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POND ANALYSIS

at

APN 216-107-007

Apps. #13143

Prepared for:

John Mahony

(Job No. 23-325-16)

March 31, 2023

Prepared by:

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Dated: _____

REGISTERED PROFESSIONAL ENGINEER
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Introduction

This report has been prepared to address concerns raised by the Humboldt County Planning Department (hereinafter referred to as County) regarding the site's seasonal historic pond, and to provide supplemental information for that property known as APN 216-107-007, pertinent to Application #13143.

On March 16, 2023, Dylan Kirkley of Omsberg & Preston conducted a field investigation with the project applicant, John Mahony. Due to recent changes in County policy, the applicant has decided to explore sources of irrigation water other than the on-site well, and as such is considering the site's pond as an alternative water source. It is our understanding that the pond is seasonal, and that roughly 63,000 gallons of rainwater is needed for this site's annual agricultural irrigation. The County is concerned that the pond may be on-stream, and that it may not be able to capture enough rainwater to serve the project. These concerns are addressed in this report utilizing knowledge and insight from the landowner, his contractor, past-workers and available photographic evidence collected from our visit to the property.

Field Investigation

Information gathered from the Humboldt County Maintained Road Logs, 2022 Road Log (ALPHA), shows that 8A030 Lauffer Road, from 8A020 Island Mountain Road to the End, is 4.4 miles. There are two (2) ditch relief culverts (DRCs), labeled County DRC#1 & County DRC#2, located within Lauffer Road's right-of-way on the North side of the subject property (refer to photos contained herein).

The DRCs are corrugated metal pipe (CMP), located 2.28 miles and 2.34 miles from Island Mountain Road, within the 4.4 mile segment of the County-maintained segment of Lauffer Road. Both were found to be slightly out-of-round, with outer diameters of 15.5 inches. The DRCs collect storm water from Lauffer Road's inboard-side road ditch and outlet it onto the subject parcel. The stormwater then makes its way to the seasonal historic pond. County DRC#1 is shot-gunned and has contributed to incising and gully formation. County DRC#2 was found to be partially plugged. Refer to the images and photos that follow for full particulars.

It should also be noted that the wild invasive pigs roaming the property have caused extensive ground disturbance in many areas, and we are respectfully requesting that these disturbed areas continue to be documented in the event future concerns arise.

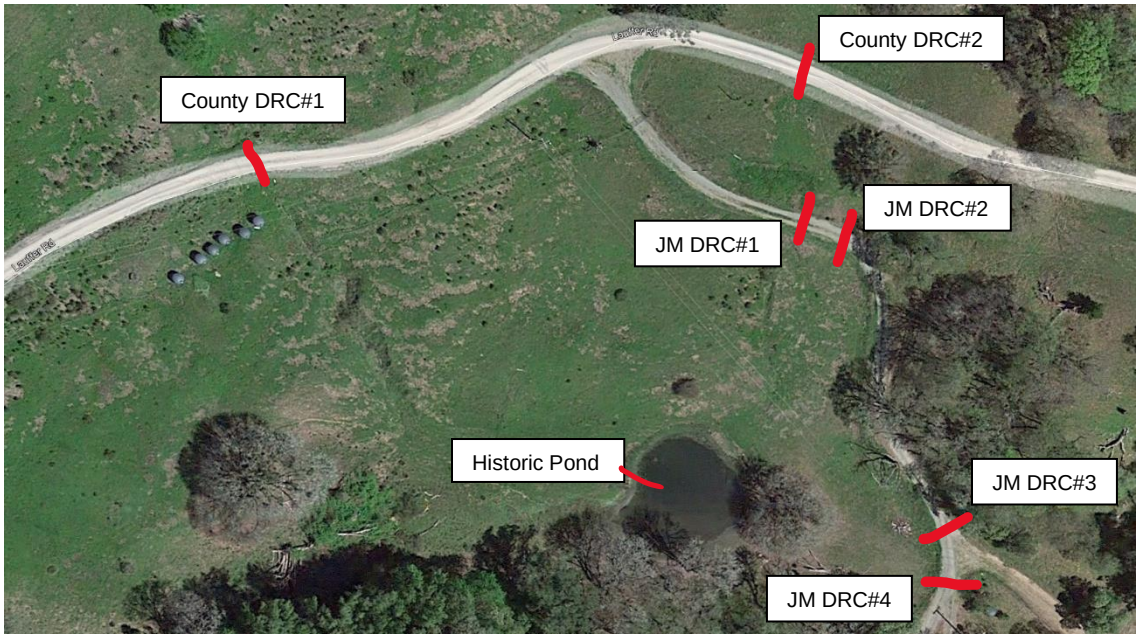
Conclusion

Based on our field visit, we believe the historic seasonal pond is a natural rainwater catchment, or retention basin. It does not appear to be fed by springs, streams, tributaries, or other identifiable watercourses, and has no outlet. Stormwater does accumulate in the basin during rain events and, based on evidence observed during our site visit, as well as owner testimony, appears to naturally infiltrate into the subsurface soils over time. We found no visible stream channel exiting the pond.

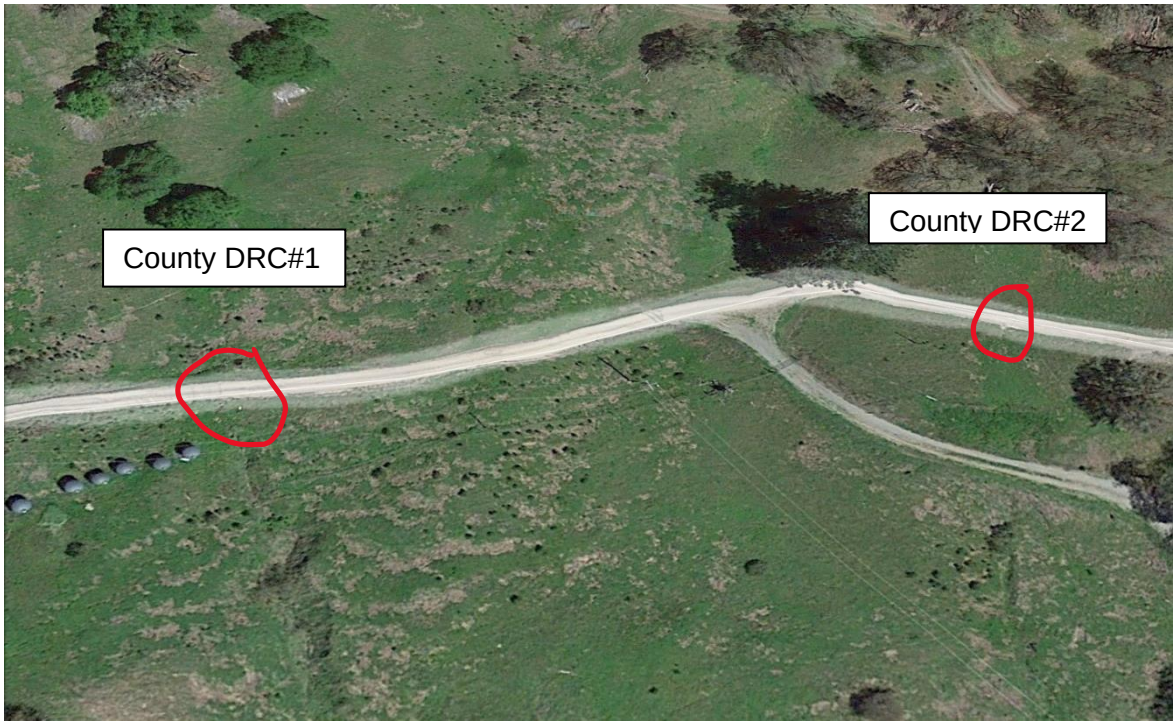
The County's DRC#1 has created a gully that carries stormwater runoff and sheet flow from above the road into the pond. Preliminary drainage calculations were performed, and the pond area was found to have the capacity to store roughly 61,500 gallons of rainwater.

Overview of APN 216-107-007, showing the historic pond and Lauffer Road (Imagery via Humboldt County GIS)

Remnant location of the historic seasonal pond (Imagery via Humboldt County GIS)



Approximate locations of County and private DRC's (Imagery via Google Earth)



(Image via Google Earth)

(Image via Google Earth)

County 16” (15.5”) CMP DRC#1 on Lauffer Road, Looking North

(Photo by O & P Staff, March 16, 2023)

County 16” (15.5”) CMP DRC#1 on Lauffer Road, Looking South

(Photo by Omsberg & Preston Staff, March 16, 2023)

Gully created by shot-gunned County DRC#1
(Photos by Omsberg & Preston Staff, March 16, 2023)

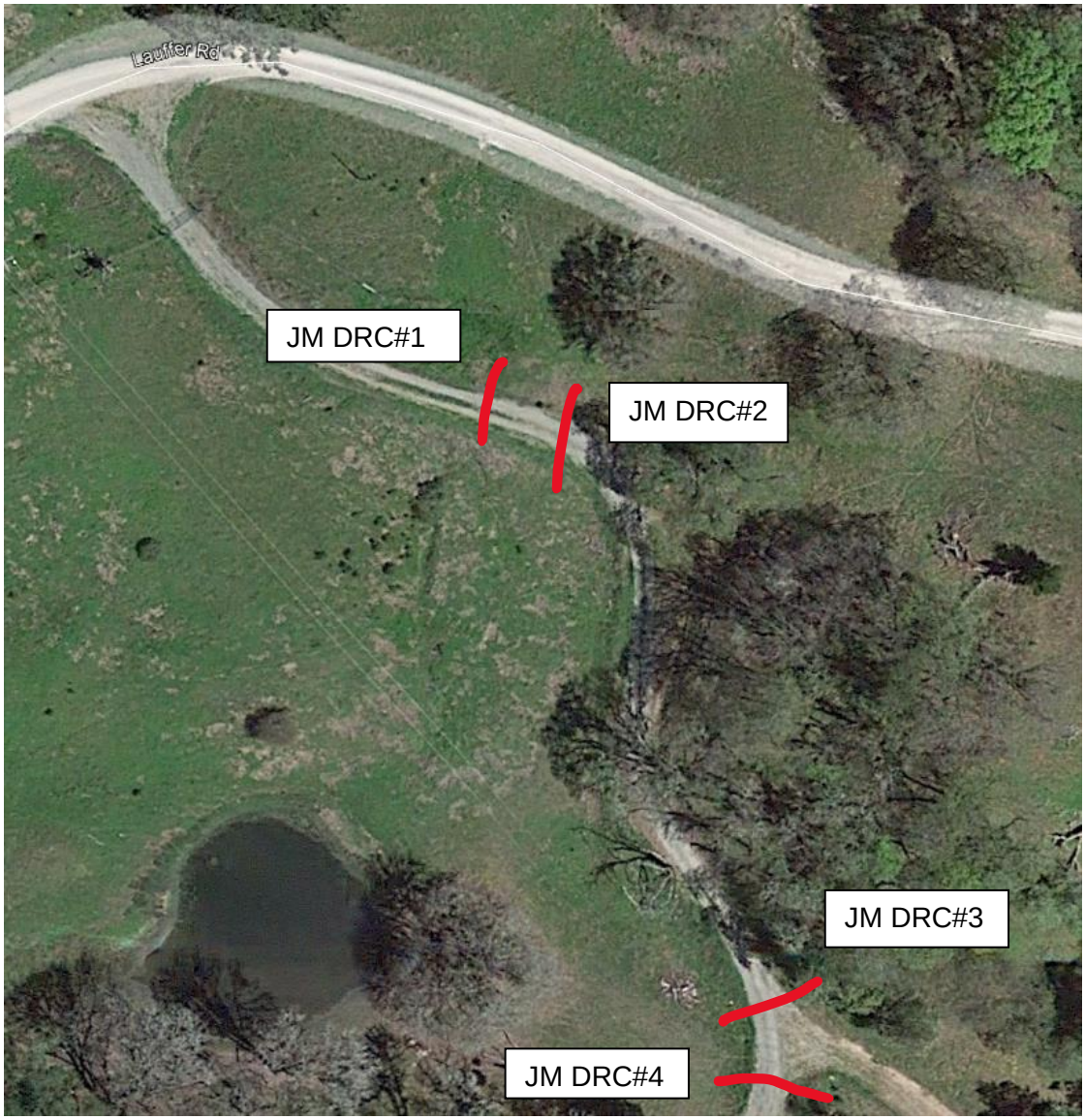
County DRC#1, looking East
(Photo by Omsberg & Preston Staff, March 16, 2023)

County DRC#2, looking North (Photo by Omsberg & Preston Staff, March 16, 2023)

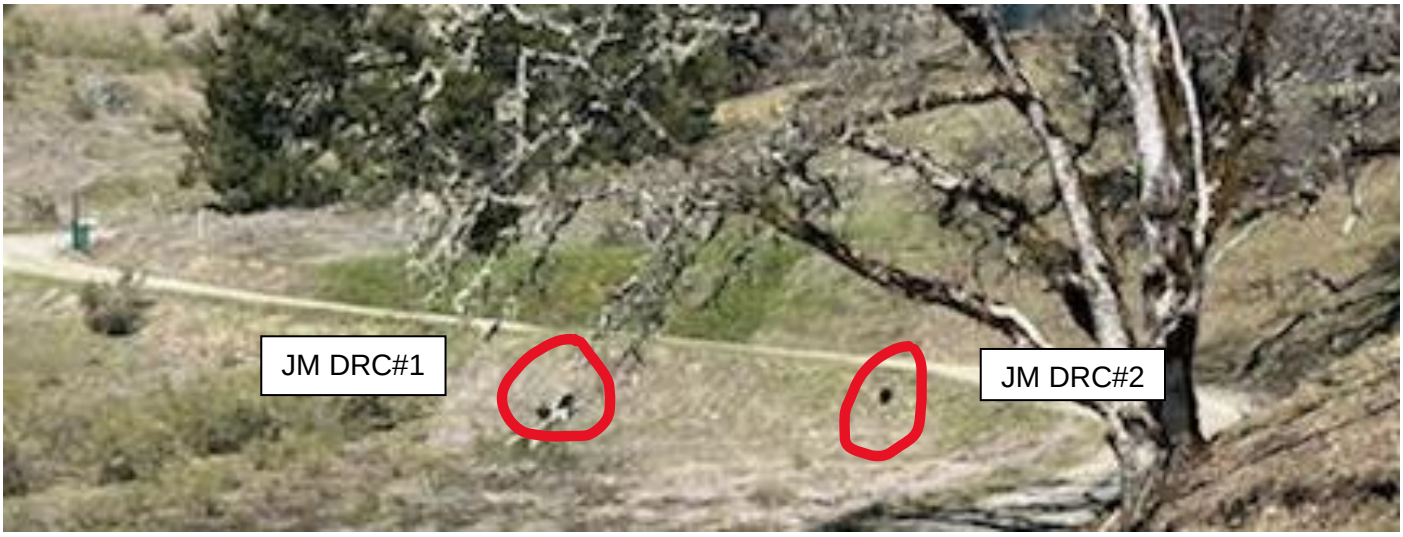
County DRC#2, partially plugged inlet (Photo by Omsberg & Preston Staff, March 16, 2023)

County DRC#2 partially plugged outlet
(Photo by Omsberg & Preston Staff, March 16, 2023)

County DRC#2, sheet-flowing to the South into private drive inboard ditch, then into private CPP DRC
(Photo by Omsberg & Preston Staff, March 16, 2023)



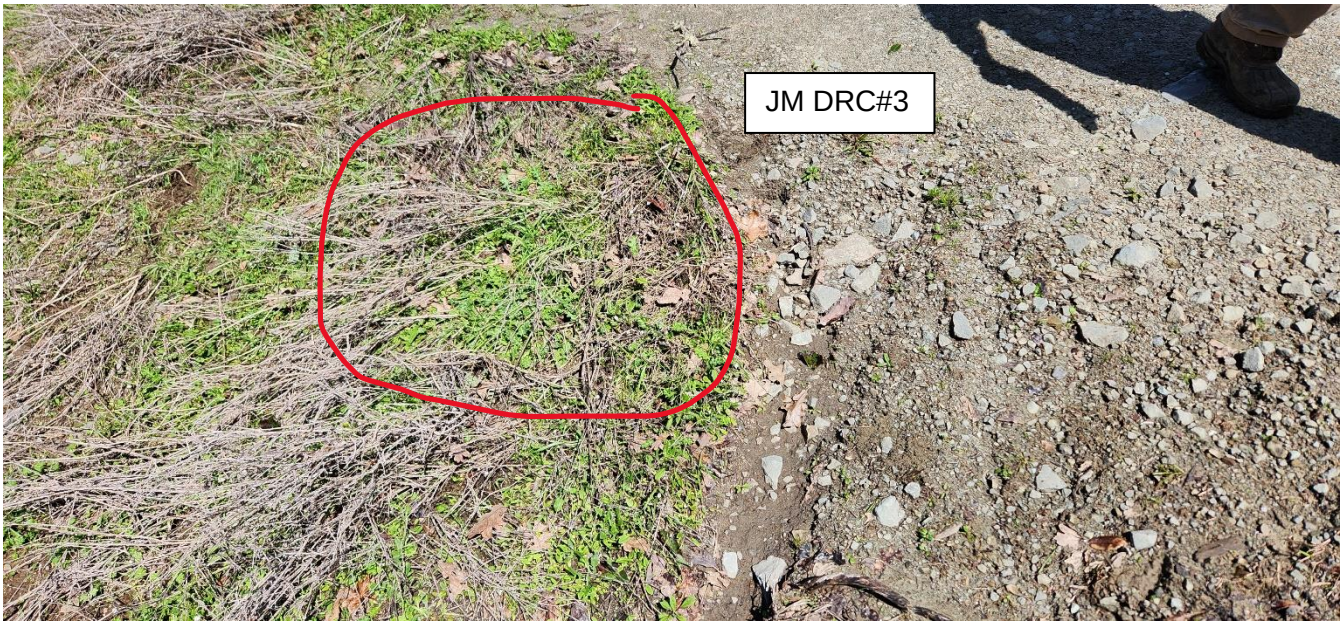
Approximate locations JM (private) DRCs (Photos by Omsberg & Preston Staff, March 16, 2023)



JM DRC#1 (Photo by Omsberg & Preston Staff, March 16, 2023)

JM DRC#2 (Photo by Omsberg & Preston Staff, March 16, 2023)

JM DRC#3, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)



JM DRC#3 (Photo by Omsberg & Preston Staff, March 16, 2023)

JM DRC#4, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)

JM DRC#4, looking East (Photo by Omsberg & Preston Staff, March 16, 2023)

Historic pond (Photos by Omsberg & Preston Staff, March 16, 2023)

Historic pond, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)

Historic pond, looking East (Photo by Omsberg & Preston Staff, March 16, 2023)

Historic pond, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)

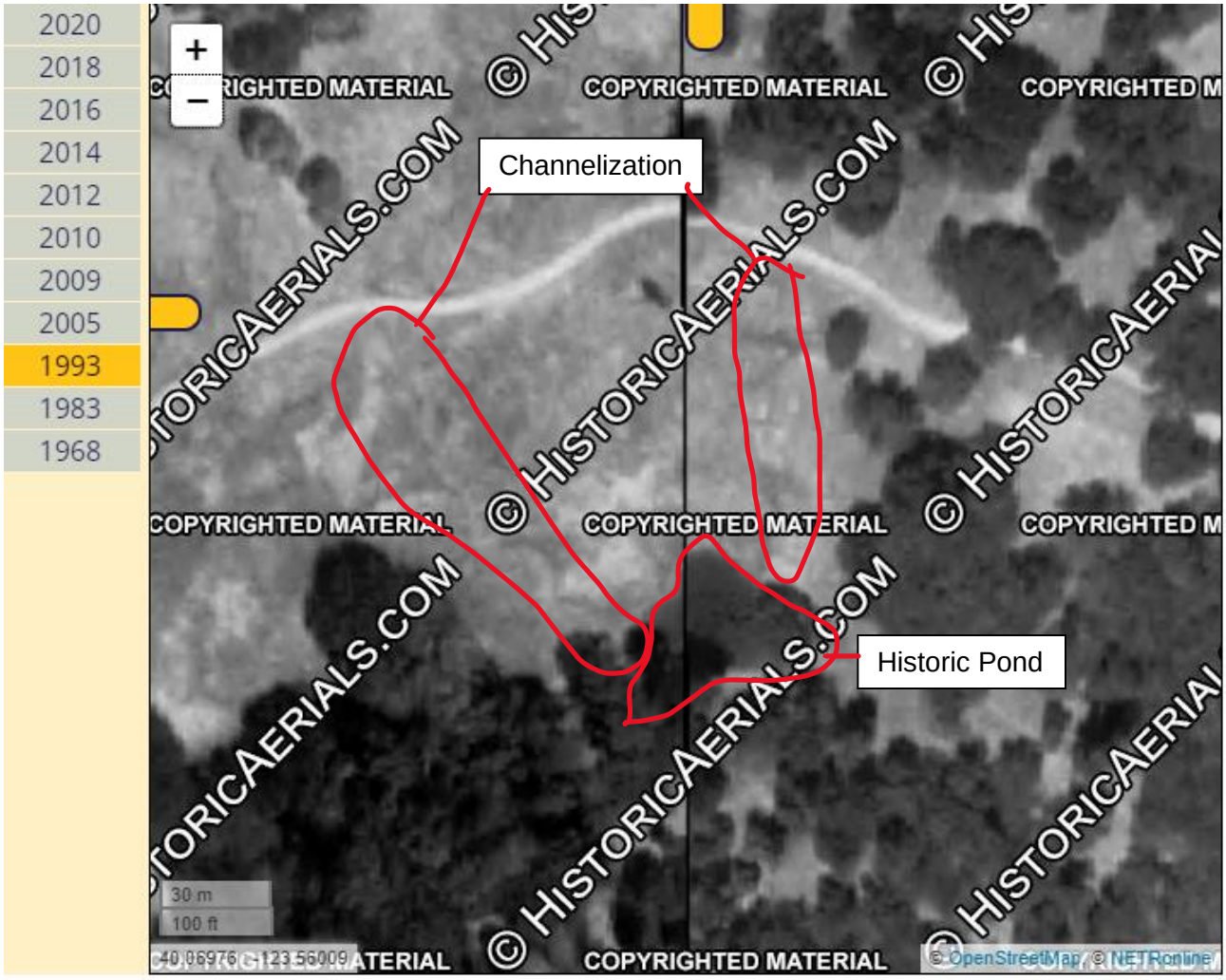
Historic pond, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)

Historic pond, looking West (Photo by Omsberg & Preston Staff, March 16, 2023)

Historic Aerials

1983 imagery showing historic channelization & pond

(Image provided by Historic Aerials)



1993 image showing historic channelization & pond

(Image via Historic Aerials)

2005 image showing historic channelization & pond

(Image provided by Historic Aerials)

Contours at pond area