

2017-148

Town of Tisbury
Elastic Mooring Committee
Town Hall, Vineyard haven, MA 02568

April 15, 2017

Harbor Management Committee
Selectmen
Harbormaster
Tisbury Town Hall
Vineyard Haven, MA 02568

RE: Low impact moorings and proposed regulations

~~Dear Sirs,~~ *To Whom it may concern*

Attached are our proposed Low Impact Mooring Regulations. As with many things marine there is never a perfect answer. As time goes on and more experience is gained and new technology becomes available, changes may be necessary.

These Low Impact Moorings are not appropriate everywhere. Some vessels and some areas are inappropriate for these moorings.

Other Low Impact technologies may be better in some areas and should be looked into more thoroughly. Piles are a good example. They have very little impact on the bottom, they last a long time, properly installed they are very strong, but like other systems they are not appropriate everywhere or for everyone.

Sincerely,

William M. Austin Chair

The Elastic Mooring Committee

DRAFT

April 15, 2017

PROPOSED REGULATIONS FOR LOW IMPACT MOORINGS

GENERAL:

Certain Federal (Army Corps of Engineers) and State (D.E.P. and D.M.F.) require that low impact mooring technology be used on moorings in certain areas and conditions. Where low impact technology is required or opted for by the mooring holder, these regulations and specifications apply.

All low impact moorings shall be sized and installed in a professional manner by an approved installer and with components such that the mooring will perform properly and safely for the expected wind, wave, and tide conditions and with the permitted size boat for that mooring.

Only American made shackles and hardware shall be used. All shackles shall be seized with Stainless or Monel wire in a professional manner. Zip ties are not allowed as a shackle seizing. Systems using wire rope clips are not allowed.

The configuration of the low impact mooring shall consist of one of the following systems as described below and as shown on the accompanying sketches. Existing elastic band moorings shall be brought into compliance with these regulations as the systems wear and are maintained.

No low impact mooring shall be installed without the approval of the Harbormaster.

No existing chain mooring shall be changed to a low impact mooring without the approval of the Harbormaster.

Should any part of these regulations be unclear, final interpretation will be with the Harbormaster.

As time and experience dictate the Harbormaster may modify these regulations as necessary.

LOW IMPACT MOORING:

The mooring shall consist of an Anchor, an elastic rode, a chain to the surface through a mooring ball and a pennant to the boat. See sketches 1,2 & 3

THE ANCHOR:

The anchor for a low impact mooring shall consist of a concrete block sized according to table A (Anchor Sizes) or a Helix anchor with the following specifications.

Helix Anchor

The following specifications shall be considered the minimum allowable specifications of a helix mooring system.

- (1) The shaft must be a minimum of 1 1/2" thick and at least six feet in length.
- (2) The shaft and helix must be heavy galvanized steel.
- (3) There shall be a minimum of 2 helixes attached to each shaft with the lower helix being a minimum of 8" in diameter and the top helix being a minimum of 10" in diameter.
- (4) Helix moorings shall be placed/installed at the discretion and direction of the Harbormaster. No Helix mooring is to be placed without written approval of the Harbormaster. Installation of helix moorings must be done by an approved Mooring Installer.
- (5) It shall be the responsibility of the Mooring Installer to assure that the proper size and length helix is used according to subsoils within a given mooring area and for the vessel to be moored.
- (6) The Mooring Installer shall record the position of the helix mooring by a Global Positioning System (GPS) fix and record all the mooring specifications including the length of shaft, depth of mean high water, torque reading at set, all sizes and length of ground tackle. All information shall be filed with the Harbormasters Office within 14 days of work.
- (7) All helix moorings shall be installed as close to flush with the bottom surface as possible with no more than 6" protruding above the bottom surface.

HELIX TORQUE REQUIREMENTS.

500 ft.lbs. for shallow water small boat moorings

1000 ft.lbs. for other moorings for boats up to 50 ft.

Individual engineering analysis by an engineer at the owners expense will be required for installation of helix anchors for boats larger than 50 ft.

THE ELASTIC RODE:

The elastic rode shall come from a reputable manufacturer. All elastic rodes shall be provided with a certification from the manufacturer specifying the length (as measured from pull to pull) the breaking strength, and the elongation characteristics (stress/strain curve). This certification shall be provided to the Harbormaster, the mooring holder and made available to installers and inspectors. The rode shall have attached by the manufacturer or installer a permanent tag with a unique identifying number, this number shall be recorded with the harbormaster. The rode shall be provided with heavy galvanized deep thimbles at each end attached in a manner to provide full strength of the rode for the life of the rode. The rode shall be heavy molded one piece with appropriate thimbles, bushings and connections (such as the Hazlett Rode) or The rode shall be covered with a tight weave cover to protect the rode from abrasion and marine growth (such as the Storm Soft Rode). The size and length shall be according to Sketch 1,2 & 3. The rode shall have a float attached near the anchor end in such a manner so as to hold the shackle holding the rode to the anchor in an upright position and help prevent fouling of the rode on the shackle and bail. This float shall be made of durable material and filled with closed cell foam so as not to absorb water over time.

SWIVEL:

At the connection between the elastic rode and the chain a Galvanized shall be installed to help prevent the elastic rode from becoming twisted. This swivel shall be a minimum of 1 size larger than the chain size.

CHAIN:

Chain is to be galvanized and sized as shown on the accompanying tables and sketches.

BUOY:

The mooring buoy shall be round and minimum of 12" in diameter, white, hard/soft shell high-density foam filled, with 2" blue reflective band around the middle. Through the center there shall be a conduit which the top mooring chain shall pass through and attach to pennant. At least 50% of buoy must be above the water at all times. The mooring buoy shall have the permanently assigned mooring permit number and the vessel of record in at least 2" block letters. Low Impact moorings will be identified with the letters "LI". No "spar" buoys.

PENNANT:

The pennant shall follow the same regulations as the conventional moorings. Chafing gear shall be provided at all chafe points. Pick up buoys are allowed.

SMALL BOAT MOORINGS:

At the Harbormasters discretion, small boats less than 20 feet in length may use a single blade round shaft helix or a low profile block. A braided synthetic line from the anchor to the buoy and a pennant as shown in sketch 7. Torque requirements would still apply.

OFF SEASON MAINTENANCE \ WINTER STAKES:

Winter stakes may be used at the owner's option. If used they must be configured to keep the elastic band off the bottom. If winter stakes are used, they must not be in place between June 1 and October 15.

ALTERNATIVE MOORINGS:

Anyone wishing to use other low impact mooring design may apply to the Harbormaster to use other technology. These will be called alternative moorings. An application will require the following:

A complete design on paper showing all parts, pieces, connections, sizes etc.

The calculated holding power of the mooring.

The swinging radius including the boat.

The proposed position of the mooring.

A description of boat that will use the mooring.

The harbormaster may require additional information and may require professional review at the owner's expense. Approval will be up to the Harbormaster.

Should an Alternative mooring be installed and later declared to be unsatisfactory by the Harbormaster, it shall be removed within 14 days.

TABLE A:

Boat Length	Block Size
up to 20 ft.	1000 lb
20ft. to 25 ft.	2000 lb
26 ft. to 45 ft.	4000 lb
46 ft. to 50 ft.	6000 lb
Over 50 ft.	per Harbormaster

All moorings shall be sized according to the largest boat that might use the mooring. This could mean that the mooring is sized larger than the permit holder's boat.

INSPECTIONS:

Regular inspections shall be done to meet both the manufactures recommendations and the Town Regulations. Any components damaged or not in good condition shall be replaced within 10 days of the inspection. The inspector shall complete and submit a Town approved inspection form within 14 days of the inspection.

Any mooring using elastic band technology shall be inspected as follows:

Every Year: The low impact mooring and all its components shall be cleaned and inspected. These yearly inspections may be done by a qualified and approved diver.

Every 3 Years: All the mooring components (excluding the block or Helix) must be removed from the water for a more complete inspection. All the components must be cleaned and inspected for damage, wear, and corrosion, etc. Any components showing more than 20% wear shall be replaced. In addition to the normal inspection the length of the elastic rode must be measured and checked against the installed length. Any yield more than 10% shall require replacement of the elastic rode.

Every 6 Years: All the mooring components (including the block or Helix) must be removed from the water for a more complete inspection. All the components must be cleaned and inspected for damage, wear, and corrosion, etc. Any components showing more than 20% wear shall be replaced. In addition to the normal inspection the length of the elastic rode must be measured and checked against the installed length. Any yield more than 10% shall require replacement of the elastic rode.

INSTALLERS:

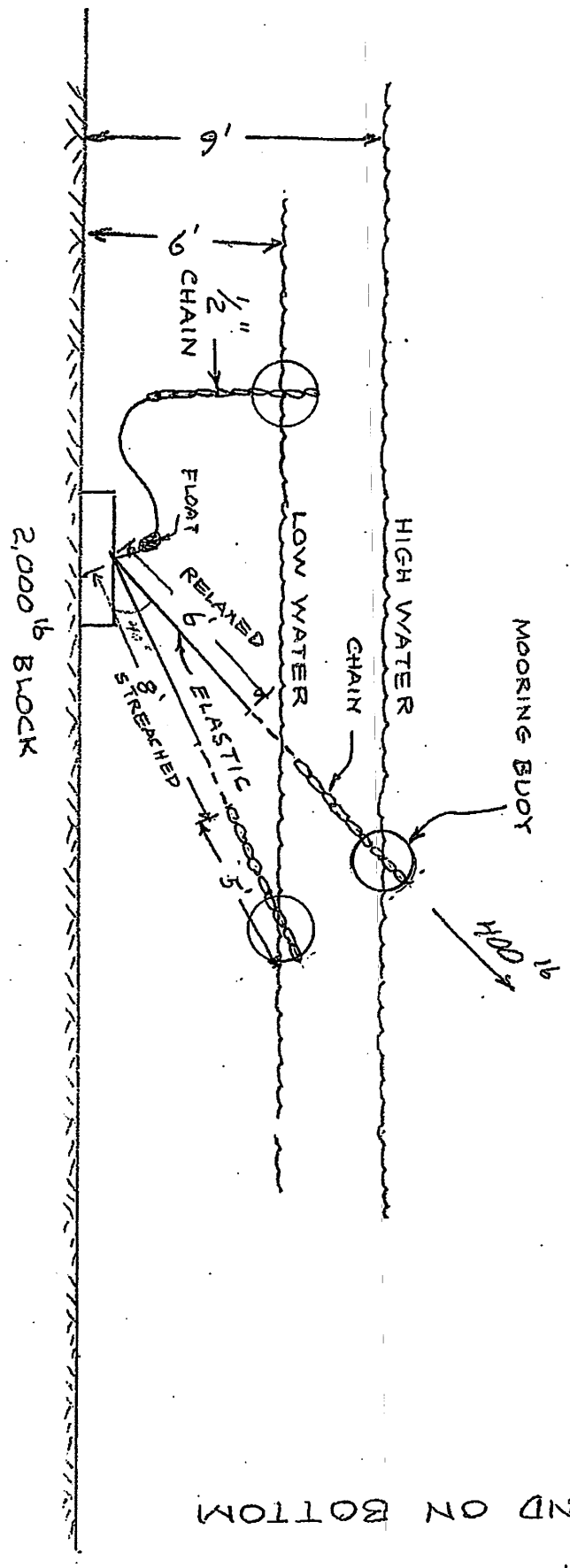
Installers shall be approved by the Harbormaster. Criteria for approval shall include but not be limited to: Availability of sufficient and proper equipment to perform the work safely and professionally. Knowledge of mooring systems and proper rigging. Experience and reputation working on mooring systems. Ability to perform in a professional manner.

INSPECTORS:

Inspectors shall be approved by the Harbormaster. Criteria for approval shall include but not be limited to: Availability of sufficient and proper equipment to perform the work safely and professionally. Knowledge of mooring systems and proper rigging. Experience and reputation working on mooring systems. Ability to perform in a professional manner.

Specific to Diving inspectors is the ability to perform rigging tasks reliably under water and the requirement to have a surface monitor present together with the required diver down flags, etc.

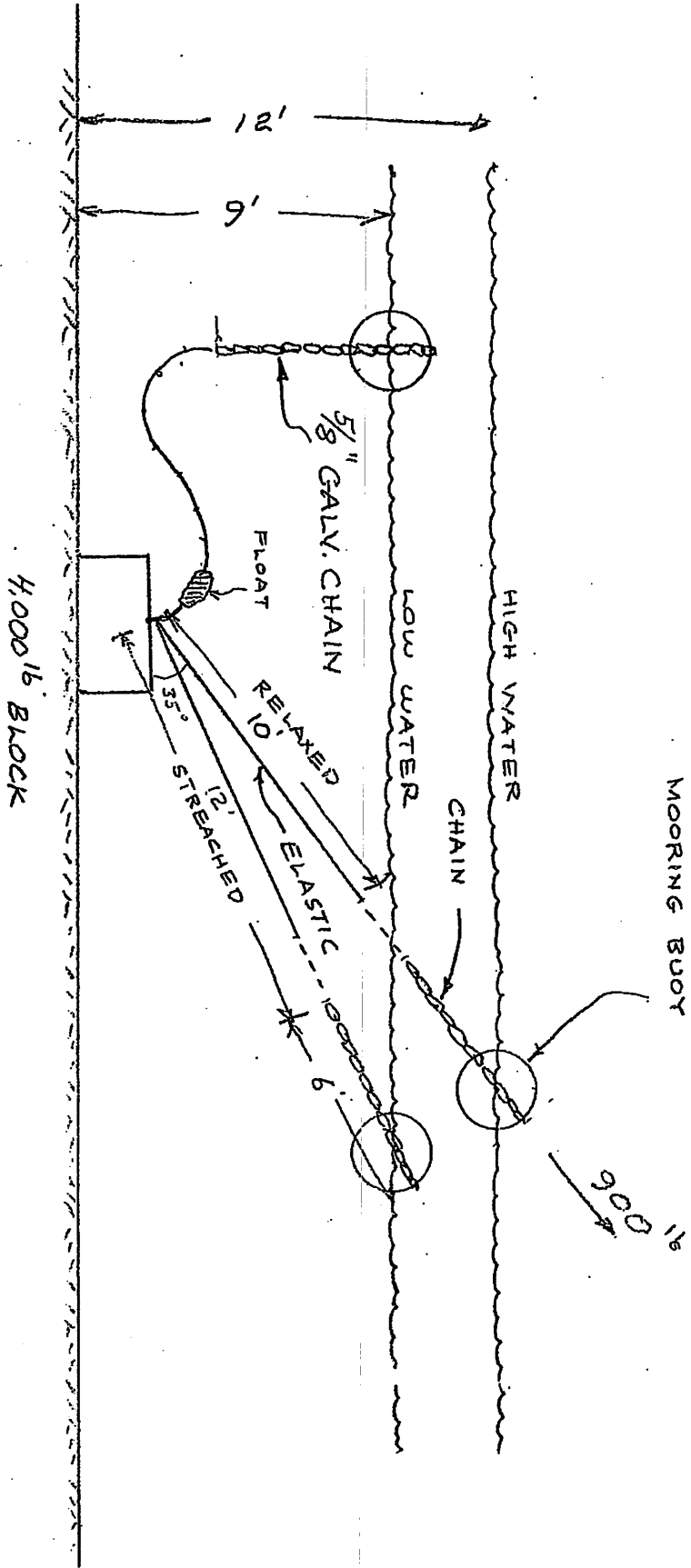
CHAIN + ELASTIC BAND = MHW DEPTH + 2 FEET



SKETCH 1
ELASTIC BAND ON BOTTOM

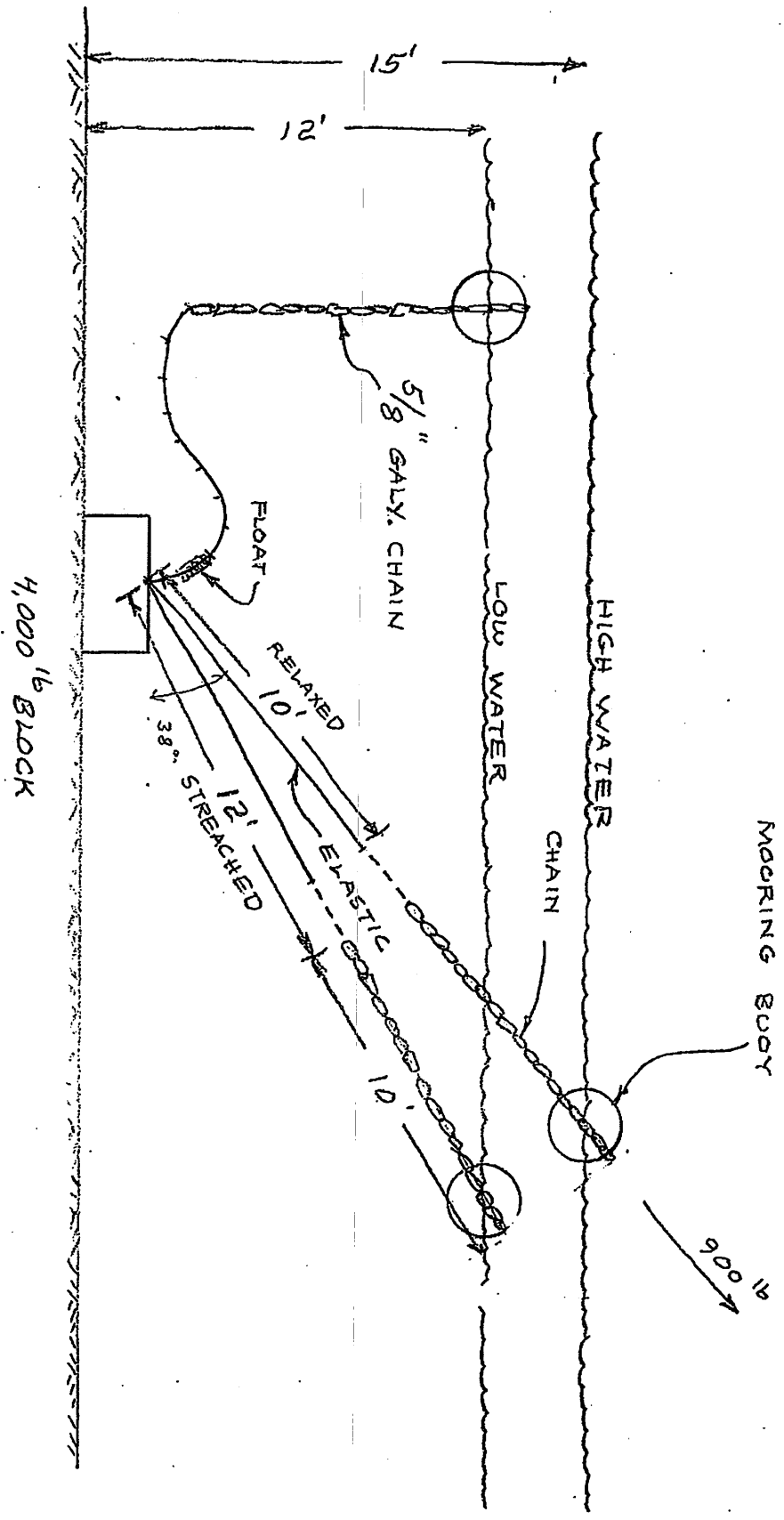
APRIL 2, 2017

CHAIN + ELASTIC BAND = MHW DEPTH + 4 FEET



SKETCH 2
ELASTIC BAND ON BOTTOM

CHAIN + ELASTIC BAND = MHW DEPTH + 5 FEET



SKETCH 3
ELASTIC BAND ON BOTTOM

APRIL 2, 2017