WM
El Sobrante Landfill
10910 Dawson Canyon Road
Corona, CA 92883
(951) 277-1740

Dawson Canyon Road Bridge over Temescal Wash

Executive Summary

Bridge Inspection – September 25, 2023

The site visit and bridge inspection were performed by Joe Dietz, SE, (DSC Engineering) on the morning of Monday, September 25, 2023. In summary, the bridge was found to be in overall good condition. No cracking was observed on the underside of the concrete slab, pier walls, abutments, or pile caps. USA Waste of California, Inc. (WM) has retained DSC Engineering to provide routine inspections to document bridge conditions and make recommendations on maintenance, repairs and/or enhancements to the bridge.

Items noted during inspection are as follows:

Bridge Deck – No action required.

- Existing methacrylate deck treatment completed in June 2020 is in fair condition and most areas are sound and in good condition.
- The repairs completed in June 2020 at the areas of spalling are in good condition.
- Deck will be reinspected annually, and additional deck treatment or deck overlay may be recommended at that time by SE.

Bridge Approach, West End – No action required, but action recommended.

- There is no approach guardrail protection on the west end of the bridge.
- WM will install approach guardrail protection during first half of 2024.

Bridge Deck Approach – No action required, but action recommended.

- There are no approach slabs or joints at each end of the bridge.
- Per SE recommendation, WM will install bridge deck approach slab when other major maintenance on the bridge deck, such as an overlay, is needed.

Channel Invert – Action required, see below.

- Based on the Record Bridge Drawings, the existing Temescal Wash has incised and lowered approximately 14 feet in some areas exposing the concrete pile caps.
- If significant scour below the pile cap occurs, there is a loss of skin friction on the piles which support the bridge. If there is a significant loss, there may be settlement. The settlement would result in settlement of the bridge deck (on the order of an inch or so). Cracking of the bridge deck would likely occur.
- Overturning from the lateral forces is not a concern.

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Action Plan

Regarding the channel invert, large diameter angular rock should be placed along the entire length and width of the soft bottom channel under the bridge. WM is working with adjacent property development TVCC (Temescal Valley Commerce Center) and County of Riverside to complete this work. To complete the channel invert repair, permits from California Department of Fish and Wildlife (CDFW), California Regional Water Quality Control Board (RWQCB) and US Army Corps of Engineers (USACE) will be needed. The Section 1600 Lake or Streambed Alteration Agreement to CDFW was submitted on 6/9/2021. The work is anticipated to be completed Q4 of 2024. It should be noted permitting with various resource agencies for this work may take several years.

Until the rock scour protection is installed, WM Engineering Department will implement a routine bridge monitoring program during significant rain events. A stream gauge will be installed at the central pier walls to monitor stream flows during large rain events. The monitoring program would include developing photographic documentation of the stream channel and the pile caps so that comparisons can be made. A third-party structural engineer will review the documentation during annual inspections and after large storm events.

It should be noted that large rain events over the entire watershed are infrequent with a recurrence interval of approximately once every 10 years. WM will continue to work with SE regarding scour assessment.

The technical Memorandum dated September 25,2023 from Joe Dietz, PE, SE, is attached to this Executive Summary. Please feel free to reach out with any questions.

Sincerely,

David Meyer
Sr. District Manager
WM El Sobrante Landfill
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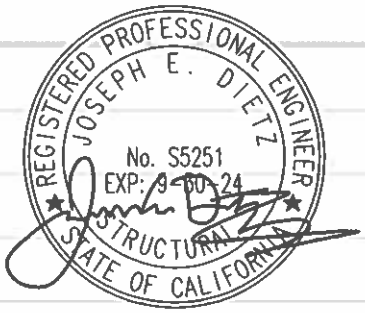
DSC ENGINEERING
STRUCTURAL & CIVIL ENGINEERS

TECHNICAL MEMORANDUM



Date:	September 25, 2023		
To:	David Meyer, Sr District Manager, Waste Management		
Cc:			
From:	Joe Dietz, PE, SE		
Project:	Dawson Canyon Road Bridge over Temescal Wash	***DSC Project Number:***	01039:19001
Subject:	Bridge Inspection and Recommendations		

This memorandum summarizes the findings of the bridge inspection performed by DSC Engineering and the recommended work items associated with the Dawson Canyon Road Bridge over the Temescal Wash in Riverside County. In summary, the bridge was found to be in overall good condition, except as noted herein. A site visit and bridge inspection were performed by me, Joe Dietz, SE, on the morning of Monday, September 25, 2023. The inspection took place at approximately 9:30am under clear skies and an ambient air temperature of approximately 70 degrees Fahrenheit. Waste Management has retained DSC Engineering to provide routine inspections on an annual basis to document bridge conditions and make recommendations on maintenance, repairs and/or enhancements to the bridge.

Prior to the bridge inspection, DSC Engineering reviewed the previous July 22, 2019 Bridge Inspection and 2022 Bridge Report, both prepared by DSC Engineering. During my visit, I performed an element level bridge inspection in accordance with AASHTO and Caltrans procedures to independently assess the state of the bridge. A visual inspection was performed on the following items: reinforced concrete bridge deck, bridge barriers, utility supports, underside of reinforced concrete slab, concrete pier walls, abutments, exposed pile caps, and the invert of the Temescal Wash upstream and downstream of the bridge approximately 200' in each direction. During the inspection, pictures and written notes were recorded to document the existing field conditions.

The existing Dawson Canyon Road Bridge was constructed in approximately 1986 based on the record drawings provided by Waste Management dated October 14, 1986, prepared by Krieger & Stewart for the original bridge construction. The existing reinforced concrete bridge consists of a 5-span continuous slab design. The reinforced concrete slab is supported by concrete abutments at each end and concrete pier walls at the interior spans. The end span dimensions vary, with interior spans spaced equally at 36 feet, for a total bridge length of approximately 178 feet. Abutments and pier walls are supported by precast prestressed concrete piles. Based on the visual bridge inspection, the existing condition matches the record drawings except for the invert of Temescal Wash has incised approximately 9 feet.

Based on the bridge inspection, the items below were noted as in need of repair or maintenance. The proposed work to correct the deficiencies is also included:

Item: Bridge Deck
Priority: Low, Reinspect in 2 years

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Condition: The existing methacrylate deck treatment that was completed in June 2020 is in fair condition (Picture 1). Some areas of the deck treatment are beginning to show signs of distress, most areas are sound and in good condition. The repairs completed in June 2020 at the areas of spalling are in good condition.
Recommended Work: Deck shall be reinspected annually. It is anticipated that in 2 years, near the end of the expected life of the methacrylate deck treatment, that additional deck treatment or deck overlay may be recommended at that time.

Item: Bridge Approach, West End
Priority: Recommended for safety enhancement, but not required
Condition: There is no approach guardrail protection on the west end of the bridge (Picture 2). Per the record drawings, a wood post metal beam guard railing system was to be installed at each end and side of the bridge to provide for structure protection and driver safety. The approach appears to have never been installed. The guardrail would restrict traffic from a direct vehicle impact to the bridge.
Recommended Work: Provide Caltrans standard wood post metal beam guardrail protection at each side of the west end of the bridge.

Item: Bridge Deck Approach
Priority: Recommended, but not required
Condition: There are no approach slabs or joints at each end of the bridge (Picture 6). The asphalt roadway on either end of the bridge is placed directly against the concrete bridge deck. Some minor spalling at the concrete bridge deck edge is present. Modern bridge design utilizes such approach slab design to better transfer loads to the bridge and reduce wear/spalling at the bridge deck edge.
Recommended Work: Install concrete approach slabs and repair edge of concrete deck. Given that only minor spalling has occurred, the installation of the bridge deck approach slab should be considered when other major maintenance on the bridge deck, such as an overlay, is needed.

Item: Channel Invert
Priority: Immediate Repair Needed
Condition: Based on the Record Bridge Drawings, the existing Temescal Wash has incised and lowered approximately 14 feet in some areas (Picture 7 & 8) exposing the concrete pile caps. Since the previous inspection in 2019, the Temescal Wash invert has lowered an additional 1' between pier walls 2 & 3. See attachment 1 for the approximate invert elevation of the Temescal Wash at the north side of the bridge.
Recommended Work: Place large diameter angular rock along the entire length and width of the soft bottom channel under the bridge. The rock should be placed so that the top of the new rock scour protection is level with the top of the concrete pile caps, refer to the 2022 Bridge Report for additional recommendations. Until the rock scour protection is installed, a routine bridge monitoring program should be initiated as well as during significant rain events. The suggested monitoring program would include developing photographic documentation of the stream channel and the pile caps so that comparisons can be made. DSC will review the documentation during annual inspections and after large storm events. Based on discussions with Waste Management, the process to install the additional scour protection has been initiated but may require a significant amount of time for permitting with various agencies.

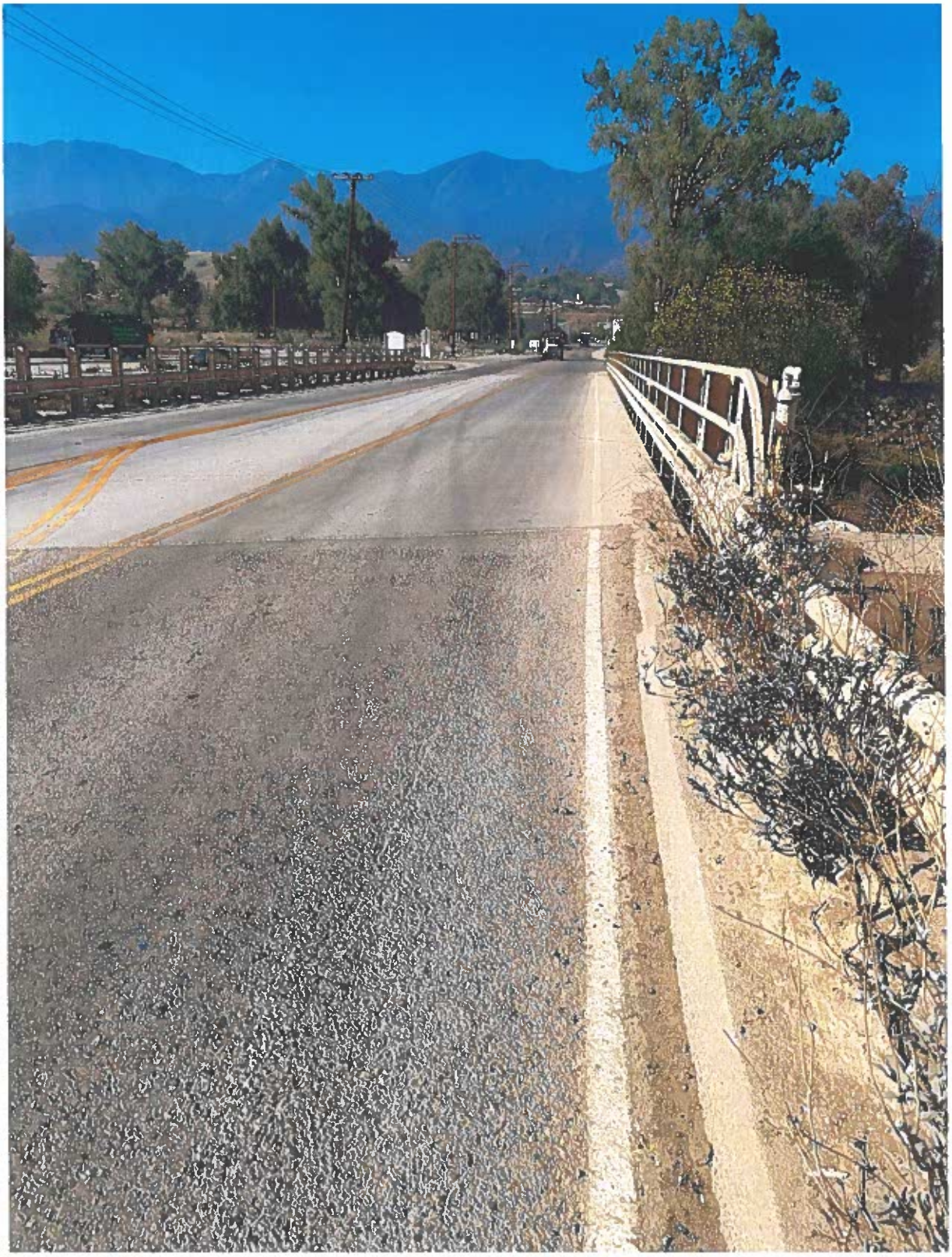
It is expected that the work items listed above will bring the rating of the bridge within a structurally sufficient range. Bridge inspections should continue to be performed at least every 2 years.

Conclusions

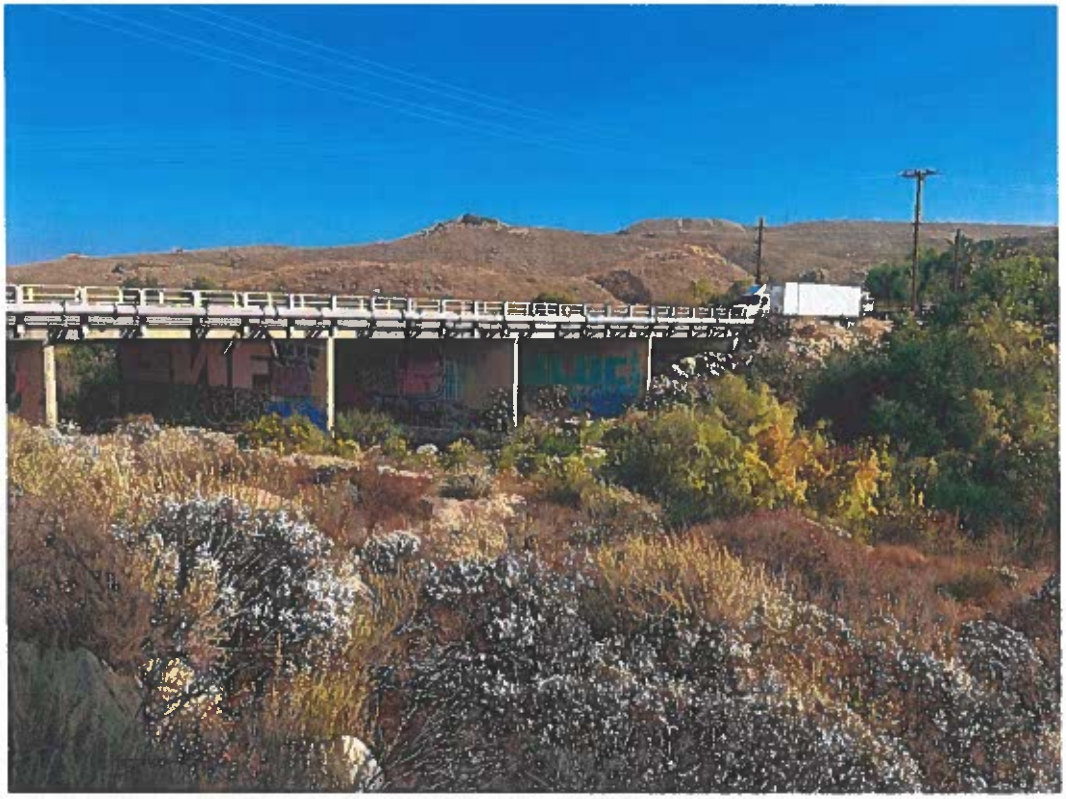
The bridge is in good overall condition. No cracking was observed on the underside of the concrete slab, pier walls, abutments, or pile caps. As long as the proposed maintenance work and deficiencies notes are completed in a timely manner, the bridge can be expected to perform in a structurally sufficient range.

Picture 1: Concrete Bridge Deck with Methacrylate Deck Treatment

Picture 2: West Approach

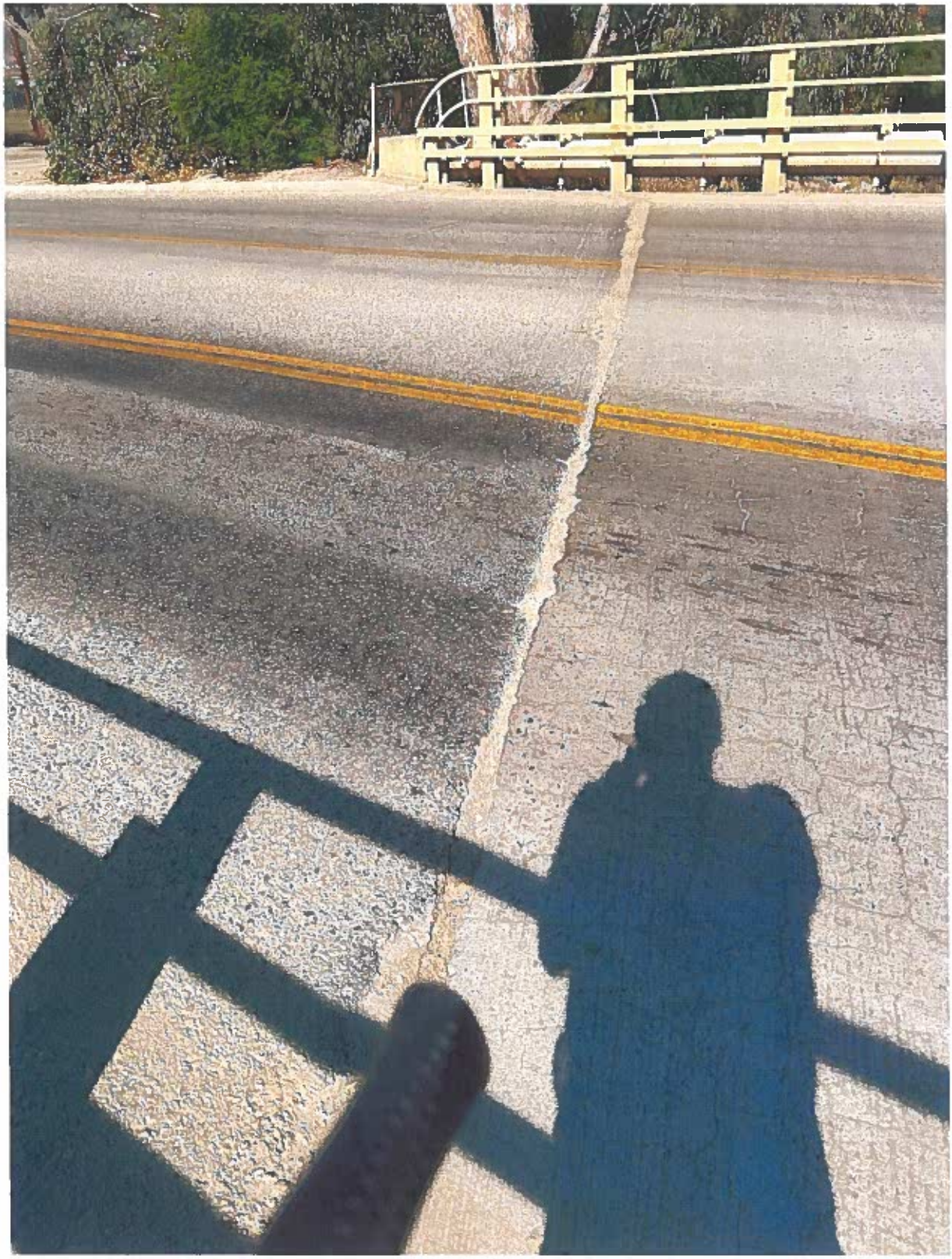


Picture 3: East Approach



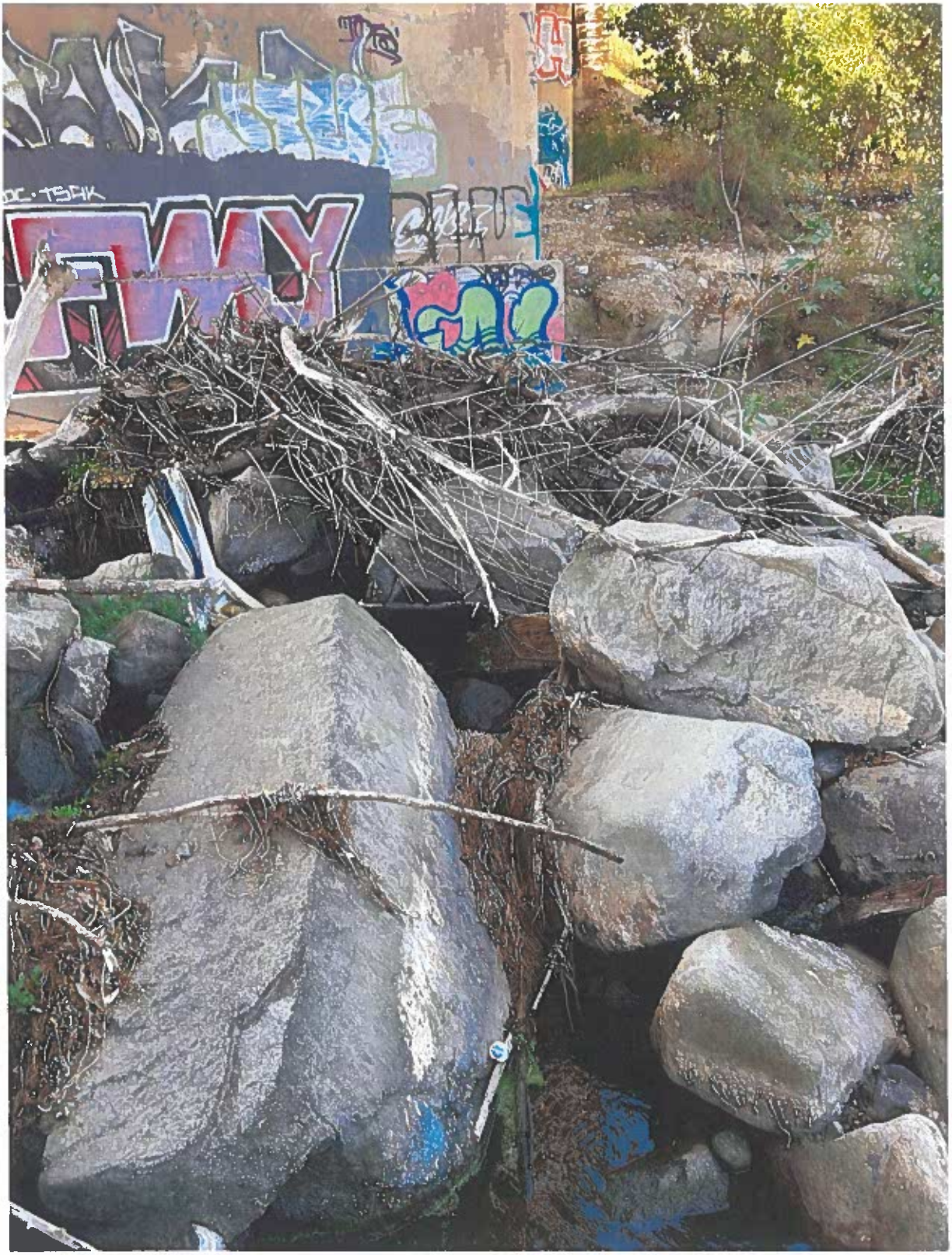
Picture 4: South Bridge Elevation

Picture 5: North Bridge Elevation



Picture 6: West End of Bridge Deck

Picture 7: Channel Invert



Picture 8: Channel Invert