

**Project Overview**

Prevention of scour under the West Salitrillo Creek Bridge by constructing a concrete ramp to help divert water into the rip rap. Additionally, install willow brush mattresses for riverbank stabilization downstream of the bridge.

**Bridge Scour Solution**

**Preliminary Steps**

Rip Rap:

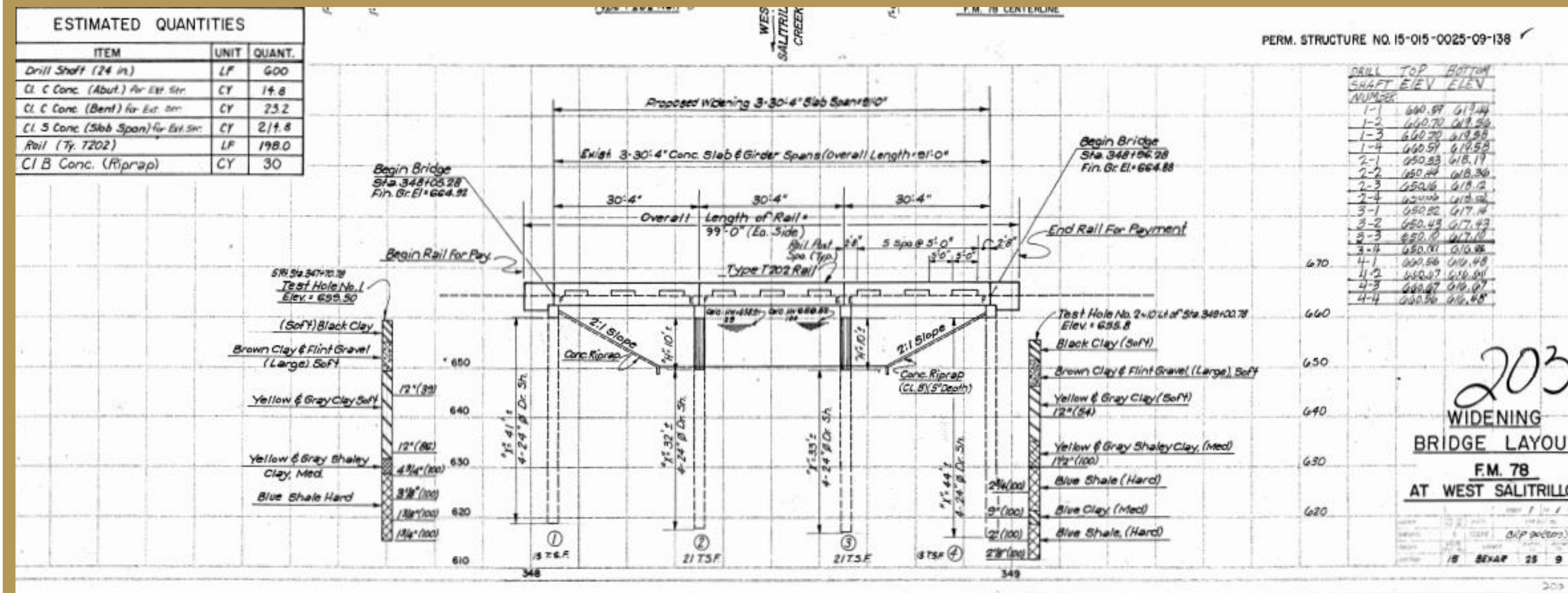
Prior to beginning construction, 10 feet of rip rap adjacent to the bridge foundation, including the abutment, will be temporarily relocated to allow for necessary work access.

Concrete Liner:

Pump 50 cubic yards of Cementitious Grout or Flowable fill into the void along the concrete liner to Prevent continued scour.

Black Clay Soil Backfill:

Willow Brush Mattresses require 61 cubic yards of black clay soil backfill.



**South Side of West Salitrillo Creek**



**Concrete Ramp Area:**  
 Install a 4:1 declined 5'x30'-4" concrete ramp on the south side of the bridge.

**Willow Brush Mattress Area**



**Willow Brush Mattresses:**  
 Install 50 m<sup>2</sup> of willow brush mattresses to combat soil erosion at creek water runoff.

**Capital Costs**

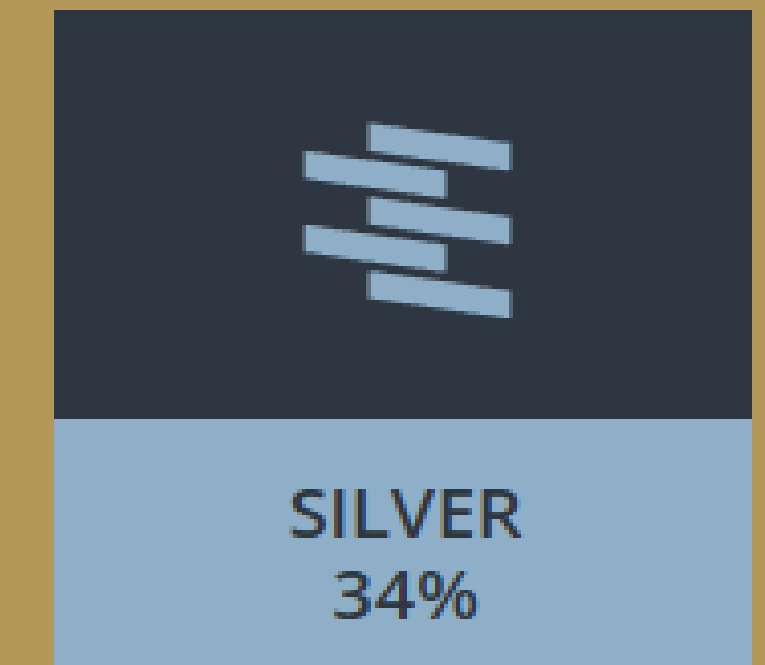
Capital Costs	Costs
1. MK1 Construction Fees	\$12,000.00
2. MK1 Concrete Ramp	\$4,000.00
3. Eco Services	\$7,000.00
4. Engineer Fees	\$8,000.00
5. Summary	\$6,000.00
6. Brush Mattresses	\$32,000.00
7. Riprap	\$12,000.00
8. 20% Contingency	\$15,000.00
<b>Total Cost</b>	<b>\$94,000.00</b>

**Life Cycle Cost Analysis**

Year	Cost Component	Cost	Discounted Rate Cost	Discounted Cost
0	Initial Installation	\$94,000.00	1	\$94,000.00
5-50	Willow Brush Mattress Maintenance	\$15,000.00	5% (every 5 years)	\$5,000.00
5-50	Rip Rap Maintenance	\$500.00	2% (every 5 years)	\$1000.00
1-50	Salvage value	\$94,000.00	After 50 years	\$10,500.00

**Envision Framework**

Criteria	Score
Quality of Life	12/90
Resource Allocation	46/134
Natural World	16/84
Climate and Resilience	94/190
<b>Total Score</b>	<b>168/498</b>



**Climate & Resilience**

- Carbon Footprint and Emission Control Limitations
- Compliance with TxDOT SWPPP Guidelines
- Risk Mitigation through Adaptive Assessment
- Climate Change and Flood Resilience
- Downstream Impact Considerations

**Resource Allocation**

- Sustainable Procurement Practices
- Energy Efficiency Measures
- Water Conservation Efforts
- Minimizing Environmental Footprints
- Alignment with Long-term Resilience Goals

**Meet the Team**

