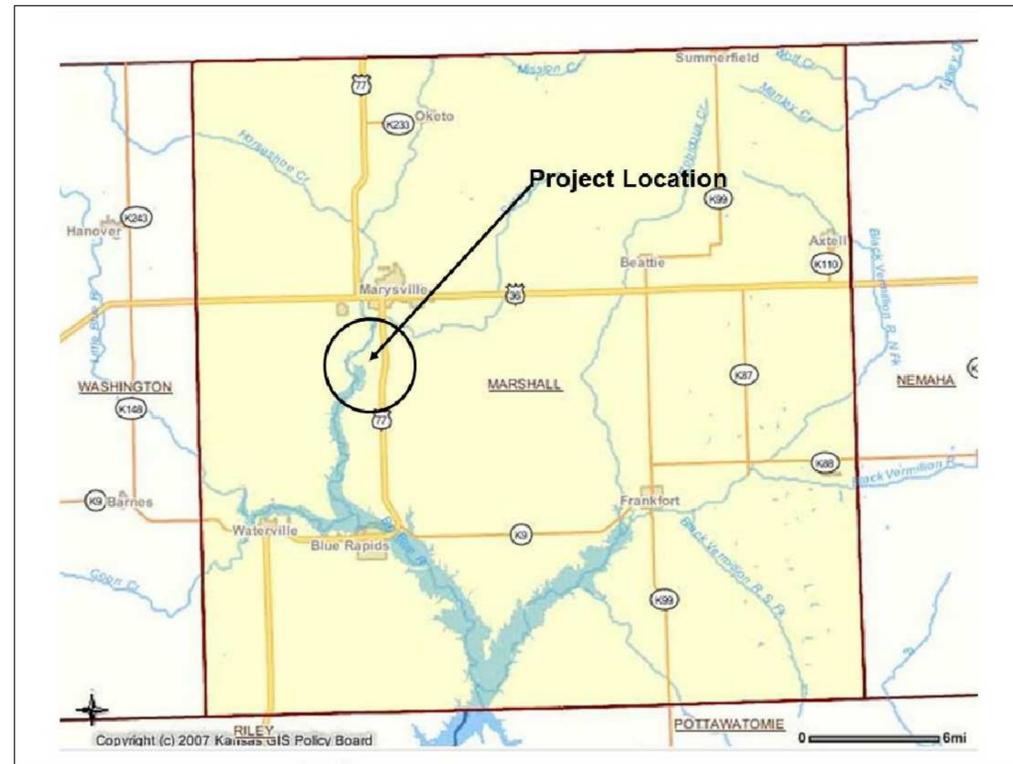


# Big Blue River

Site No. BBR 41

Marshall County, Kansas

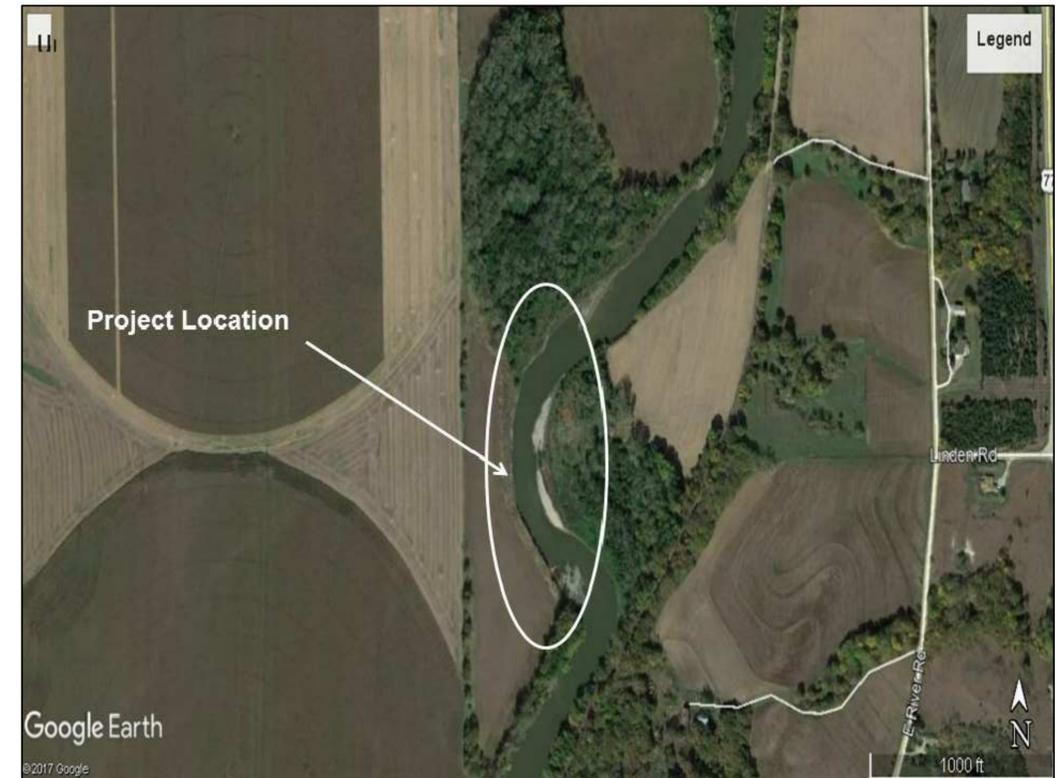


Marshall County Map  
NTS



### Sheet Index

Sheet No.	Sheet Title
1	Cover Sheet
2	General Layout
3-5	Plan View
6	Details
7	Cross Section Sheet



Site Location Map  
NTS



### Quantities

Item	Unit	Total
Rock 18"	Tons	3840
Rock 24"	Tons	1545
Soil Moving	C.Y.	14325
Bare Root Trees	Each	1275
Live Stakes	Each	1300
Native Grass Seeding	Acres	2.24
Mulching	Acres	2.24
Riparian Buffer Ripping	Acres	1.97

(For specific detailed information on tree, shrub, temporary and native seeding, see NRCS Forms ECS-4 and ECS-5)



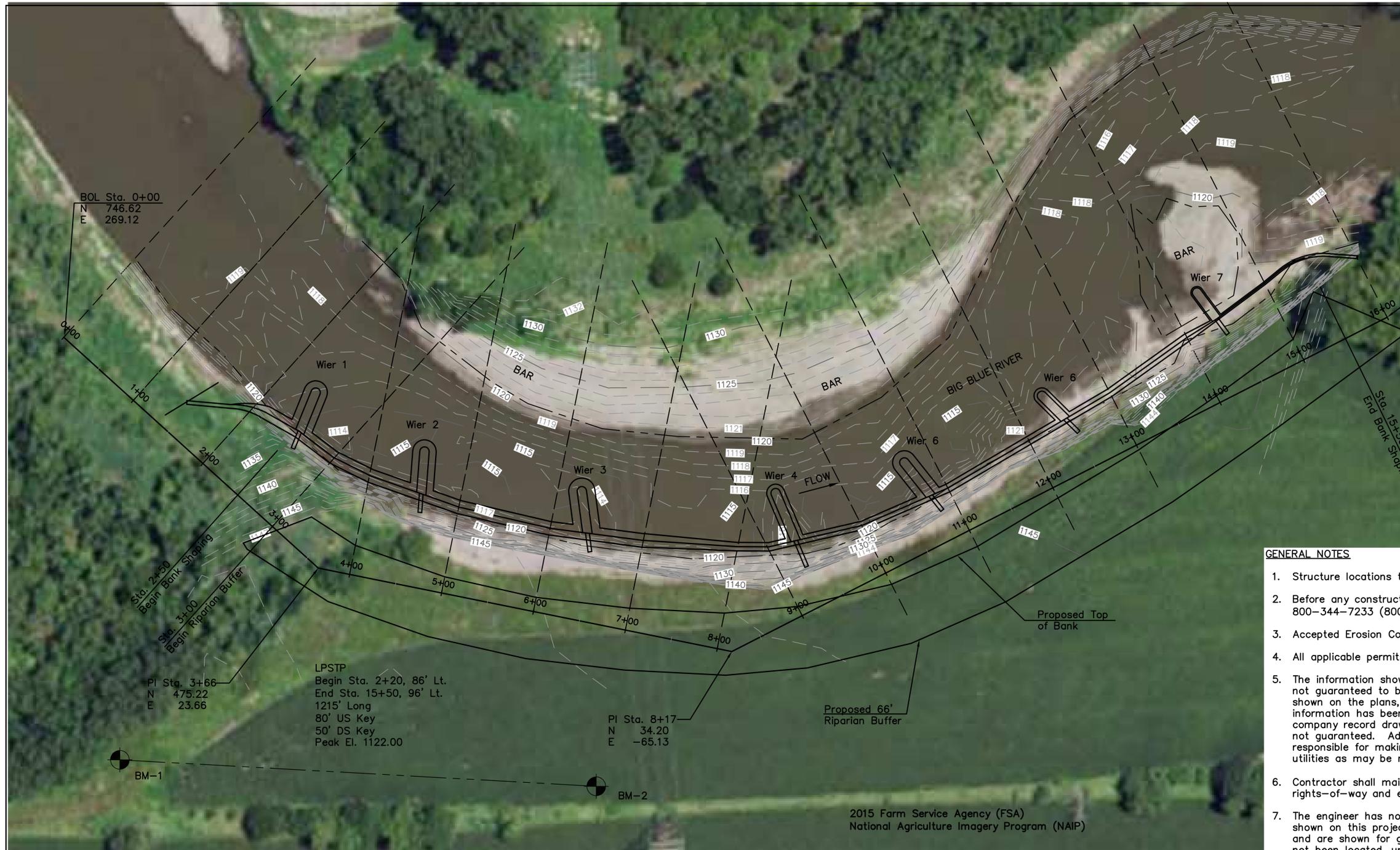
11821 NW 13th Street - Topeka, Kansas 66615  
785-213-3778



8800 Linden Drive Prairie Village, Kansas 66207  
913-302-1030



To the best of my professional knowledge, judgment, and belief, these plans meet applicable NRCS standards.



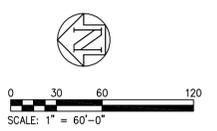
**LEGEND**

- Benchmark
- Control Point
- Existing 1 Foot Contour
- Existing 5 Foot Contour
- New Improvements

EOL Sta. 16+00  
 N -664.75  
 E 290.45

**BENCHMARKS**

BM-1 Iron Bar w/Cap Sta. 3+45.85 293.27 Lt. N 686.84 E -180.37 EL. 1149.50	BM-2 Iron Bar w/Cap Sta. 7+02.38 169.11 Lt. N 178.77 E 208.52 EL. 1149.63
----------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------



**GENERAL NOTES**

1. Structure locations to be field located and staked by Wildhorse Riverworks, Inc.
2. Before any construction activity, the contractor is responsible for calling Kansas One Call at 800-344-7233 (800-DIG-SAFE)
3. Accepted Erosion Control practices will be applied to all disturbed areas.
4. All applicable permits will be obtained by others prior to project construction.
5. 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 provide field locations. The plans locations shown are not guaranteed. Additional existing utilities may also be encountered. The contractor is responsible for making the determinations as to the type and location of underground utilities as may be necessary to avoid damage thereto.
6. Contractor shall maintain construction limits within the existing and/or proposed rights-of-way and easements.
7. 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.
8. Coordinates for this project are not associated with any known survey or coordinate system.
9. Do not remove any trees larger than 12" DBH or over 50' in height without permission of the Engineer.
10. Soil moving calculations are based on available information. Contractor shall inspect the site and make an evaluation of existing conditions.
11. Contractor shall shape top of bank such that the gradient slopes away from the graded bank.
12. Contractor is responsible for planting from top of LPSTP or water level to top of bank. Buffer field by others.
13. If construction is completed between July 1 and Feb. 1: Before leaving the site, contractor shall rip the entire 66' buffer area to a 20-inch depth.

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 N 746.62  
 E 269.12

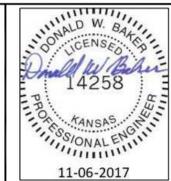
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 N 475.22  
 E 23.66

LPSTP  
 Begin Sta. 2+20, 86' Lt.  
 End Sta. 15+50, 96' Lt.  
 1215' Long  
 80' US Key  
 50' DS Key  
 Peak El. 1122.00

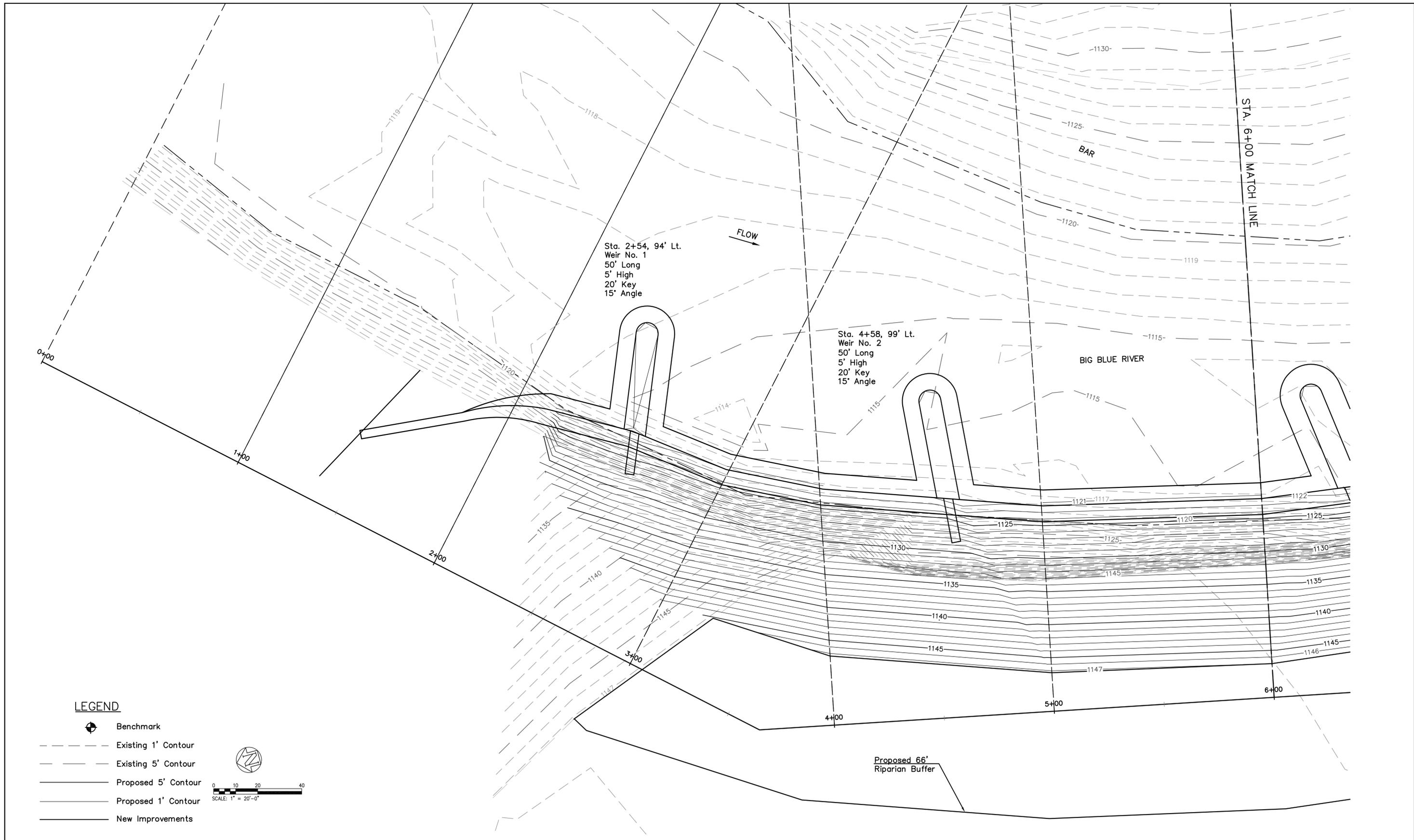
PI Sta. 8+17  
 N 34.20  
 E -65.13

2015 Farm Service Agency (FSA)  
 National Agriculture Imagery Program (NAIP)

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		1			
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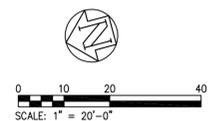


Marshall County, Kansas  
 Big Blue River  
 General Layout



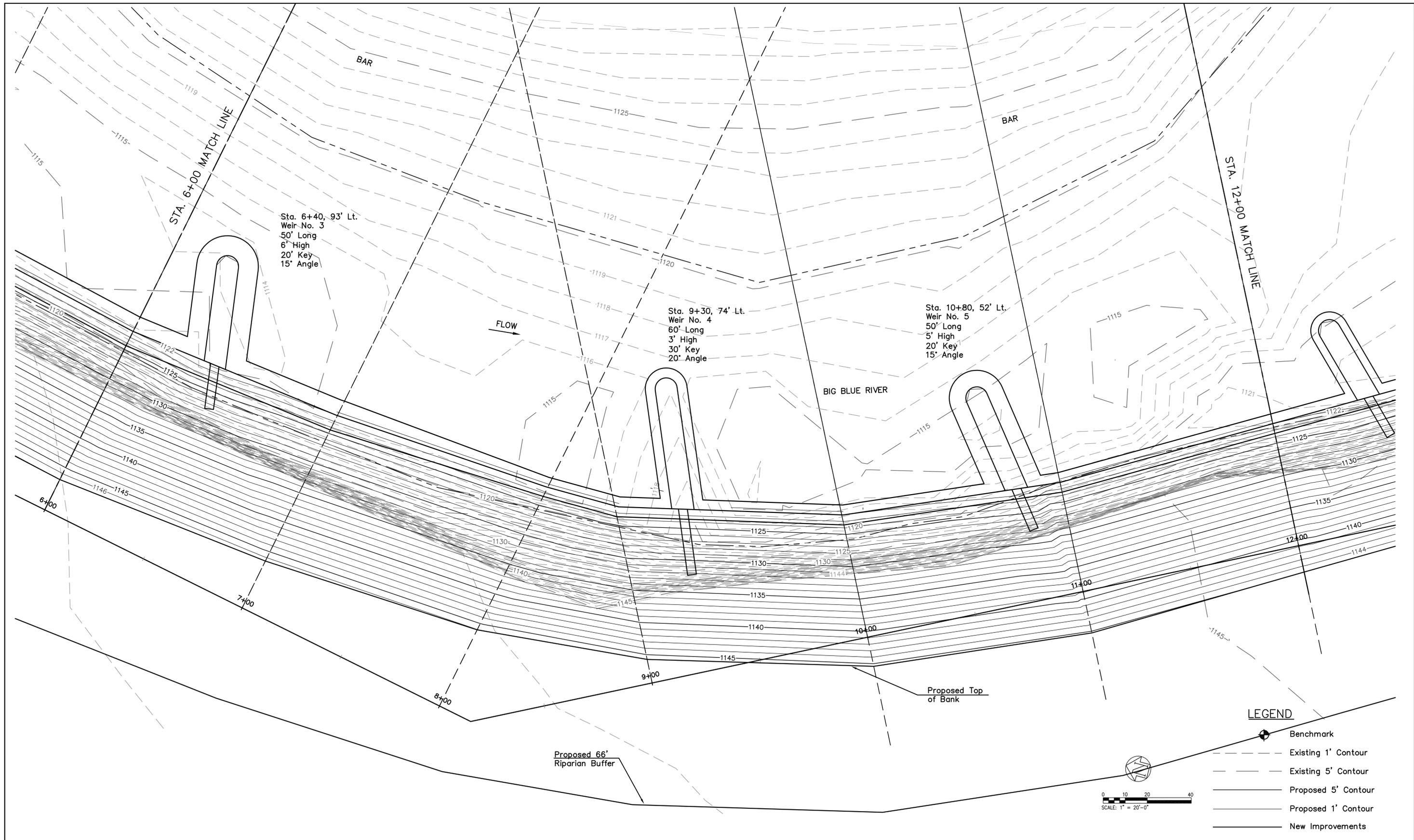
**LEGEND**

- Benchmark
- Existing 1' Contour
- Existing 5' Contour
- Proposed 5' Contour
- Proposed 1' Contour
- New Improvements

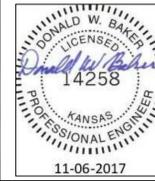


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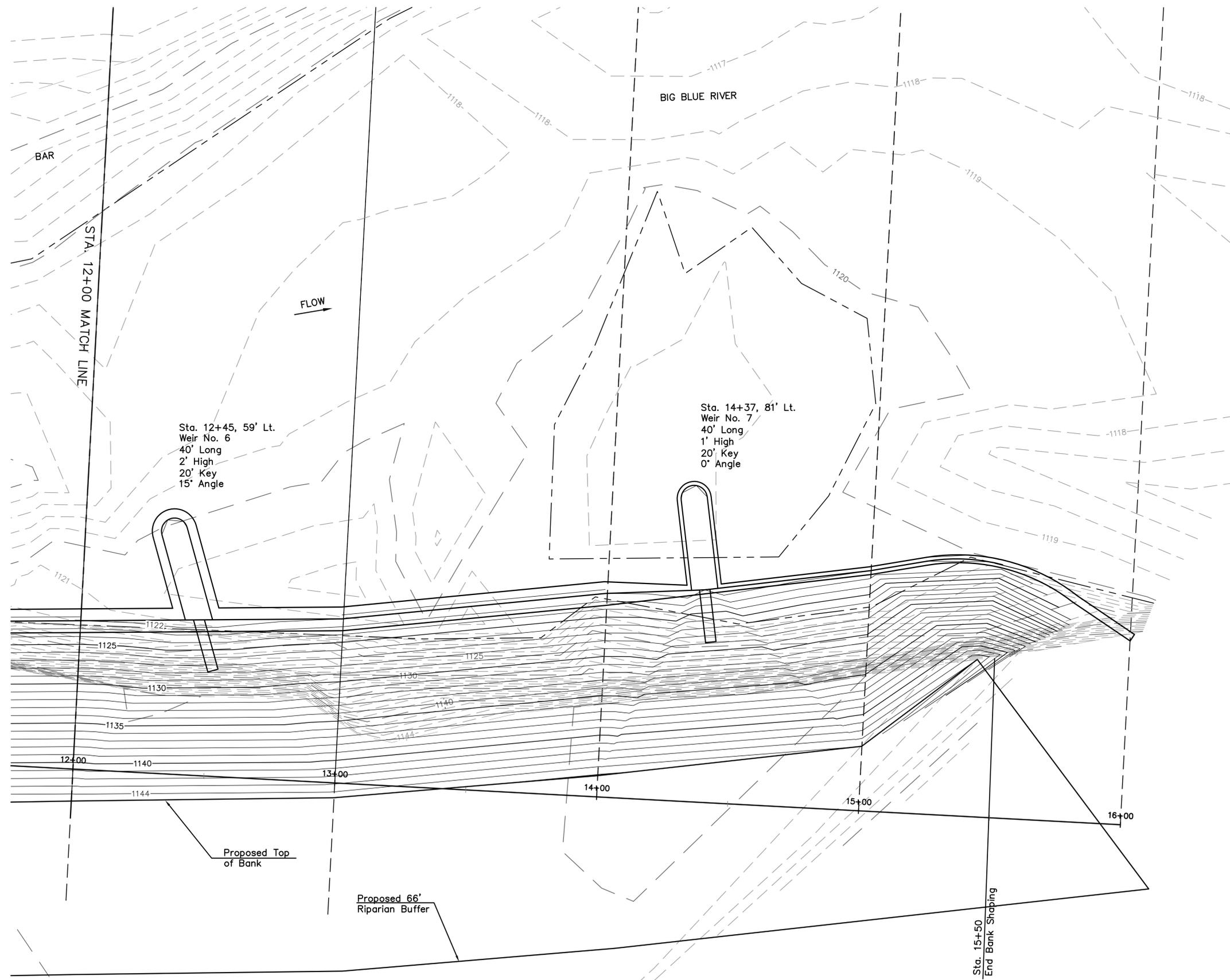




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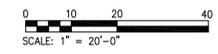


Marshall County, Kansas  
Big Blue River  
Plan View



**LEGEND**

-  Benchmark
-  Existing 1' Contour
-  Existing 5' Contour
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-  Proposed 1' Contour
-  New Improvements

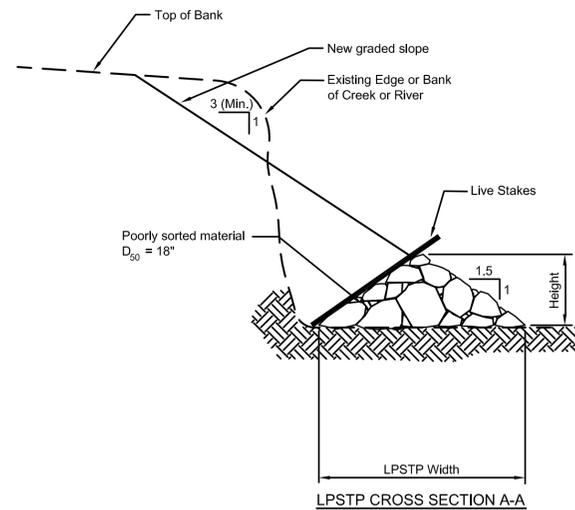
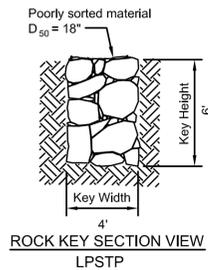
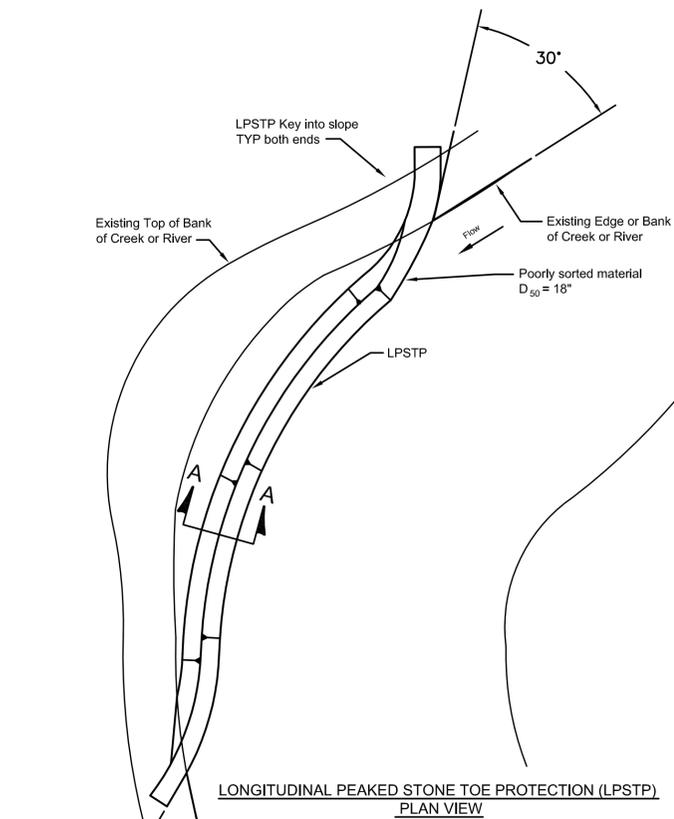


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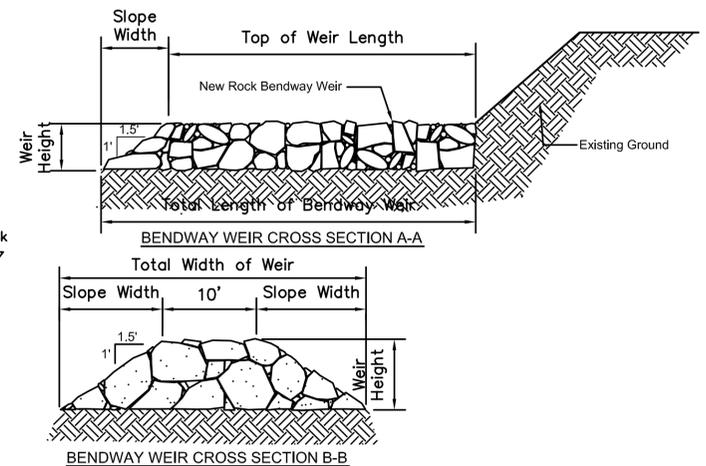
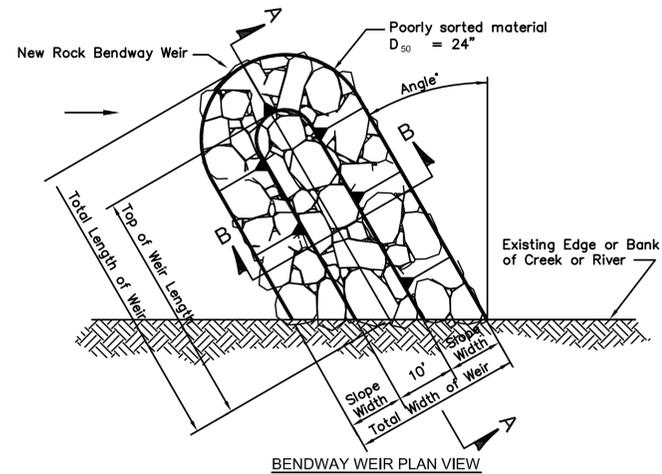


Marshall County, Kansas  
Big Blue River

Plan View



Structure Specification Sheet											Phil Balch, 2002 - revised 3/2006		
Project Name		Stream		County		State		Bank		Length		Height	
Richard Neitfeld (BBR55)		Big Blue River		Marshall		Kansas				Shaped 1,300		Total 1,600	24
Structures										Key		Material Specifications	
#	Type	Spacing	Angle	Area	Height	Length	Key Length	Yards3	yds3	Tons			
ft.	(Degrees)	sq. ft.	ft.	ft.	ft.	ft.							
1	LPSTP	N/A	N/A	21,870.0	6	1215	130	2430	130	3840.0	Poorly Sorted Limestone Rock		
1	Weir	155	15	1,250.0	5	50	20	163	20	274.5	Poorly Sorted Limestone Rock		
2	Weir	180	15	1,250.0	5	50	20	163	20	274.5	Poorly Sorted Limestone Rock		
3	Weir	225	15	1,400.0	6	50	20	222	20	363.0	Poorly Sorted Limestone Rock		
4	Weir	150	20	1,140.0	3	60	30	104	30	201.0	Poorly Sorted Limestone Rock		
5	Weir	170	15	1,250.0	5	50	20	172	20	288.0	Poorly Sorted Limestone Rock		
6	Weir	200	15	640.0	2	40	20	39	20	88.5	Poorly Sorted Limestone Rock		
7	Weir	N/A	0	520.0	1	40	20	17	20	55.5	Poorly Sorted Limestone Rock		
				29,320					3,310	280	5,385		
								Total yds3	3,590				
Site Information											Quantities List		
Structure Height / ft.	Variable		Cord Length / ft.	1320						Rock / Cubic Yards	3,590		
Crest Width / ft.	10		Mid Ord / ft.	347						Rock / Tons	5,385		
Finished Slope Grade/H:V	3:1		BkF Elev	1130		12+00				Soil moving/ Cubic Yds.	14,325		
Schumm Channel Stage	4		Rosgen Classification	C5c						Bare Root Trees	1,275		
Radius of Curvature / ft.	801.17		Channel Width / ft.	250.00						Live Stakes	1,300		
Max. Structure Spacing / ft.	278.60		Tortuosity	3.2						Native Grass Seeding / acres	2.24		
Reg. Structure Spacing / ft.	117.49		Critical Shear Stress	0.331 lbs./sq.ft.						Mulching / acres	2.24		
Hydraulic Radius / ft.	8.880		Slope = ft./ft.	0		3.49 ft./mile				Buffer Area	1.97		
Cross Sectional Area / sq. ft.	2,291.00		Wetted Perimeter / ft.	258									
Bank Full Discharge / cfs	12,847		Manning's n	0.029									
			Mean Velocity / fps.	5.61									
Channel Bank Vegetation - Practice Code 322				Five Year Flood Frequency -				Landowner					
Vegetation Type		Quantity		Discharge / cfs		33,150		Richard Neitfeld		DBA		RJ Farms	
Bare Root Seedlings / ea.		1,275.00						Address		681 Keystone Road		City, State Zip	
Live Stakes / ea.		1,300.00						Marysville, Kansas 66508		Phone		785-562-3256	
Seeding / acres		2.24				4,860.8 Sq. Mi.		Legal		W1/2, Sec. 4, T3S, R7E		Date	
Mulching - Practice Code 484		2.24						Date		10/2/2017			

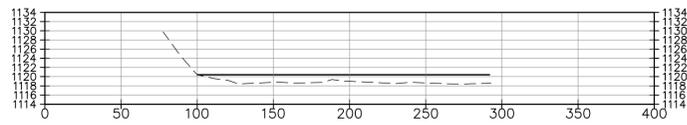


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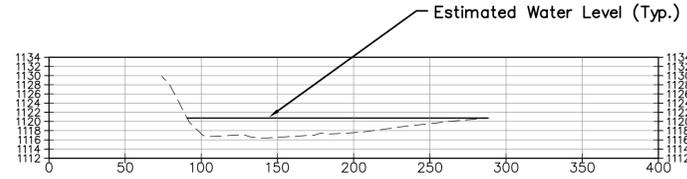


Marshall County, Kansas  
Big Blue River

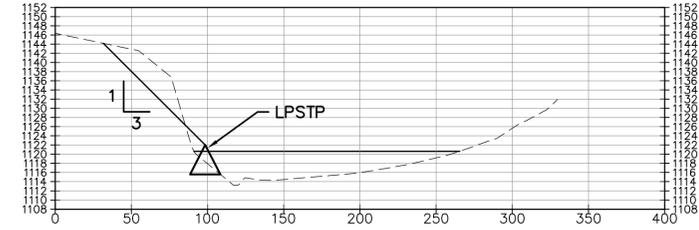
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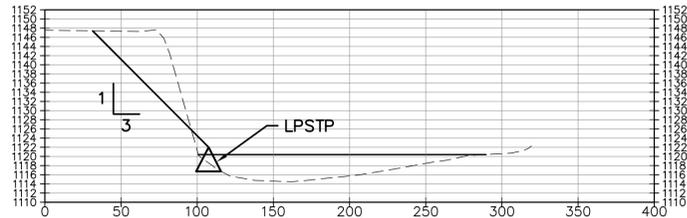
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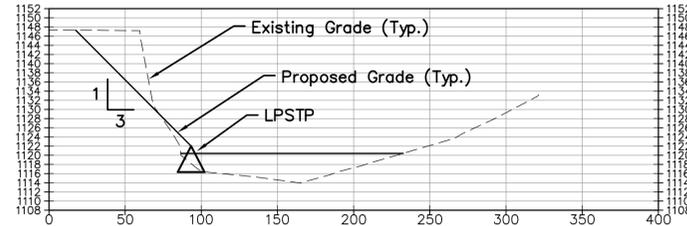
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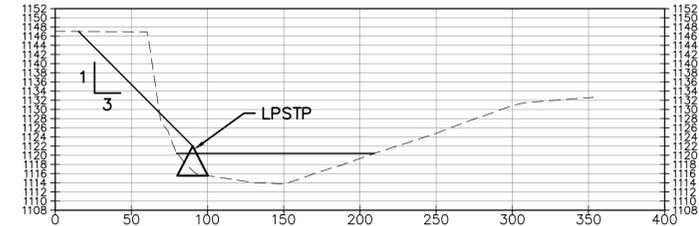
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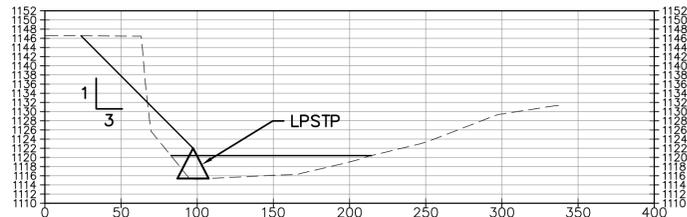
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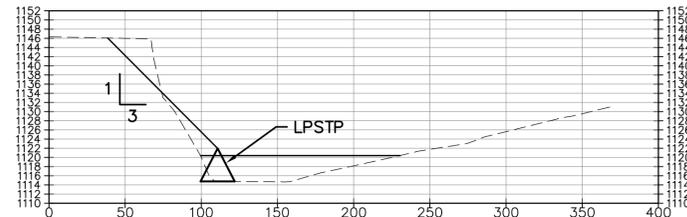
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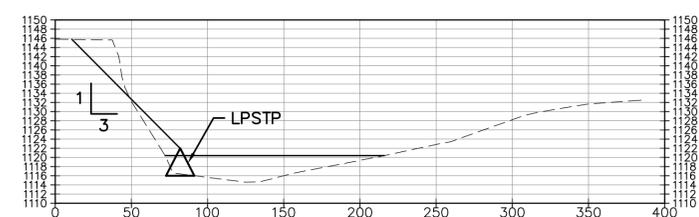
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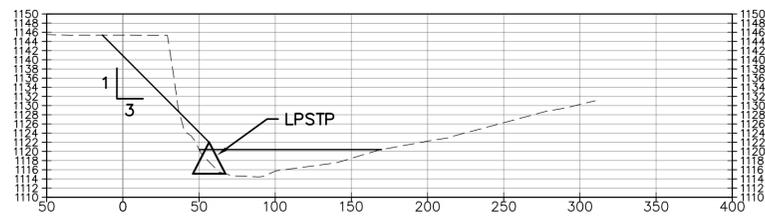
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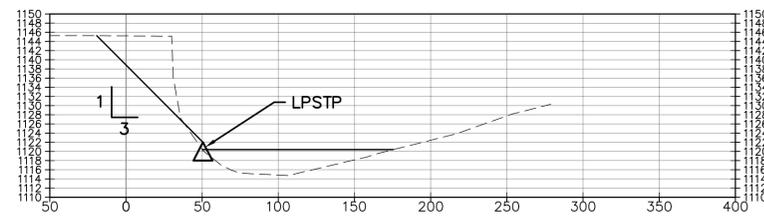
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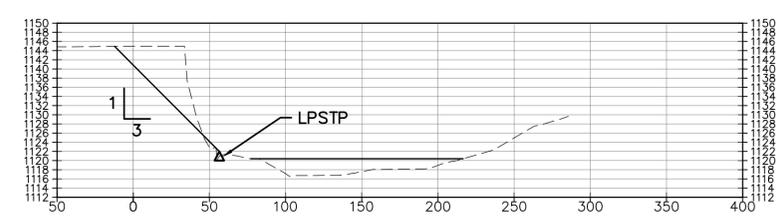
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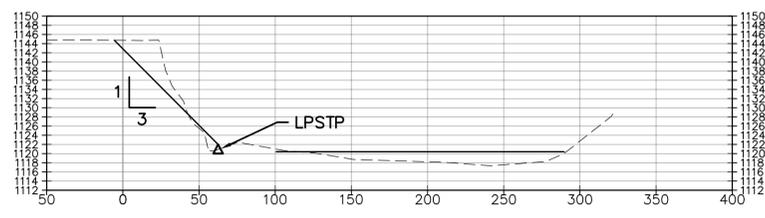
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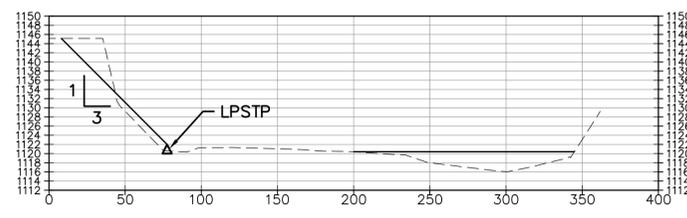
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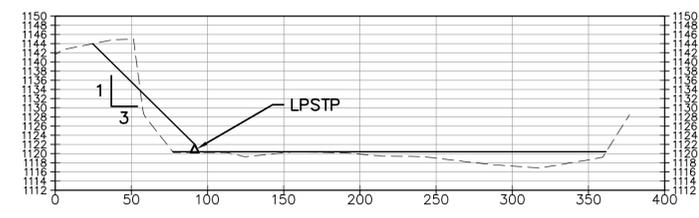
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13+00



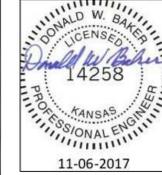
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15+00

SCALE:  
1"=20' VERT.  
1"=60' HORZ.

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Checked By:	DWB				
Date:	9/20/17				
Scale:	1"=60'				



Marshall County, Kansas  
Big Blue River

Cross Sections

**CONSTRUCTION SPECIFICATIONS  
INDEX**

**STREAM REHABILITATION  
CONSTRUCTION**

**Kansas Department of Agriculture- Division of Conservation**

**Marshall County, Kansas**

**October 19, 2017**

**Prepared By:**

**Wildhorse Riverworks, Inc.  
11821 NW 13<sup>th</sup> Street  
Topeka, Kansas 66615  
785-213-3778**

**&**

**Water Resource Solutions, LLC.  
8800 Linden Drive  
Prairie Village, Kansas 66207  
913-302-1030**



**10-19-2017**

## TABLE OF CONTENTS

### DIVISION 1 – GENERAL REQUIREMENTS

- 01001 – General Requirements
- 01002 – Special Conditions
- 01003 – Summary
- 01004 – Mobilization and Demobilization

### DIVISION 2 – SITEWORK

- 02102 – Clearing and Grubbing
- 02200 – Excavation, Filling, and Grading
- 02900 – Protection of Soil and Plants
- 02901 – Channel Bank Vegetation – NRCS Practice Code 322
- 02906 – Mulching – NRCS Practice Code 484

### DIVISION 3 – CONCRETE AND ROCK STABILIZATION STRUCTURES

- 03162 – Bendway Weirs & LPSTP

### DIVISION 4 THROUGH 16 NOT USED

## SECTION 03162 – CONCRETE AND ROCK STABILIZATION STRUCTURES

### PART 1 – GENERAL

#### 1.1 DESCRIPTION:

- A. This section covers vanes, bendway weirs, longitudinal peaked stone toe protection (LPSTP), cross vanes, engineered rock riffles, and check dams to be used at various locations within the project area as shown on the project design sheet. Items include, but are not limited to:
1. Rock gradation, procurement, storage, and handling.
  2. Sub-grade preparation prior to rock installation.
  3. Rock installation.
- B. Types of structures covered by this specification:
1. Vanes
  2. Bendway Weirs
  3. LPSTP
  4. Cross Vanes
  5. Engineered Rock Riffles
  6. Check Dams
- C. Related Work in Other Sections:
1. Excavating, Back Filling, and Grading: Section 02200

#### 1.2 REFERENCES:

- A. The publications listed below form a part of this specification to the extent referenced. The latest revision of the following standards shall apply to work hereunder:
1. ASTM C 88: Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
  2. ASTM C 127-88: Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
  3. ASTM D 5312-92: Standard Test Method for Evaluation of Durability of Rock for Erosion Control under Freezing and Thawing Conditions

#### 1.3 LINES AND GRADES:

- A. Rock placement shall conform to the lines and grades shown on the technical drawings.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Material shall be reasonably free from dirt, clay, sand, rock fines and other materials not meeting the required gradation limits.
- B. Except as otherwise specified, the rock shall be angular to sub rounded in shape. The rock shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. The least dimension of an individual rock fragment shall not be less than one-third the greatest dimension of the fragment. Except as otherwise provided, the rock shall be tested and shall have the following properties:
  - 1. Bulk Specific Gravity (saturated surface-dry basis) shall not be less than 2.4 when tested in accordance with ASTM C 127.
  - 2. Absorption shall not be more than 4 percent when tested in accordance with ASTM C 127.
  - 3. The weight loss in 5 cycles shall not be more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used when tested in accordance with ASTM C 88 for soundness
  - 4. Rock that fails to meet the requirements stated above in 1, 2, or 3 may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this specification.
- C. The rock materials shall be reasonably well graded by weight and poorly sorted by size, within the limits stated below or on the Drawings to meet the following requirements:

**Aggregate Gradation A (D<sub>50</sub> = 24 in.)**

Size (lbs)	Percent Heavier
10	90
450	50
1000	10

**Aggregate Gradation B (D<sub>50</sub> = 18 in.)**

Size (lbs)	Percent Heavier
10	85 - 100
100	60-80
250	30-60
600	0

**Aggregate Gradation C (D<sub>50</sub> = 12 in.)**

Size (lbs)	Percent Heavier
5	85 - 100
50	50 - 70
100	5 - 15
400	0

**PART 3 – INSTALLATION**

**3.1 INSTALLING ROCK STRUCTURES:**

- A. The sub-grade surfaces on which the rock, filter, bedding, or geotextile is to be placed shall be cut and graded to the lines and grades shown on technical drawings. The surface to which the rock is to be placed shall be reasonably smooth and free of mounds, dips, or windrows.
- B. The rock shall be placed by equipment on the surfaces and to the depths specified. The rock shall be installed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying material. The rock shall be delivered and placed in a manner that will ensure the rock shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks. Rock shall be placed in a manner to prevent damage to existing structures. Hand placing will be required as necessary to prevent damage to any new and existing structures.
- C. Side slopes should be the natural angle of repose, which approximates 1.5 ft. horizontal to 1 ft. vertical.

**3.2 MAINTENANCE:**

- A. If, at any time before 12 months after the completion and acceptance of the work, there shall be any settlement requiring repairs to be made along the line of work, or should any defect appear in the work due to neglect, carelessness or improper construction on the part of the Contractor, the Contracting Officer will notify the Contractor to make such repairs and remedy any defects. The Contractor shall, within 5 days after such notice, begin and carry out such repairs at no additional cost to the owner.

**PART 4 – MEASUREMENT AND PAYMENT**

**4.1 METHOD OF MEASUREMENT:**

- A. Work will be measured by tons of rock placed.

**4.2 BASIS OF PAYMENT:**

- A. The amount of work completed and approved, as stated above, shall be paid for at the contract unit price.

END OF SECTION 03162

## SECTION 01002 – SPECIAL CONDITIONS

### PART 1 – GENERAL

#### 1.1 RELATIONSHIP TO GENERAL CONDITIONS

- A. Should conflict occur between these Special Conditions and the General Requirements, these Special Conditions shall take precedence. When these Special Conditions modify a portion of the General Conditions, the unaltered portions of the General Conditions shall remain in effect.

#### 1.2 LOCATIONS, LINES AND LEVELS

- A. Contractor shall establish location of new work on property and establish and maintain all other grades, lines, levels, and benchmarks; check and compare all drawings, verifying grades, lines, levels, and dimensions indicated thereon, and report all inconsistencies to Engineer and receive Engineer's instructions before commencing work.

#### 1.3 DOCUMENTS FURNISHED

- A. Contractor will be responsible for obtaining all necessary Drawings and Project Manuals, including all modifications thereof, as required, including distribution to subcontractors and suppliers.
- B. Contractor shall pay the actual cost of reproduction for all additional sets requested by him.

#### 1.4 LAWS TO BE OBSERVED

- A. The Contractor shall at all times observe and comply with all federal and state laws, local laws, ordinances, orders, decrees and regulations existing or enacted subsequent to the execution of the Contract, which in any manner affect the prosecution of the work. The Contractor and his Surety shall indemnify and save harmless the Sponsor, the Sponsor's Architects, Engineers, and their representatives, agents, and employees against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself, his employees or his subcontractors.

#### 1.5 CONSTRUCTION OBSERVATION

- A. The undertaking of periodic site visits by the Engineer or representative shall not be construed as supervision of actual construction nor make him responsible for providing a safe place for the performance of work by contractors or contractor's employees, or those of suppliers or subcontractors, or for access, visits, use, work, travel, or occupancy by any person.

#### 1.6 CONSTRUCTION COORDINATION

- A. Before starting any construction, a meeting shall be held with Sponsor, Contractor, Subcontractors, and Engineer to plan and coordinate the schedule of construction and to review intent of Contract Documents. Contractor and Subcontractor shall follow instructions received at this meeting in prosecuting the work.

END OF SECTION 01002

## SECTION 01003 – SUMMARY

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:

1. Work covered by the Contract Documents
2. Type of Contract
3. Use of premises
4. Owner's occupancy requirements
5. Work restrictions
6. Specification formats and conventions

- B. Related Sections include the following:

1. Division 1 Section "General Requirements" for limitations and procedures governing temporary use of Sponsor's facilities.

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work consists of the following:

1. The site work including addition of wooden, soil bioengineering, and rock structures, reconfiguration of existing streambank, planting of cover crop, mulching, and native plantings.

#### 1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

#### 1.5 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings.
- B. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

#### 1.6 OWNER'S OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: Homeowners will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Homeowners during construction operations to minimize conflicts and facilitate homeowner's usage. Perform the Work so as not to interfere with Homeowners' operations.

1. Provide not less than 72 hours' notice to homeowner of activities that will affect Homeowner's operations.

#### 1.7 WORK RESTRICTIONS

A. On-Site Work Hours: Contractor's normal working hours are acceptable. Any work expected during evenings or weekends should be coordinated with Homeowner's schedule.

1. Provide not less than 72 hours' notice to Homeowners of activities outside normal working hours.

B. Existing Utility Interruptions:

1. Notify Engineer and Sponsor not less than three days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Engineer's written permission.

#### 1.8 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
3. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

END OF SECTION 01003

## SECTION 01004 – MOBILIZATION AND DEMOBILIZATION

### PART 1 - GENERAL

#### 1.1 Description:

- A. Mobilization shall include all activities associated with transportation of all construction equipment, materials, supplies, appurtenances, facilities, and the like, staffed and ready for commencing and prosecuting the Work; and the subsequent demobilization and removal from the jobsite of said equipment, appurtenances, facilities, and the like upon completion of the Work.
- B. Mobilization shall also include assembly and delivery to the jobsite of equipment, tools, materials, and supplies necessary for the prosecution of work which are not intended to be incorporated in the Work; the clearing of and preparation of the Contractor's work area; the complete assembly, in working order, of equipment necessary to perform the required work; personnel services preparatory to commencing actual work; and all other preparatory work required to permit commencement of the actual work on construction items for which payment is provided under the Contract.
- C. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal and site clean up, of offices, buildings and other facilities assembled on the site specifically for this contract.
- D. This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the Contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

#### 1.2 WORK COVERED BY THIS SECTION:

- A. Organization and mobilization of the Contractor's forces.
- B. Transporting construction supplies and equipment to the jobsite.
- C. Transporting various tools, materials, and equipment to the jobsite.
- D. Erection of temporary buildings and facilities as required for field offices, staging, storage, and construction operations.

#### 1.3 RELATED SECTIONS:

None

#### 1.4 DELIVERY:

- A. Delivery to the jobsite of construction tools, equipment, plant, temporary buildings, materials, and supplies shall be accomplished in conformance with local governing ordinances and regulations.

#### 1.5 TOOLS AND SUPPLIES:

- A. Provide construction tools, equipment, materials, and supplies of the types and quantities necessary to facilitate the timely execution of the Work.

- B. Provide personnel, products, construction materials, equipment, tools, and supplies at the jobsite at the time they are scheduled to be installed or utilized.

#### 1.6 SITE ACCESS

- A. Contractor shall provide adequate access to the site at the locations shown on the attached map, or other access routes that may be negotiated with individual homeowners by the contractor with approval of the Sponsor or Contracting Officer.

#### 1.7 CLEAN UP

- A. Upon completion of the Work, remove construction tools, apparatus, equipment mobile units and buildings, unused materials and supplies, plant, and personnel from the jobsite.
- B. Restore all areas utilized for mobilization, storage, and construction access to their original, natural state or, when called for in the Contract Documents, complete such areas indicated.

#### 1.8 MEASUREMENT AND PAYMENT

- A. Measurement: The work of this Section will not be measured separately for payment.
- B. Payment: Mobilization will be paid for at the Contract Lump Sum price, and will include accumulating tools, apparatus, equipment, materials, and personnel, and performing final removal and demobilization.

END OF SECTION 01004

## SECTION 02102 – CLEARING AND GRUBBING

### PART 1 – GENERAL

#### 1.1 WORK INCLUDED IN THIS SECTION:

- A. Clearing and grubbing required for this work includes, but is not necessarily limited to:
- 1 Removal of trees, stumps, debris, and brush.
  - 2 Trimming and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal.
  - 3 Removal and disposal of miscellaneous abandoned subsurface structures and debris that may be discovered during the work.

#### 1.2 RELATED WORK IN OTHER SECTIONS:

- A. Excavating, Filling and Grading      Section B

#### 1.3 JOB CONDITIONS:

- A. Dust Control:
1. Use all means necessary to control dust on and near the work and on and near all borrow areas.

#### 1.4 LINES AND GRADES:

- A. All clearing and grubbing shall be done within the lines and grades shown on the drawings.

### PART 2 – INSTALLATION

#### 2.1 CLEARING:

- A. Contractor shall only clear trees, stumps, brush, snags and other vegetation when necessary for the installation of the overall project. All other trees and vegetation shall be left standing. Trees and vegetation to be left standing shall be protected from damage during the completion of the work.

#### 2.2 GRUBBING:

- A. In areas requiring excavation, Contractor shall grub and remove material to a depth necessary to complete excavation to the limits indicated and complete required work. Material to be grubbed shall include stumps, roots larger than one inch in diameter, matted roots, and any miscellaneous subsurface structures and debris that may be encountered. Trees shall be Trees and plants to be relocated: Any tree or plants moved shall be done in a timely manner so as not to delay construction progress. The Contractor shall take extra measures to protect trees during the relocation by erecting barricades, staking, trimming, etc. as required. Trees shall be completely removed with stump ground down to a minimum depth below the grade of six (6) inches.

2.3 PROTECTION:

- A. Contractor shall take precautions to protect any trees, vegetation, structures, benchmarks and survey stakes, and utilities not intended to be removed. Prior to beginning work, Contractor shall be responsible for field verifying that there are no utilities within the work area. Contractor shall be responsible for repairing and/or replacing, at no additional cost to the Sponsor, items that are damaged during construction that were not intended to be removed.

2.4 DISPOSAL OF MATERIAL:

- A. All materials resulting from clearing and grubbing activities shall be removed and disposed of in an acceptable manner at an acceptable facility conforming to all applicable regulations. Materials suitable for use as aquatic habitat enhancement (stumps, logs, etc.) shall be stockpiled as directed by the Engineer.

PART 3 – MEASUREMENT AND PAYMENT

3.1 METHOD OF MEASUREMENT:

- A. The quantity of Clearing and Grubbing will not be measured for payment unless the construction limits are changed. Clearing and Grubbing shall be considered subsidiary to Excavating, Filling, and Grading. No adjustment will be made for changes involving less than 0.1 acre (0.04 ha).

3.2 BASIS OF PAYMENT:

- A. The amount of work completed and approved, as stated above, shall be paid for as part of the contract lump sum price. Such payment shall constitute full compensation for all labor, equipment, tools and all other items necessary and incidental to completion of the work.
- B. In the event of a change in construction limits, the Contractor shall submit a unit price for Clearing and Grubbing to be approved by the Engineer.

END OF SECTION 02102

## SECTION 02200 – EXCAVATING, FILLING AND GRADING

### PART 1 – GENERAL

#### A.1 WORK INCLUDED IN THIS SECTION:

- A. Excavating, filling and grading required for this work includes, but is not necessarily limited to:
  - 1. Excavating, filling and backfilling for streambank stabilization.
  - 2. Rough and finish grading of streambank.
  - 3. Preparation of sub-grade for areas to be seeded, planted with trees and shrubs, and/or mulched.

#### 1.2 RELATED WORK IN OTHER SECTIONS:

- A. Clear and Grubbing: Section 02101

#### 1.3 JOB CONDITIONS:

- A. Dust Control:
  - 1. Use all means necessary to control dust on and near the work and on and near all offsite borrow areas, if such dust is caused by the Contractor's operations during performance of the work, or if resulting from the condition in which the Contractor leaves the site.
- B. Protection: Use all means necessary to protect all materials of this section before, during, and after installation, and to protect all objects designated to remain. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Sponsor. Protect tops, trunks and roots of existing trees on project site which are to remain.
- C. Notification: The Contractor shall notify the Engineer prior to installation of specified portions of the work to allow the inspector sufficient time to inspect the work and shall obtain approval of all material prior to commencing construction. Any portion of the work installed without inspection may be removed to allow for inspection. Any eventual difficulty or loss of time caused by the Contractor failing to meet permit requirements shall be borne solely by the Contractor.

#### 1.4 LINES AND GRADES:

- A. All excavation, filling and backfill shall be done to the lines and grades shown on the drawings.

#### 1.5 BENCH MARKS AND MONUMENTS:

- A. Maintain carefully all bench marks and reference points, which are shown on the drawings. The Contractor shall pay for the replacement of such reference points if disturbed by the Contractor during construction.

1.6 REFERENCES:

- A. The publications listed below form a part of this specification. The latest revision of the following standards shall apply to work hereunder:

Associated General Contractors of America, Inc.  
“Manual of Accident Prevention in Construction”

PART 2 – PRODUCTS

2.1 FILL MATERIAL, GENERAL:

- A. All fill material for embankment construction shall come from onsite unless otherwise specified by the engineer. All fill material shall be subject to approval of the Engineer.

2.2 IMPORTED FILL MATERIAL:

- A. If imported fill material is required to finish embankments or subgrade. The Contractor shall be responsible for providing a borrow area for imported fill.

2.3 TOPSOIL:

- A. All areas disturbed by construction operations, which are not to be paved or rocked under this contract, shall be provided with a 6-inch compacted layer of topsoil approved by the Engineer. Topsoil from areas within the project limits may be stockpiled and used where such topsoil is considered satisfactory to sustain plant growth. Additional materials, if required, shall be brought to final grade, as shown on the drawings, and shall be lightly compacted.

2.4 OTHER MATERIAL:

- A. All other materials not specifically described, but required for proper completion of the work of this section, shall be as selected by the Contractor, subject to the approval of the Engineer.

PART 3 – INSTALLATION

3.1 GENERAL:

- A. Familiarization: Prior to all work in this section, become thoroughly familiar with the site, the site conditions, and all portions of the work falling within this section.
- B. Backfilling Prior to Approval
1. Do not allow or cause any of the work installed to be covered up or enclosed by work of this section prior to all required inspections, tests, and approval.
  2. Should any of the work be so enclosed or covered up before it has been approved, uncover all such work at no additional cost to the Sponsor.
- C. Site Drainage: During construction, excavation and fill shall be performed in a manner and sequence that will provide drainage at all times.

### 3.2 EXCAVATION AND FILLING:

- A. General: Excavation, as hereinafter specified, shall comprise the satisfactory removal and disposition of all material. After topsoil removal has been done, excavation of every description and of whatever substances encountered, shall be performed to the lines and grades indicated on the drawings. After backfilling of key trenches has been completed, any surplus of excavated material shall be known as "waste" and shall be disposed of at the location approved by the Engineer. Any additional fill material required, that is not available from excavation within the immediate project area, shall be obtained from borrow area locations approved by the Engineer. During construction, excavation, key trenching, and backfilling shall be performed in a manner and sequence that will provide drainage at all times.
1. Classification of Excavation: Excavation shall be unclassified.
  2. Earth and Rock Excavation shall be unclassified. Earth and Rock Excavation shall include earth, clay, silt, sand, gravel, hard pan, loose shale, loose stone masses, boulders, rock material in ledges, bedded deposits, unstratified masses, and conglomerate deposits so firmly cemented that they possess the characteristics of solid rock, which cannot be removed without systematic drilling.
- B. Depressions Resulting from Removal of Obstructions: Where depressions result from, or have resulted from, the removal of surface or subsurface obstructions, open the depression to equipment working width and remove all debris and soft material, as directed by the Engineer.
- C. Sloped Surfaces: Sloped ground surfaces steeper than 1 vertical to 4 horizontal, on which fill is to be placed, shall be plowed, stepped (benched) or broken up, in such manner that the fill material will bond with the existing surface.
- D. Fill and Backfill: All fill or backfill material shall consist of earth or other approved material with all undesirable material removed. Unless otherwise specified, all fill shall be uniformly placed uniform layers to achieve a 3H:1V slope and then compacted by equipment.
- E. Over-excavation: Backfill and compact all over-excavation areas, as specified for fill, at no additional cost to the Sponsor.
- F. Unfavorable Weather: Ground frozen or too wet - do not place, spread, or roll any fill material during unfavorable weather conditions. Do not resume operations until moisture content and fill density are satisfactory to the Engineer.
- G. Overbank flow: To prevent erosion of finished slopes from overland flow, provide berms and rock chutes or slope drain devices along sections of disturbed bank where drainage is towards the disturbed bank.
- H. Soften Sub-grade: Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and re-compact as specified for fill and compaction below.
- I. Dewatering: Provide and maintain at all times during construction, ample means and devices with which to promptly remove and dispose of all water from every source entering the

excavations or other parts of the work. Dewater by means, which will insure dry excavation and the preservation of the final lines and grades of bottoms of excavation.

### 3.3 BACKFILLING:

- A. General Backfill: Unless otherwise specified, all channel slopes shall be shaped to a 3H:1V slope which smoothly transitions into the existing slope at each end of the project.
- B. Responsibility of Contractor for Backfill Settlement:
  - 1. The Contractor shall be responsible for the satisfactory compaction and maintenance of all backfill of any description required under this contract. If, prior to the final acceptance of this entire contract, any backfilled areas are found to have settled, they shall immediately be reworked by the Contractor and restored to the specified grades.

### 3.4 FINISH GRADING

- A. The finishing of side slopes, cuts and fills shall be to reasonably smooth uniform surfaces that will merge with the adjacent terrain without noticeable break. Finishing shall be done in accordance with grades shown on the drawings, and without variations that are readily discernible.
- B. Finish grading shall be performed to the lines and grades shown on the drawings. All areas disturbed by the Contractor during construction operations shall be bladed smooth, shaped, and compacted, as specified herein before. The finished grade shall provide for topsoil that is free from perennial vegetation and is loosened to depth of twelve (12) inches for areas disturbed under this contract.
- C. Newly graded areas shall be protected from traffic, erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. Damaged areas shall be revegetated, if necessary.
- D. Haul roads into the work sites shall be ripped to loosen compacted soils prior to removing equipment from the project site.

### 3.5 BORROW AND SPOIL AREAS:

- A. Borrow and spoil areas shall be graded to promote positive drainage at the completion of the work. No borrow or spoil slopes shall be greater than 3 horizontal to 1 vertical.
- B. Erosion controls shall be implemented to prevent erosion into waterways.
- C. Borrow and spoil areas shall be seeded and mulching shall be applied at the completion of construction.

### 3.6 CLEANING UP:

- A. Upon completion of the work of this section, immediately remove all debris and excess earth materials from the site.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT:

- A. Work will be measured by bid quantity of cubic yards of soil. Contractor shall maintain weight tickets for soil trucked to the site. Material moved on site by earth moving equipment will be paid at the contract unit price and units indicated.

4.2 Basis of Payment:

- A. The amount of work completed and approved, as stated above, shall be paid for at the contract unit price. Such payment shall constitute full compensation for all labor, equipment, tools and all other items necessary and incidental for the completion of the work.

END OF SECTION 02200

## SECTION 02900 – PROTECTION OF SOIL AND VEGETATION

### PART 1 – GENERAL

#### 1.1 WORK INCLUDED IN THIS SECTION:

- A. This section governs measures and sets environmental protection performance, restoration, and design standards for protecting and restoring native soils and vegetation that are impacted by heavy construction equipment and other site construction activities.

#### 1.2 RELATED WORK IN OTHER SECTIONS:

- A. Excavating, Filling and Grading      Section 02200

#### 1.3 REFERENCES:

- A. The following standards are referenced directly in this section. The latest version of these standards shall be used.
  1. NRCS Planning and Design Manual, NRCS, 1998
  2. Home Landscapes, Planting, Design and Management, E.C. Martin, Jr., and Pete Melby, Timber Press
  3. American Standard for Nursery Stock

### PART 2 – PRODUCTS:

#### 2.1 STANDARDS

- A. All materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. The use of any herbicide shall follow directions given on the herbicide label. In the case of a discrepancy between these specifications and the herbicide label, the label shall prevail.

#### 2.2 MATERIALS

- A. Prior to delivery of any materials to the site, submit to the Engineer a complete list of all materials to be used during this portion of the work. Include complete data on source, amount and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Engineer.

### PART 3 – INSTALLATION

#### 3.1 GENERAL

- A. Selective Clearing is removal of undesirable trees and underbrush around specimen trees and brush as designated on the drawings and/or instructed by the Engineer.

- B. Soil and specimen trees as shown on the drawings and/or instructed by the Engineer to save, shall be protected from damage incident to clearing, grubbing, and construction operations.

3.2 PLANT PRESERVATION

- A. The Engineer shall mark all plant materials on the site to be saved and/or relocated. No plant material may be removed from the site prior to the Engineer's inspection. All plant material to be saved/or relocated will be protected from injury to the roots and to the branches, to a distance five feet beyond the drip-line. No grading, trenching, pruning, or storage of materials may go in this area, except as approved by the Engineer.
- B. Trees and plants to be relocated: Any tree or plants moved shall be done in a timely manner so as not to delay construction progress. The CONTRACTOR shall take extra measures to protect the tree during the relocation by erecting barricades, staking, trimming, etc. as required.

3.3 FIELD QUALITY CONTROL

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with this type of work and the type of materials being used. Said person shall be competent at identification of soils and plant materials to be removed and to be preserved during the season (summer, winter) work is to be completed. Said person shall also direct all work performed under this section.

END OF SECTION 02900

## SECTION 02901 – CHANNEL BANK VEGETATION – NRCS PRACTICE CODE 322

SUMMARY: The work described herein consists of furnishing, transporting, and installing seeds, trees, and other materials as required for the rehabilitation and establishment of stream side vegetation. It is the Contractor's responsibility to perform soil preparation, native grass planting, bare root seedling planting, management, and such additional extra and incidental work as may be necessary to complete the work in accordance with the specification and plans. The Contractor shall furnish required materials, equipment, tools, labor, and incidentals, unless otherwise provided in the specifications or Drawings.

### PART 1 – GENERAL

#### 1.1 DESCRIPTION:

A. Planting required—both native grass and trees—is indicated as plantings. Plantings on the Drawings and, in general, include, but are not limited to:

1. Procurement, storage and protection of listed grass seed.
2. Preparation of planting sites.
3. Planting areas.
4. Contractor maintenance of plantings installed by Contractor.

B. Related Work in Other Sections:

1. Clearing and Grubbing: Section 02102
2. Excavating, Filling and Grading Section: Section 02200

#### 1.2 QUALITY ASSURANCE–NATIVE GRASS SEEDING

A. Qualification of Workmen: Provide at least one person who shall be present during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct work performed under this Section.

B. Standards:

1. Seeds shall meet or exceed the specification of Federal, State, and County laws requiring inspection for plant disease and insect control.
2. All seeds shall be true to species and shall be tagged with the name and percent pure live seed in accordance with accepted industry standards for grass seed.
3. Seed shall meet or exceed specifications of Federal, State and County laws requiring inspection for plant disease and insect control and shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act.

1.3 QUALITY ASSURANCE–TREE PLANTING

A Qualification of Workmen: Provide at least one person who shall be present during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct work performed under this Section.

B Standards:

1. Bare root seedlings and cuttings must be grown from locally adapted seed or cuttings of known origin and meet height and caliper standards listed in the NRCS Kansas Forestry Technical Note KS-9.

1.4 JOB CONDITIONS:

A. Time of Planting:

1. The Contractor shall complete native grass seeding immediately following construction during favorable weather conditions.
2. The Contractor shall complete tree plantings during normal and accepted planting seasons listed in the NRCS Kansas Forestry Technical Note KS-9 and during favorable weather conditions.

1.5 SUBMITTALS:

A. Materials list include, but not limited to, the following:

1. Quantities, Signed and Dated by Supplier(s).

1.6 DELIVERY, STORAGE AND HANDLING:

A. Delivery, Storage and Handling:

1. The Contractor shall deliver seed, bare root seedlings, and cuttings to the project site in good condition.
2. The Contractor shall use all means necessary to protect the seed, bare root seedlings, and cuttings before, during, and after installation and to protect the installed work and materials of other trades.

B. Replacement: In the event of damage during construction, the Contractor shall immediately make repairs and replant necessary to the approval of the Engineer and at no additional cost to the Sponsor.

1.7 SITE DISTURBANCES:

A. It is the Contractor's responsibility to take precautions insuring that equipment and vehicles do not disturb or damage existing grading, seeding, or other site improvements.

- B. The Contractor shall repair and/or return to original condition any damage at no cost to Sponsor.

## PART 2 – MATERIALS

### 2.1 PLANT MATERIALS:

- A. General: Furnish seed that is true to name and type representative of the species or variety.
- B. Plant materials
  - 1. Native grass seeding shall follow recommendations in NRCS Critical Area Planting – Practice 342.
  - 2. Bare Root seedlings and tree cuttings shall follow recommendations in Kansas Forestry Technical Note No. KS-9.
- C. Mulching: Other materials not specifically described but required for a complete and proper planting installation shall be as selected by the Contractor, subject to the approval of the Engineer

### 2.2 WATER:

- A. Water, hose, and other watering equipment required for the work shall be furnished by the Contractor.

### 2.3 HERBICIDE:

- A. Herbicides shall be applied according to manufactures label instructions and adhere to State, Federal, and local laws.

## PART 3 – INSTALLATION

### 3.1 SURFACE CONDITIONS:

- A. Inspection:
  - 1. Prior to work of this Section, carefully inspect the installed work of other trades and verify that such work is complete to the point where these installations may properly commence.
  - 2. Verify that planting, seeding and related construction work may be completed in accordance with the original design and the referenced standards.
- B. Discrepancies:
  - 1. In the event of discrepancy, immediately notify the Engineer.
  - 2. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

3.2 SPREADING OF TOP SOIL:

A. Finish Grading: Finish grading will be performed according to Section 02002 of these Specifications, in graded areas.

3.3 PLANTING NATIVE GRASS SEED:

A. Preparation:

1. Roughly grade seed beds with equipment, leave few ridges and depressions and making areas into a continuous, firm plane that ensures proper drainage.

B. Planting:

1. Native grass seed shall be planted by hand broadcast method as approved by the Engineer. Seeding of native grass should follow recommendation in NRCS Critical Area Planting.
2. For site-specific native grass mix, reference the KS-ECS-4 form found in the design packet.

3.4 PLANTING BARE ROOT SEEDLING

A. Preparation

1. Roughly grade channel bank slope with equipment, leave few ridges and depressions and making areas into a continuous, firm plane that ensures proper drainage. The planting area must be free of living sod and perennial weeds before planting. Vegetation from native grass seeding is acceptable.

B. Planting

1. Cuttings and bare root seedlings should follow recommendations in Kansas Forestry Technical Note KS-9.
2. For site-specific information on cutting and bare root seedlings, reference the KS-ECS-5 form found in the design packet.

3.5 MULCHING:

A. Mulching shall immediately follow seed planting.

B. Mulch shall be an organic substance capable of eventual complete decay. The mulch shall be native prairie hay, brome hay, or straw and shall be applied at a rate of 4,000 pounds per acre. Native prairie hay is the preferred mulch.

C. Mulch shall be evenly distributed over the entire seeding area.

3.6 INSPECTION:

- A. In addition to normal progress inspections, NRCS shall schedule and conduct the following formal inspections, giving the Engineer at least 24 hours prior notice of readiness for inspection:
1. Inspection of plant locations, to verify compliance with the Drawings.
  2. Final inspection after completion of native grass seeding and final inspection after completion of cuttings and bare root seedling plantings; schedule these inspections sufficiently in advance, and in cooperation with the Engineer, so that final inspections may be conducted within 24 hours after completion of native grass seeding and tree planting.
  3. Final inspection at the end of the maintenance period provided that previous deficiencies have been corrected. The maintenance period consists of the first three years following native grass seeding and tree planting.

3.6 CLEAN-UP:

- A. During the progress of this work, and upon completion, the Contractor shall thoroughly clean the project area and remove and properly dispose of resultant dirt, debris and other waste materials.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT:

- A. The quantity of seeding and mulching will be measured in pounds of pure live seed and mulch applied. Seeding and Mulching shall be considered subsidiary to grass planting and the overall construction project.

4.2 BASIS OF PAYMENT:

- A. The amount of work completed and approved, as stated above, shall be paid in lump sum as part of the contract unit price. Such payment shall constitute full compensation for all labor, equipment, tools and all other items necessary and incidental for the completion of the work. Two payment requests should be made based on native grass seeding and tree planting complete. The first payment request shall follow native grass seeding and mulching. A separate payment request shall be made after the cuttings and bare root seedlings are planted.

END OF SECTION 02901

## SECTION 02906 – MULCHING – NRCS PRACTICE CODE 484

### PART 1 – GENERAL

#### 1.1 DESCRIPTION:

A. Mulching is the application of organic material to the soil to protect it from raindrop and sheet flow erosion. Mulching shall be used on cover crop planted areas and tree plantings when so directed by the engineer. In general, mulching shall include, but is not limited to:

1. Procurement, storage and protection of all listed material
2. Maintaining plantings installed by Contractor.

B. Related Work in Other Sections:

1. Excavating, Filling and Grading Section: Section 02102
2. Channel Bank Vegetation: Section 02901

C. Purpose:

1. This practice shall be used to reduce soil erosion, aid in seed germination and establishment of plant cover, and conserve soil moisture.

#### 1.2 QUALITY ASSURANCE:

A. Qualification of Workmen: Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this Section.

B. Standards:

1. All mulch materials shall be native prairie hay, brome hay, or wheat straw. All materials should be of good quality and free from mold or decay.

#### 1.3 JOB CONDITIONS:

A. Site preparations: Soil surface shall be prepared prior to the application of mulch in order to achieve optimum contact between soil and mulch. All areas to be mulched should be reasonably free from rills and gullies.

B. Time of mulching: All mulching shall be performed during favorable weather conditions immediately following final grading.

#### 1.4 SUBMITTALS:

A. Materials list shall include, but not limited to, the following:

1. Hay or straw quantities by weight with scale ticket, Signed and Dated by Supplier(s).

2. As-Installed Plan: During course of the installation, carefully record in red outline on a print of the planting drawings actual mulching location.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Pick up materials in accordance with any special handling instructions and deliver to project site in good condition.
- B. Use all means necessary to protect plant materials before, during, and after installation and to protect the installed work and materials of all other trades.

1.6 SITE DISTURBANCES:

- A. Take precautions to insure that equipment and vehicles do not disturb or damage existing grading, seeding, plantings or other site improvements.
- B. Repair and/or return to original condition any damage at no cost to Owner.

PART 2 – MATERIALS

2.1 MULCH MATERIALS.

- A. General: Materials shall consist of natural, biodegradable material such as plant residue to include, but not limited to, the following:
  1. Native Prairie Hay
  2. Brome Hay
  3. Wheat Straw
- B. All materials shall be free from diseased plant residue and noxious weed seed.
- C. Miscellaneous Materials: All other materials not specifically described but required for a complete and proper planting installation shall be as selected by the Contractor, subject to the approval of the Engineer

PART 3 – INSTALLATION

3.1 SURFACE CONDITIONS:

- A. Inspection:
  1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where these installations may properly commence.
  2. Verify that planting, seeding and related construction work is completed in accordance with the original design and referenced standards.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Engineer.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 GRADE SURFACE:

- A. Finish Grading: All finish grading will be performed according to Section 02002 of these Specifications, in areas that are graded.
- B. Fine Grading: Fine mechanical grading shall only be conducted on areas where it can be done safely without posing a danger or hazard to the equipment and operator.

3.3 APPLICATION TIMING:

- A. Mulch shall be applied upon completion or within 24 hours of cover crop seeding.

3.4 APPLICATION RATE:

- A. Mulch shall be applied at the rate of 4,000 pounds per surface acre.

3.5 CRIMPING:

- A. If required by the engineer, mulch shall be crimped immediately after spreading with a mulch crimper or equivalent device consisting of a series of dull flat blades with notched edges spaced approximately 8 inches apart. The mulch shall be crimped into the soil to a depth of 1 to 3 inches. Crimping shall only be performed in areas where it can be done safely, without posing a danger or hazard to the operator or equipment.

3.6 INSPECTION:

- A. In addition to normal progress inspections, schedule and conduct the following formal inspections, giving the Engineer at least 24 hours prior notice of readiness for inspection:
  1. Final inspection after completion of seeding, planting and mulching; schedule this inspection sufficiently in advance, and in cooperation with the Engineer, so that final inspection may be conducted within 48 hours after completion of mulching.
  2. Final inspection at the end of the maintenance period provided that all previous deficiencies have been corrected.

3.7 MAINTENANCE:

- A. General: The Contractor shall inspect the site within 48 hours of any precipitation event that produces 0.5 inches or more of rain in a 24 hour period. Mulch that is displaced shall be reapplied and anchored. Maintenance shall be completed as soon as possible with consideration of site conditions.

B. Maintain all seeding, planting, and mulching starting with the planting operations and continuing for 30 calendar days after all mulching is complete and approved by the Engineer.

C. Work Included:

1. Protect all planted areas against damage, including erosion, and drought by providing and maintaining proper safeguards such as periodic watering.

D. Extension of Maintenance Period: Continue the maintenance period at no additional cost to the Owner until all previously noted deficiencies have been corrected, at which time the final inspection shall be made.

3.8 CLEAN-UP:

A. During the progress of this work, and upon completion, thoroughly clean the project area and remove and properly dispose of all resultant dirt, debris and other waste materials.

END OF SECTION 02906