

Beaver Problems Contacts:

Dept of Public Health/ Bureau of Environmental Assessment
Elaine Kruger 617-624-5757

www.mass.gov/dph/beha/beavers/beacon.htm

She was involved in our beaver dam issue, and spoke with Martin Fair the day he signed the emergency permit. She was also on the joint advisory board of DPH and DEP which created the beaver regulations.

Dept of Environmental Protection
Thomas Maguire 617-292-5602

He is the contact at DEP for appeal of Conservation Commission actions, and was contacted during our beaver dam issue. He was also on the joint advisory board of DPH and DEP which created the beaver regulations. Once an emergency is declared by Board of Health, if Conservation does not act within 24 hours, he may be contacted for an appeal. DEP appeals will be completed within 7 business days.

Mass Wildlife Fur Bearing Biologist Chrissy Henner 508-792-7270, ext 123 was also contacted and is a great resource for beaver issues. *Resigned 12/28/04
Tom O'Shane*

FEMA location coordinator is Dave Knowles 617-956-7570. He said beaver issues are usually handled at the local or state level.

Dept of Conservation and Recreation/Flood Hazard Management Program
Eric Carlson, Environmental Engineer 617-626-1362

Eric.carlson@state.ma.us

Contacted regarding helping us get into talks with Wilmington about the Weir boards and Rt 62 bridge clearing management.

Beaver Solutions – Beaver conflict resolution specialists.

Mike Callahan 413-585-9145

Installed flow device in Fieldcrest dam Spring 2004, State of Mass foremost authority on beaver control. Maintains over 40 flow devices in town of Billerica, helped develop North Andover's beaver management plan. Has provided written opinions on both Rt 62 culvert and dam behind Shea's. Copies in this manual. Featured in the MSPCA film "Solving Human-Beaver Conflicts in Massachusetts." Copies of film on VHS available at Conservation and DPW for review.

BEAVER SOLUTIONS

98 Bay Road; Hadley, MA 01035

Phone: (413) 585-9145; Fax: (413) 587-9788

Email: info@beaversolutions.com

September 27, 2004

Martins Pond Association
c/o Paul Cameron
37 Burroughs Road
North Reading, MA 01864

Dear Paul,

It was a pleasure to meet with you again on September 21st and evaluate the beaver issues at the two Route 62 culverts, as well as the downstream beaver dam. As we discussed, I am confident that a long term, cost-effective solution exists to protect the culvert from future beaver damming and lower the upstream water level significantly. Since 1998 our culvert protective fences and beaver dam pipe systems have solved over 400 beaver problems in five states. Our culvert protective fences have a 98% success rate. See enclosed study.

The culverts under Route 62 are currently blocked by beavers. This is raising the water level over an extensive area upstream by approximately one foot. This problem with the culverts is clearly causing a threat to Martins Pond residents because this area downstream of Martins Pond is no longer able to provide much of a runoff absorbing buffer in case of heavy storms. With the partially blocked culverts under Route 62 high storm events can be backed up towards Martins Pond.

I recommend that the culverts be cleared of beaver damming materials and immediately protected with the installation of a culvert protective fence on both ends of the culverts. This action would prevent the culverts from being redammed, and resolve this problem in a long term manner. With the culverts open, the water level in the large wetland would be lowered by one foot, thereby providing storm protection for upstream residents. The installation of a properly designed and installed culvert protective fence system would prevent continued beaver damming of these culverts.

Unfortunately, since the beavers living in this area are used to the high water level, it is very possible that they will respond to the lower water level by trying to dam against the fencing. If this damming becomes problematic these beavers should be trapped. New beavers will likely relocate to this area in less than a year because it is ideal beaver habitat. However, this would not be a problem because any new beavers would not have the memory of the higher water level nor the memory of damming the culverts, so they would tolerate the lower water level and leave the fence alone. Trapping would only be needed once at the most in this area if the culvert protective fence was installed.

Any manmade device exposed to the four seasons and the presence of beavers requires some maintenance. While our culvert fences are designed to be very low maintenance, this maintenance is very important. Quarterly all floated leaves and sticks should be cleared from the culvert fences. When this routine maintenance is performed as recommended, a culvert protective fence will remain effective for many years. Beaver Solutions guarantees every device we maintain. See attached. Since our customer's satisfaction and our reputation are very important to us, we offer this service at a low cost.

I do not feel that water level at the downstream dam can be effectively lowered in a long term manner with a beaver dam pipe due to the shallowness of the pond and the extremely high water flow in this area. Since the ponded area here is shallow, the beavers could easily build a new dam immediately downstream of the piped dam rendering the pipe ineffective. Fortunately though, I do not expect the dam height to be raised significantly over time due to the high water flow. Therefore I recommend that this dam be left alone, and only breached if necessary in anticipation of the Route 62 culverts being opened.

I would be happy to speak with you at your earliest convenience to answer any questions or concerns regarding the proposal, or to schedule the work.

Sincerely,

A handwritten signature in cursive script that reads "Mike Callahan".

Michael Callahan, Owner

BEAVER SOLUTIONS

Mike and Ruth Callahan
 Bay Road
 Hadley, MA 01035-9427
 (413) 585-9145 Fax: (413) 587-9788

PROPOSAL

Date

9/27/04

Proposal for

Paul Cameron
 c/o Martins Pond Association
 37 Burroughs Road
 North Reading, MA 01864

Project Location

Rt. 62 Culverts

Project Description

Culvert Protective Fence

Description

Quantity

Rate

Total

Total labor and material costs for an extra large culvert protective fence system with flooring and a downstream exclusion fence to prevent beaver damming of the culverts. Price includes delivery, installation and a post-installation inspection.

1

1,475.00

1,475.00

Optional Annual Maintenance Agreement - Culvert fencing to be inspected and kept clean of floated debris by Beaver Solutions quarterly through December 2005. Minor repairs and Beaver Solutions Guarantee are included in price.

1

240.00

240.00

Total

\$1,715.00

Note: All culvert protective fences Maintained by Beaver Solutions are guaranteed to prevent beaver damming of the culvert. Beaver Solutions is fully insured.

Culvert Protective Fences by Beaver Solutions

A culvert in a roadbed probably appears to a beaver like a hole in a dam. As the roadbed with a blocked culvert produces a large ponded area for minimal work, beavers are naturally attracted to these sites.

Beaver Solutions culvert protective fences are custom designed for each site and have a 98% success rate. They prevent culvert damming by beavers by decreasing damming stimuli (the sound and feel of moving water), and increasing the work needed to plug the culvert. Design factors considered include the intensity of damming stimuli, topography, length of time damming at the site, food supply, history of poor quality flow devices at site, stream flow and depth, among others.

The trapezoidal shaped fence (see diagram) was invented by Wildlife Biologist Skip Lisle and can be highly effective. This design both decreases dam building stimuli (water movement and noise) and creates a long perimeter to dam. Beavers may start damming near the culvert, but give up as they get farther away from the culvert as it is an unnatural direction for them to dam and the stimulus for damming is decreased. The typical cost to install a culvert protective fence is usually \$500 to \$600.

Diagrams - The Trapezoidal Fence

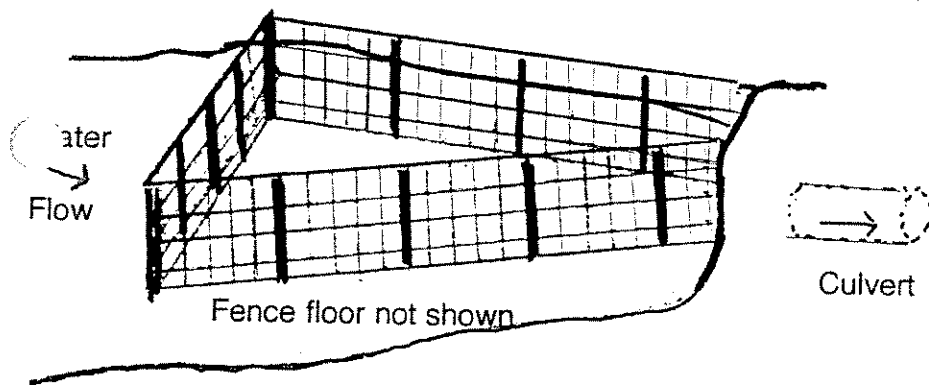


Figure A - Side View

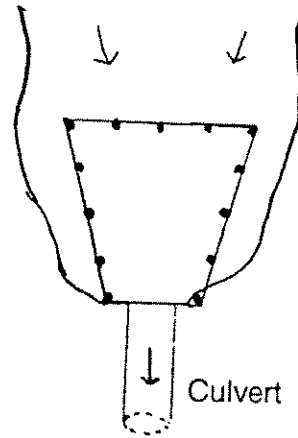


Figure B - Top View

Proper maintenance is extremely important for the fence system to remain effective for many years. Quarterly, all floated leaves and sticks should be removed from the fence. Beaver Solutions fully guarantees every culvert protective fence we maintain, and offers this service at a very low cost. We are licensed and fully insured.

The downstream end of the culvert is also fenced to prevent the beavers from entering the culvert from that end. If the culvert is very noisy, building a small dam downstream (or on the fence) to backup water to the culvert can silence it, and will greatly decrease the beaver's motivation to dam on the fence.

Beaver Solutions

Mike & Ruth Callahan, Owners

98 Bay Road

Hadley, MA 01035

Phone: (413) 585-9145 Fax: (413) 587-9788 E-mail: info@beaversolutions.com

Beaver Solutions

Culvert Maintenance Guarantee

*If any Culvert Protective Fence we maintain is blocked by beavers, we will repair or replace it at no charge, or you will be offered a full refund of our labor. **

** Labor is at least half of the total cost.*

This Maintenance Guarantee does not cover flooding from other dams, vandalism, or catastrophic event damage.

Minor repairs are included with routine maintenance at no additional cost.

BEAVER SOLUTIONS

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Website: www.beaversolutions.com

October 13, 2003

Paul Cameron
c/o Martins Pond Association
37 Burroughs Road
North Reading, MA 01864

Dear Paul,

Thank you for the opportunity on October 3rd to assess the Martins Pond beaver problem, as well as the culvert on Eisenhaure Lane for the town. I am pleased to report long term solutions for each of the beaver problems do exist.

As you are aware, Beaver Solutions specializes in resolving human/beaver conflicts. Our highly successful flow devices usually offer the most cost-effective and long-lasting solution to beaver-related flooding problems. Since 1998 we have used flow devices to resolve over 300 beaver problems in five states. Our satisfied customers include town highway, water and conservation departments, State and Federal Agencies, railroads, private businesses and homeowners. Beaver Solutions also performs licensed beaver trapping for those sites where we do not recommend flow devices.

Flow devices can generally be classified as either beaver dam pipes or culvert protective fence systems. Pipe systems are often referred to as Pond Levelers as they control the size of a beaver pond to prevent damaging flooding. Specially designed culvert protective fence systems are typically utilized on road culverts to stop beaver damming of the culvert. When properly designed and installed these types of flow devices offer long term protection from beaver damming activity, thereby protecting roads, human health and safety, and saving significant amounts of time and money for years to come. They are also the most humane and environmentally friendly solution to beaver problems.

The dam on Martins Brook is challenging in several ways. First it is not a tall dam with the water elevation difference between the upstream and downstream sides being only about one foot. Therefore as we discussed, piping this dam can only lower the pond level by 6 - 12 inches. Second, access to the dam is difficult due to the distance from the road and the heavy brush in and around the pond and dam. Third, due to homes close to the water edge on Martins Pond, the pond's water level must be prevented from fluctuating widely. Fourth, the outflow end of the pipe must be protected from beaver interference because the dam is so short the outflow end cannot be properly hidden in the dam. Finally, it is a challenge to ascertain the minimum pipe capacity needed at the dam due to the presence of upstream and downstream pumping stations.

Despite these issues I am confident that a long term solution exists for this site. Based on my assessment I am recommending the installation of a Pond Leveler pipe with an 18" diameter. This pipe is much larger than we normally use, but it will provide the maximum flow capacity at the lowest total cost because only one sixty foot long pipe will be needed rather than several 12" diameter Pond Leveler pipes.

Beavers building new dams upstream or downstream of a piped dam can be an issue at any site. Fortunately though, Martins Brook appears deep enough (over 2 feet) due to beaver damming at the Route 62 weir that the risk is low at this site.

Even though the Route 62 weir is being actively dammed by beavers, it poses no threat to the Martins Pond residents at this time. The weir could be piped if the dam was built up considerably in the future though. Of note, due to the water drawoff by the Town of Wilmington in this area, one 12" Flexible Pond Leveler should have sufficient capacity to handle the flow at this downstream point. At this time no intervention is needed however.

Our flow devices are designed to remain effective for many years with minimal maintenance. They are designed to be very low maintenance, but the little maintenance that is required is very important. Pond Leveler pipes need only be inspected once annually in the spring for winter ice damage and the pipes adjusted if necessary to ensure the proper pond level. Culvert protective fences should be cleared of any floated leaves and sticks quarterly so that beavers will not dam against the fence.

When this routine maintenance is performed as recommended, our flow devices will remain effective for many years. Since both your satisfaction and our reputation are very important to us, Beaver Solutions offers maintenance plans at a very low cost. See enclosed estimates. While we are willing to train anyone interested in performing this maintenance work, our guarantee applies to the devices we maintain.

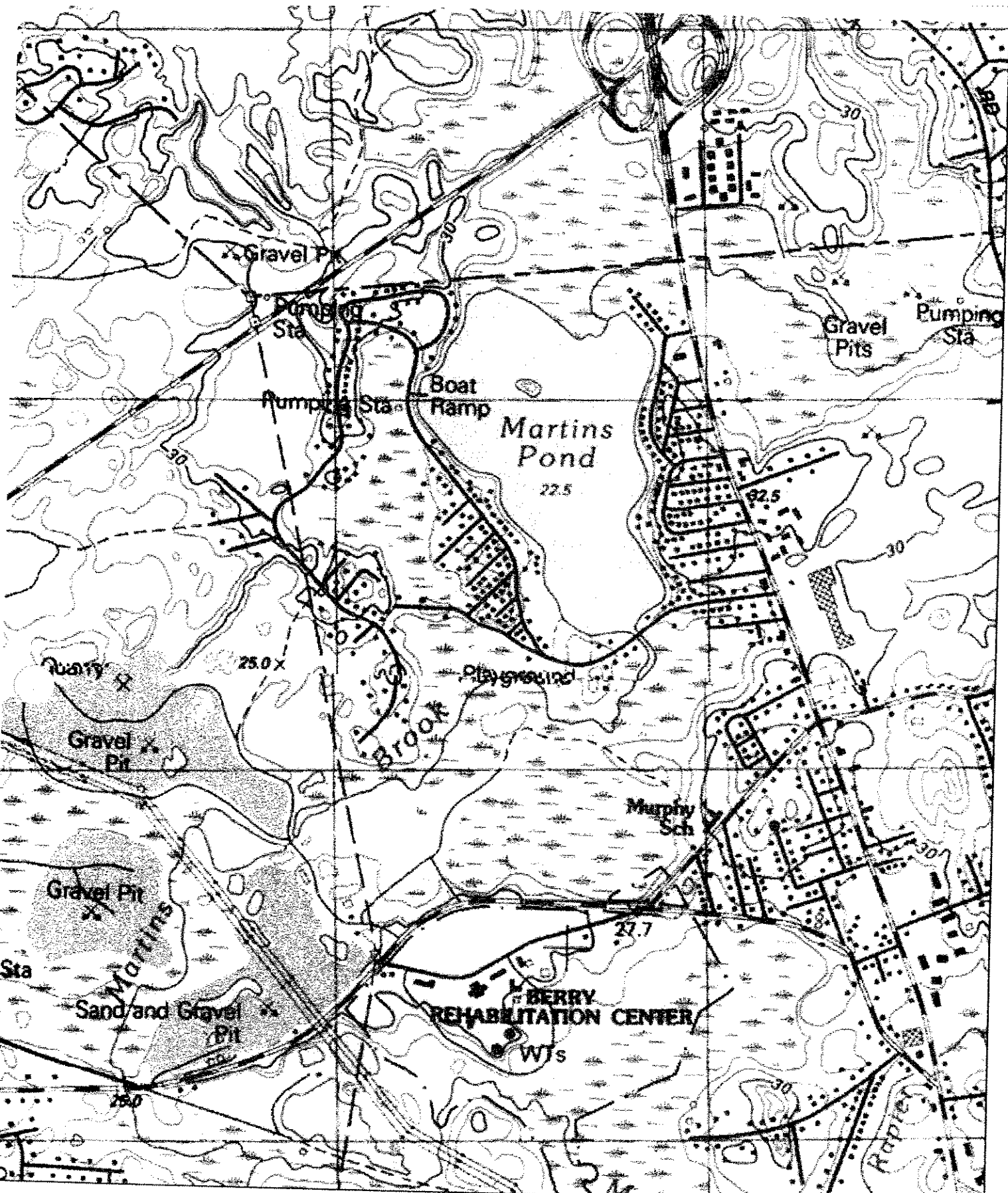
Please review the enclosed proposals and feel free to forward them to the appropriate town officials. Please contact us at your convenience regarding any questions or concerns, or to discuss the next step in this process. Please note that once the ponds freeze over we are no longer able to install pipes until spring.

Sincerely,



Michael Callahan, Owner

cc: Michael Soraghan, Town Engineer



Date: 10/13/2003
 Scale: 1 inch equals 1111 feet

Location: 042° 35' 30.2" N 071° 07' 38.7" W
 Caption: Martins Pond Area
 North Reading, MA
 Beaver Solutions

BEAVER SOLUTIONS

PROPOSAL

Mike and Ruth Callahan
98 Bay Road
Hadley, MA 01035-9427
13) 585-9145 Fax: (413) 587-9788

Date
10/13/03
Project Location
Martins Pond Dam
Project Description
Pond Level Control

Proposal for
Paul Cameron
c/o Martins Pond Association
37 Burroughs Road
North Reading, MA 01864

Description	Quantity	Rate	Total
Total labor and material costs for an extra large Pond Leveler pipe system with 60 ft of 18" diameter double wall ADS piping. Includes large exclusion fences on both ends of the pipe to prevent the beavers from digging the pipe. Price includes delivery to a difficult site to access, installation, and a post-installation inspection.	1	2,280.00	2,280.00
Optional Annual Maintenance Agreement - Entire Pond Leveler pipe system to be inspected in the spring of 2004 for winter ice damage, and pipe adjusted if necessary to maintain proper water level. Price includes Beaver Solutions Guarantee.	1	100.00	100.00
Savings if the Town / Pond Assoc. supplies the 60 feet of 18" diameter double wall solid ADS pipe.		-600.00	-600.00
Total			\$1,780.00

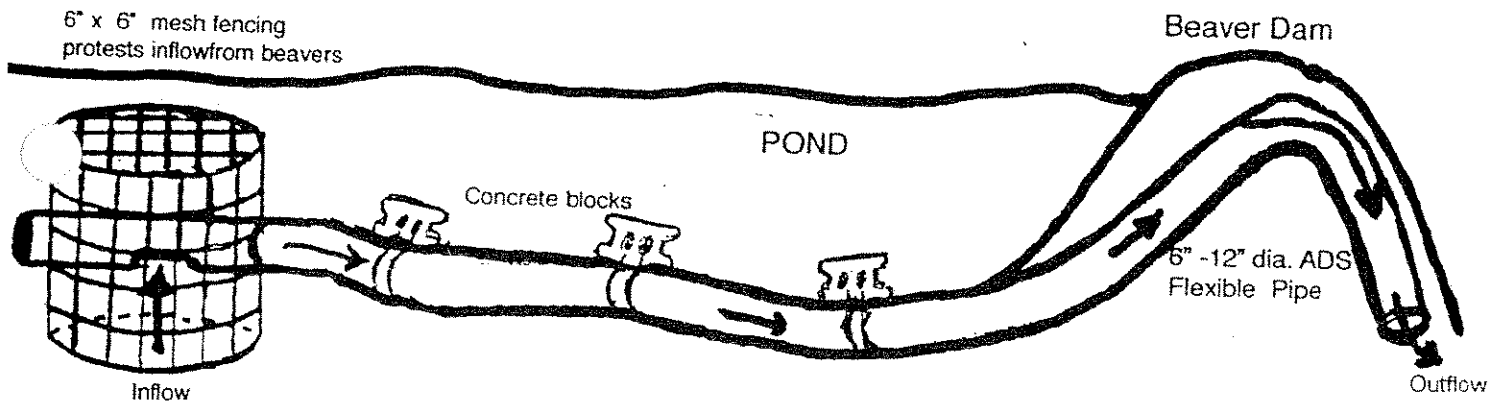
The Flexible Leveler by Beaver Solutions

In order for beaver dam pipes to work indefinitely, they must be designed so that beaver cannot detect the flow of water into the pipe. The Flexible Leveler concept was invented and successfully used for 20 years by Michel LeClair at Gatineau Park in Ottawa, Canada. It works by surrounding the inflow area of the pipe with fencing which prevents the beavers from getting close enough to the intake to detect the water movement. As a result, the beavers do not attempt to clog the pipe.

Flexible Leveler systems control the size of beaver ponds protecting human interests in a long term, cost-effective manner. Wherever feasible this is preferable to the short term solution of trapping. It is designed to prevent detection by the beavers and to keep normal water levels below the top of dam. Beavers will raise their dams only when the water level rises above the dam. When the water level is below the top of the dam, beavers will not continue to raise the height of the dam. Rains will then be held back by the dam and slowly released. Some normal fluctuation of the water level during wet and dry spells is expected, but the dam will not continue to rise and the pond size will be controlled.

The peak of the flexible pipe in the dam determines the pond level (see diagram). Water will flow through the pipe until the pond level drops below the peak of the pipe. This design not only permits control of the water level, but it also allows for the entire pipe to be hidden under the water and in the dam, out of sight.

Diagram - The Flexible Leveler



Notes

- The number of pipes needed is determined by the average stream flow. Usually 1 or 2 are sufficient.
- Keeping the water level as high as tolerable decreases the possibility of new problematic dams.
- In most states permits are necessary to work in a wetland or alter a beaver dam.
- The dam is breached a small amount for several days to gently lower the water to the desired level.
- The pond level can be raised or lowered by adjusting the peak of the flexible piping.
- A Flexible Leveler will function for many years with minimal maintenance.
- Each Flexible Leveler comes with a Beaver Solutions guarantee.

Beaver Solutions

Ruth and Mike Callahan, Owners

98 Bay Road, Hadley, MA 01035

Phone: (413) 585-9145 Fax: (413) 587-9788

Website: www.beaversolutions.com E-mail: info@beaversolutions.com

Beaver Solutions Maintenance Guarantee

If we are hired to maintain a Culvert Protective Fence or Flexible Pond Leveler and it is blocked by beavers, we will not charge for our labor to repair or replace it, or you will be offered a full refund of our labor cost.

*Note: Labor costs are typically half of the installation cost.
This Maintenance Guarantee does not cover flooding from other dams, vandalism, nor catastrophic event damage.
Minor repairs are included with routine maintenance at no additional cost.*

Eff. 6/03

3-19-04 11:00 AM.

Mike,

Mike Callahan from Beaver Solutions
will install the 18" Beaver Deceivers on
Friday April 2nd at the end of Fieldcrest

question ① Does the Town want to

supply the 18" ADS Poly DRAINAGE PIPE
Two - 20' SECTIONS. SINGLE WAIVED
ONE - SPLIT COUPLING (SAVES US \$600.)

② I have ~~to~~ filed the necessary
paperwork with Martin Fair today.

Paul Cameron
cell - 617-875-3573

10-DAY EMERGENCY BEAVER OR MUSKRAT PERMIT

Name TOWN OF NORTH READING / MARTINS POND ASSOCIATION Permit No. 01-04

Address 235 NORTH ST., NORTH READING, MA 01864

Authorized Agent Name (if applicable): MIKE SORAGHAN / PAUL CAMERON

Complaint Location: END OF FIELDCREST TERRACE

In accordance with and pursuant to provisions contained in chapter 131 of the Massachusetts General Laws section 40, 80A and 321 Code of Massachusetts Regulation 2.08 and 10.00 (Wetlands Protection Act), the permittee(s) above named may immediately remedy the threat to human health and safety by one or more of the following options:

- (a) the use of conibear or box or cage-type traps for the taking of beaver or muskrat, subject to the regulations promulgated by the Division of Fisheries and Wildlife (see back)
- (b) the breaching of dams, dikes, bogs or berms, so-called*
- (c) employing any non-lethal management or water-flow devices*

*If the permittee chooses option(s) b and/or c, he/she must appear before the local conservation commission to obtain an emergency certification regarding specifications for breach size and/or water-flow device installation in accordance to M.G.L. c. 131, s. 40 (Wetlands Protection Act).

The Board of Health has determined that said beaver or muskrat problem poses a threat to public health or safety as stated in M.G.L. c.131, s.80A.

Specify: FLOODING OF RESIDENTIAL PROPERTY

Board of Health Official Name: MARTIN FAIR, HEALTH AGENT

Board of Health Official Signature: Martin Fair Date: 03-31-04

The above signature validates this permit for 10 consecutive days from the date shown for option (a) only. If the permittee chooses options (b) and/or (c), he/she must return to the Board of Health for a final signature after obtaining an emergency certification from the conservation commission.

Please attach the emergency certification to this permit and return to the Board of Health for final approval.

(See Back)

John A. Benedetto
Services In
Animal Damage Control
P.O. Box 60
Wakefield, MA 01880
(781) 246-2884

January 12, 2004

Martin's Pond Association
C/O Paul Cameron
37 Burroughs Rd.
N. Reading, MA 01864

Site # 19-03
02-04

SITE INSPECTIONS OF JANUARY 11TH WITH PAUL

- A. Price quotation will be \$750.00 to \$1000.00 "per site". Each site would require a Breech Permit with my name on it and would also require a 10-day emergency-trapping permit with my name included on it. This quote is for the use of restricted "kill type traps". For the duration of the 10-day permit I will remove as many beavers as possible. Final fees would be quoted after inspection of each site 1 week before starting work.
- B. Beaver pipes work in only specific areas and conditions. Before installation, make sure that the finished elevation of water will satisfy all abutters. These pipes also require maintenance, so figure this into your decision. Many flow devices also require as maintenance, the trapping of beaver at the site.
- C. Breeching of dams may be of temporary relief during the winter months. While the ice remains on the waters, the beavers usually do not repair small breeches as aggressively as open water. Adult beaver will inspect the dam daily if they are close enough to the main lodge etc., but usually only repair major breeches or leaks. Beavers will sometimes use the smaller leaks to get out from under the ice to feed on fresh bark etc.

If you have any questions please feel free to contact me.

John Benedetto