



# MEMO

**Project No.:** 419.01  
**To:** Beth Christman, Truckee River Watershed Council  
**From:** Chris Anderson, P.E.  
**Date:** March 29, 2023  
**Subject:** Hoke Meadows Restoration-Construction Phase Services

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This memorandum (memo) addresses a revision to the culverts for the Improvement Plans for Hoke Meadows Restoration Culvert Improvements project (Project). Due to constructability challenges, the Truckee River Watershed Council (TRWC) desires to eliminate two (2) of the four (4) proposed new culverts.

This memo summarizes the hydraulic analysis to supplement the drainage report and support the elimination of two culverts.

Auerbach Engineering Corporation (AEC) prepared the following documents for the TRWC in December of 2020.

- AEC. (December 2020). *Meadows Culvert Design Drainage Report*. Prepared for TRWC
- AEC. (December 2020). *Improvement Plans for Hoke Meadows Restoration Culvert Improvements*. Prepared for TRWC

These documents are incorporated herein by reference.

The basis of design for the project is established by the capacity of the existing culvert under Stampede Dam Road, which measures 196" span by 122" rise. The 2020 drainage report and analysis established the road overtopping flow through the culvert as 1,612 cfs.

The proposed revision is shown on the attached marked up plan sheet from the 2020 project improvement plans. This revision entails the following:

- Keep the proposed 34" rock embedment in the existing culvert per the 2020 project improvement plans
- Eliminate the two culverts per the attached
- Upsize the two-remaining culverts to 83" span by 69" rise structural plate arch culverts

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The attached HY-8 hydraulic analysis shows the above results in a road overtopping flow rate of 1,677 cfs, which is in excess of the existing condition flow of 1,612 cfs.

The revised culvert sizing supports the basis of design for the Project.

Feel free to call me at (530)214-3098 with any questions.

**Attachments:** HY-8 Hydraulic Analysis Results  
Plan Sketch

# HY-8 Analysis Results

## Crossing Summary Table

Culvert Crossing: PROP (3 Culverts 1 Ex 2 New)

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	EX Culvert w Embedment Discharge (cfs)	Prop Culvert 1 Discharge (cfs)	Prop Culvert 4 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
5981.54	PK2	86.60	62.13	12.26	12.16	0.00	5
5982.25	PK5	175.00	111.99	31.55	31.32	0.00	4
5982.80	PK10	259.00	156.73	51.31	50.94	0.00	4
5983.48	PK25	379.00	218.51	80.52	79.95	0.00	3
5984.21	PK50	511.00	289.77	110.93	110.29	0.00	3
5984.85	PK100	636.00	356.13	140.26	139.58	0.00	3
5985.70	PK200	810.00	448.40	181.05	180.36	0.00	2
5986.83	PK500	1040.00	574.79	232.95	232.30	0.00	4
5990.80	Overtopping	1677.17	943.89	366.84	366.45	0.00	Overtopping

