

FOULK CIVIL ENGINEERING, INC.
CIVIL ENGINEERING - LAND SURVEYING
4777 MANGELS BLVD.
FAIRFIELD, CA 94534
OFFICE (707) 864-0784
FAX (707) 864-0793

Mr. Matt Tuggle
Solano County Department of Public Works
675 Texas Street, Suite 5500
Fairfield, Ca 94533

March 8, 2024
24-001

RE: 4585 Pace Lane (APN 106-040-140)

Dear Mr. Tuggle,

Our services are being provided on the above referenced property related to drainage and the County's policy for on-site detention. It is our understanding that the property has been developed with two homes as separate projects over the past few years without involvement by the Public Works Department. Recently the county has asked the owner to provide runoff detention storage on the property per said policy.

Historical tributary drainage areas include on and off-site areas west of and within to the subject parcel. The drainage path is a shallow stream that runs from west to east through the subject parcel. The stream flows through a 15" culvert on the east side of the property to the neighboring property (APN 106-290-290) where that owner has recently installed the 12-inch culvert and a concrete wall shown in the photo below. The top of concrete wall elevation is 138.5 feet.



Concrete Wall and Culverts

Downstream of the neighbor's culvert, the shallow stream continues east through his property and others before its ultimate outfall to Sweeney Creek.

The 12-inch culvert and concrete wall on the neighbor's property reduces the flow rate and results in on-site detention on the subject parcel as shown in the photos below which were taken on the morning of the February 4, 2024 during a significant storm event. The ponded surface elevation is at or a little above the 138.5 foot top of the concrete wall elevation.



February 4, 2024 - Looking Downstream East at Neighbors Property



February 4, 2024 - Looking Upstream West at Subject Property

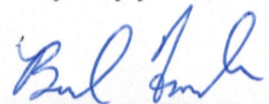
The attached Detention Area Exhibit A, based on topographic survey, shows an area of inundation to the 138.5 foot top of wall elevation of approximately 25,530 square feet. The detention pond volume calculations based on contour areas, also shown on Exhibit A, shows the calculated detention volume of 18,635 cubic feet .

Exhibit B shows the impervious surface areas related to the development of the property to date at being approximately 56,568 square feet. A new shop building planned for the property will create an additional 1,440 square feet of impervious area bringing the total to 58,008 square feet. Based on the County's Policy for On-site Detention, as shown on exhibit A, 8,701 cubic feet of detention volume is required.

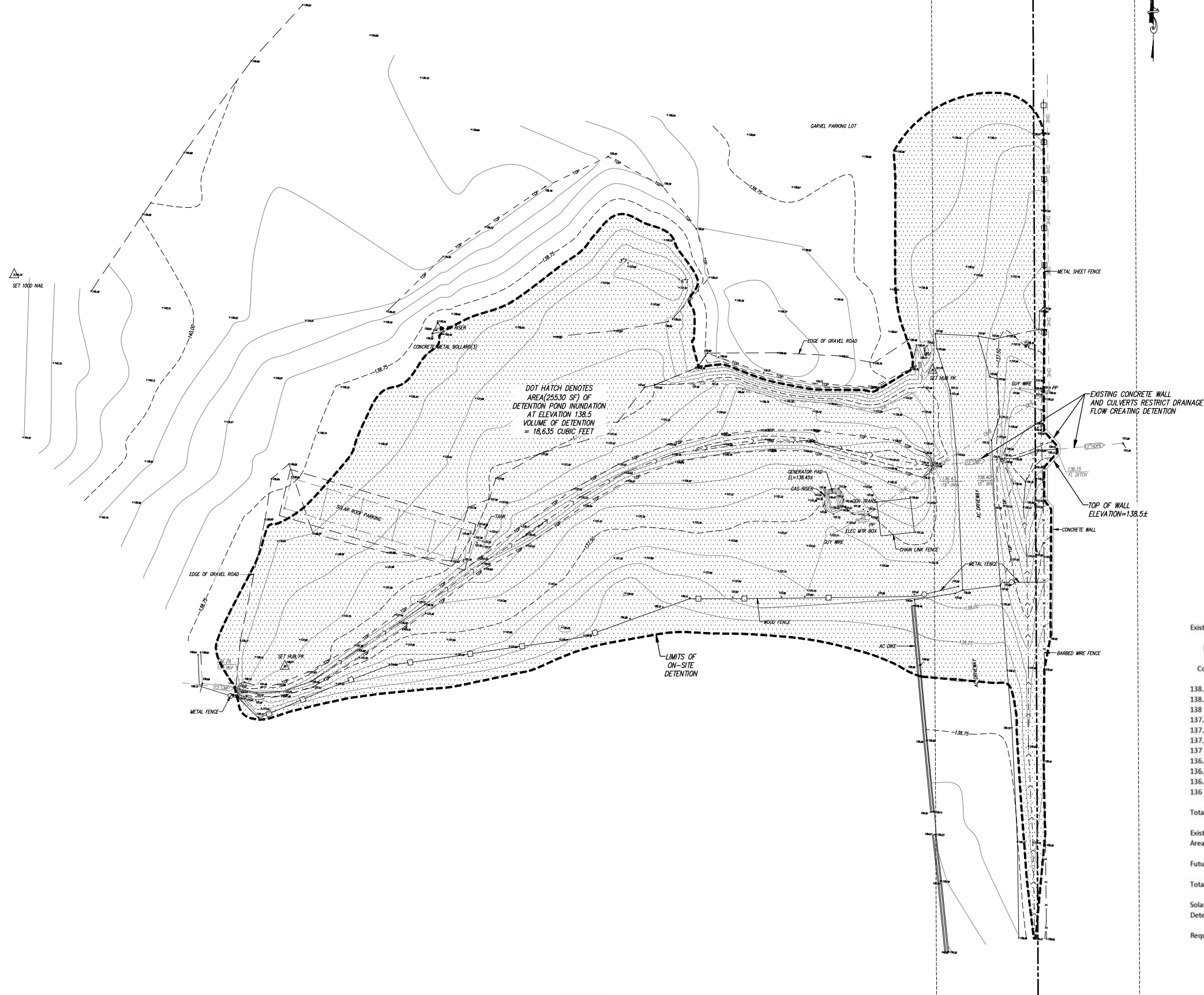
The resultant detention pond created by the recently constructed 12" culvert and concrete wall along the downstream neighbors westerly property line creates a detention pond on the subject parcel of approximately 18,635 cubic feet, exceeding the volume required by said County's policy by 9,934 cubic feet. Given that the resulting detained volume exceeds the County requirements we recommend that the County accept the current conditions and allow other project approvals to move forward.

I appreciate your attention on this issue. Please feel free to call me with any questions.

Very truly yours,



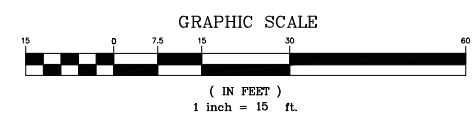
Brad Foulk, PE, PLS



Existing Detention Pond Volume Calculations

Existing Ground Contour (ft)	Contour Area(SF)	Incremental Volume(CF)
138.5	25530	
138.25	21288	5852.25
138	16889	4772.13
137.75	9261	3268.75
137.5	6051	1914.00
137.25	3825	1234.50
137	1120	618.13
136.75	2799	489.88
136.5	419	402.25
136.25	121	67.50
136	3	15.50
Total Storage Volume (CF)		18635
Existing Impervious Surface Area (SF)		56568
Future Shop Building Area (SF)		1440
Total Impervious Surface Area		58008
Solano County Formula For Determining Required Detention		Detention Volume (CF) = ((Impervious Area/1000)*150)
Required Detention Volume (CF)		8701

DESIGNED BY: BDF
 DRAFTED BY: NRF
 CHECKED BY: BDF
 ISSUE DATE: 03/08/24



FCE FOULK CIVIL ENGINEERING, INC.
 Civil Engineering Land Surveying Planning
 4777 Mangels Boulevard, Fairfield, CA 94534
 (707)864-0784 fax (707)864-0783 e-mail: foulke@gmail.com



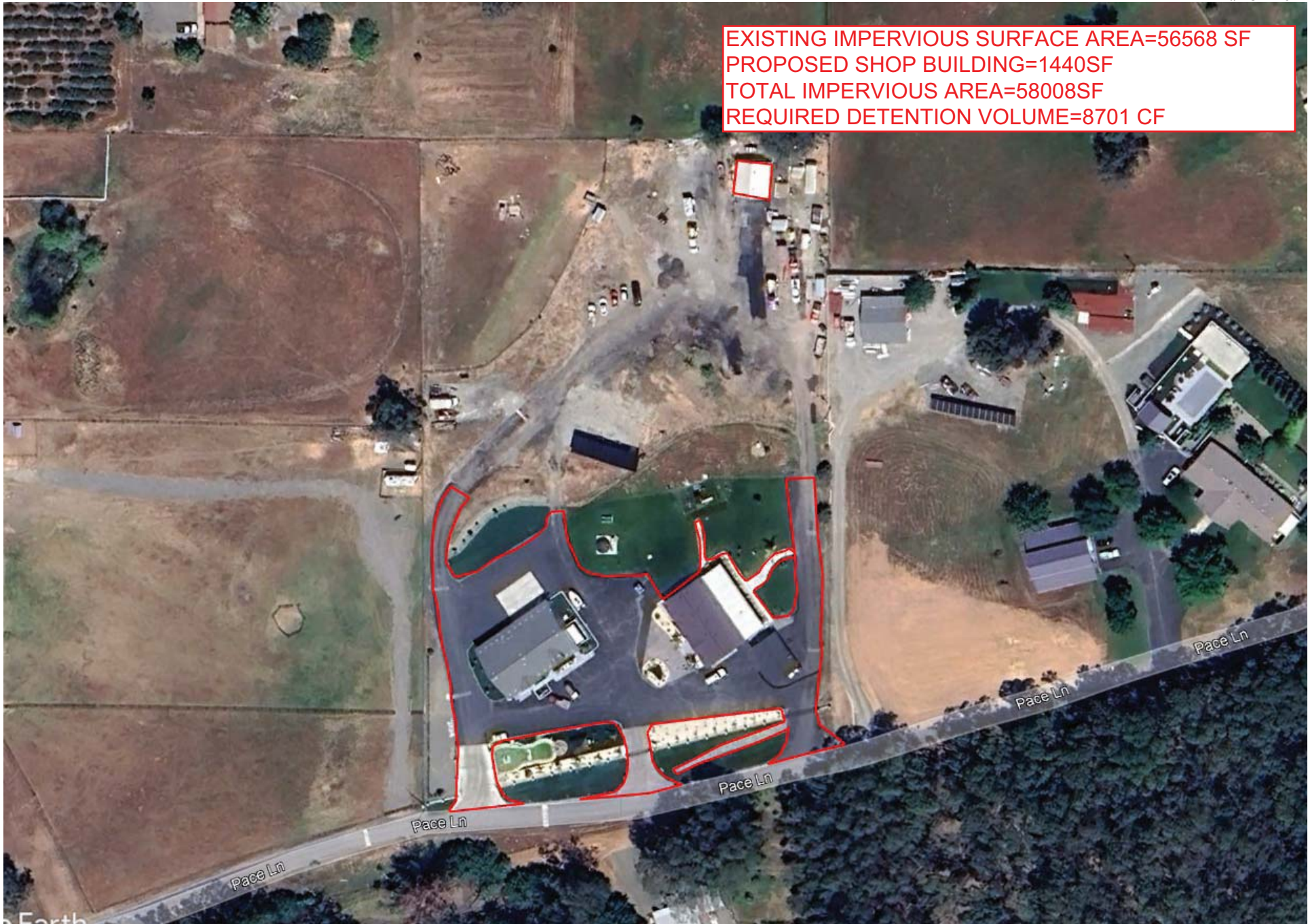
REV.	DATE	DESCRIPTION	BY	APPROVED

PROJECT: **LANDS OF STEVENS
4585 PACE LANE
SOLANO COUNTY, CA**

SHEET TITLE: **DETENTION POND AREA EXHIBIT A**

SCALE: 1"=15' DWG: 24-001 JOB NO: 24-001 XREF: 24-001-TOPO

SHEET
1
OF 1



EXISTING IMPERVIOUS SURFACE AREA=56568 SF
PROPOSED SHOP BUILDING=1440SF
TOTAL IMPERVIOUS AREA=58008SF
REQUIRED DETENTION VOLUME=8701 CF

EXHIBIT B
4585 PACE LANE, VACAVILLE
IMPERVIOUS AREAS