

Big Sugar Creek at Historic Powell Bridge Bank Stabilization Project

EWP DSR 119-16-004

SE¹/₄ NE¹/₄-S21-T22N-R30W

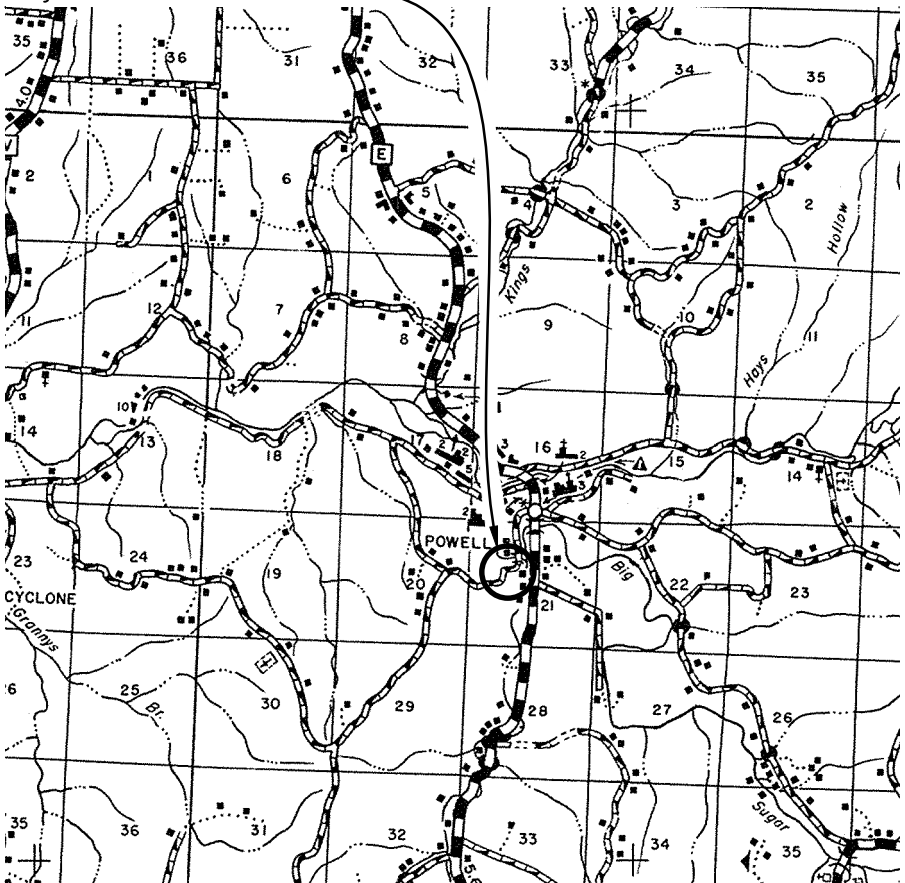
Lat=36.61585 E; Long= 94.18208 W

McDonald County, Missouri



LOCATION IN MISSOURI

Project Location



NOTES:

1. All construction shall be completed in compliance with the conditions of the U.S. Army Corps of Engineers General Permit (GP) 41.
2. Missouri law requires that any person making or beginning any excavation notify all underground facility owners/operators which may be affected by said excavation at least three but not more than ten working days in advance, except in the case of an emergency. A "working day" is everyday, except Saturday, Sunday, or a legally declared local, state or federal holiday.
3. To make this notification and locate all utilities at the site or on ingress & egress roads prior to excavation, contact the Missouri One Call system and submit a locate request. The phone number for the Missouri One Call System is 800-344-7483 (1-800-DIG-RITE).
4. Contact county road department prior to starting work to confirm tonnage limitations on local bridges.

The contact numbers for technical assistance concerning the plan set are as follows:

Sponsor Liaison: Keith Linqvist, McDonald Co. Presiding Commissioner
(417) 223-7530

Government Liaisons: John Feistner (417) 839-9416
Michael Malone (417) 831-5246



The excavator is responsible for having all utilities located at the site or on ingress road prior to beginning work. Call 1-800-DIG-RITE (344-7483) or 811 or click www.mo1call.com 3 days before you dig! The landowner shall ensure that the excavator completes the utility locate request.

ESTIMATED PROJECT QUANTITIES	
Length of Stone Toe Protection	120 LF
Riprap Armament Volume	730 CY
Riprap Armament Weight	1,095 TN*
Estimated Excavation	120 CY
Seeding and Mulching	1 AC
Pollution Control	1 LS

* Estimate based on 1.5 tons per cubic yard of placed and compacted rock

SHEET INDEX

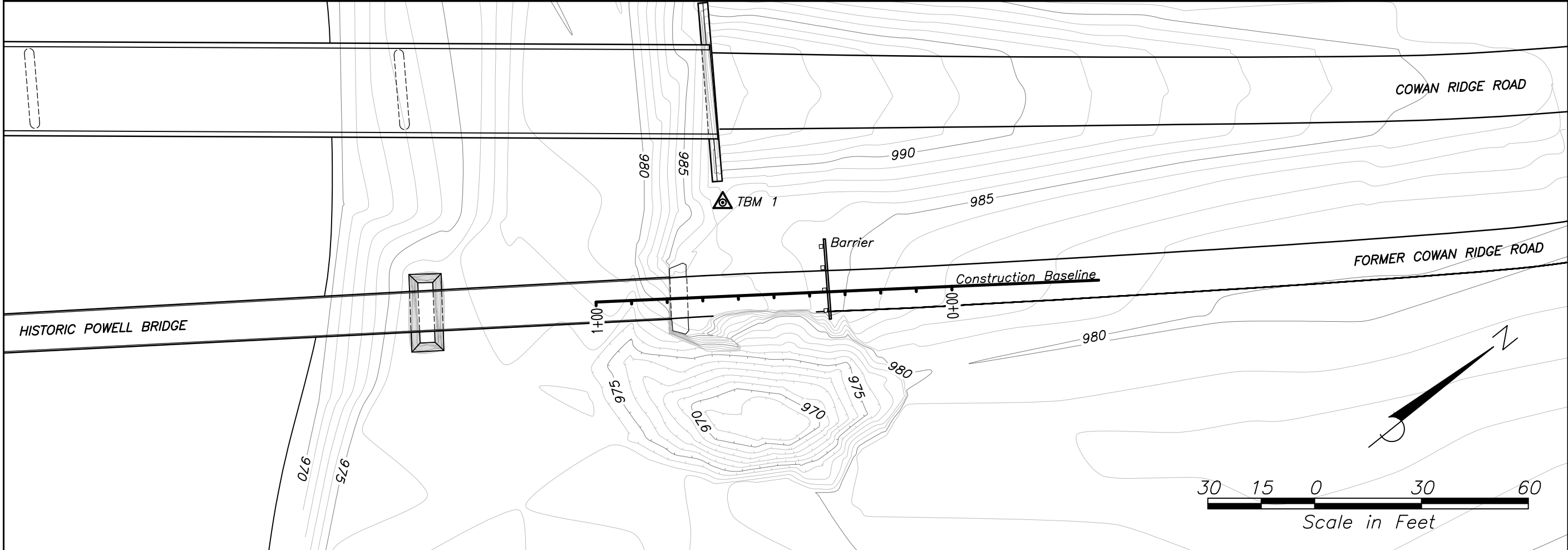
SHEET-1-COVER SHEET
SHEET-2-EXISTING CONDITION
SHEET-3-PLANNED CONSTRUCTION
SHEET-4-CROSS SECTION DATA
SHEET-5-PROJECT DETAILS
SHEET-6-POLLUTION CONTROL

Designed	MJM	Date	12/16
Drawn	MJM	Date	12/16
Checked	JMF	Date	12/16
Approved	[Signature]	Date	12/8/16

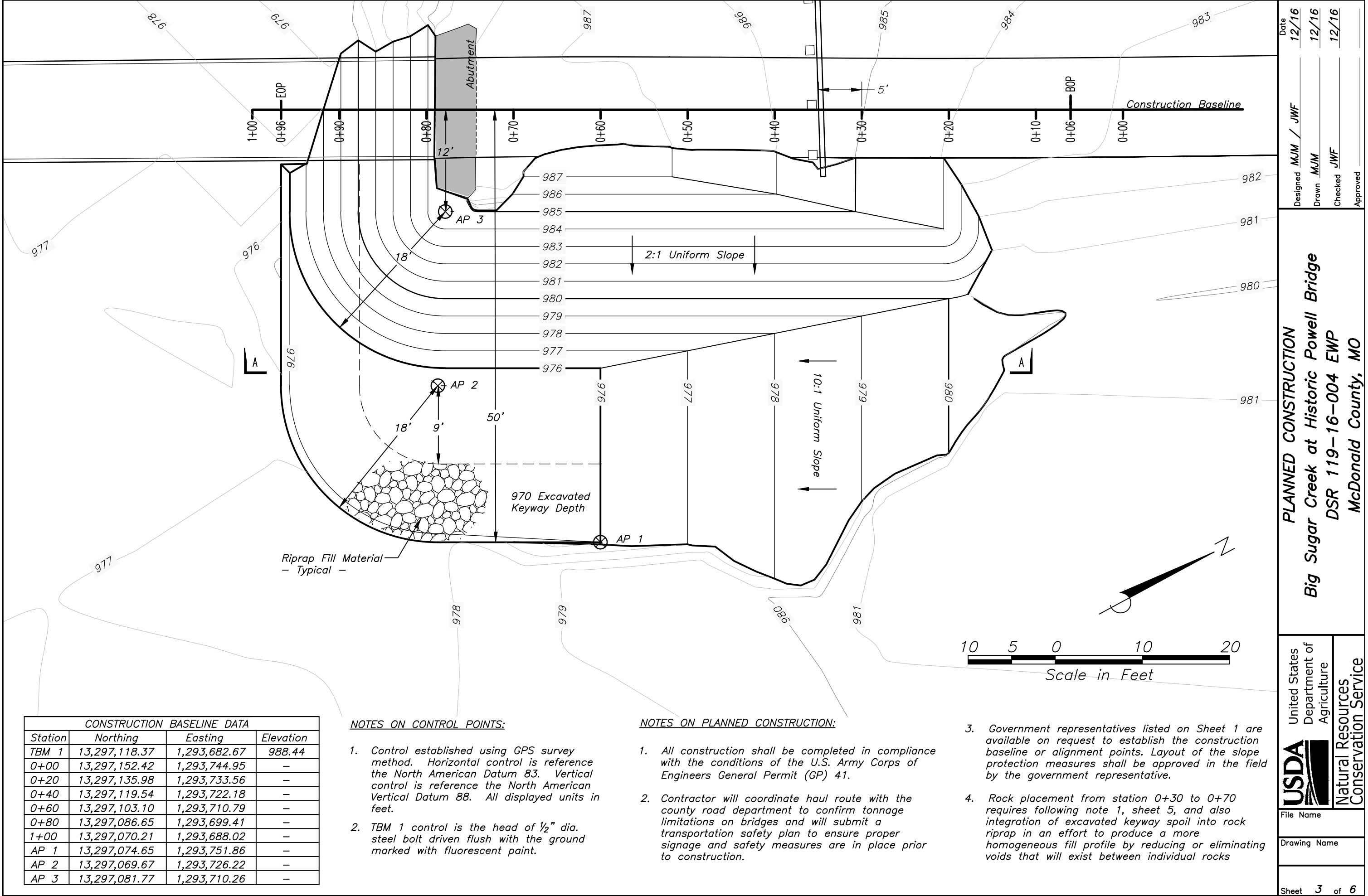
COVER SHEET
Big Sugar Creek at Historic Powell Bridge
DSR 119-16-004 EWP
McDonald County, MO

United States
Department of
Agriculture
USDA
Natural Resources
Conservation Service

File Name
Drawing Name
Sheet 1 of 6



 United States Department of Agriculture		EXISTING CONDITION Big Sugar Creek at Historic Powell Bridge DSR 119-16-004 EWP McDonald County, MO		Designed <u>MJM</u>	Date <u>12/16</u>
File Name				Drawn <u>MJM</u>	<u>12/16</u>
Drawing Name				Checked <u>JWF</u>	<u>12/16</u>
Sheet 2 of 6				Approved _____	_____



CONSTRUCTION BASELINE DATA			
Station	Northing	Easting	Elevation
TBM 1	13,297,118.37	1,293,682.67	988.44
0+00	13,297,152.42	1,293,744.95	-
0+20	13,297,135.98	1,293,733.56	-
0+40	13,297,119.54	1,293,722.18	-
0+60	13,297,103.10	1,293,710.79	-
0+80	13,297,086.65	1,293,699.41	-
1+00	13,297,070.21	1,293,688.02	-
AP 1	13,297,074.65	1,293,751.86	-
AP 2	13,297,069.67	1,293,726.22	-
AP 3	13,297,081.77	1,293,710.26	-

NOTES ON CONTROL POINTS:

- Control established using GPS survey method. Horizontal control is reference the North American Datum 83. Vertical control is reference the North American Vertical Datum 88. All displayed units in feet.
- TBM 1 control is the head of 1/2" dia. steel bolt driven flush with the ground marked with fluorescent paint.

NOTES ON PLANNED CONSTRUCTION:

- All construction shall be completed in compliance with the conditions of the U.S. Army Corps of Engineers General Permit (GP) 41.
- Contractor will coordinate haul route with the county road department to confirm tonnage limitations on bridges and will submit a transportation safety plan to ensure proper signage and safety measures are in place prior to construction.

- Government representatives listed on Sheet 1 are available on request to establish the construction baseline or alignment points. Layout of the slope protection measures shall be approved in the field by the government representative.
- Rock placement from station 0+30 to 0+70 requires following note 1, sheet 5, and also integration of excavated keyway spoil into rock riprap in an effort to produce a more homogeneous fill profile by reducing or eliminating voids that will exist between individual rocks

United States
Department of
Agriculture



File Name

Drawing Name

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PLANNED CONSTRUCTION

Big Sugar Creek at Historic Powell Bridge

DSR 119-16-004 EWP

McDonald County, MO

Date

12/16

Designed

MJM / JWF

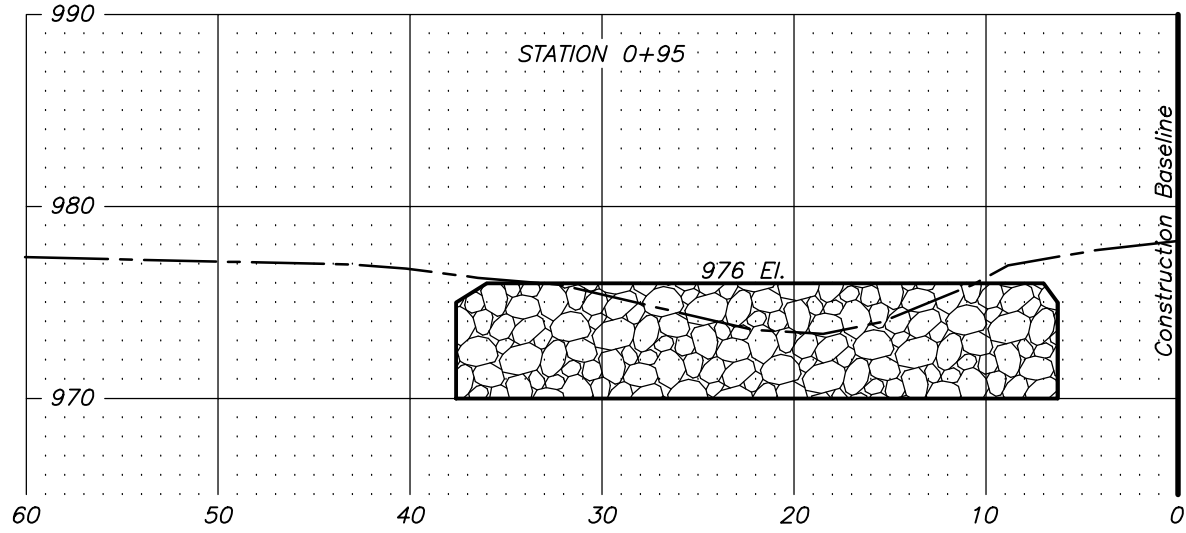
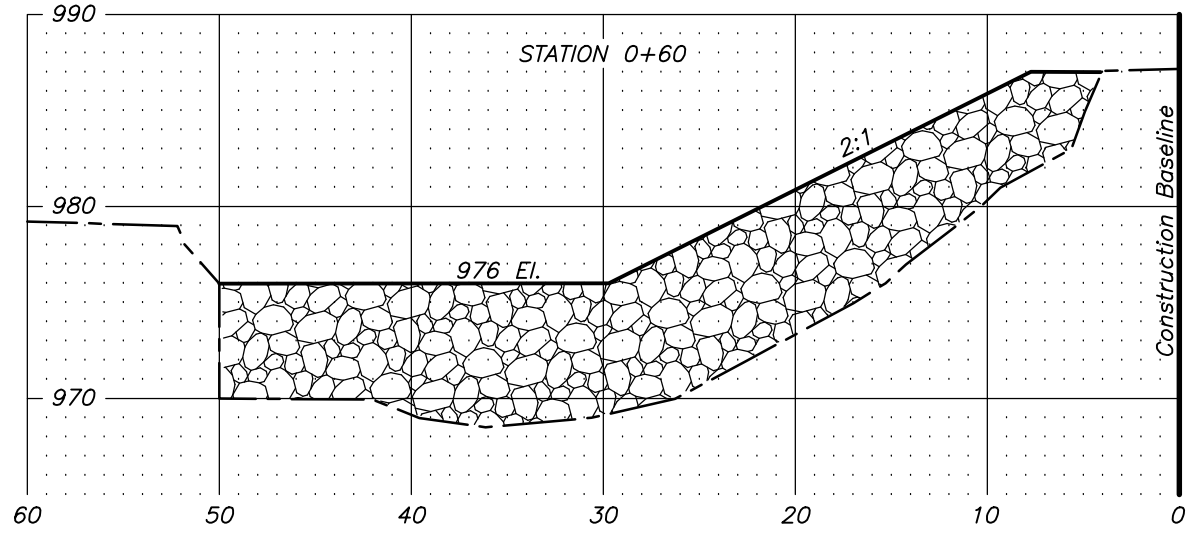
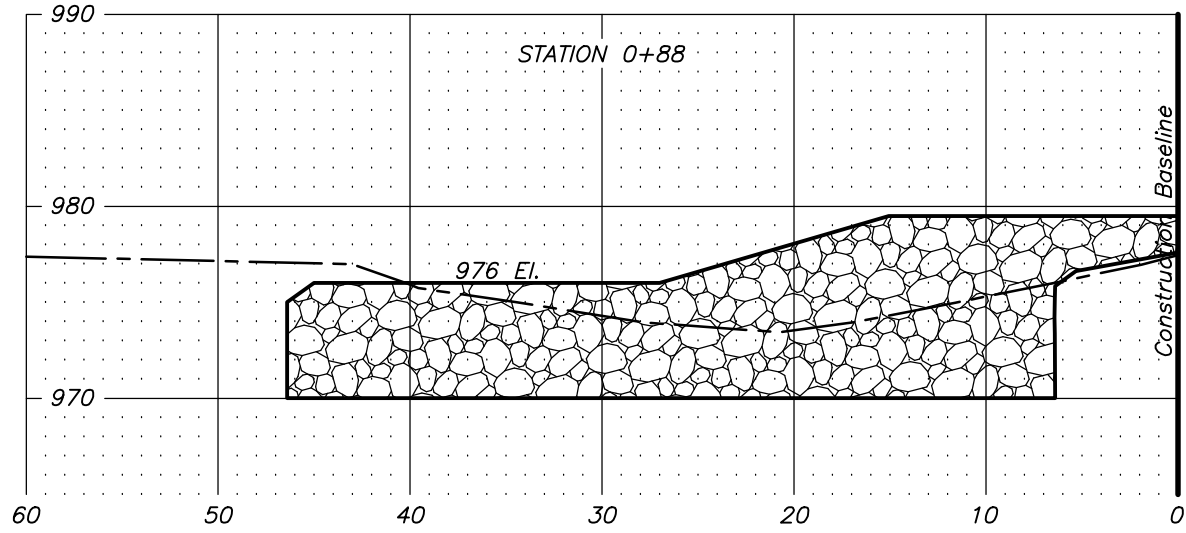
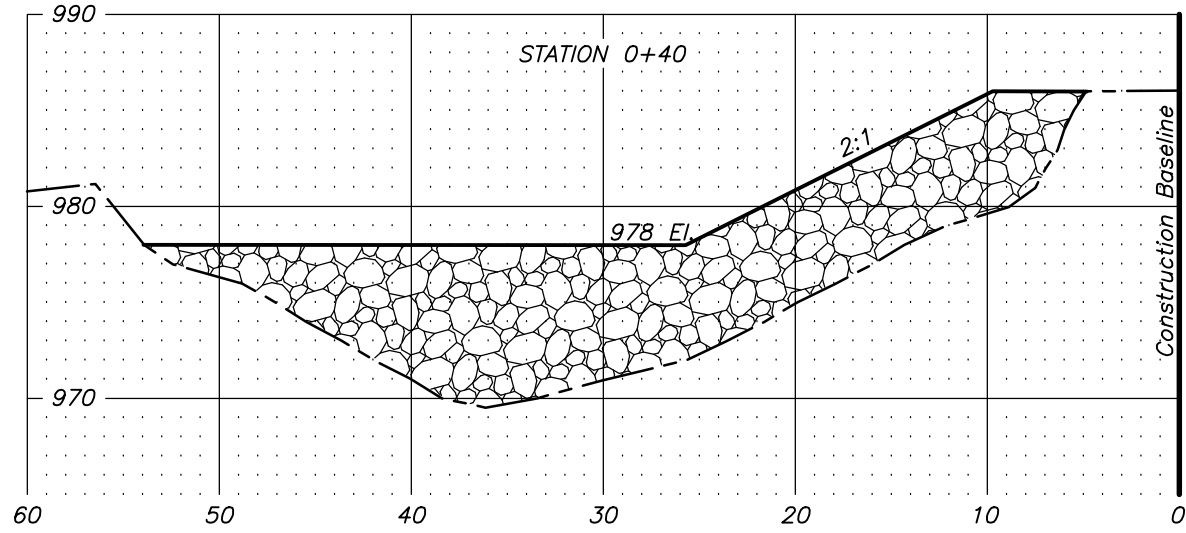
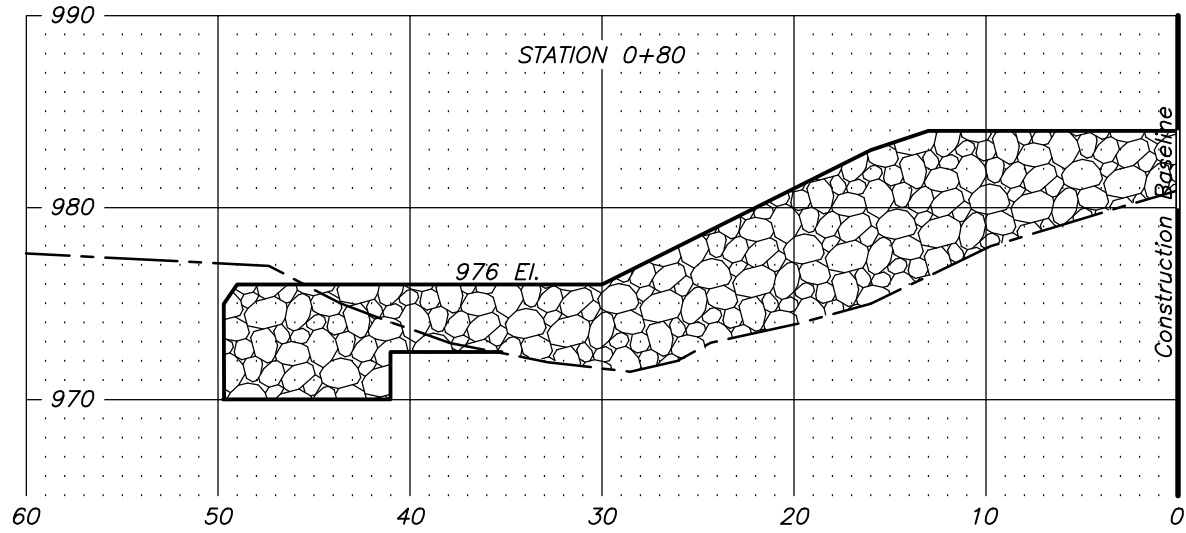
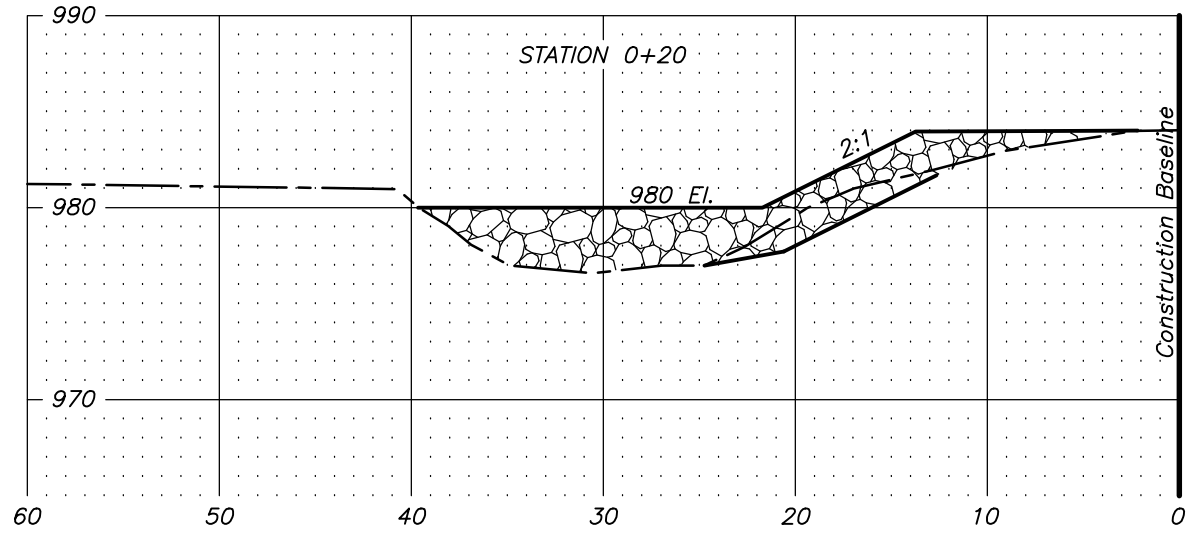
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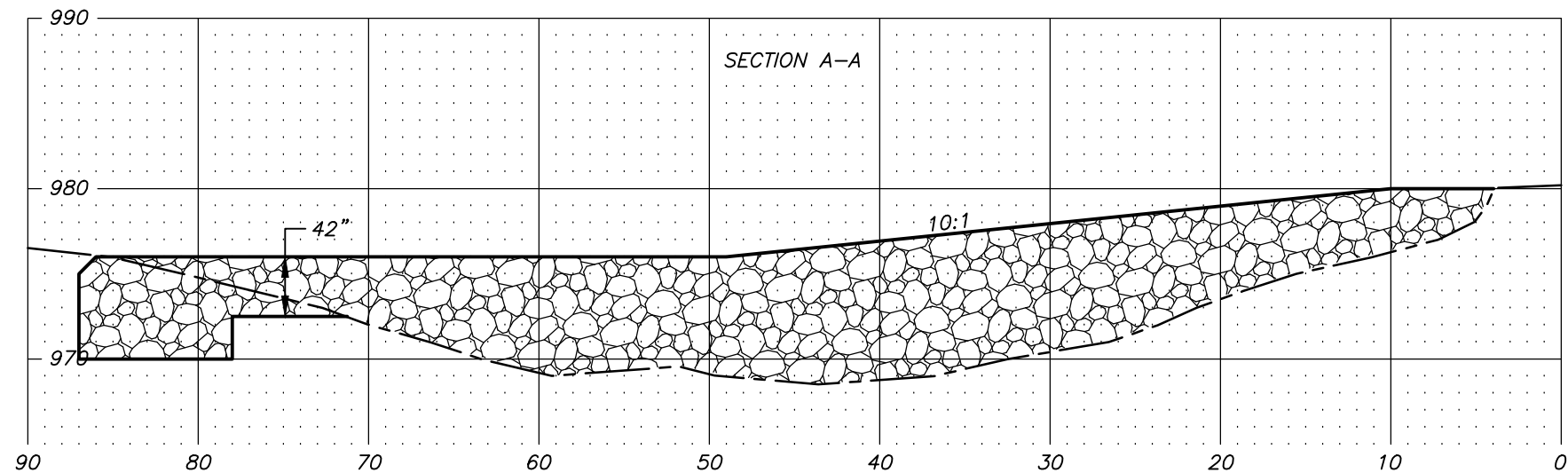
CROSS SECTION DATA

Big Sugar Creek at Historic Powell Bridge

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McDonald County, MO





NOTES ON PLACEMENT:

1. All rock shall be delivered and placed in a manner that will ensure that the installed measures are 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. Larger rock shall be placed at the toe of the rock protection measures to form a stable base. End-dumping of rocks without any further compactive effort to ensure consolidation is not an acceptable method of construction.
2. Slopes flatter than specified in this plan set are allowed, however, no adjustments to quantities will be made. All stone shall be placed by equipment on the surfaces and to the depths specified. The channel shall be excavated to the cross sections and grades shown on the plans. The excavated surfaces shall be reasonably smooth. The channel bank alignment shall be uniform.
3. Rock Blanket shall be placed as shown in the plans, with an angle of repose no steeper than 1.5:1. Voids encountered in forming a uniform slope for the rock blanket shall be filled with offsite rock.
4. It is the intent of the designer that the entirety of the fill profile be constructed with rock riprap armament to guard against the effects of long term erosion of the adjacent unconsolidated and erosion prone soil.
5. Extreme care must be taken when placing rock adjacent to the existing stone and concrete abutment. Rock may not be dumped within 6 feet of the stone and concrete structure and all rock placed against the structure will be dropped no more than 24 inches. Damage to this existing structure must be avoided.

NOTES ON VEGETATION:

1. Trees and woody debris that interferes with the placement of rock to the depths specified shall be disposed with coordination and approval of the county commission and/or government representative. No trees shall be removed from the site for the benefit of the contractor.
2. For additional details on vegetation removal and disposition, refer to the governing General Permit (GP) 41.

NOTES ON ROCK GRADATION:

1. Rock riprap is the source material to achieve the lines and grades described in this plan set. Rock riprap shall be sound, durable stone meeting the requirements of MoDOT Type 4 Ditch Liner with the approximate gradation show below.
2. The source, type, and gradation of rock shall be reviewed and approved by the government representative prior to procurement or placement.
3. Rock riprap shall not be placed until the foundation is completed and the subgrade surfaces have been inspected and approved by the government representative.

GRADATION OF ROCK	
PERCENT PASSING BY SIZE	SIZE (INCHES)
100	2.0 D ₅₀ = 30"
50-80	1.4 D ₅₀ = 21"
25-50	D ₅₀ = 15"
10-30	.5 D ₅₀ = 8"
0-5	.2 D ₅₀ = 3"

NOTES ON SPOIL AND DISTURBED EARTH SURFACES:

1. Separate topsoil from all on-site excavate. Use separated topsoil as a final cover over disturbed and low bqnk areas to provide a sufficient substrate for seed.
2. During construction, spoil will be stockpiled away from concentrated flow areas. After rock riprap operations are completed, excess spoil shall be spread uniformly in designated areas and along the rock armament toe.
3. Seed and mulch all disturbed areas due to construction and equipment operation to include the equipment staging area according to plan specifications.
4. Fences removed to enable contractor access shall be replaced by the contractor to an equal or improved condition upon completion of the rock fill operations.

PROJECT DETAILS

Big Sugar Creek at Historic Powell Bridge

DSR 119-16-004 EWP

McDonald County, MO

United States
Department of
Agriculture



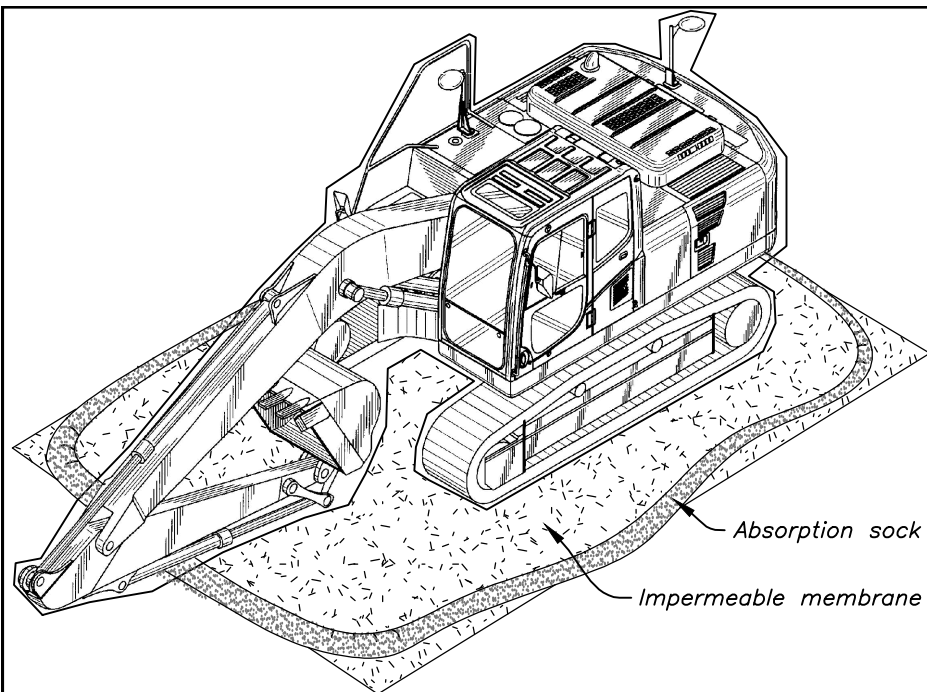
Natural Resources
Conservation Service

File Name

Drawing Name

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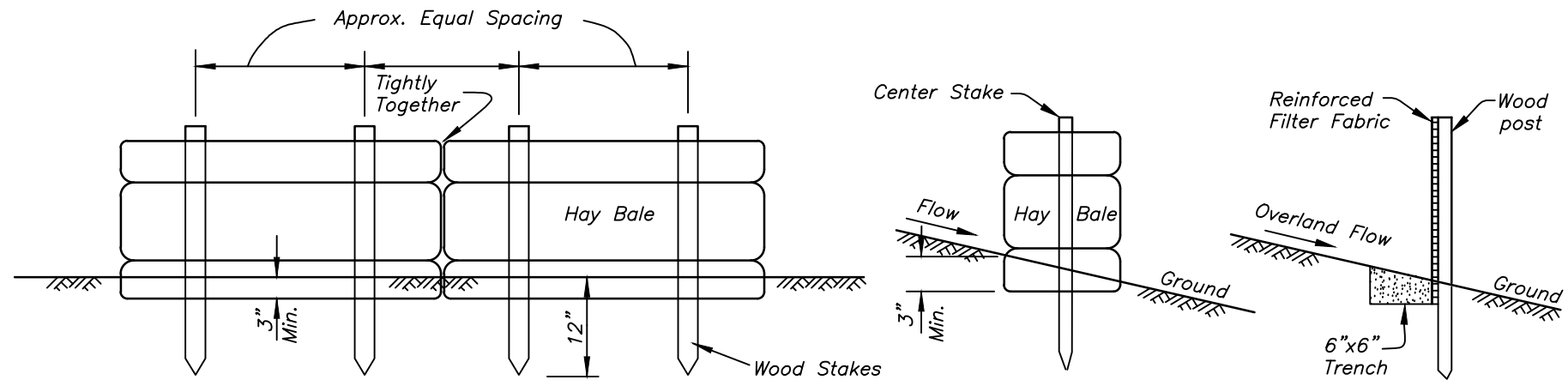
Date	12/16
Designed	MJM
Drawn	MJM
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Approved	



**EXAMPLE EQUIPMENT REFUELING
& MAINTENANCE STATION**

NOTES ON PETROLEUM, OIL, AND LUBRICANT CONTAINMENT:

1. The contractor shall provide a site-adapted plan for the prevention of petroleum, oil, and lubricants (POL) used onsite from entering the stream channel in accordance with the COE general permit.
2. Equipment refueling and maintenance will be consistently conducted in a centralized location where spill control materials are present.
3. When equipment is shut down for maintenance or refueling operations, place drip pans, diapers, or absorbents under vehicles to mitigate spills.
4. Recycle solvents, coolants, and lubricants to the maximum extent possible. Label and date all waste accumulation containers and keep POL waste products separate from other refuse.



STRAW OR GRASS HAY BALES

SILT FENCE

NOTES ON EROSION PREVENTION:

1. For large disturbed areas that shall be left open for an extended period of time, silt fence may be required to reduce erosion and the transport of solids into the stream.
2. Post spacing shall be as needed to properly support silt fence or hay bales but shall not exceed 8 feet for the silt fence.
3. Wood posts shall be a minimum $1\frac{1}{2}$ " x $1\frac{1}{2}$ " for softwoods such as pine and a minimum $1\frac{1}{8}$ " x $1\frac{1}{8}$ " for hardwoods such as oak.

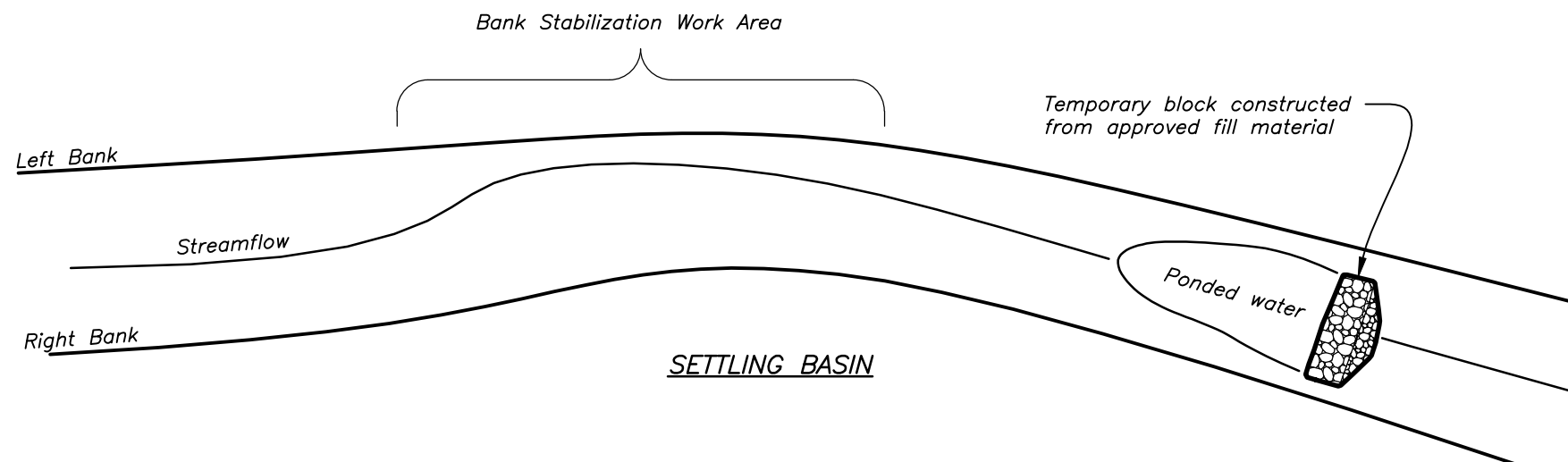
NOTES ON DETENTION OF SUSPENDED SOLIDS:

1. For non-navigable streams, a settling basin may be appropriate to reduce suspended solids from being transferred downstream.
2. Construct the settling basin by constructing a temporary dam immediately downstream of the project site. The temporary dam shall be constructed of rock rip-rap or other approved fill materials.
3. Near the end of the project, remove the temporary dam, restoring normal flow to the watercourse. Reuse the fill material to complete the planned stabilization work.

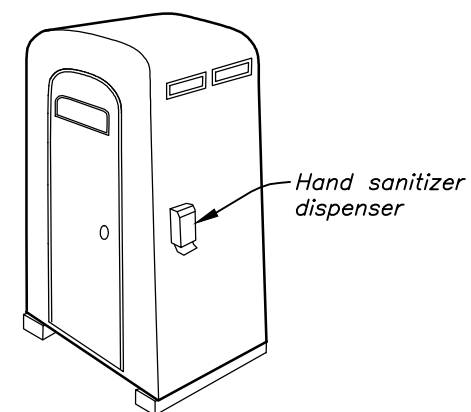
NOTES ON SITE SANITATION:

1. The contractor shall provide adequate and readily accessible sanitation facilities as required by the Occupational Safety and Health Administration.
2. Portable toilets shall be present at the rate of one (1) portable toilet per fifteen (15) onsite workers of the same gender.
3. The portable toilet will be installed as a part of mobilization and will be removed from the site during demobilization.
4. The portable toilet will be maintained in a clean, sanitary, and serviceable condition during the period of construction.
5. A hand washing station or antibacterial gel dispenser shall be located in the vicinity of the portable toilet.
6. A trash collection point shall be established onsite for use by the workforce, and all generated trash will be collected and removed from the site weekly.

~ DRAWINGS NOT TO SCALE ~



SETTLING BASIN



TYPICAL PORTABLE TOILET

Date	12/16
Designed	MJM
Drawn	MJM
Checked	JWF
Approved	

POLLUTION CONTROL
Big Sugar Creek at Historic Powell Bridge
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McDonald County, MO



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