

504 Redwood Blvd.

Suite 220

Novato, California 94947

T 415 / 382-3444

F 415 / 382-3450

October 7, 2005
File: 727-01bltr.doc

Law Offices of David F. Beach
111 Santa Rosa Avenue, Suite 202
Santa Rosa, CA 95402-0788

Attn. Mr. John Fritsch

Re: Geotechnical Evaluation
Wood v. Hidden Lakes HOA
Granite Bay, California

Ladies and Gentlemen:

Introduction

As a result of the September 27th mediation meeting, it is our understanding that a preliminary settlement agreement was achieved. One component of the settlement agreement is to reduce any leakage from the pond above the plaintiffs' properties. The plaintiffs' also requested that the work be performed on the Hidden Lakes Estate HOA property.

Three options have been previously discussed to reduce seepage and/or lower groundwater levels in the vicinity of the Wood and Allegra properties. Although the third option presented below would require work to be performed on the plaintiffs' properties, this option is presented for consideration because it may be more effective in lowering groundwater levels.

Option 1 – Lake Sealant

Adding a sealant to the lake water is the simplest and least disruptive option to reduce lake seepage. A sealant product such as Seepage Control ESS-13, or approved equivalent, is added to the lake. The product is pulled into and clogs the soil at any leakage areas. A 60 to 90 percent reduction in seepage is expected and the results are reported to be permanent. Since the lake does not need to be dewatered and only small construction equipment is required, disruption to the project site is minimal.

Monitoring the effectiveness of the sealant would include evaluating future water use and comparing to previous records and a calculated predicted water use that accounts for evaporation and landscape irrigation in the common HOA property. The existing monitoring wells and pump discharge on the plaintiffs' property could also be monitored. Since the project site has naturally high groundwater conditions, the effectiveness regarding lowering the groundwater level on the plaintiffs' properties is unknown.

The estimate cost for Option 1 is roughly \$20,000 to \$25,000. A conceptual plan view of the remedial work is presented on Figure 1.

October 7, 2005

Option 2 – Lake Liner

Another alternative to reduce lake leakage is to install a liner on the lake bottom. This option would require de-watering of the lake, removal of sediment and grading of the lake bottom, installation of a continuous liner (HDPE 40 mil or approved equivalent) up to the high water level, and re-filling the lake. Construction is expected to take a few months and would be fairly disruptive to the project site. The seepage reduction is expected to be about 90 to 95 percent.

Monitoring the effectiveness of the sealant liner include evaluating future water use and comparing to previous records and a calculated predicted water use that accounts for evaporation and landscape irrigation in the common HOA property. The existing monitoring wells and pump discharge on the plaintiffs' property could also be monitored. Since the project site has naturally high groundwater conditions, the effectiveness regarding lowering the groundwater level on the plaintiffs' properties is unknown.

The estimate cost for Option 2 is roughly \$100,000 to \$125,000. A conceptual plan view of the remedial work is presented on Figure 2.

Option 3 – Cut-Off / Collector Trench

A third remediation option for consideration is installation of a 6-foot deep, combination, groundwater cut-off and collector trench installed at the downstream base of the dam on the Wood and Allegra property. A waterproof membrane would be installed on the upstream side of the trench to cut-off groundwater seepage to a depth of 6 feet that flows downstream towards the plaintiffs properties. The downstream side of the trench would be filled with permeable material and a collector subdrain that connects to a sump pump. Any water collected in the trench would be pumped back into the lake. An overflow line and gravity subdrain would also be installed within the drainage easement. The depth of this drain would be controlled by the elevation of the storm drain system in the street. If adequate depth is present, the need for the pump could be eliminated. This option would require removal and replacement of some of the landscape improvements. Although the trenches would be located to minimize conflicts with existing improvements, a moderate amount of disruption to the Wood and Allegra properties is expected due to the construction activities.

Monitoring the effectiveness of the trench system would include recording water levels in the existing monitoring wells and pump discharge amounts on the plaintiffs' property. Since this system would lower groundwater level regardless of the source, it is expected to be the most effective option for lowering the groundwater level on the plaintiffs properties.

The estimate cost for Option 3 is roughly \$60,000 to \$80,000. A conceptual plan view of the remedial work is presented on Figure 3.

Conclusions

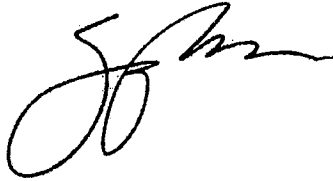
Based on our geotechnical evaluation, we would recommend a phased approach to the remedial plan. The first phase of work would involve application of the lake sealant and monitoring for a period of about 1 year. If additional work is required, then Options 2 or 3 could be implemented at a later date.

Law Offices of David F. Beach
Page 3 of 3

October 7, 2005

If you have any questions or if we can be of further assistance please call.

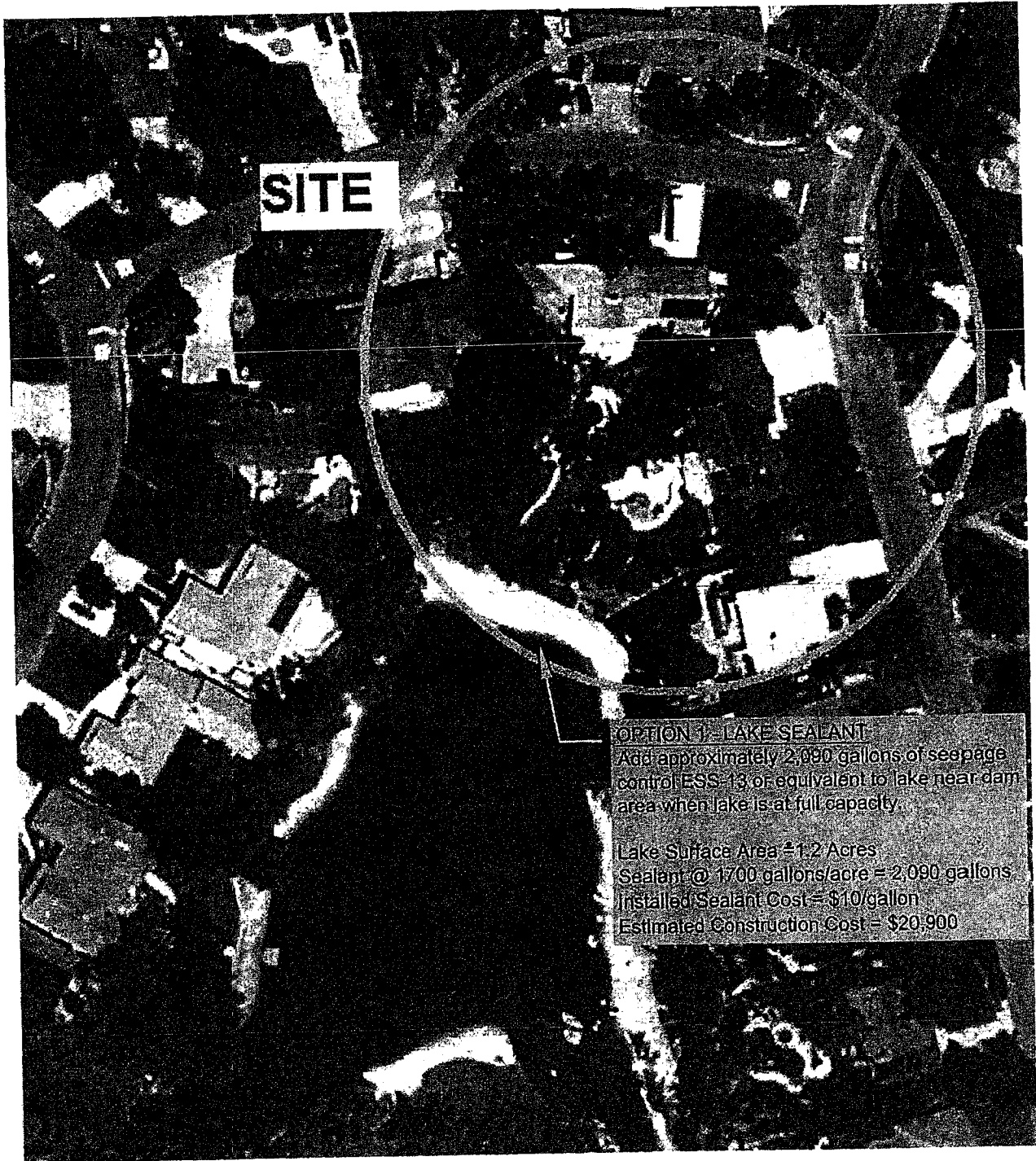
Yours very truly,
MILLER PACIFIC ENGINEERING GROUP



Scott A. Stephens
Civil Engineer No. 50482
Geotechnical Engineer No. 2398
(Expires 6/30/05)

3 copies submitted

Attachments: Figures 1, 2 and 3



SITE

OPTION 1 - LAKE SEALANT
 Add approximately 2,090 gallons of seepage control ESS-13 or equivalent to lake near dam area when lake is at full capacity.

Lake Surface Area = 1.2 Acres
 Sealant @ 1700 gallons/acre = 2,090 gallons
 Installed Sealant Cost = \$10/gallon
 Estimated Construction Cost = \$20,900

HLE EXHIBIT 20

COPYRIGHT 2005, MILLER PACIFIC ENGINEERING GROUP
 FILE: 727.05_options.dwg

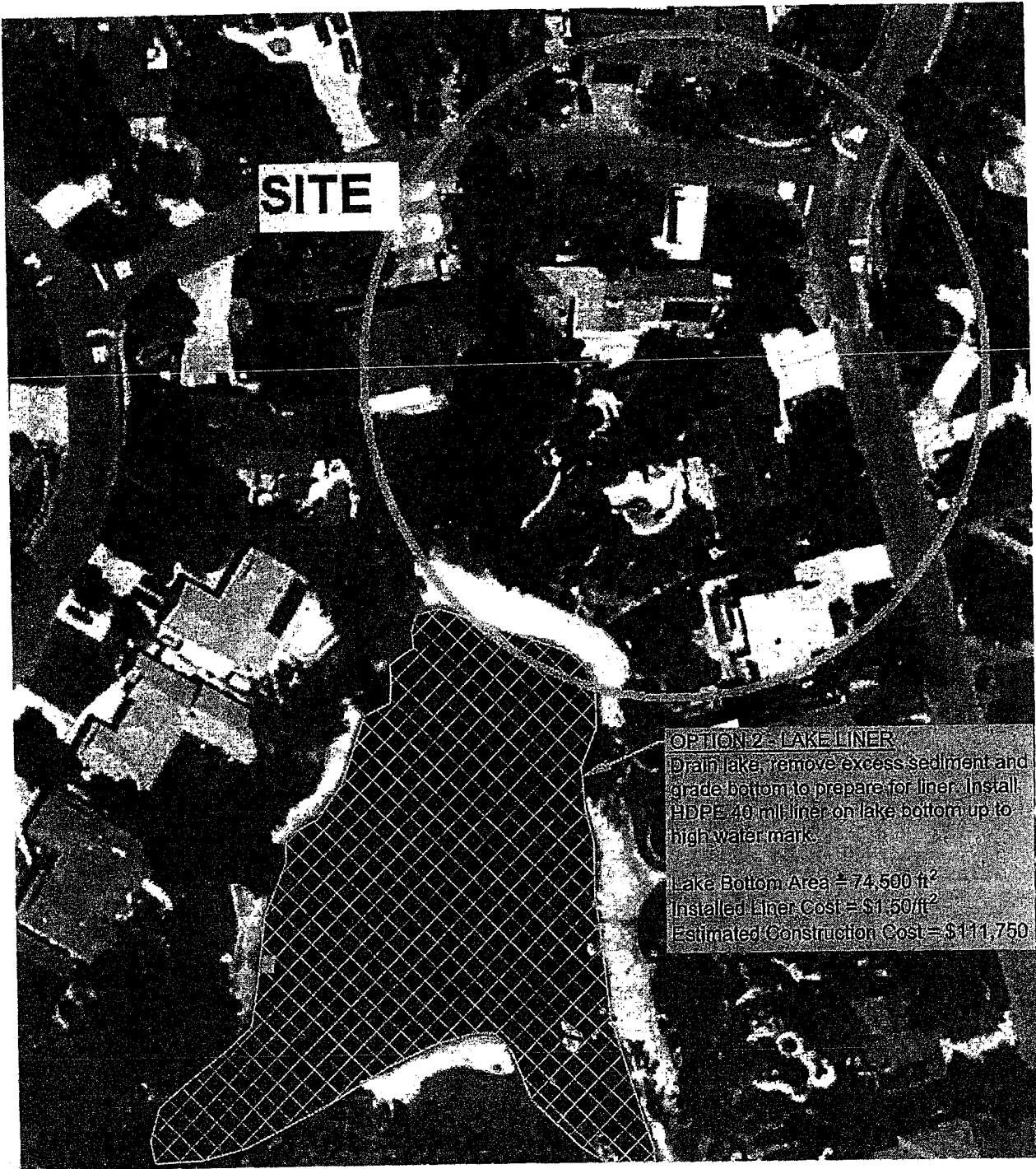


OPTION 1 - LAKE SEALANT
 Wood v. Hidden Lakes Estate HOA
 Granite Bay, California

1

Project No. **727.05** Date **10/6/05** Approved By:

Figure



COPYRIGHT 2005, MILLER PACIFIC ENGINEERING GROUP
 FILE: 727.05_options.dwg



OPTION 2 - LAKE LINER
 Wood v. Hidden Lakes Estate HOA
 Granite Bay, California

2

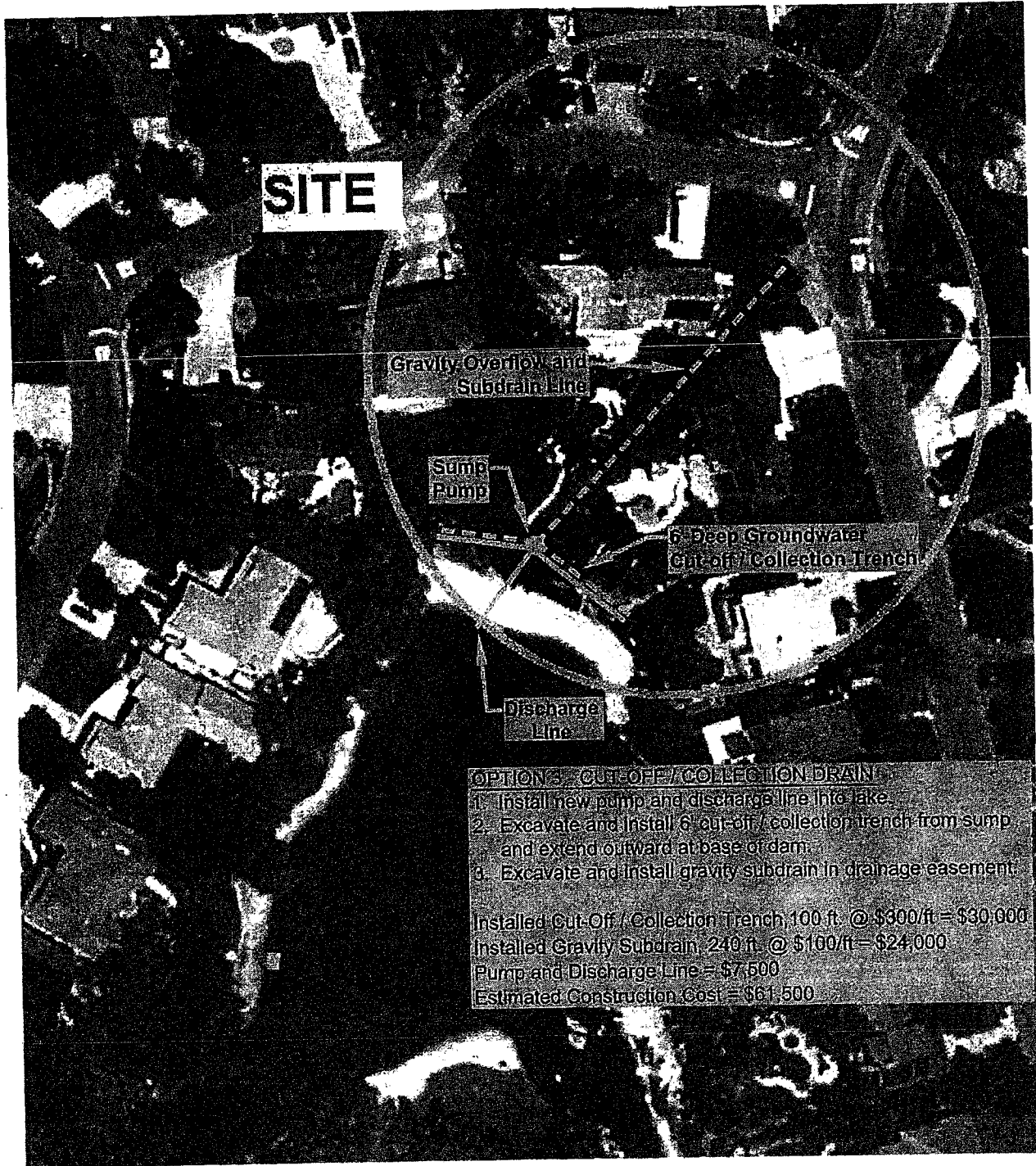
Project No. 727.05

Date 10/6/05

Approved By:

Figure

HLE EXHIBIT 20



OPTION 3 - CUT-OFF / COLLECTION DRAIN

1. Install new pump and discharge line into lake.
2. Excavate and install 6" cut-off / collection trench from sump and extend outward at base of dam.
3. Excavate and install gravity subdrain in drainage easement.

Installed Cut-Off / Collection Trench, 100 ft. @ \$300/ft = \$30,000
 Installed Gravity Subdrain, 240 ft. @ \$100/ft = \$24,000
 Pump and Discharge Line = \$7,500
 Estimated Construction Cost = \$61,500

COPYRIGHT 2005, MILLER PACIFIC ENGINEERING GROUP
 FILE: 727.05_options.dwg



OPTION 3 - CUT-OFF / COLLECTION DRAIN
 Wood v. Hidden Lakes Estate HOA
 Granite Bay, California

3

Project No. 727.05

Date 10/6/05

Approved By:

Figure

HLE EXHIBIT 20