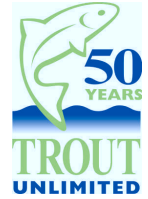




Trinidad / Purgatoire River Reach 4 Demonstration Project



Project Concept & Preliminary Design

Prepared by

 **FIN-UP** Habitat Consultants, Inc.

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Sept. 29, 2010

Trinidad / Purgatoire River Reach 4 Demonstration Project

Goals and Objectives:

Enhance approximately 2,750 ft (½ mile) of the Purgatoire River in downtown Trinidad, Colorado.

Provide velocity shelter, cover, and quality usable habitat for resident trout during the high flow summer months through the installation of in-channel habitat features (see below).

- ✓ 4 full-channel boulder cross-vanes to create new pool habitat.
- ✓ 8 boulder J-Hook vanes to protect banks and provide cover.
- ✓ 40 boulder clusters to provide pocket water habitat in riffles.
- ✓ 3 short boulder vanes to protect existing quality features.
- ✓ 70 ft of large wood bank-full benches utilizing existing trees.
- ✓ 2 large wood / boulder J-Hook vanes for habitat complexity.

Construction of a new handicap accessible trail along the Purgatoire River to provide fishing access for persons with disabilities. Three handicap accessible river fishing sites will be constructed adjacent to newly installed habitat features in the project reach.

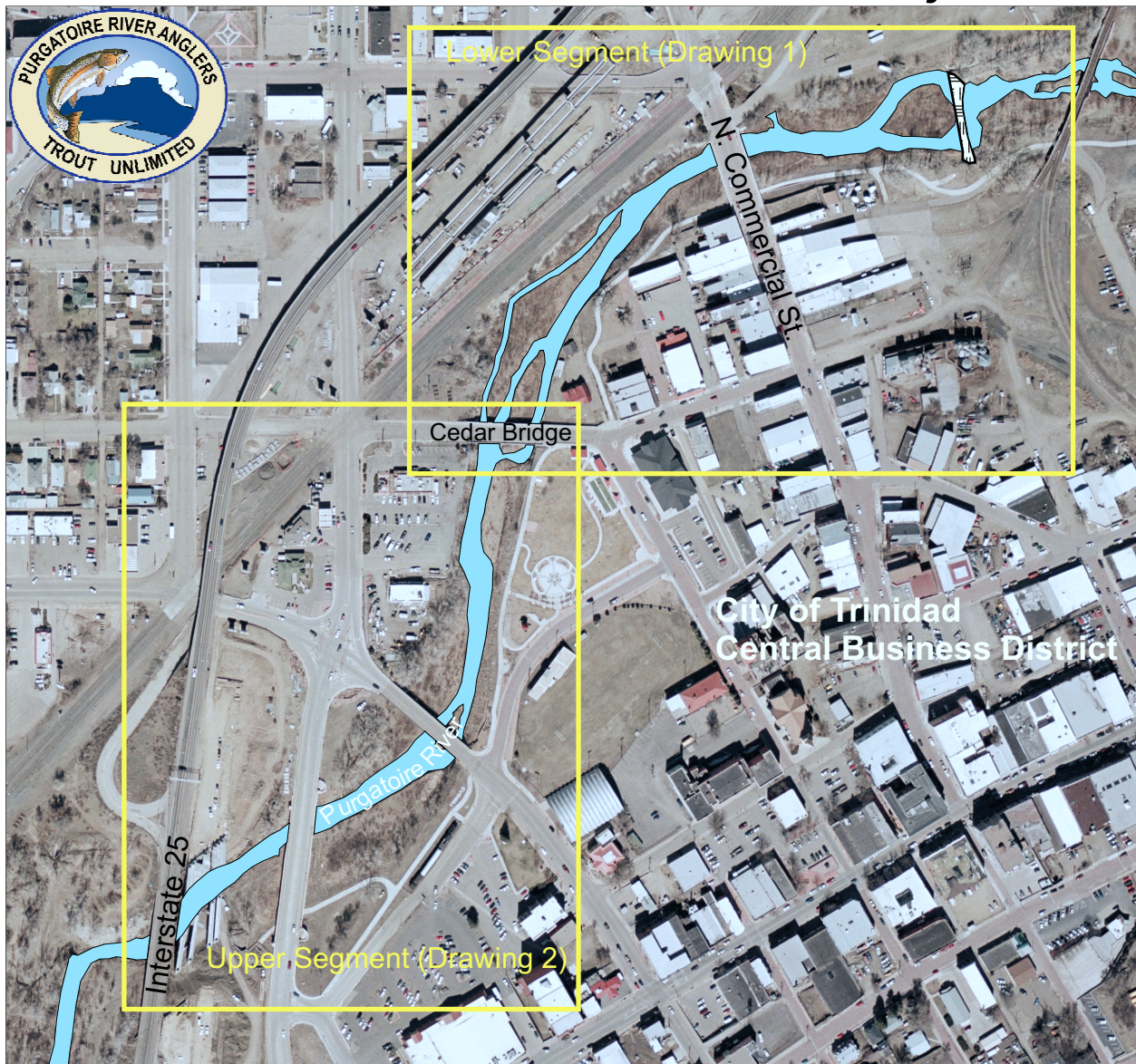
Materials & Equipment:

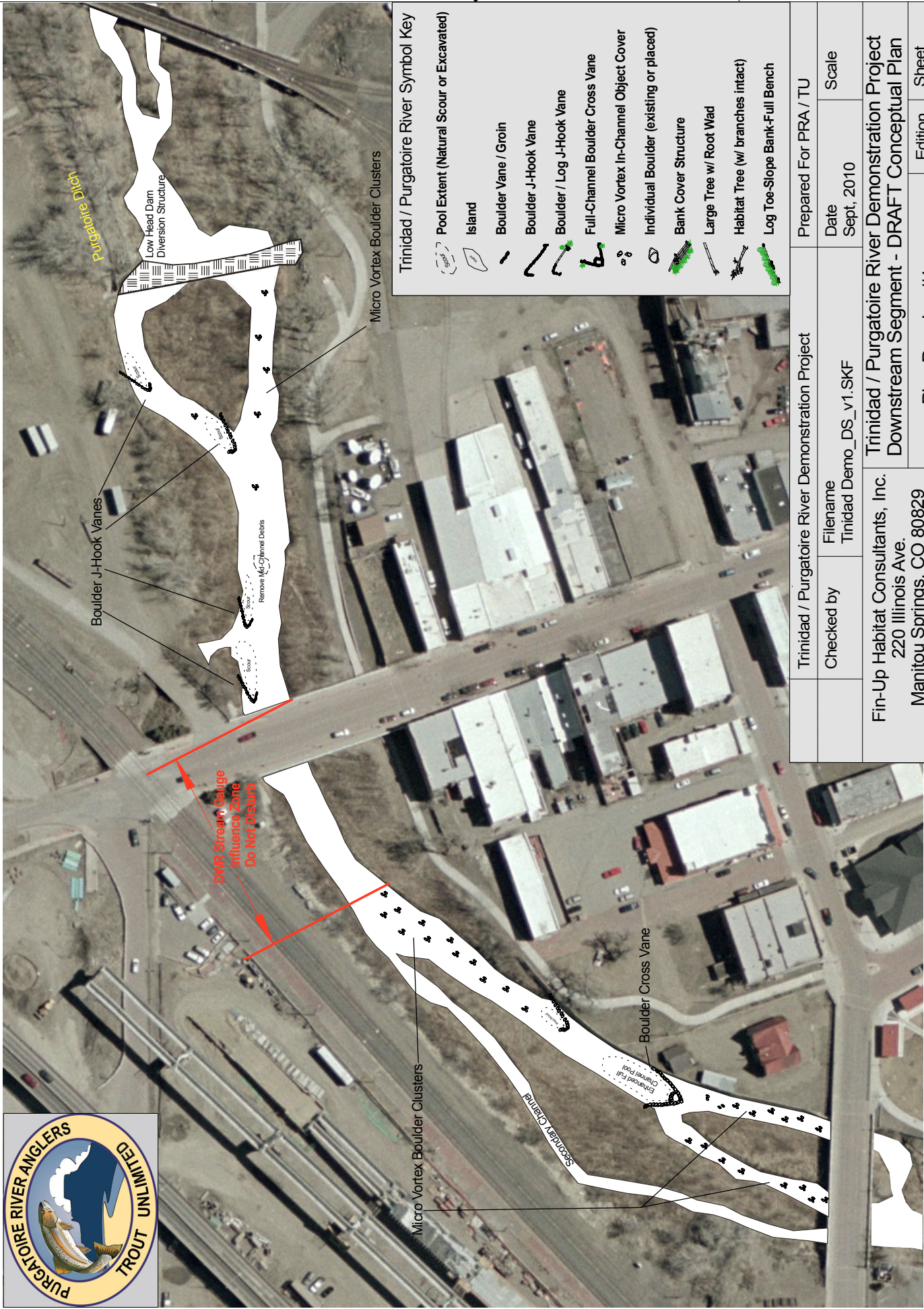
- ✓ 650 boulders (Approximately 1 yd³ to 1½ yd³ each)
- ✓ 5 Cottonwood trees (dead cottonwood is available in the project reach)
- ✓ 10 MR-1 Manta-Ray dead-man anchors rigged with 20ft x ¼" stainless steel wire rope.
- ✓ Gravel Breeze or equivalent for handicap access trail
- ✓ Timbers for construction of handicap accessible areas
- ✓ PC-150 or equivalent Excavator with a hydraulic thumb
- ✓ JD – 624H Loader or equivalent
- ✓ Dump Truck

Estimated Project Cost: \$120,000.00 - \$150,000.00

Depending on boulder costs and type of materials utilized for the handicap access trail.

Trinidad / Purgatoire River Reach 4 Demonstration Project

















Trinidad / Purgatoire River Symbol Key	
	Pool Extent (Natural Scour or Excavated)
	Island
	Boulder Vane / Groin
	Boulder J-Hook Vane
	Boulder / Log J-Hook Vane
	Full-Channel Boulder Cross Vane
	Micro Vortex In-Channel Object Cover
	Individual Boulder (existing or placed)
	Bank Cover Structure
	Large Tree w/ Root Wad
	Habitat Tree (w/ branches intact)
	Log Toe-Slope Bank-Full Bench

Trinidad / Purgatoire River Demonstration Project		Prepared For PRA / TU	
Checked by	Filename Trinidad Demo_DS_v1.SKF	Date	Scale
Fin-Up Habitat Consultants, Inc. 220 Illinois Ave. Manitou Springs, CO 80829 (719) 332-2550		Sept, 2010	
Trinidad / Purgatoire River Demonstration Project Downstream Segment - DRAFT Conceptual Plan		Plan Drawing #1	Sheet Edition Ver. 1.0 1

Trinidad / Purgatoire River Symbol Key

-  Pool Extent (Natural Scour or Excavated)
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Trinidad / Purgatoire River Demonstration Project		Prepared For PRA / TU	
Checked by	Filename Tinad Demo_US_v1.SKF	Date Sept, 2010	Scale
Fin-Up Habitat Consultants, Inc. 220 Illinois Ave. Manitou Springs, CO 80829 (719) 332-2550		Trinidad / Purgatoire River Demonstration Project Upstream Segment - DRAFT Conceptual Plan	
Plan Drawing #2		Edition Ver. 1.0	Sheet 1

Bank-Full Bench / Toe-Slope Stabilization Plan View

FIN-UP Habitat Consultants, Inc.
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P. Gallagher 01/2008

SIZE: 2" = 50' H.D. P.W. NO. Drawing #1 REV.

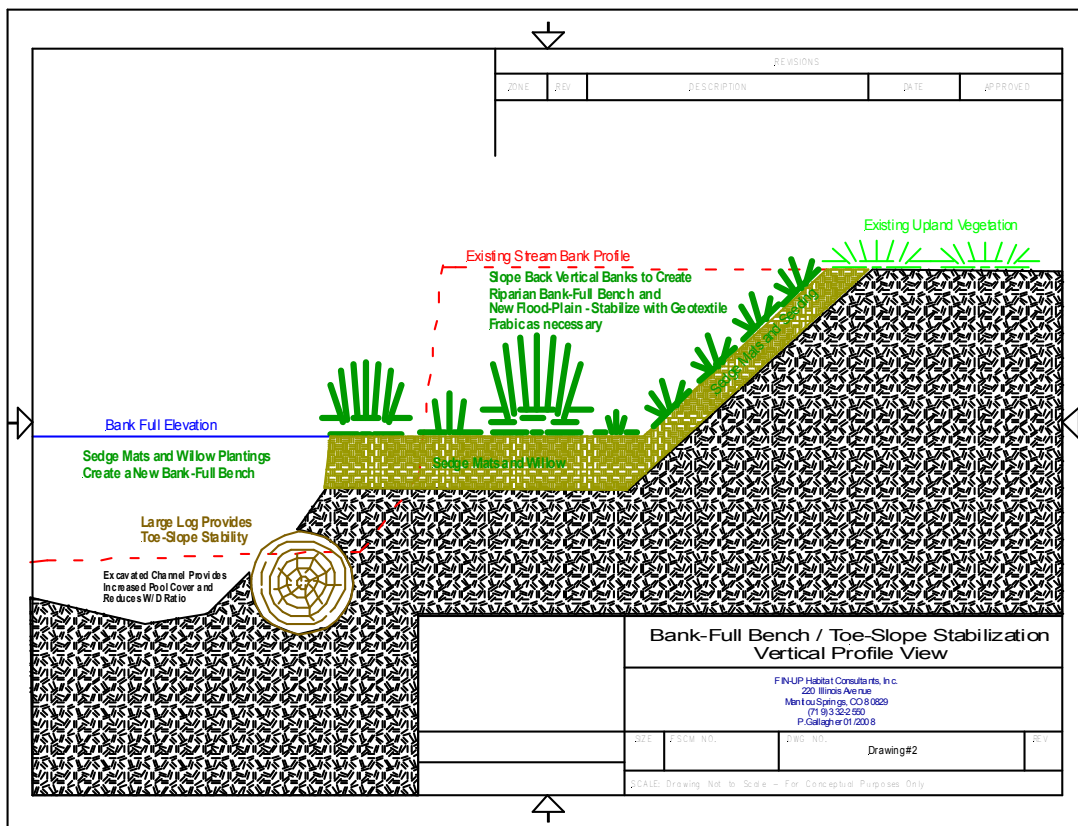
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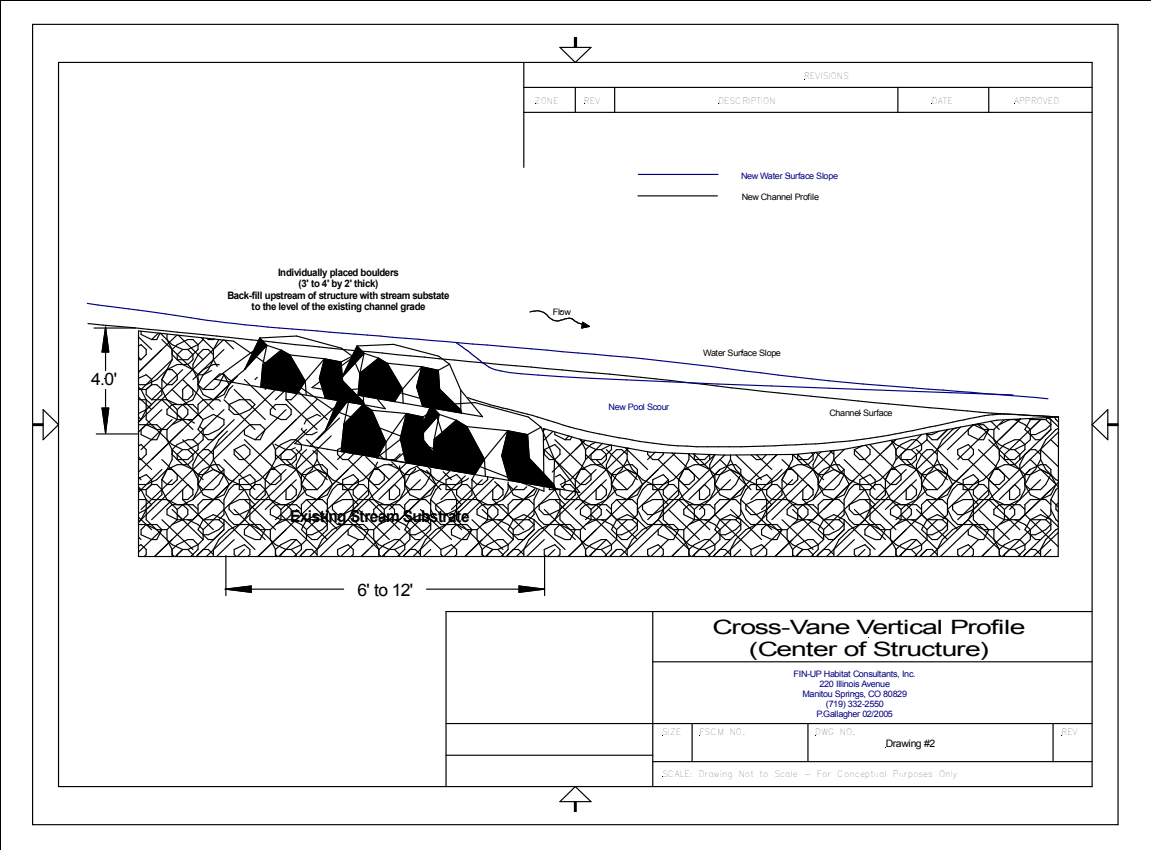
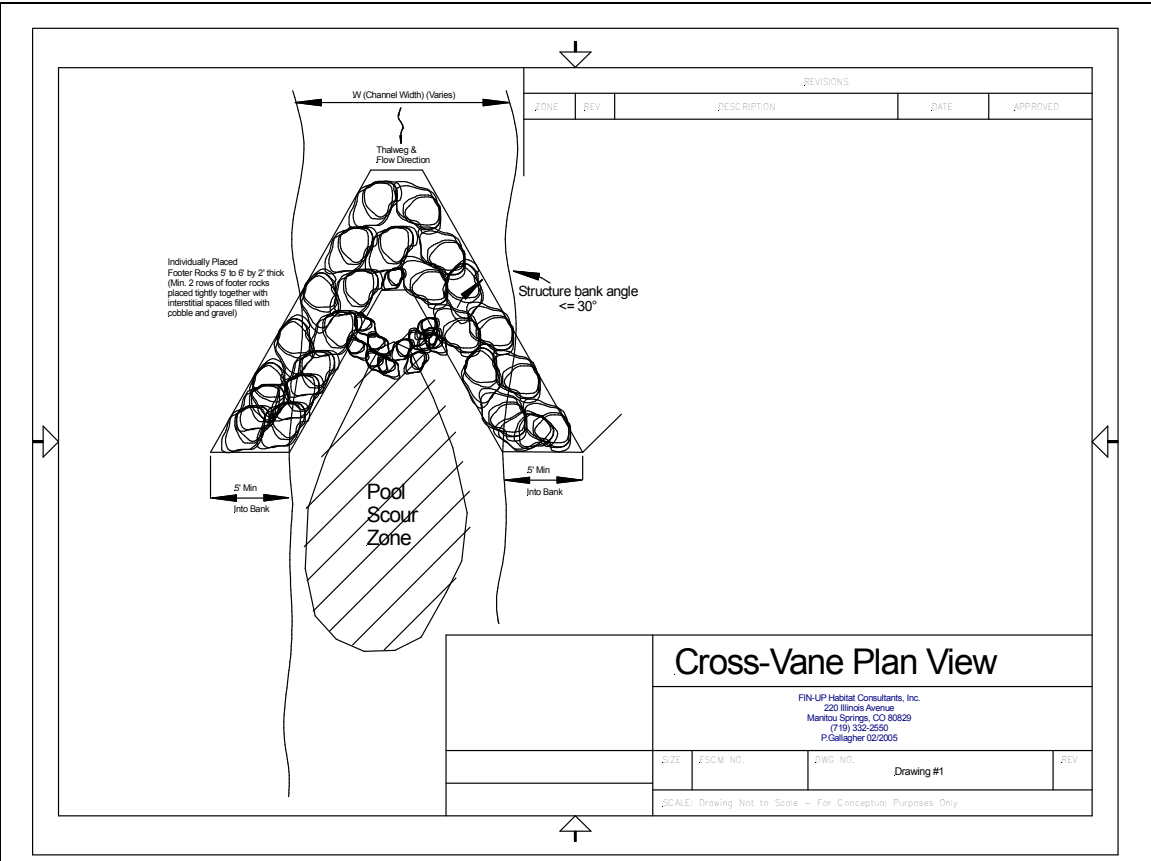
Bank-Full Bench / Toe-Slope Stabilization Vertical Profile View

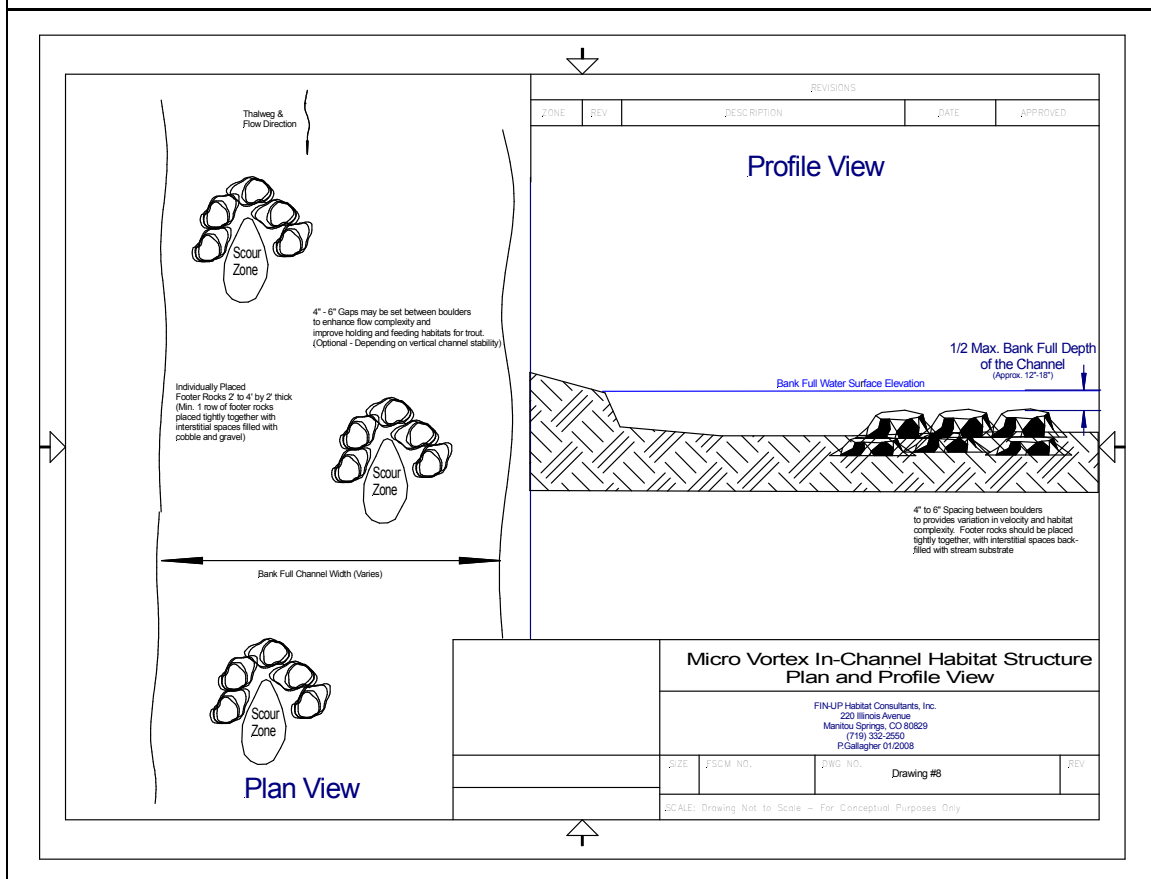
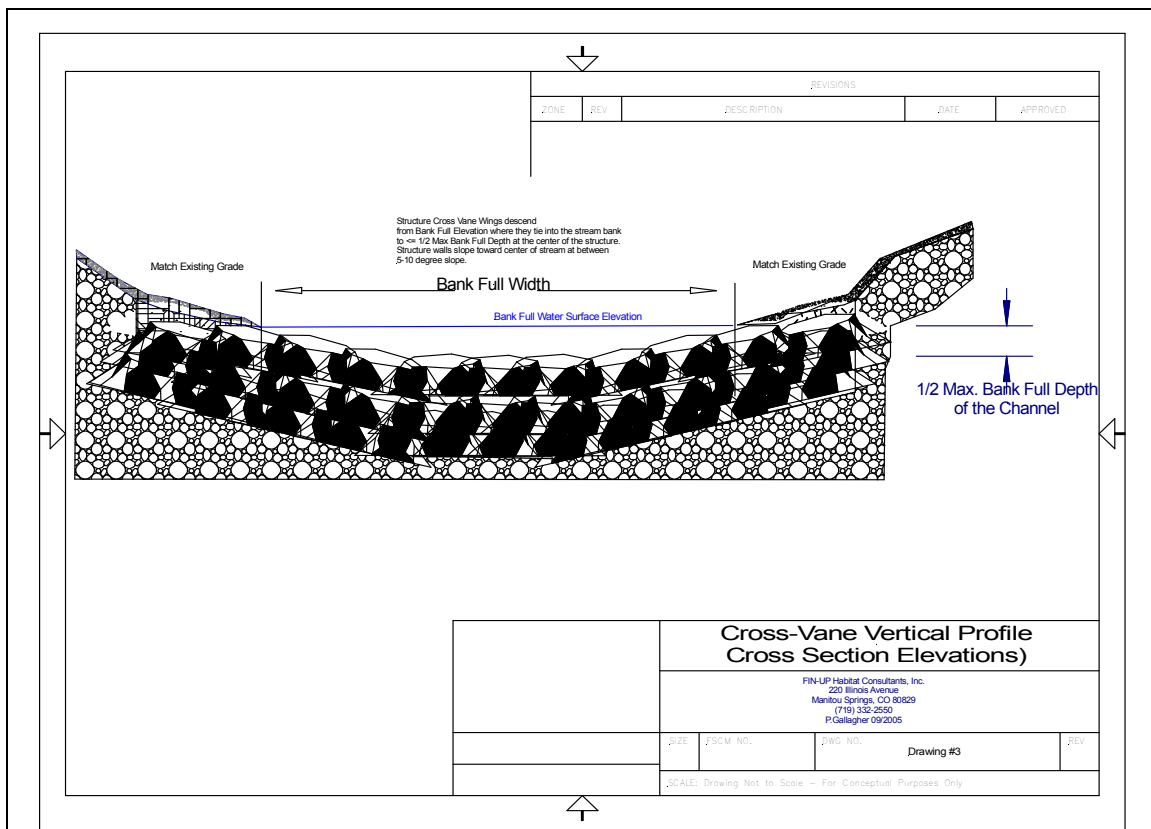
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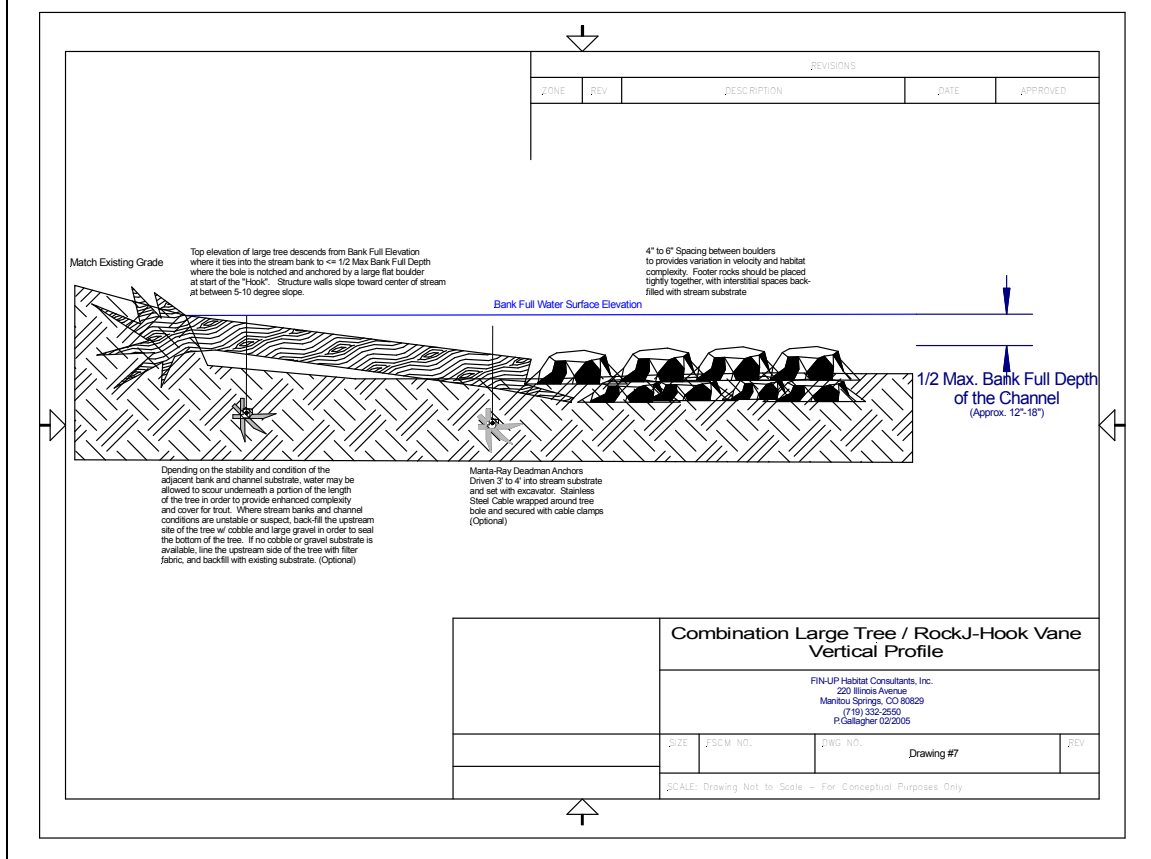
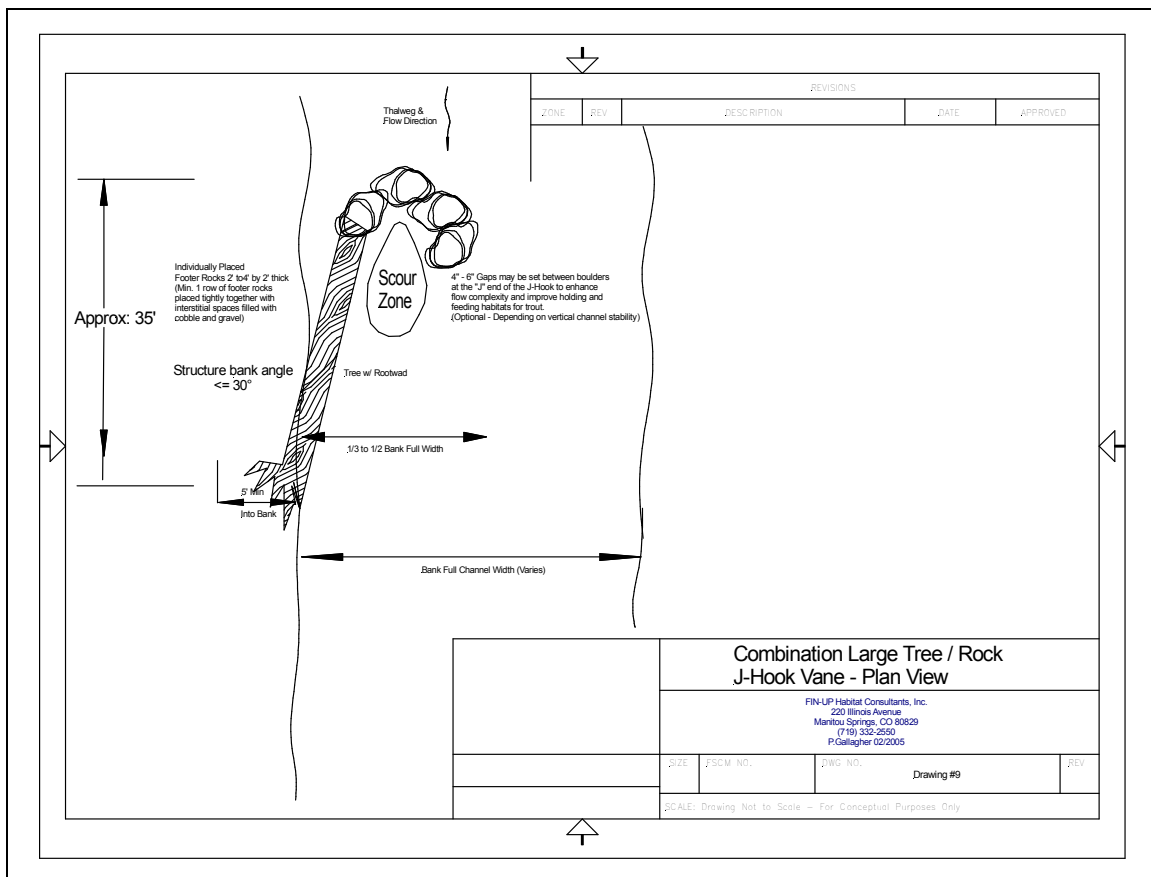
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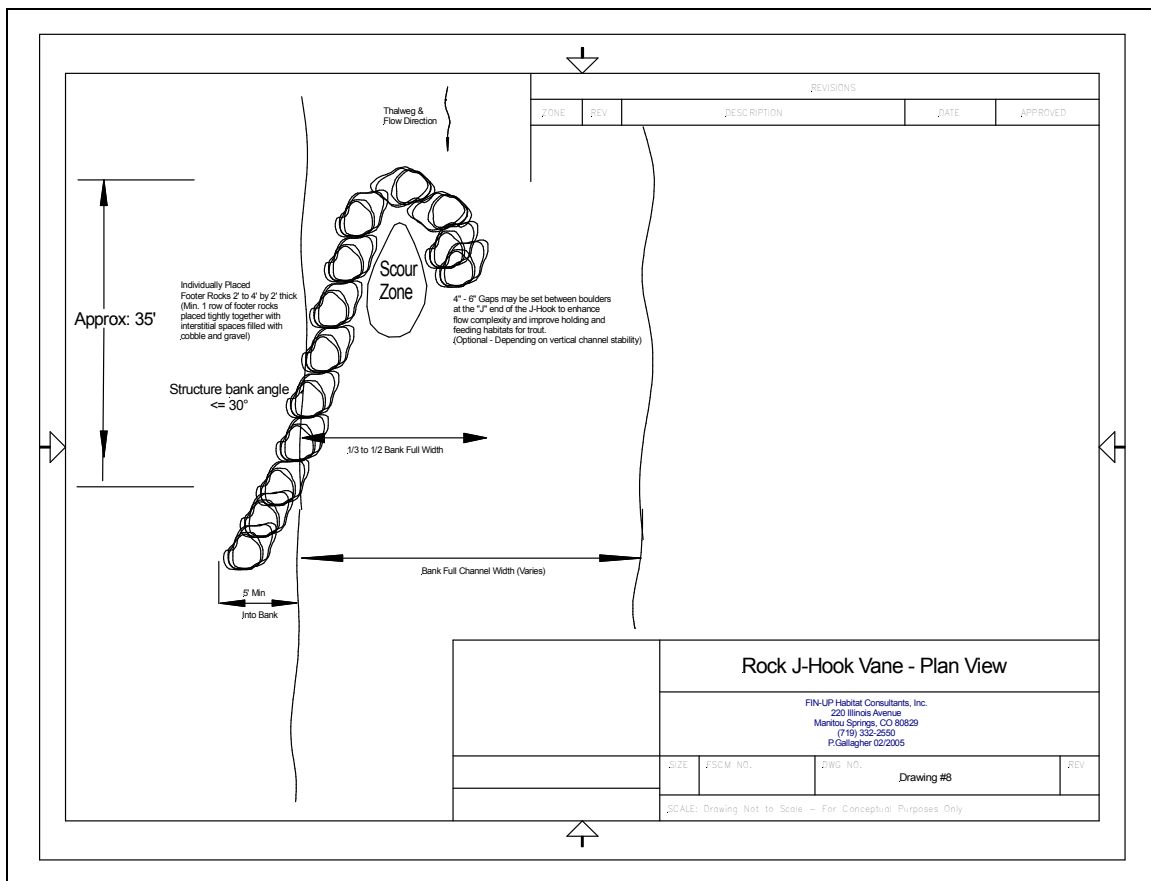
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Cross Vane Structure on Fountain Creek below 21st Street Bridge, El Paso County, CO.



Installing Bank Full Bench & Log Toe Slope Structure - South Platte River, Camp Alexander, Park County, CO



Installing a Log Vane - Camp Alexander, Elevenmile Canyon.



Riparian Bench / Log Toe Slope Structures, one year after construction - Cucharas River, Huerfano County, CO.



Double Log /Boulder Cross Vane with Restored Stream Bank Upstream - Beaver Creek Wildlife Area, CO.



Picketwire Canyonlands, SE Colorado - Rock vanes used to protect dinosaur trackway. These structures were installed in 1998, and survived a 100 year event the following spring. Note the deposition and new willow vegetation taking hold in between the structures.



Aerial of Dinosaur Tracks along Purgatoire River
 Picket Wire Canyonlands, Comanche National Grassland, southeastern Colorado
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