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DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
STATE REGULATORY PROGRAM OFFICE- KANSAS
2710 N.E. SHADY CREEK ACCESS ROAD
EL DORADO, KANSAS 67042

REPLY TO
ATTENTION OF:

September 20, 2011

Kansas State Regulatory Office
(NWK-2011-00916)

City of Oxford
ATTN: Robert Spoon
115 S Sumner, PO Box 337
Oxford, Kansas 67119

Dear Mr. Spoon:

This letter pertains to your Department of the Army permit application to protect City wastewater lagoons by conducting bank stabilization and riparian preservation and enhancement activities. The proposed work by the Watershed Institute includes the construction of 9 rock bendway weirs and 4 rock vanes and the planting of native grass and trees in 3.5-acres of riparian corridor. The project site is located in the Arkansas River in Section 13, T32S-R2E, Sumner County, Kansas.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (33 U.S.C. 1344). The implementing regulation for this Act is found at 33 C.F.R. 320-332.

This letter contains an approved jurisdictional determination for your project site. This jurisdictional determination is valid for a 5-year period from the date of this letter unless new information warrants revision of the determination before the expiration date. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 C.F.R. Part 331. Enclosed you will find a Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the Northwestern Division Office at the following address:

Division Engineer
ATTN: David W. Gesl
Administrative Appeals Review Officer
U.S. Army Corps of Engineers
P.O. Box 2870
Portland, OR 97208-2870
Telephone: 503-808-3825

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. Part 331.5, and that it has been received by the Division Office within 60

days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **November 19, 2011**.

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

In the event that you disagree with an approved jurisdictional determination, and you have **new information** not considered in the original determination, you may request reconsideration of that determination by the Corps District prior to initiating an appeal. To request this reconsideration based upon new information, you must submit the completed RFA form and the new information to the District Office so that it is received within 60 days of the date of the NAP. Send approved jurisdictional determination reconsideration requests to:

District Commander
ATTN: Mark D. Frazier
Chief, Regulatory Branch
U.S. Army Engineer District, Kansas City
635 Federal Building, Suite 402
Kansas City, MO 64106-2896
Voice: 816-389-3990 – FAX: 816-389-2032

We have reviewed the information furnished and have determined that your project is authorized by nationwide permit (**NWP**) **27**, provided you ensure that the conditions listed in the enclosed copy of excerpts from the March 12, 2007 Federal Register, Issuance of Nationwide Permits, as corrected, are met. You must also comply with the Kansas City District Regional NWP Conditions posted at: <http://www.nwk.usace.army.mil/regulatory/regulatory.htm>.

The Kansas Department of Health and Environment (KDHE) has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in their attached letter. All conditions included in the water quality certification become conditions of the NWP authorization, please carefully review all conditions associated with this NWP. If you have any questions concerning state water quality standards or compliance issues with the associated certification conditions, please contact KDHE at 785 296 5573, Bureau of Water – NPS Section, 1000 SW Jackson Street, Suite 420, Topeka, Kansas 66612-1367.

General condition 26 requires you to sign and submit the enclosed "Compliance Certification" upon completion of the authorized work and any required mitigation.

This NWP verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to **March 18, 2012**. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have twelve (12) months from the date of the modifications or revocation of the NWP to complete the activity under the present terms and conditions of this NWP. Although an individual DA permit is not required, other Federal, state and/or local permits may be required. You should verify this yourself.

In addition, information provided by the Kansas Department of Wildlife, Parks and Tourism (KDWPT) indicates that your project may involve potential impacts to a state listed threatened or endangered species and/or its designated critical habitat. Therefore, a separate action permit may be needed from KDWPT to be in compliance

with regulations pursuant to the Kansas Nongame and Endangered Species Conservation Act. For more information concerning an action permit, please contact the KDWPT Environmental Services Section at 620-672-5911. A copy of this verification is being furnished to KDWPT for their information in administering the subject Kansas Act.

We are interested in your thoughts and opinions concerning your experience with the Kansas City District, Corps of Engineers Regulatory Program. We have placed an automated version of our Customer Service Survey form on our website at: <http://www.nwk.usace.army.mil/regulatory/survey.pdf> which can be filled in and submitted online. At your request, we will mail a paper copy that you may complete and return to us by mail or fax.

Mr. Thomas A. McCabe, Regulatory Project Manager, reviewed the information furnished and made this determination. If you have any questions concerning this matter, please feel free to contact Mr. McCabe, by telephone at (816) 389-3743 or by fax at (316) 322-8259. Please reference Permit No. NWK-2011-00916 in all comments and/or inquiries relating to this project.

Enclosures

Copies Furnished (electronically wo/enclosures):

Environmental Protection Agency,
Watershed Planning and Implementation Branch
U.S. Fish and Wildlife Service
Kansas Department of Wildlife, Parks and Tourism
Kansas Department of Health and Environment
Kansas Department of Agriculture

WSN: CSU-0080; ECA: 2011248

page 2

The work has been authorized to be completed on or before January 1, 2014. Approval for construction of this project will expire on that date unless the time is subsequently specifically extended by the Chief Engineer. Any desired extension of time should be requested in writing approximately 30 days prior to the expiration date.

Sincerely,



John R. Roth, PE
Water Structures Engineer

Enclosure

pc: Brock Emmert
The Watershed Institute
Corps of Engineers, State Regulatory Office
Sumner County Floodplain Administrator
Stafford Field Office



Stafford Field Office
300 S. Main Street
Stafford, Kansas 67578-1521

phone: (620) 234-5311
fax: (620) 234-6900
www.ksda.gov/dwr

Dale A. Rodman, Secretary
David W. Barfield, Chief Engineer
Jeff Lanterman, Water Commissioner

Sam Brownback, Governor

October 31, 2011

THE CITY OF OXFORD
ROBERT SPOON, CITY SUPERINTENDENT
115 S SUMNER; PO BOX 337
OXFORD, KS 67119

Re: Bank Stabilization using Bendway Weirs
& Rock Vanes
Arkansas River; Sumner County
WSN: CSU-0080; ECA: 2011248

Dear Mr. Spoon:

Consideration has been given to your application for a permit and approval of plans relating to the stabilization of the stream bank, using bendway weirs and rock vanes, along the right descending bank of the Arkansas River at a location in the SW $\frac{1}{4}$ of Section 13, Township 32 South, Range 02 East, Sumner County, Kansas.

In accordance with the provisions of K.S.A. 82a-301 to 305a, the Chief Engineer has approved the plans and issued the enclosed permit, authorizing construction of the proposed project. Please note the conditions on the reverse side of the permit. Condition No. 9 requires the permittee to notify this office within 30 days after the project is completed. A Notice and Proof of Completion form is enclosed for this purpose. Special conditions have been added to provide clean materials for the use of riprap, and requiring the project to meet local floodplain management requirements.

The one set of plans submitted to this office has been endorsed with the Chief Engineer's approval and will be retained in our files. Should you desire any copies of the plans with the Chief Engineer's approval shown thereon, please submit the required number.

Under the Water Projects Environmental Coordination Act, K.S.A. 82a-325 to 327, an application notice was sent to 7 state agencies for their review and comments. Responses are attached. We request you review their environmental concerns and take appropriate steps to address any adverse comments.

THE STATE



OF KANSAS

COPY FOR YOUR INFORMATION

KANSAS DEPARTMENT OF AGRICULTURE
Dale A. Rodman, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

PERMIT NO. CSU-0080

K.S.A. 82a-301 *et seq.*

The Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture, by virtue of the powers and duties imposed by K.S.A. 82a-301 to 305a, hereby issues this permit to the City of Oxford, giving his consent to the construction of 9 bendway weirs and 4 rock vanes for bank stabilization along the right descending bank of the Arkansas River at a location in the SW ¼ of Section 13, Township 32 South, Range 02 East, Sumner County, Kansas.

All work authorized by this permit shall be performed in accordance with the maps, plans, profiles and specifications filed with the application and approved by the Chief Engineer, and in accordance with plans for any changes or modifications subsequently approved by the Chief Engineer subject to the provisions of the aforementioned statutes, their regulations and the attached permit conditions.

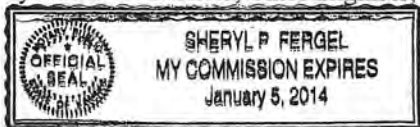
Witness my hand this 31st day of October, 2011.



David W. Barfield
David W. Barfield, P.E.
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

State of Kansas)
)SS
County of Shawnee)

The foregoing instrument was acknowledged before me this 31st day of October, 2011, by David W. Barfield, Chief Engineer, Division of Water Resources, Kansas Department of Agriculture.



Sheryl P. Fergel
Notary Public

RECORD THIS PERMIT WITH THE REGISTER OF DEEDS
OF THE COUNTY WHEREIN THE WORK IS LOCATED

DWR 2-200.0 (Rev. 5/92)

PERMIT CONDITIONS

1. This permit grants no water rights nor other property rights, nor does it authorize any injury to private property, invasion of private rights nor impairment of senior water rights, nor does it exempt you from obtaining consent from appropriate federal, state or local government.
2. The work shall at all times be subject to supervision and inspection by representatives of the Division of Water Resources.
3. No changes in the work, maps, plans, profiles and specifications as approved shall be made except with the written consent of the Chief Engineer.
4. Any work authorized by this permit will be maintained in a condition satisfactory to the Chief Engineer and substantially in accordance with the approved plans.
5. The clearing of trees, brush, drift and other debris in order to maintain the work substantially in accordance with the approved plans is hereby authorized, except that the removal of plantings made specifically for habitat or environmental mitigation is not authorized by this permit.
6. Any excess material deposited in the stream channel incident to the construction and maintenance of the project authorized by this permit shall be removed and the channel restored to a condition satisfactory to the Chief Engineer and substantially in accordance with the approved plans.
7. All areas disturbed by construction and all other exposed soil areas shall be seeded and maintained with a mixture of grass or other vegetation appropriate to the soils, climate and project in order to minimize erosion and protect the project integrity.
8. If the work is not completed on or before the 1st day of January, 2014, this permit, if not specifically extended, shall cease and be null and void. If, upon the expiration or revocation of this permit, the work has not been completed, the permittee shall, at his own expense and to such extent and in such time and manner as the Chief Engineer may require, remove all or any portion of the uncompleted work and restore the watercourse to a satisfactory condition. No claim shall be made against the State of Kansas on account of any such removal or alteration.
9. Within thirty (30) days after the completion of the work authorized by this permit, the permittee shall file with the Division a statement that the work has been completed in accordance with this permit and the approved maps, plans, profiles and specifications.
10. The Chief Engineer reserves the right to require such changes in the maps, plans, profiles, specifications and conditions as may be considered necessary. The Chief Engineer further reserves the right to modify, suspend or revoke this permit at any time should the permittee fail to comply with any of the conditions of this permit or regulations of the Division without sufficient cause or should such action be deemed necessary in the interest of public safety and welfare.
13. Only graded rock, quarry-run rock and/or clean concrete rubble shall be used in the work as approved. If concrete rubble is used, all large slabs should be broken up and all exposed reinforcement rods, trash, and other extraneous materials shall be removed prior to placement. No asphalt material shall be placed as fill material.
14. The project must meet the floodplain management requirements of the local authority.



**KANSAS
STATE
HISTORICAL
SOCIETY**

**Cultural Resources
Division**

6425 S.W. 6th Avenue
Topeka, Kansas
66615-1099
PHONE# (785) 272-8681
FAX# (785) 272-8682
TTY# (785) 272-8683

**KANSAS HISTORY
CENTER**

Administration
Center for Historical Research
Cultural Resources
Education / Outreach
Historic Sites
Kansas Museum of History
Library & Archives

HISTORIC SITES

Adair Cabin
Constitution Hall
Cottonwood Ranch
First Territorial Capitol
Fort Hays
Goodnow House
Grinter Place
Hollenberg Station
Kaw Mission
Marais des Cygnes Massacre
Mine Creek Battlefield
Native American Heritage
Museum
Pawnee Indian Village
Pawnee Rock
Shawnee Indian Mission

MEMORANDUM

To: ECA Permit Applicant
From: Kansas State Historical Society
Bob Hoard, State Archeologist
Re: Historic and Prehistoric Cultural Resources

Because of time and budget constraints, the Kansas State Historical Society has elected to waive review of permit applications under the Water Projects Environmental Coordination Act (KSA 82a-325 *et seq.*). However, digging, grading, and other types of construction activities may reveal the presence of buried historic and/or prehistoric archeological sites or artifacts within your project area. If archeological materials are encountered during construction, please contact me at 785-272-8681 ex. 268 or by email at rheard@kshs.org and do not further disturb the site. If the materials appear to be significant, we may ask for the opportunity to document or salvage them.

In the event human burials or remains are encountered, the Kansas Unmarked Burial Sites Preservation Act (KSA 75-2741 through 75-2754) requires the finder to immediately report these discoveries to the local law enforcement agency. If the remains are not the result of criminal activity, their fate will be determined by the Unmarked Burial Sites Preservation Board. Encountering an unmarked burial does not necessarily stop a project. Discussion with the Board may lead to modification of the project, and in some cases the burial is removed and the project allowed to proceed. Human burials and associated artifacts must not be further disturbed after their discovery, until law enforcement officials or the Unmarked Burial Sites Preservation Board has determined appropriate action. The Unmarked Burial Sites Preservation Act provides substantial penalties for intentionally disturbing human burials and grave goods, whether located on public or private property. If you find a bone that you suspect may be human, leave it where it is and get expert help to identify it. The county coroner, a medical doctor, or an archeologist can help.

What To Look For

Archeological sites from the historic and prehistoric periods may be buried. Prehistoric sites can be recognized by the presence of discolored earth, bones, stone tools (arrow heads, knives, scrapers), stone flakes (thin, sharp-edged pieces of stone produced when making chipped stone tools), burned stones, and pieces of coarse, unglazed pottery. Stone flakes are the most commonly found artifact.

Historic period sites can be recognized by the presence of stone, brick, or concrete foundation walls, or concentrations of these materials. Many of the items used in historic times are similar to those used today. Bottles, cups, "tin" cans, buckets, hand tools, glass fragments, and other items can be easily recognized. If you are unsure of the significance of what you have found, contact my office.

Thank you for assisting us in preserving the archeological heritage of Kansas.

These actions do not constitute compliance with Section 106 of the National Historic Preservation Act. If this project receives Federal funding, licensing, permitting, or assistance you must contact the State Historic Preservation Office (785-272-8681 ex. 240) prior to construction for a review of the undertaking under Federal law.

KSTATE

Kansas State University

Kansas Forest Service
2610 Claffin Rd.
Manhattan, KS 66502-2798
785-532-3300
Fax: 785-532-3305
E-mail: kfs@lists.oznet.ksu.edu
<http://www.kansasforests.org>

Memorandum

TO: Applicant(s)

FROM: Kansas Forest Service, Kansas State University

SUBJECT: Division of Water Resources Permits/Approvals

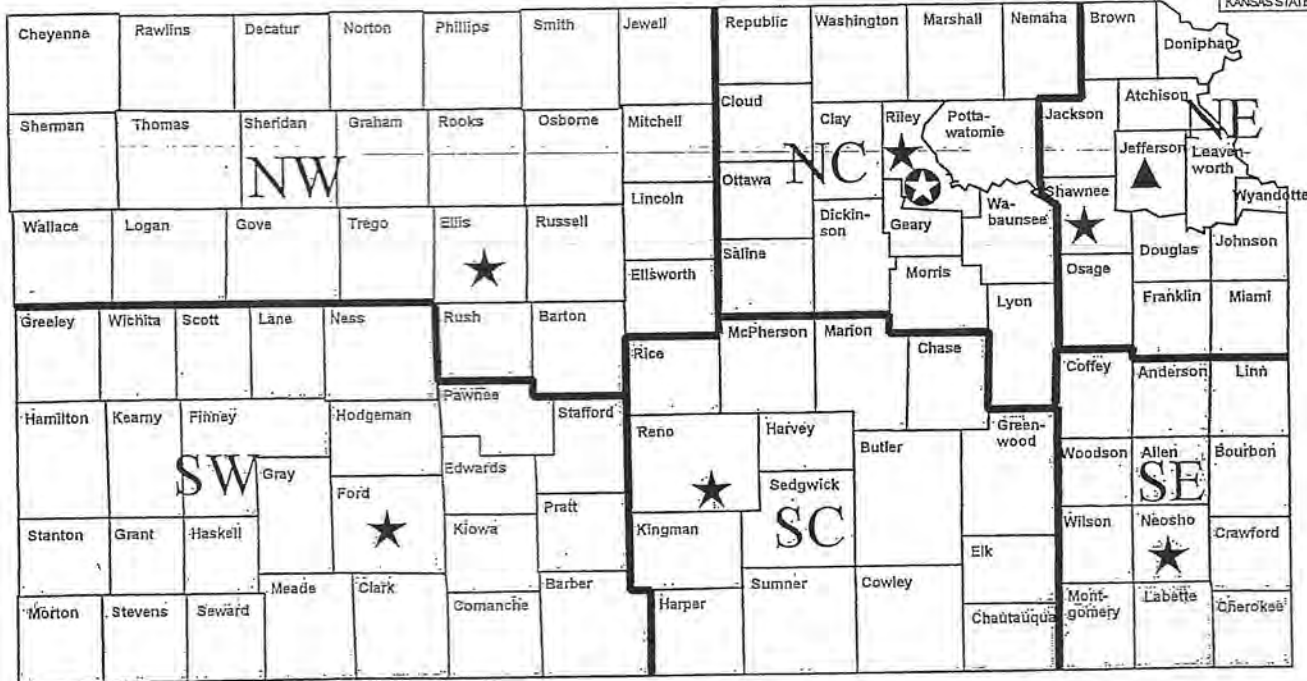
Under the Water Projects Environmental Coordination Act, the Kansas Forest Service is responsible for reviewing permit applications from the Kansas Department of Agriculture, Division of Water Resources to determine if your project will affect critical forest resources of our state. Due to the large volume of permit applications, we are unable to sufficiently review them all. To provide you with the basic information you need regarding forest resources, we have asked the Division of Water Resources to provide all applicants with the information in this memorandum.

Forest land only makes up approximately four percent of the total land area of Kansas. Any direct affects at a project site can have significant impacts in a local area as well as impacts on the total forest resources of Kansas. Forests provide important benefits in improving water quality, reducing soil erosion, providing wildlife habitat, providing recreational opportunities and producing wood products. Riparian forests, directly associated with streams and rivers, act as filters, reducing sediment flow and filtering out non-point source pollutants before they enter streams or rivers. **Any removal of forest land greater than one acre in size should be mitigated, on land suitable for trees, by replanting native trees adapted to the site using a minimum spacing of 10' X 10' or 435 trees per acre.**

District Foresters are available, upon request, to provide professional assistance in preparing tree planting plans, including tree species selection, proper planting procedures, weed control recommendations and after planting care. The service is free of charge. Cost-share programs may be available to assist with the reestablishment of trees. A list of District Foresters and District Boundary Map are located on the back page.



Kansas Forest Service State and District Offices



★ NW

James H. Strine
District Forester
Kansas Forest Service
1232 240th Avenue
Hays, KS 67601-9228
785-625-3425, Ext. 220
Fax: 785-623-4369
Email: JStrine@Oznet.ksu.edu

★ NC

Thad K. Rhodes
District Forester
Kansas Forest Service
1125 Westport Drive
Manhattan, KS 66502-2860
785-776-5182
Fax: 785-539-7983
Email: TRhodes@Oznet.ksu.edu

★ NE

John M. Hamel
District Forester
Kansas Forest Service
2914 Plass Court, Suite C
Topeka, KS 66611-1925
785-267-2275
Fax: 785-267-2174
Email: JHamel@Oznet.ksu.edu

★ SW

Troy L. Bratton
District Forester
Kansas Forest Service
107 Layton Street
Dodge City, KS 67801-2498
620-227-2392
Fax: 620-227-6020
Email: TBratton@Oznet.ksu.edu

★ SC

Dennis W. Carlson
District Forester
Kansas Forest Service
9 West 28th, Suite B
Hutchinson, KS 67502-3453
620-663-3501
Fax: 620-663-3866
Email: DCarlson@Oznet.ksu.edu

★ SE

David N. Bruckerhoff
District Forester
Kansas Forest Service
308 W 14th Street
Chanute, KS 66720-2895
620-431-1530
Fax: 620-431-2108
Email: DBrucker@Oznet.ksu.edu

▲ Statewide

David L. Bruton
Utilization & Marketing Forester
318 Broadway
Valley Falls, KS 66088-1302
785-945-6292
Fax: 785-945-6882
Email: Dbruton@Oznet.ksu.edu

⊕ STATE OFFICE

Kansas Forest Service
2610 Claflin Road
Manhattan, KS 66502-2798
785-532-3300
Fax: 785-532-3305
Email: KFS@lists.Oznet.ksu.edu

Operations Office
512 SE 25th Ave.
Pratt, KS 67124-8174



Phone: (620) 672-5911
Fax: 620-672-6020
www.kdwp.state.ks.us

Robin Jennison, Secretary

Sam Brownback, Governor

24 October 2011

Brock Emmert, Watershed Institute, Inc.
1200 SW Executive Dr.
Topeka, KS 66615

Ref: E1.0203
Summer
Sec13-T32S-R02E
Track: **20110421**
Permit **2011-42**

Dear Mr. Emmert:

We have received your application for an Action Permit regarding a bank stabilization project along the Arkansas River near Oxford, KS in Sumner County (Section 13, Township 32 South, Range 02 East). The project will occur in Designated Critical Habitat for the Arkansas Darter (*Etheostoma cragini*), Arkansas River Shiner (*Notropis girardi*), Arkansas River Speckled Chub, (*Macrhybopsis tetranema*), Silver Chub (*Macrhybopsis storeriana*), and Plains Minnow (*Hybognathus placitus*).

This letter and its attachments will serve as **Action Permit No. 2011-42** as required by K.S.A. 32-961 and K.A.R. 115-15-3 to meet the requirements of the *Kansas Nongame and Endangered Species Conservation Act* of 1975, K.S.A. 32-957 to 963, 32-1009 to 1012, and 32-1033, to carry out this proposed action. The permit holder will be required to sign and return the enclosed *Compliance Agreement* upon receipt of the permit and *Compliance Certification* upon completion of the authorized actions. This permit is valid from our receipt of the *Compliance Agreement* until the expiration date, if applicable, indicated on the permit.

It is the Permit Holder's (or an agent for the Permit Holder) responsibility to ensure that the permitted action complies with the attached general and special conditions of **Action Permit No. 2011-42**. If you have any questions concerning this permit, its conditions, or its enforcement, feel free to contact the department's Ecological Services Section.

Sincerely,

Eric R. Johnson, Chief
Ecological Services Section

Xc: (John Roth, DWR)

Pratt Operations Office
512 SE 25th Ave., Pratt, KS 67124-8174
Phone 620-672-5911 Fax 620-672-6020
www.kdwp.state.ks.us

KANSAS DEPARTMENT OF WILDLIFE, PARKS, AND TOURISM ACTION PERMIT

Permit Holder: **Brock Emmert, Watershed Inst., Inc.**
 Action Permit No.: 2011-42
 Date: **24 October 2011**
 Permit Issuer: Kansas Department of Wildlife, Parks, and Tourism
 Permit Expires: Upon Project Completion and Post Inspection per KDWPT officials

General Conditions

1. All activities covered by this permit will be consistent with the listed terms and conditions. Any activity not specifically listed that might affect the listed species involved is a violation of the listed terms and conditions and will invalidate this permit.
2. That in issuing this permit, the Department of Wildlife, Parks, and Tourism relied on information and data that the Permit Holder provided with the application. If the Permit Holder requires action plan changes after permit issuance, the departments Ecological Services Section will evaluate how those changes might affect the listed species before modifying permit terms and conditions.
3. The Permit Holder will keep this permit on file and make it available for inspection by authorized department representatives until the action is completed.
4. The Permit Holder will allow department representatives to make periodic inspections anytime deemed necessary to assure compliance with the permit terms and conditions.
5. The Permit Holder will allow, for the permit duration, access to the permitted property by holders of valid federal / state collecting permits to verify permit compliance or conduct specific monitoring of project effects.
6. This permit does not authorize violation of existing federal, state, or local laws and regulations and does not preclude requirements to obtain other permits or authorizations required by such laws or regulations.
7. This permit is valid from the date of issuance until the post construction compliance checks are performed. **THE PERMIT HOLDER MUST NOTIFY THE DEPARTMENT'S ECOLOGICAL SERVICES SECTION WHEN THE PERMITTED ACTION STARTS AND WHEN IT IS COMPLETED (SEE COMPLIANCE FORM ATTACHED) FAX: 620-672-2972, EMAIL: ess@ksoutdoors.com or brian.bartels@ksoutdoors.com**
8. The Permit Holder may not transfer this permit to a third party without prior written notice, accompanied by the transferees written agreement to comply with all listed terms and conditions, to the departments Ecological Services Section.
9. If changes occur to sale, lease, easement, principal operators of lands covered by this permit, or any other legal method of land transfer, the Permit Holder must notify the departments Ecological Services Section. The Permit Holder must notify new operators that obligations listed in the attached Special Conditions, and amendments to these conditions, remain in effect.
10. That in issuing this permit, the Department relied on legal authority and knowledge of life history and habitat requirements, available at the time, of Kansas listed threatened and endangered species. If the permitted action has not started within one year of this permits issue date, the Permit Holder must notify the department's Ecological Services Section so that personnel can reevaluate the permit regarding listed species status because the department continually collects current biological information.

- 11. The Permit Holder must inform all contractors of the listed permit conditions and assure compliance with these conditions throughout the construction period.**
12. The department reserves the right to modify, suspend, or revoke this permit anytime if the Permit Holder fails to comply with any of the conditions listed in this permit.
13. The Permit Holder will ensure that all petroleum products, chemicals, and other fuels are stored by methods that prevent spills from entering any nearby streams within or near the project area. Spills that occur within 500 yards of protected streams will be cleaned up within 24 hours to prevent pollution from runoff. The Permit Holder or contractors must notify the following agencies upon discovering a spill to possibly undertake efforts to rescue protected species within the affected area: KDWPT, Ecological Services Section (telephone number 620-672-5911); United States Department of the Interior, Fish and Wildlife Service (telephone number 785-539-3474); and Kansas Department of Health and Environment (telephone number 785-296-1679).

Special Conditions

- 1a. In order to minimize impacts to the Arkansas Darter (*Etheostoma cragini*), Arkansas River Shiner (*Notropis girardi*), Arkansas River Speckled Chub, (*Macrhybopsis tetranema*), Silver Chub (*Macrhybopsis storeriana*), and Plains Minnow (*Hybognathus placitus*) no activities may take place within the wetted channel or damage the banks of the river during the critical spawning period for these species (March 1 – August 31, inclusive).
2. The Permit Holder or contractors will not channelize or ditch any stream before, during, or after project completion other than what was submitted / reviewed.
3. No sand or gravel can be taken from any waterway without prior approval from the Kansas Department of Wildlife, Parks, and Tourism - Ecological Services Section.
4. All areas denuded of vegetation as a result of the permitted action will be reseeded with permanent seeding within one year. The remaining reseeded will also be in compliance with current applicable NRCS critical area seeding mixture guidelines.
5. All equipment will be thoroughly washed or cleaned prior to contact with waters and should be held to the bare minimum necessary to complete the project outside of restricted dates to prevent transport of exotic species such as the Zebra Mussel (*Dreissena polymorpha*).
6. There will be no deposition of cement sweepings, washings, treatment chemicals, or grouting and bonding materials into the streams proper or into any location where such pollutants can be washed into the streams by runoff water.
7. Upon completion of project, photo documentation of mitigation activities will be provided to KDWPT.

COMPLIANCE AGREEMENT

Your signature below as Permit Holder indicates that you accept and agree to comply with the terms and conditions of this permit (Action Permit **2011-42**) including any required mitigation measures. This must be signed and returned to the department before authorized action(s) can commence.

Brook Emmert, Watershed Inst., Inc.



Permit Holder (or Agent)

10/25/2011
Date

This permit becomes effective when the department official, designated to act for the Secretary of the Department of Wildlife, Parks, and Tourism has signed below and we receive this signed agreement.



Eric R. Johnson, Chief
Ecological Services Section

10-26-11
Date

**COMPLIANCE CERTIFICATION FOR KANSAS DEPARTMENT OF WILDLIFE, PARKS, AND
TOURISM ACTION PERMIT**

Your signature below as Permit Holder indicated that you have completed the authorized action(s) and complied with all the terms and conditions of this permit (Action Permit **2011-42**) including any required mitigation.

Brock Emmert, Watershed Inst., Inc.

Permit Holder (or Agent)

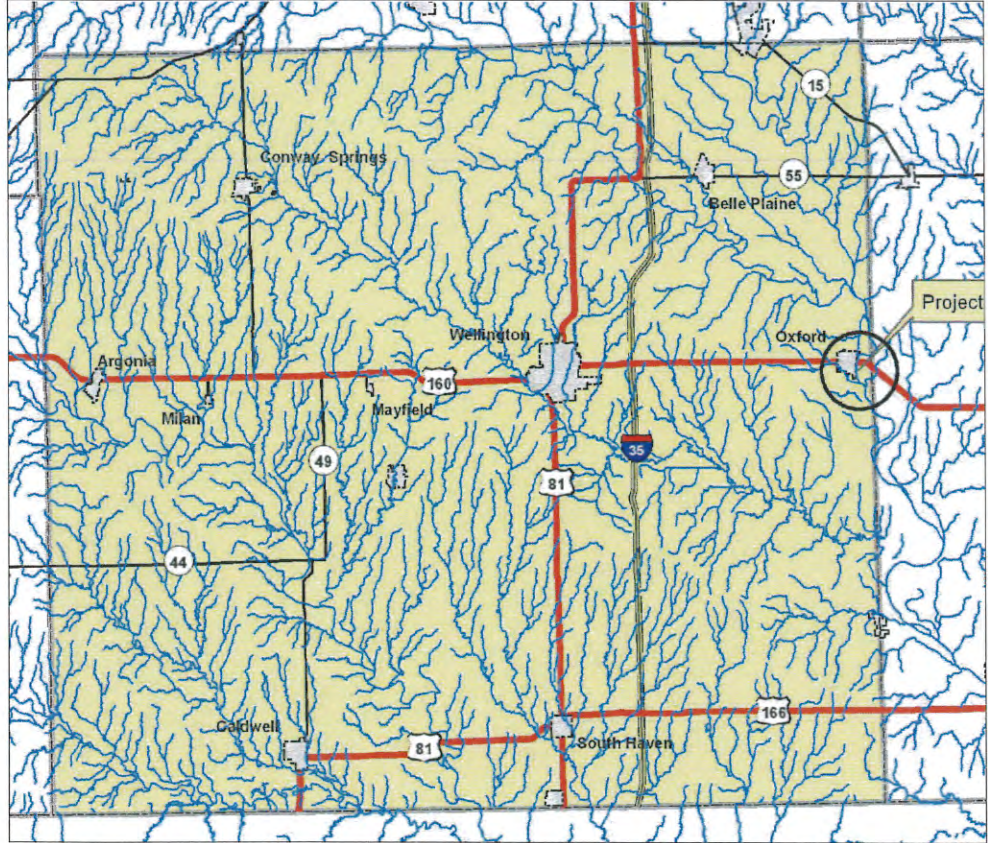
Date

Date Action(s) Completed

ARKANSAS RIVER SUMNER COUNTY, KANSAS

CITY OF OXFORD

W 1/2 SECTION 13, T32S, R2E



SUMNER COUNTY MAP
NOT TO SCALE

Sheet Index

| Sheet Number | Sheet Title |
|--------------|----------------------|
| 1 | Cover Sheet |
| 2-4 | Plan Sheet |
| 5 | Details Sheet |
| 6-8 | Cross Section Sheets |

SITE QUANTITIES

| Quantities List | |
|------------------------------|-------|
| Rock / Cubic Yards | 1,311 |
| Rock / Tons | 1,967 |
| Soil moving / Cubic Yds | 289 |
| Bare Root Trees | 301 |
| Native Grass Seeding / acres | 9.1 |

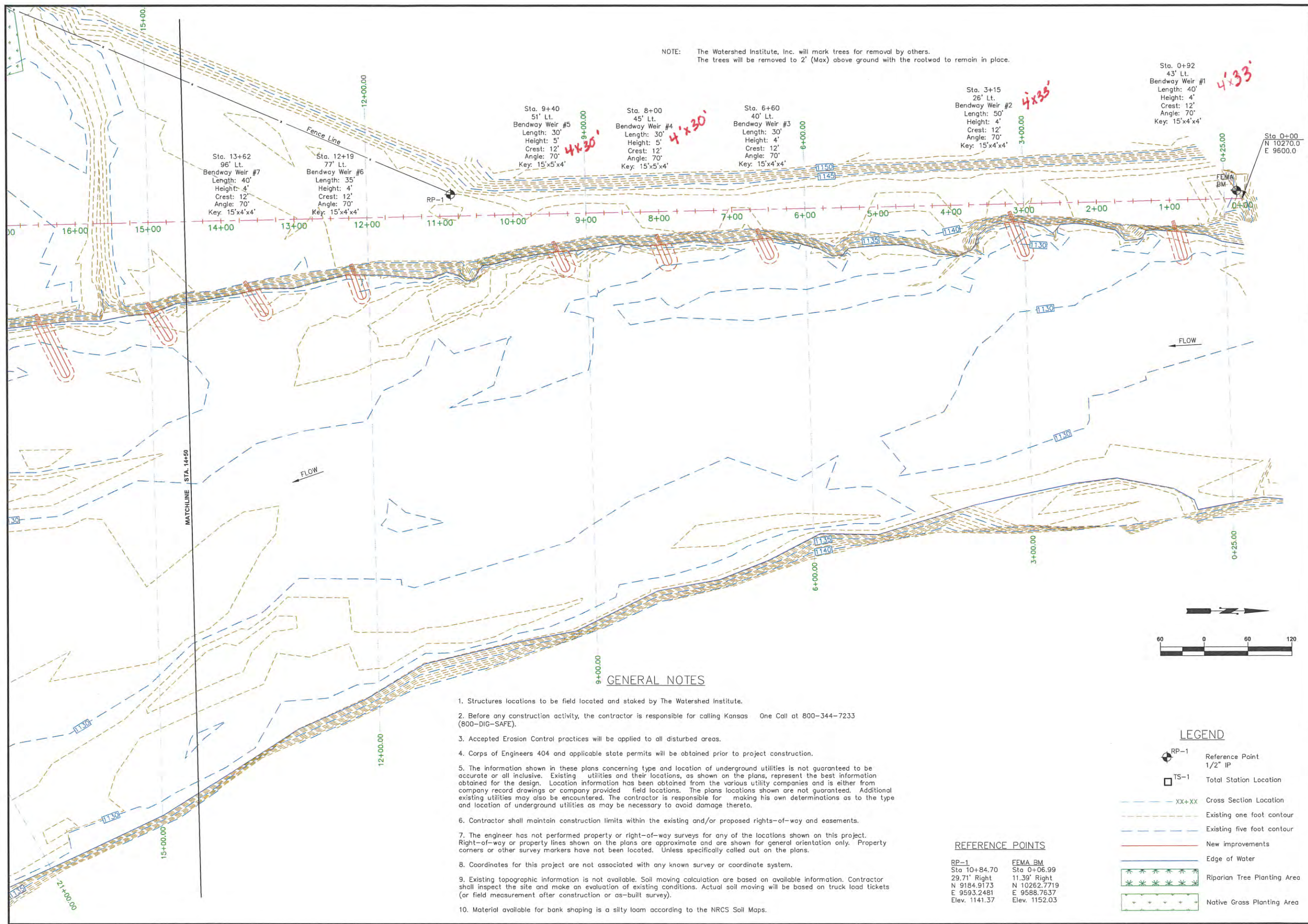


SITE LOCATION MAP
NOT TO SCALE



1200 SW Executive Dr. Topeka, Kansas 66615 785-272-2252





NOTE: The Watershed Institute, Inc. will mark trees for removal by others. The trees will be removed to 2' (Max) above ground with the rootwad to remain in place.

Sta. 13+62
96' Lt.
Bendway Weir #7
Length: 40'
Height: 4'
Crest: 12'
Angle: 70°
Key: 15'x4'x4'

Sta. 12+19
77' Lt.
Bendway Weir #6
Length: 35'
Height: 4'
Crest: 12'
Angle: 70°
Key: 15'x4'x4'

Sta. 9+40
51' Lt.
Bendway Weir #5
Length: 30'
Height: 5'
Crest: 12'
Angle: 70°
Key: 15'x5'x4'

Sta. 8+00
45' Lt.
Bendway Weir #4
Length: 30'
Height: 5'
Crest: 12'
Angle: 70°
Key: 15'x5'x4'

Sta. 6+60
40' Lt.
Bendway Weir #3
Length: 30'
Height: 4'
Crest: 12'
Angle: 70°
Key: 15'x4'x4'

Sta. 3+15
26' Lt.
Bendway Weir #2
Length: 50'
Height: 4'
Crest: 12'
Angle: 70°
Key: 15'x4'x4'

Sta. 0+92
43' Lt.
Bendway Weir #1
Length: 40'
Height: 4'
Crest: 12'
Angle: 70°
Key: 15'x4'x4'

Sta. 0+00
N 10270.0
E 9600.0

GENERAL NOTES

- Structures locations to be field located and staked by The Watershed Institute.
- Before any construction activity, the contractor is responsible for calling Kansas One Call at 800-344-7233 (800-DIG-SAFE).
- Accepted Erosion Control practices will be applied to all disturbed areas.
- Corps of Engineers 404 and applicable state permits will be obtained prior to project construction.
- The information shown in these plans concerning type and location of underground utilities is not guaranteed to be accurate or all inclusive. Existing utilities and their locations, as shown on the plans, represent the best information obtained for the design. Location information has been obtained from the various utility companies and is either from company record drawings or company provided field locations. The plans locations shown are not guaranteed. Additional existing utilities may also be encountered. The contractor is responsible for making his own determinations as to the type and location of underground utilities as may be necessary to avoid damage thereto.
- Contractor shall maintain construction limits within the existing and/or proposed rights-of-way and easements.
- The engineer has not performed property or right-of-way surveys for any of the locations shown on this project. Right-of-way or property lines shown on the plans are approximate and are shown for general orientation only. Property corners or other survey markers have not been located. Unless specifically called out on the plans.
- Coordinates for this project are not associated with any known survey or coordinate system.
- Existing topographic information is not available. Soil moving calculation are based on available information. Contractor shall inspect the site and make an evaluation of existing conditions. Actual soil moving will be based on truck load tickets (or field measurement after construction or as-built survey).
- Material available for bank shaping is a silty loam according to the NRCS Soil Maps.



LEGEND

- ⊕ RP-1 Reference Point
1/2" IP
- TS-1 Total Station Location
- XX+XX Cross Section Location
- - - - Existing one foot contour
- - - - Existing five foot contour
- — — — New improvements
- — — — Edge of Water
- 🌳 Riparian Tree Planting Area
- 🌿 Native Grass Planting Area

REFERENCE POINTS

| | |
|---|--|
| RP-1 Sta 10+84.70 29.71' Right N 9184.9173 E 9593.2481 Elev. 1141.37 | FEMA BM Sta 0+06.99 11.39' Right N 10262.7719 E 9588.7637 Elev. 1152.03 |
|---|--|

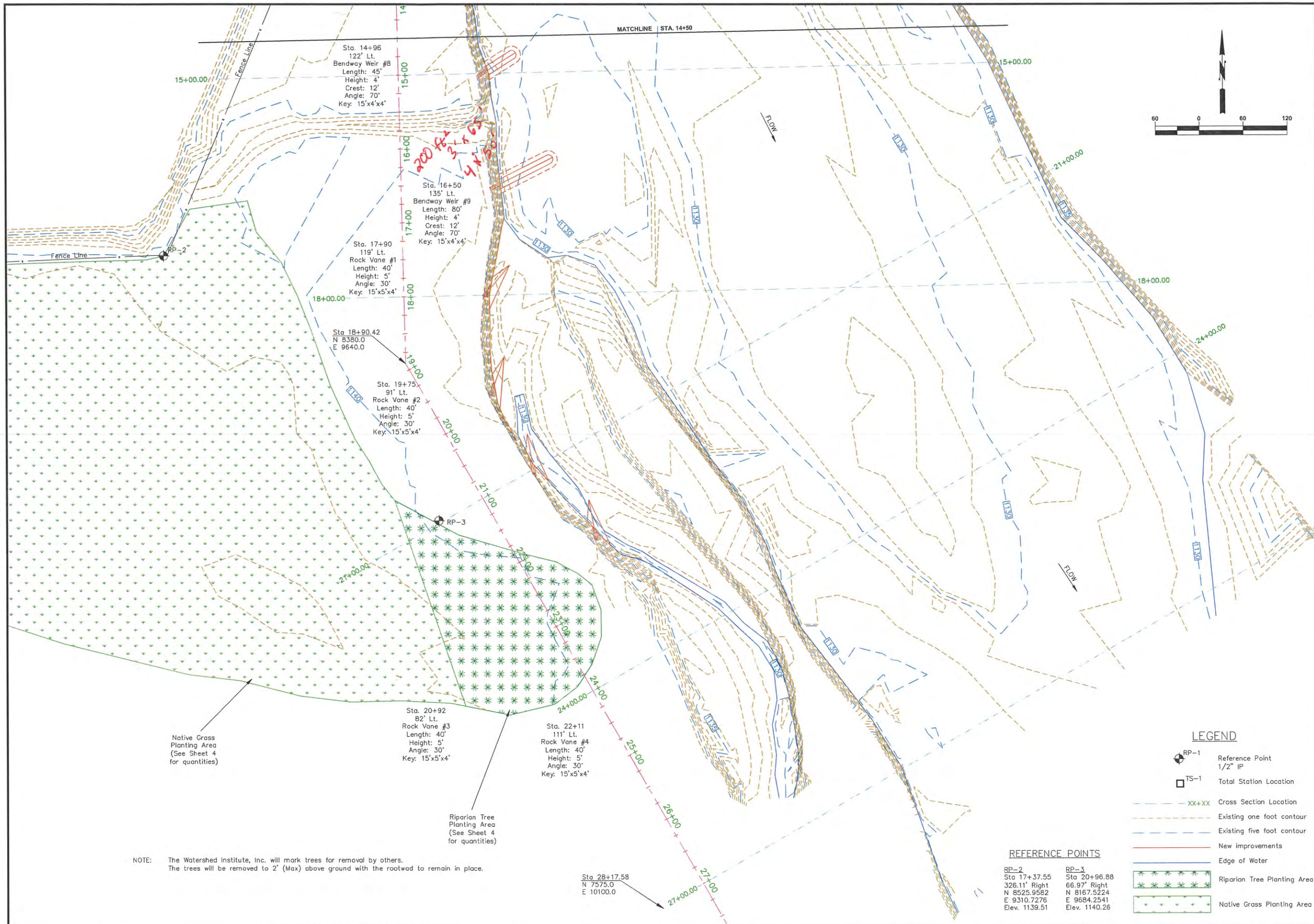
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913-708-0870

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1200 SW Executive Dr., Topeka, Kansas 66615 785-272-2252

**ARKANSAS RIVER
SUMNER COUNTY, KANSAS
CITY OF OXFORD
PLAN SHEET**



DESIGNED: BAE
DRAWN BY: JAG
APPROVED BY: JNB
DESIGN PROJ.: 14668.086
CONST: -----
SCALE: AS NOTED
DATE: 6/9/2011
DRAWING NO: **CO2**
SHEET NO: 2 of 8



NOTE: The Watershed Institute, Inc. will mark trees for removal by others. The trees will be removed to 2' (Max) above ground with the rootwad to remain in place.

Native Grass Planting Area (See Sheet 4 for quantities)

Riparian Tree Planting Area (See Sheet 4 for quantities)

REFERENCE POINTS

| | |
|--|---|
| RP-2 Sta 17+37.55 326.11' Right N 8525.9582 E 9310.7276 Elev. 1139.51 | RP-3 Sta 20+96.88 66.97' Right N 8167.5224 E 9684.2541 Elev. 1140.26 |
|--|---|

LEGEND

- RP-1 Reference Point
1/2" IP
- TS-1 Total Station Location
- XX+XX- Cross Section Location
- - - Existing one foot contour
- - - Existing five foot contour
- New improvements
- Edge of Water
- ★ Riparian Tree Planting Area
- ☆ Native Grass Planting Area

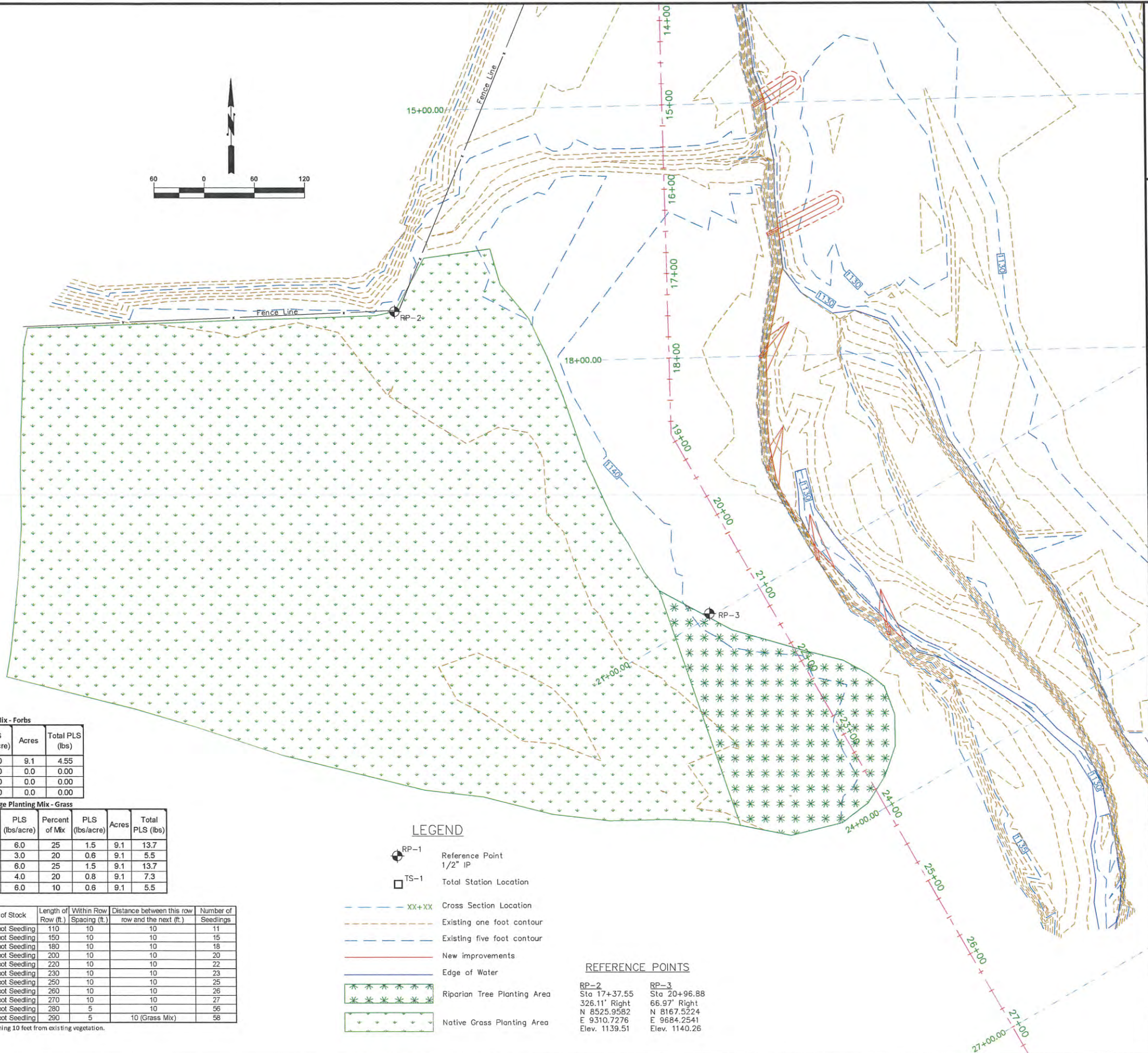
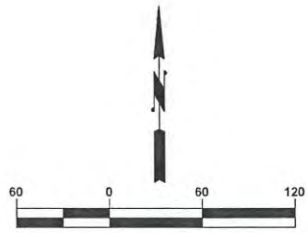
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19377 S. KAW STREET, OLATHE, KS 66062
913-708-0670

THE WATERSHED INSTITUTE
1200 SW Executive Dr., Topeka, Kansas 66615 785-272-2252

ARKANSAS RIVER, KANSAS
SUMNER COUNTY, KANSAS
CITY OF OXFORD
PLAN SHEET



| | |
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| SCALE: | AS NOTED |
| DATE: | 6/9/2011 |
| DRAWING NO.: | CO3 |
| SHEET NO.: | 3 of 8 |



Range Planting Mix - Forbs

| Species | PLS (lbs/acre) | Acres | Total PLS (lbs) |
|-----------------------|----------------|-------|-----------------|
| Showy Partridge Pea | 0.50 | 9.1 | 4.55 |
| White prairie clover | 0.50 | 0.0 | 0.00 |
| Illinois bundleflower | 0.50 | 0.0 | 0.00 |
| Roundhead lespedeza | 0.50 | 0.0 | 0.00 |

Range Planting Mix - Grass

| Species | Variety | PLS (lbs/acre) | Percent of Mix | PLS (lbs/acre) | Acres | Total PLS (lbs) |
|-----------------|-----------|----------------|----------------|----------------|-------|-----------------|
| Sand Bluestem | Woodward | 6.0 | 25 | 1.5 | 9.1 | 13.7 |
| Switchgrass | Blackwell | 3.0 | 20 | 0.6 | 9.1 | 5.5 |
| Indiangrass | Cheyenne | 6.0 | 25 | 1.5 | 9.1 | 13.7 |
| Little Bluestem | Adlous | 4.0 | 20 | 0.8 | 9.1 | 7.3 |
| Sideoats Grama | El Reno | 6.0 | 10 | 0.6 | 9.1 | 5.5 |

| Row No. | Species | Kind of Stock | Length of Row (ft.) | Within Row Spacing (ft.) | Distance between this row and the next (ft.) | Number of Seedlings |
|---------|----------------|--------------------|---------------------|--------------------------|--|---------------------|
| 1* | Sycamore | Bare Root Seedling | 110 | 10 | 10 | 11 |
| 2 | Sycamore | Bare Root Seedling | 150 | 10 | 10 | 15 |
| 3 | Sycamore | Bare Root Seedling | 180 | 10 | 10 | 18 |
| 4 | Sycamore | Bare Root Seedling | 200 | 10 | 10 | 20 |
| 5 | Sycamore | Bare Root Seedling | 220 | 10 | 10 | 22 |
| 6 | Cottonwood | Bare Root Seedling | 230 | 10 | 10 | 23 |
| 7 | Cottonwood | Bare Root Seedling | 250 | 10 | 10 | 25 |
| 8 | Cottonwood | Bare Root Seedling | 260 | 10 | 10 | 26 |
| 9 | Cottonwood | Bare Root Seedling | 270 | 10 | 10 | 27 |
| 10 | American Plum | Bare Root Seedling | 280 | 5 | 10 | 56 |
| 11 | Golden Currant | Bare Root Seedling | 290 | 5 | 10 (Grass Mix) | 58 |

* Row 1 is nearest streamside beginning 10 feet from existing vegetation.

LEGEND

- RP-1 Reference Point
1/2" IP
- TS-1 Total Station Location
- XX+XX Cross Section Location
- Existing one foot contour
- Existing five foot contour
- New improvements
- Edge of Water
- Riparian Tree Planting Area
- Native Grass Planting Area

REFERENCE POINTS

RP-2
Sta 17+37.55
326.11' Right
N 8525.9582
E 9310.7276
Elev. 1139.51

RP-3
Sta 20+96.88
66.97' Right
N 8167.5224
E 9684.2541
Elev. 1140.26

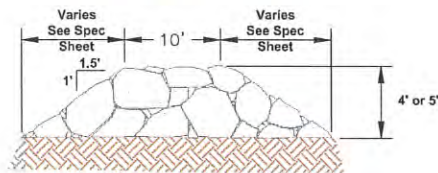
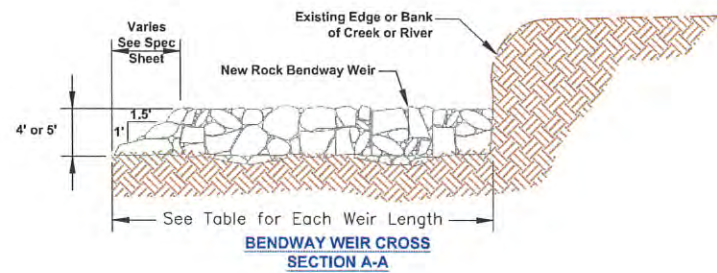
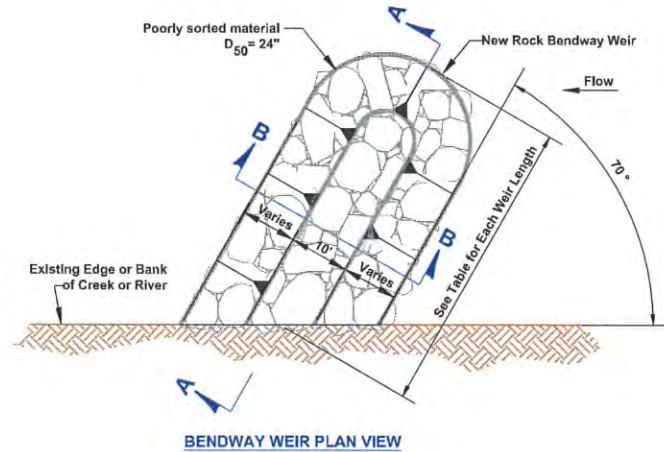
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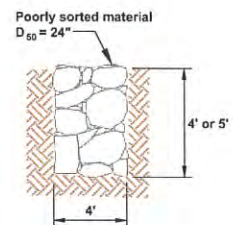
ARKANSAS RIVER, KANSAS
SUMNER COUNTY, KANSAS
CITY OF OXFORD
PLAN SHEET



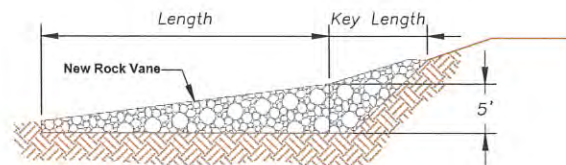
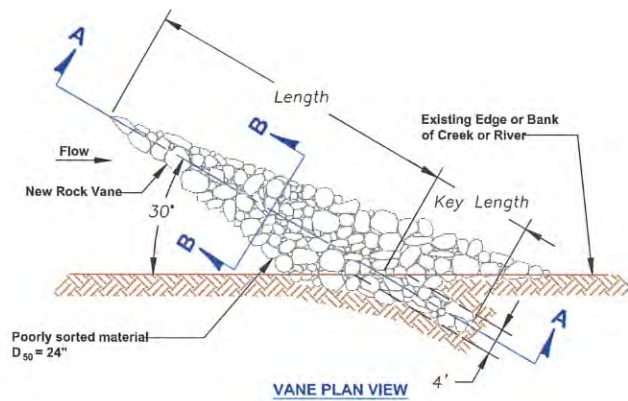
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APPROVED BY: JNB
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CONST: -----
SCALE: AS NOTED
DATE: 6/9/2011
DRAWING NO: **CO4**
SHEET NO: 4 of 8



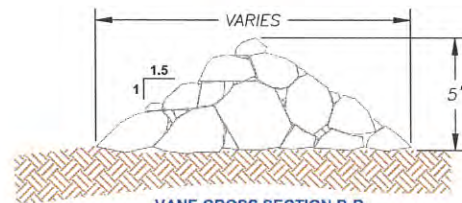
BENDWAY WEIR CROSS SECTION B-B



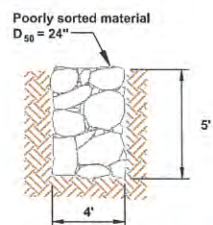
BENDWAY WEIR KEY SECTION VIEW



VANE CROSS SECTION A-A



VANE CROSS SECTION B-B



ROCK VANE KEY SECTION VIEW

| Structure Specification Sheet | | | | | | | | | | | |
|---|---------------------------------------|-------------------------------------|-----------------|-------------|-------------|-----------------|---------------------------|-------------------------------|--------|--|--|
| Project Name | | Stream | | County | | State | | Bank | | | |
| ILF - City of Oxford | | Arkansas River | | Sumner | | Kansas | | Length | Height | | |
| | | | | | | | | Shaped | Total | | |
| | | | | | | | | 0 | 2,818 | | |
| Structure | | | | | | | | | | | |
| Number | Type | Spacing (ft) | Angle (Degrees) | Height (ft) | Length (ft) | Key Length (ft) | Volume (yd ³) | Key Volume (yd ³) | Tons | Material Specifications | |
| 1 | Bendway Weir | 200 | 70 | 4 | 40 | 15 | 95 | 9 | 156 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 2 | Bendway Weir | 350 | 70 | 4 | 50 | 15 | 119 | 9 | 192 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 3 | Bendway Weir | 140 | 70 | 4 | 30 | 15 | 71 | 9 | 120 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 4 | Bendway Weir | 140 | 70 | 5 | 30 | 15 | 98 | 12 | 165 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 5 | Bendway Weir | 285 | 70 | 5 | 30 | 15 | 98 | 12 | 165 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 6 | Bendway Weir | 140 | 70 | 4 | 35 | 15 | 83 | 9 | 138 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 7 | Bendway Weir | 140 | 70 | 4 | 40 | 15 | 95 | 9 | 156 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 8 | Bendway Weir | 160 | 70 | 4 | 45 | 15 | 107 | 9 | 174 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 9 | Bendway Weir | 140 | 70 | 4 | 80 | 15 | 190 | 9 | 299 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 10 | Rock Vane | 120 | 30 | 5 | 40 | 15 | 55 | 12 | 101 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 11 | Rock Vane | 120 | 30 | 5 | 40 | 15 | 55 | 12 | 101 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 12 | Rock Vane | 120 | 30 | 5 | 40 | 15 | 55 | 12 | 101 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| 13 | Rock Vane | - | 30 | 5 | 40 | 15 | 55 | 12 | 101 | Poorly Sorted Limestone Rock (D ₅₀ = 24") | |
| | | | | | | | 1176 | 135 | 1967 | | |
| | | | | | | | Total yds ³ | 1311 | | | |
| Site Information | | | | | | | | | | | |
| Structure Height (ft) | Multiple | BkF Elev | 1,141.5 | At Station | 5+25 | | | | | | |
| Crest Width (ft) | 10 | Rosgen Classification | C5c- | | | | | | | | |
| Finished Slope Grade / H:V | 3 | Width/Depth Ratio | 39.2 | | | | | | | | |
| Schumm Channel Stage | IV | Entrenchment Ratio | 31.0 | | | | | | | | |
| Radius of Curvature (ft) | 3,194 | Channel Width (ft) | 427 | | | | | | | | |
| Maximum Structure Spacing (ft) | 616 | Tortuosity | 7.48 | | | | | | | | |
| Regular Structure Spacing (ft) | 208 | Shear Stress (lbs/ft ²) | 0.46 | | | | | | | | |
| Hydraulic Radius (ft) | 10.72 | Slope = (ft/ft) | 0.00069 | | | | | | | | |
| Mean Depth (ft) | 10.9 | Wetted Perimeter (ft) | 432.1 | | | | | | | | |
| Cross Sectional Area (ft ²) | 4,631 | Manning's n | 0.053 | | | | | | | | |
| Bank Full Discharge (cfs) | 16,867 | Mean Velocity (ft/sec) | 3.64 | | | | | | | | |
| Q ₅ Discharge (cfs) | 37,970 | Drainage Area (mi ²) | 43,279 | | | | | | | | |
| Channel Bank Vegetation | | | | | | | | | | | |
| Vegetation Type | | Quantity | | | | | | | | | |
| Bare Root Seedlings / ea. | | 301 | | | | | | | | | |
| Live Stakes / ea. | | - | | | | | | | | | |
| Seeding/ acres | | 9.1 | | | | | | | | | |
| Quantities List | | | | | | | | | | | |
| Rock / Cubic Yards | 1,311 | | | | | | | | | | |
| Rock / Tons | 1,967 | | | | | | | | | | |
| Soil moving / Cubic Yds | 289 | | | | | | | | | | |
| Bare Root Trees | 301 | | | | | | | | | | |
| Native Grass Seeding / acres | 9.1 | | | | | | | | | | |
| Landowner | City of Oxford | | | | | | | | | | |
| % | Watershed Land Trust | | | | | | | | | | |
| Address | 7211 W. 98th Terr., Suite 140 | | | | | | | | | | |
| City, State Zip | Overland Park, KS 66212 | | | | | | | | | | |
| Phone | 913-685-4600 | | | | | | | | | | |
| Legal | SE/4 S23-T12S-R5E / SW/4 S24-T12S-R5E | | | | | | | | | | |
| Date | 2/25/2011 | | | | | | | | | | |

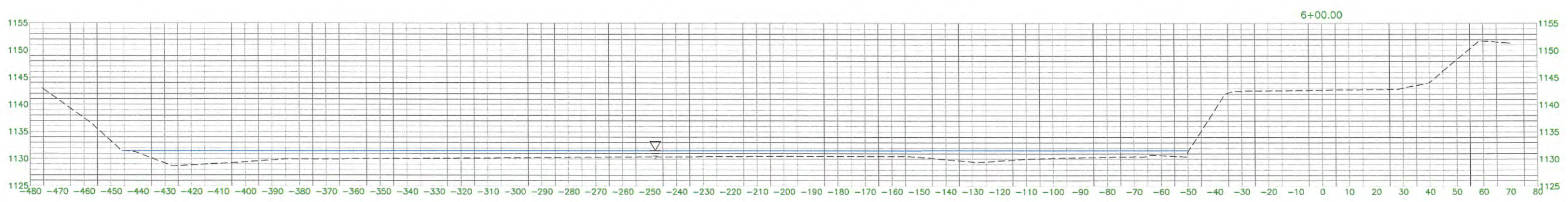
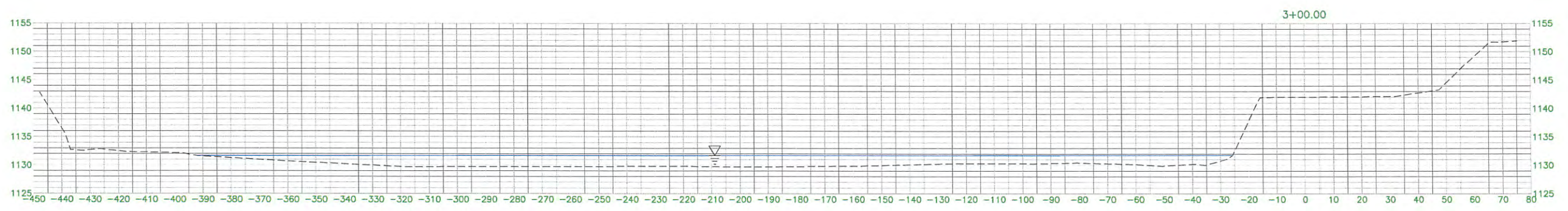
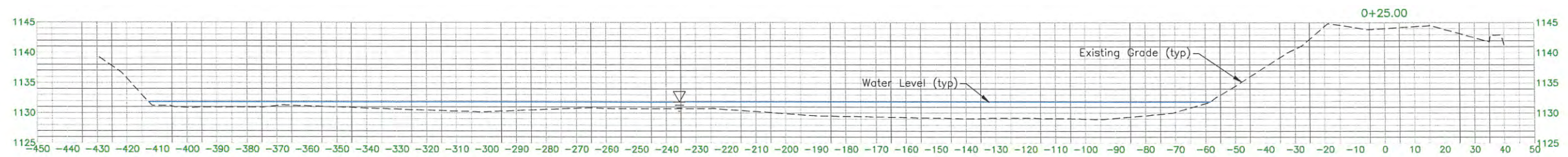
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 16377 S. KAW STREET, OLATHE, KS 66062
 913-708-0670

THE WATERSHED
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 1200 SW Executive Dr., Topeka, Kansas 66615 786-272-2552

ARKANSAS RIVER
SUMNER COUNTY, KANSAS
 CITY OF OXFORD
 PLAN SHEET



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 APPROVED BY: JNB
 DESIGN PROJ.: 14668.086
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 SCALE: AS NOTED
 DATE: 6/9/2011
 DRAWING NO: **CO5**
 SHEET NO: 5 of 8



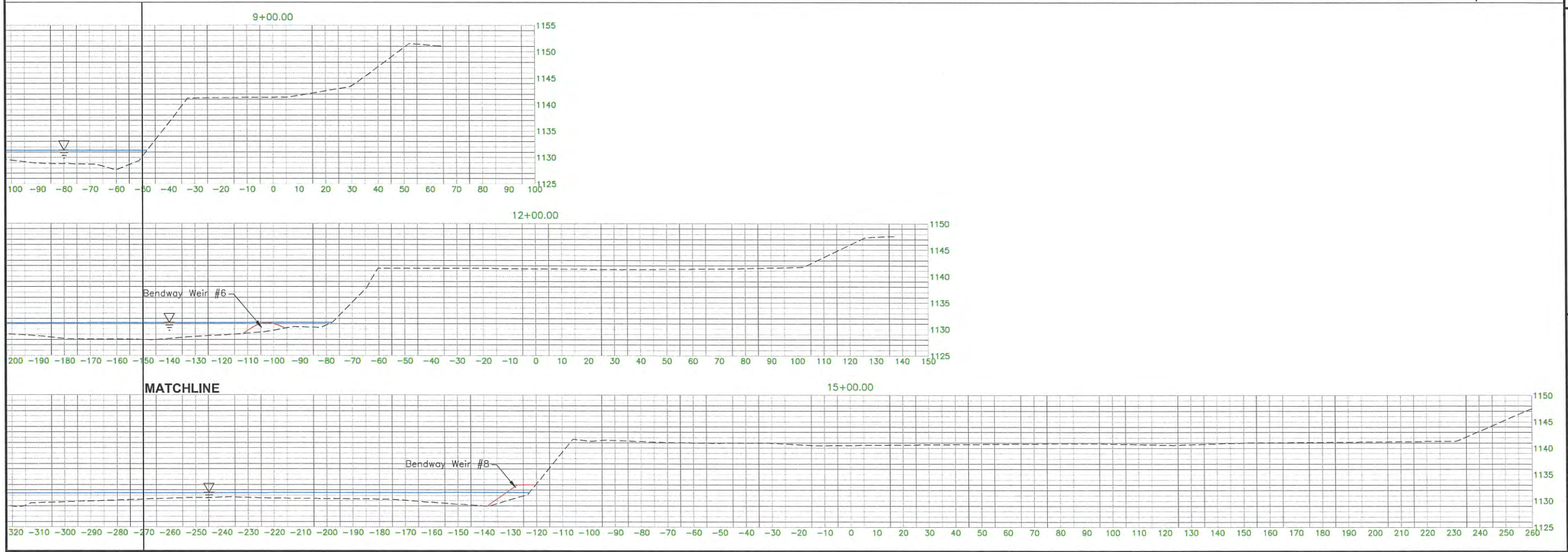
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 18377 S. KAW STREET, OLAH, KS 66002
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**ARKANSAS RIVER
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 CITY OF OXFORD
 CROSS SECTION SHEET**



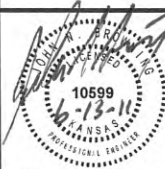
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| APPROVED BY: | JNB |
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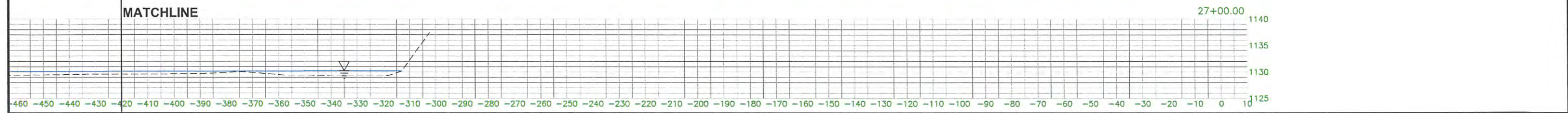
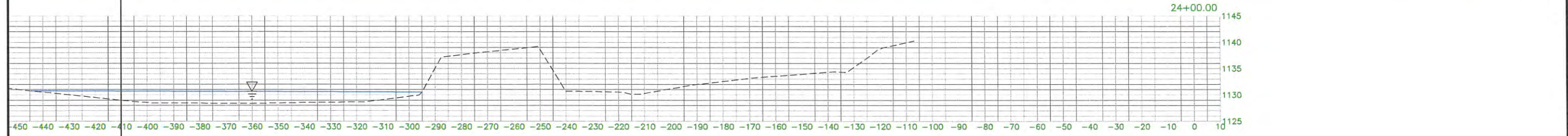
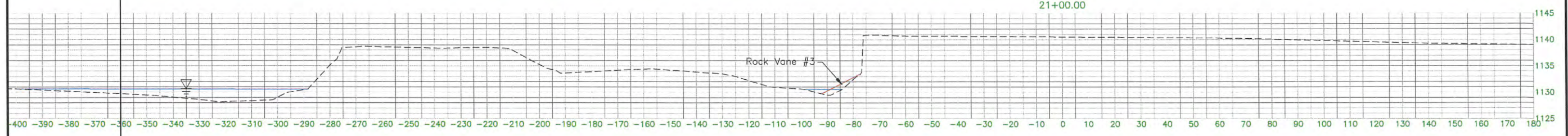
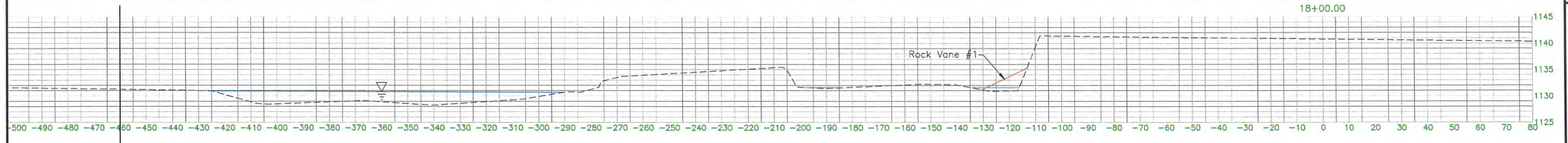
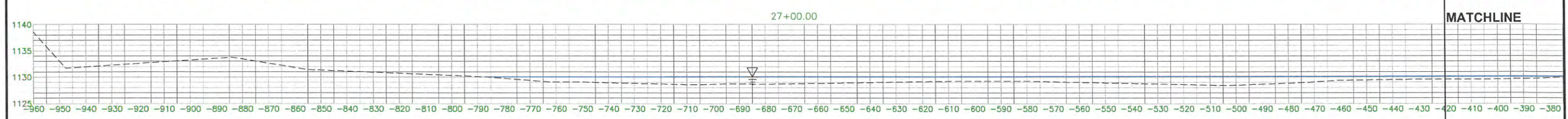
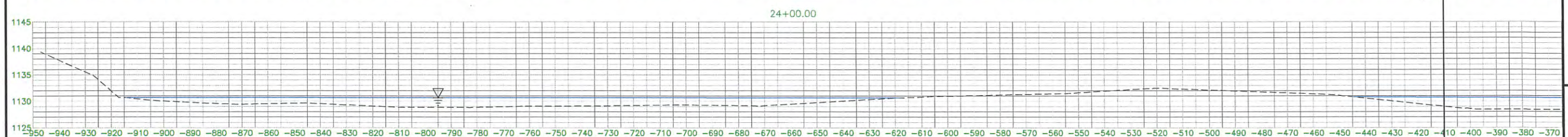
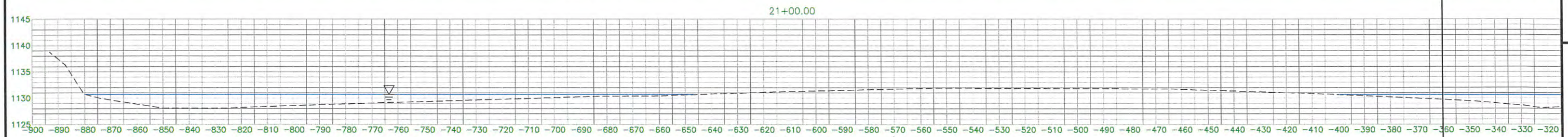
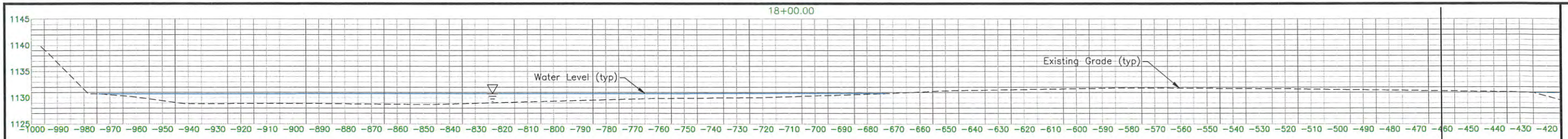
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 15377 S. KAW STREET, OLATHE, KS 66062
 913-708-0670

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 1200 SW Executive Dr., Topeka, Kansas 66615 785-272-2252

**ARKANSAS RIVER
 SUMNER COUNTY, KANSAS**
 CITY OF OXFORD
 CROSS SECTION SHEET



| | |
|---------------|------------|
| DESIGNED BY: | BAE |
| DRAWN BY: | JAG |
| APPROVED BY: | JNB |
| DESIGN PROJ.: | 14668.086 |
| CONST.: | ----- |
| SCALE: | AS NOTED |
| DATE: | 6/9/2011 |
| DRAWING NO.: | CO7 |
| SHEET NO.: | 7 of 8 |



BROWNING ENVIRONMENTAL SOLUTIONS, INC.
 18377 S. KAW STREET, OLATHE, KS 66062
 913-706-0870

WATERSHED
 T H E W A T E R S H E D I N S T I T U T E
 1200 SW Executive Dr., Topeka, Kansas 66615 785-272-2252

ARKANSAS RIVER, KANSAS
SUMNER COUNTY, KANSAS
 CITY OF OXFORD
 CROSS SECTION SHEET



| | |
|---------------|------------|
| DESIGNED BY: | BAE |
| DRAWN BY: | JAG |
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| CONST.: | ----- |
| SCALE: | AS NOTED |
| DATE: | 6/9/2011 |
| DRAWING NO.: | CO8 |
| SHEET NO.: | 8 of 8 |



August 12, 2011

Mr. Brock Emmert
The Watershed Institute, Inc.
1200 SW Executive Drive
Topeka, KS 66615

RE: City of Oxford, Streambank Stabilization, Arkansas River, Sumner County
Project Number 001030; WSN: CSU-0080; ECA: 2011248

Dear Brock:

A geometric analysis of the impact from the structures on the floodplain water surface elevation as requested by Mr. John R. Roth, P.E. of the Kansas Department of Agriculture, Division of Water Resources in his letter of July 18, 2011 has been completed.

In accordance with K.A.R. 5-45-1 through 4-24-23, the geometric analysis of Oxford Firm Panel No. 20191C0295C was completed and is attached. The project design including structures is included in the attached Firmette with the structures identified on the west bank in red. The initial analysis indicated that 5 weirs failed the 0.04 feet rise to be considered an unreasonable effect.

I recommend that weirs 1, 2, 4, 5, and 9 be reduced in height to 4 feet to match the height of the other weirs. Additionally, weirs 1 and 2 shall be limited in length to a maximum of 33 feet. Finally, weir 9 must be shortened to a maximum length of 50 feet. With these changes, all weirs and vanes will effect the floodplain with a rise of less than 0.04 feet as shown in the table. These changes are presented in the attached geometric analysis table. An addendum will need to be produced confirming these changes. Also attached is a 'no-rise' certificate for your submittal of the Division of Water Resources.

If you have questions, please give me a call at 913 708 0670.

Sincerely,

A handwritten signature in black ink, appearing to read "John N. Browning", is written over a light blue horizontal line.

John N. Browning, P.E.
Principal
Browning Environmental Solutions, Inc.

Attachments

Cc: File

BROWNING ENVIRONMENTAL SOLUTIONS, INC. 16377 S. KAW ST., OLATHE, KS 66062 (913) 708 0670

City of Oxford - Floodway Fill Geometric Analysis

| Station | Structure | Cross Section (sf) | Cross Section (HxL) | Floodway Length (ft) | Floodway Rise (ft) | Revised Cross Section (HxL) | Revised Cross Section (ft) | Revised Floodway Rise (ft) |
|---------|-----------|--------------------|---------------------|----------------------|--------------------|-----------------------------|----------------------------|----------------------------|
| 0+92 | Weir 1 | 160 | 4x40 | 3400 | 0.0471 | 4x33 | 132 | 0.0388 |
| 3+15 | Weir 2 | 200 | 5x40 | 3400 | 0.0588 | 4x33 | 132 | 0.0388 |
| 6+60 | Weir 3 | 120 | 4x30 | 3400 | 0.0353 | | | |
| 8+00 | Weir 4 | 150 | 5x30 | 3400 | 0.0441 | 4x30 | 120 | 0.0353 |
| 9+40 | Weir 5 | 150 | 5x30 | 3400 | 0.0441 | 4x30 | 120 | 0.0353 |
| 12+19 | Weir 6 | 140 | 4x35 | 4100 | 0.0341 | | | |
| 13+62 | Weir 7 | 160 | 4x40 | 4100 | 0.0390 | | | |
| 14+96 | Weir 8 | 180 | 4x45 | 5200 | 0.0346 | | | |
| 16+50 | Weir 9 | 320 | 4x80 | 5200 | 0.0615 | 4x50 | 200 | 0.0385 |
| 17+90 | Vane 1 | 200 | 5x40 | 5200 | 0.0385 | | | |
| 19+75 | Vane 2 | 200 | 5x40 | 5200 | 0.0385 | | | |
| 20+92 | Vane 3 | 200 | 5x40 | 5100 | 0.0392 | | | |
| 22+11 | Vane 4 | 200 | 5x40 | 5100 | 0.0392 | | | |

Date: 8/12/2011

Project Number 001030

John N. Browning, P.E.
 Browning Environmental Solutions, Inc.
 16377 S. Kaw Street
 Olathe, KS 66062
 913.708.0670



"NO-RISE" CERTIFICATION

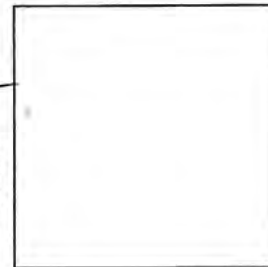
This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of Kansas

It is further to certify that the attached technical data supports the fact that proposed Streambank Stabilization, City of Oxford, KS (Name of Development) will not impact the 1% Annual Chance of flood elevations, floodway elevations, or floodway widths on Arkansas River (Name of water way) at published sections in the Flood Insurance Study for Sumner County, Kansas dated November 18, 2009 (Study Date) and will not impact the 1% Annual Chance of flood elevations, floodway elevations, or floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents that support my findings:

- Firmette 20191C0295C
- Geometric Analysis
- Project Addendum

Signature: 
Title: Principal Date: 8-12-11



{SEAL}

ARKANSAS RIVER STREAMBANK STABILIZATION PROJECT

CITY OF OXFORD

SUMNER COUNTY, KANSAS

ADDENDUM NO. 1

AUGUST 12, 2011

Contractors submitting proposals for the above reference project shall take note of the following changes, additions, deletions, clarifications to the Plans that shall become a part of and have precedence over anything shown or described in the Contract Documents and shall be taken into consideration and be included with Contract Documents for the reference project.

DRAWINGS

DRAWING CO2: Refer to changes in the structures listed below.

Bendway Weir #1: Change length to 33 feet.

Bendway Weir #2: Change length to 33 feet.

Bendway Weir #4: Change height to 4 feet.

Bendway Weir #5: Change height to 4 feet.

DRAWING CO2: Refer to changes in the structure listed below.

Bendway Weir #9: Change length to 50 feet.

DRAWING CO5: Refer to the Structure Specification Sheet. Delete the information given in the sheet and replace it with the information in bold font.

| Structure Number | 1 | 2 | 4 | 5 | 9 |
|-------------------------|--|--|--|--|--|
| Type | Bendway Weir | Bendway Weir | Bendway Weir | Bendway Weir | Bendway Weir |
| Spacing (ft) | 200 | 350 | 140 | 285 | 140 |
| Angle (Degrees) | 70 | 70 | 70 | 70 | 70 |
| Height (ft) | 4 | 4 | 4 | 4 | 4 |
| Length (ft) | 33 | 33 | 30 | 30 | 50 |
| Key Length (ft) | 15 | 15 | 15 | 15 | 15 |
| Structure Cubic Yards | 95 | 119 | 98 | 98 | 190 |
| Key Cubic Yards | 9 | 9 | 12 | 12 | 9 |
| Tons | 156 | 192 | 165 | 165 | 299 |
| Material Specifications | Poorly Sorted Limestone Rock (D ₅₀ = 24") | Poorly Sorted Limestone Rock (D ₅₀ = 24") | Poorly Sorted Limestone Rock (D ₅₀ = 24") | Poorly Sorted Limestone Rock (D ₅₀ = 24") | Poorly Sorted Limestone Rock (D ₅₀ = 24") |

John Browning, P.E.

Watershed Institute, Inc.



8-12-11

AD1-1