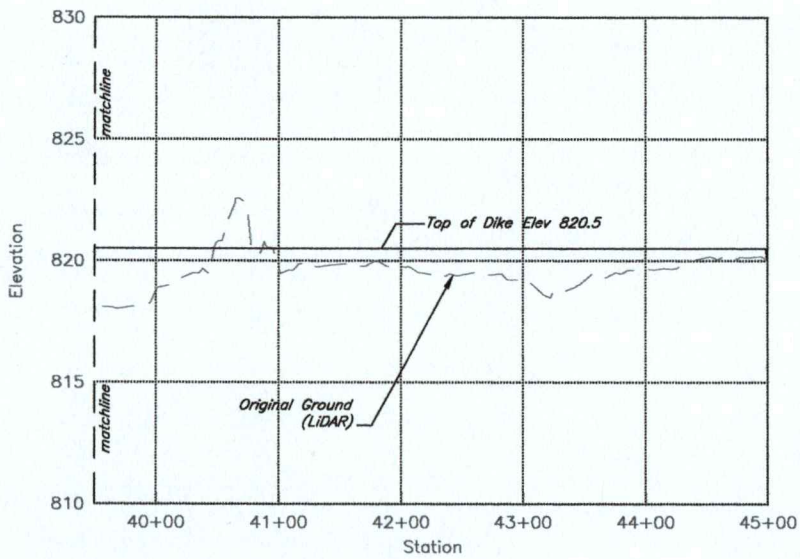
Date	07/24
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Checked	M. Miller
Approved	B. Severin

Glover Real Estate LLC (Tori)
Wetland Development (As Constructed)
SW 1/4 Sec 27, T-32S; R-21E
Labette County, Kansas





Profile View of Dike 2



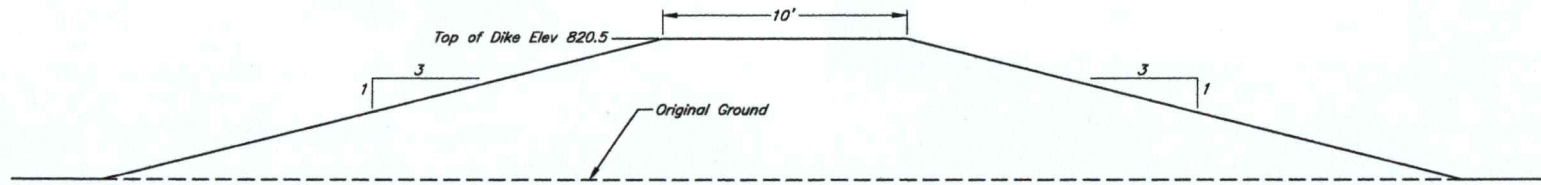
Profile View of Dike 2

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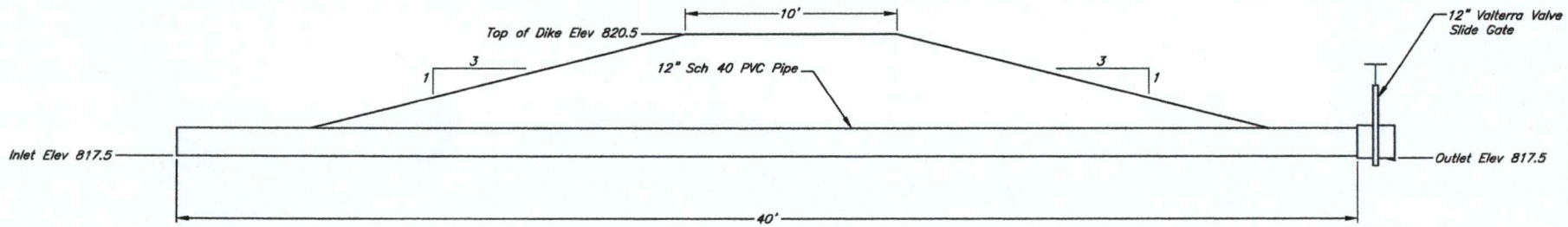
Glover Real Estate LLC (Tori)
 Wetland Development (As Constructed)
 SW 1/4 Sec 27, T-32S; R-21E
 Labette County, Kansas



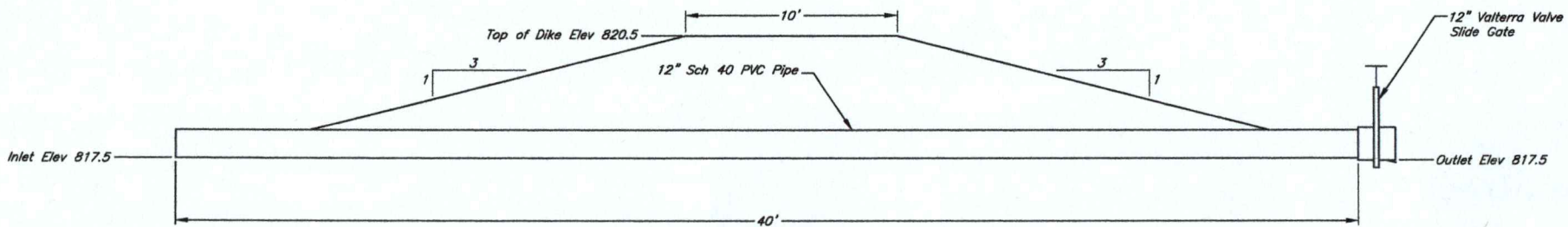
Dike 2 Profile



Typical Dike 2 (Station 0+00 - 45+00) Cross Section



Dike 2-1 Slide Gate Structure (Station 14+60) Cross Section



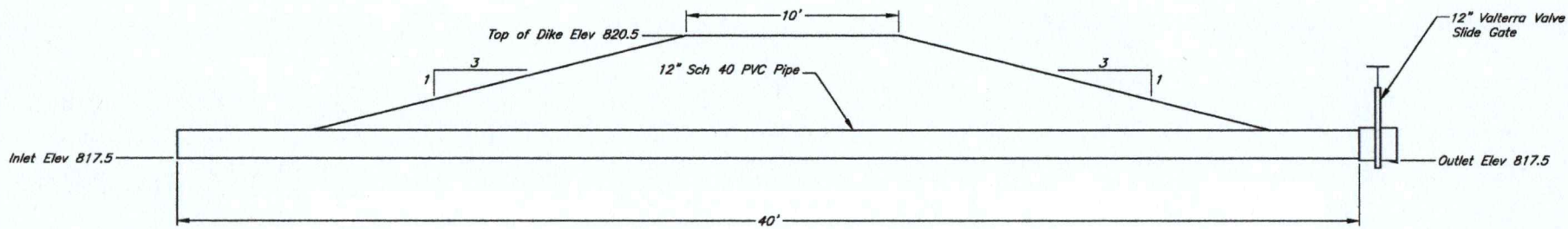
Dike 2-2 Slide Gate Structure (Station 19+40) Cross Section

Dike 2 Cross Sections

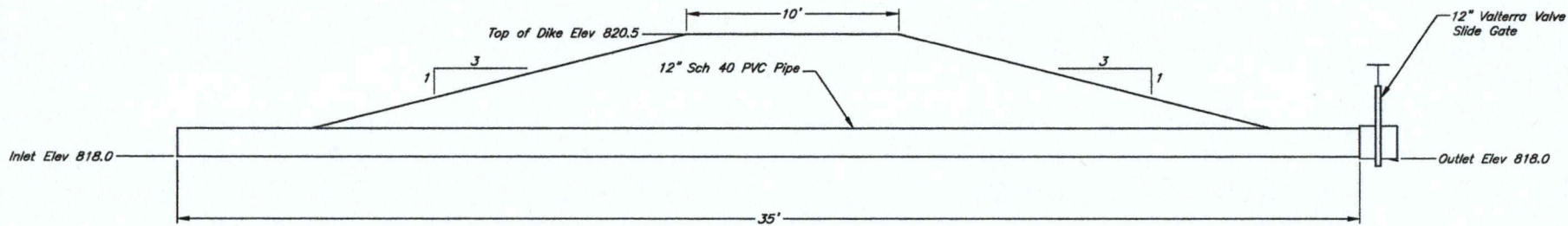
Date	07/24
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Glover Real Estate LLC (Tori)
 Wetland Development (As Constructed)
 SW 1/4 Sec 27, T-32S; R-21E
 Labette County, Kansas





Dike 2-3 Slide Gate Structure (Station 28+50) Cross Section



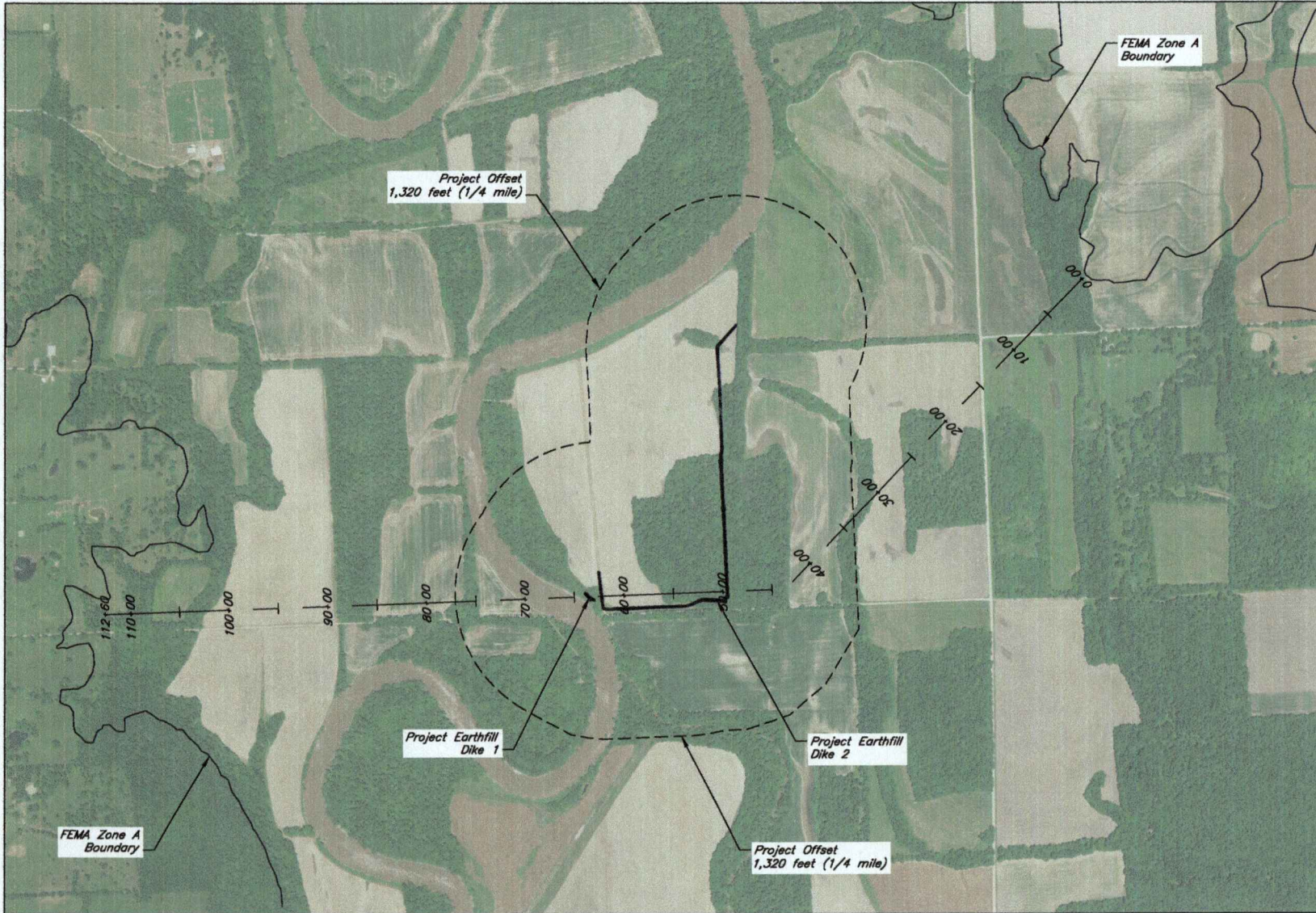
Dike 2-4 Slide Gate Structure (Station 39+00) Cross Section

Dike 2 Cross Sections

Date	07/24
Designed	B. Severin
Drawn	B. Severin
Checked	M. Miller
Approved	B. Severin

Glover Real Estate LLC (Tori)
 Wetland Development (As Constructed)
 SW 1/4 Sec 27, T-32S; R-21E
 Labette County, Kansas





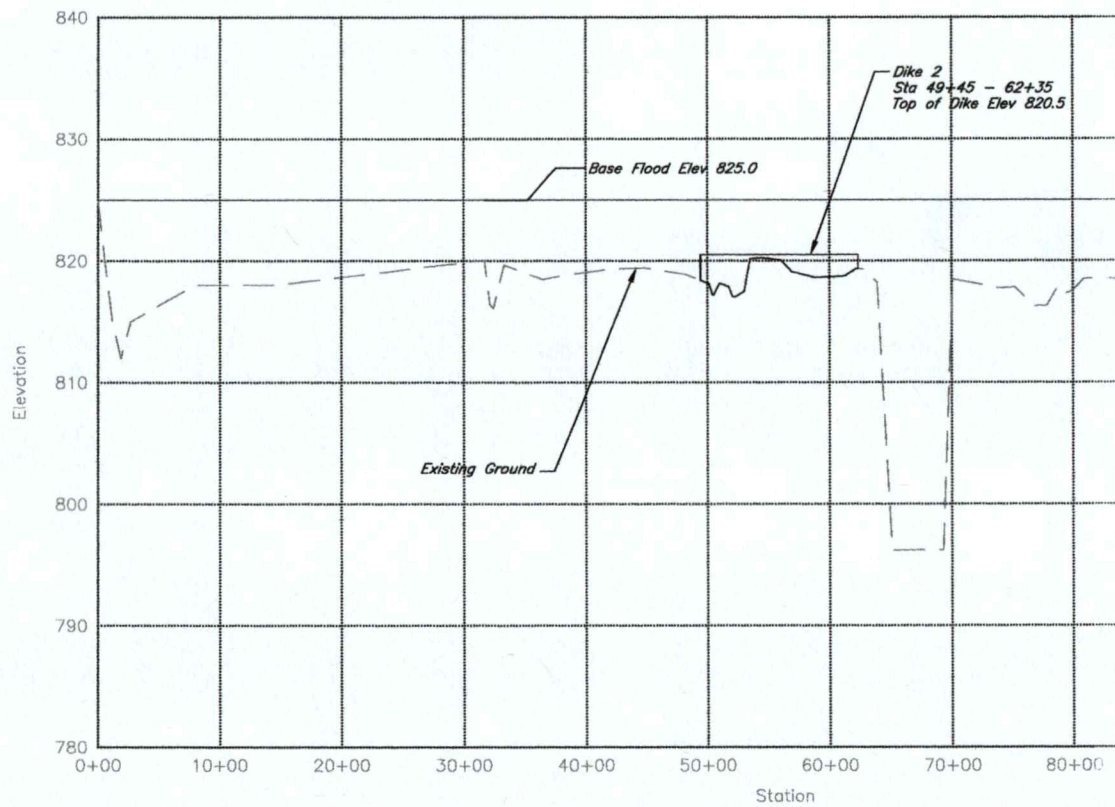
1000 0 1000 2000
Scale in Feet

Base Flood Analysis

Date	07/24
Designed	B. Severin
Drawn	B. Severin
Checked	M. Miller
Approved	B. Severin

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Profile View of FEMA Zone A

References:

Existing ground and channels: LIDAR Topographic Data and the U.S. Geological Survey (USGS) 7.5 minute quadrangle map

Base Flood Elevation Determination: Keegan Schwartz, KDA - Division of Water Resources

FEMA Zone A Floodplain: National Flood Insurance Program, Flood Insurance Rate Map (FIRM) Map Number FM20099C0355D, Unincorporated (01/02/2009)

Notes:

1. No DWR permitted floodplain fills are located within 1/4 mile of the dike location. Therefore, a geometric base flood analysis was used.
2. Dike 1 is a small ditch plug below the adjacent high bank elevation. The earthfill is negligible in the base flood calculations and was not modeled.

Base Flood Calculations:

Base flood elevation = 825.0

Base flood section area = 84,550 sq. ft.

Top width of base flood section = 11,260 ft

Maximum earthfill area below base flood elevation = 2,200 sq. ft.

Earthfill will increase base flood area by 3%

Earthfill will increase base flood elevation by 0.2 ft.

Base Flood Analysis Completed By: Brian W Severin Date: 7/30/24

KDA – Division of Water Resources (DWR) Report

Direct Diversion

A pumping site is proposed to control and maintain the wetland hydrology. The pumping site will be located as shown on the plan sheets, with the water source being the Neosho River. Therefore, a Water Appropriation for Beneficial Use (Direct Diversion) permit will be required.

Surface Water Storage

The Potential Net Evaporation (Annual Average Evaporation minus Annual Normal Precipitation) for the project location is 5 inches. The net storage for Dike 1 and Dike 2 was analyzed from the auxiliary spillway. Water control structures are installed in the dikes to maintain freeboard and manage the water level within the wetland cells. The Total Storage + Net Evaporation for both wetland cells is greater than 15 ac-ft. Therefore, a DWR Water Appropriation for Beneficial Use (Storage) permit will be required.

Dike 1 Stage Storage Table

Elevation (ft)	Area (ac)	Total Storage (ac-ft)	Total Storage + Net Evaporation (ac-ft)
815.5	1.02	0.00	0.00
816.0	3.36	1.09	2.50
816.5	7.13	3.72	6.69
817.0	11.14	8.28	12.93
817.5	14.51	14.70	20.74
818.0	18.78	23.02	30.84
818.5 (Auxiliary Spillway)	22.76	33.40	42.89
819.0 (Top of Dike)	25.75	45.53	52.26

Dike 2 Stage Storage Table

Elevation (ft)	Area (ac)	Total Storage (ac-ft)	Total Storage + Net Evaporation (ac-ft)
817.0	0.85	0.00	0.00
817.5	2.909	0.94	2.14
818.0	6.08	3.18	5.71
818.5	10.46	7.32	11.67
819.0	20.76	15.12	23.77
819.5	38.48	29.93	45.96
820.0 (Auxiliary Spillway)	62.91	55.28	81.49
820.5 (Top of Dike)	81.09	91.28	125.06

Base Flood Analysis

The project is located within the FEMA Zone A flood boundary of the Neosho River. Therefore, a floodplain fill permit will be required. A base flood analysis was completed to determine the increase in base flood area and flood elevation. The elevation of the existing ground and channels was approximated from Kansas LiDAR topographic data and the U.S. Geological Survey (USGS) 7.5-minute quadrangle map. The Base Flood Elevation (BFE) for the project location was determined by Keegan Schwartz, KDA-DWR. The base flood (FEMA Zone A, 100-yr floodplain) was approximated from the FEMA FIRM data (Map Number FM20099C0355D, Unincorporated Areas of Labette County, KS). There are no DWR permitted floodplain fills located within ¼ mile of the dike locations. Therefore, a geometric base flood analysis was completed. The as constructed dikes will increase the base flood area by 3% and the base flood elevation by 0.20 feet. See Base Flood Analysis plan sheets for further detail.