

Fish Attractors

Fish attractors constitute potential obstructions and require TVA approval. The construction requirements for fish attractors are contained in [§ 1304.411 Fish attractors](#). The TVA 1977 guidance referenced in 1304.411 is contained below.

TVA Guidelines for Fish Attractor Placement in TVA Reservoirs (TVA, 1997)

Introduction

Fish attractors are manmade habitat for concentrating fish. They provide substrate, feeding location and shelter for young fish and other small aquatic animals. Fish attractors increase overall angler success by concentrating fish and fishermen in identifiable areas and are very popular with resort/marina operators and anglers, especially those who are unfamiliar with the reservoirs.

TVA began working with fish attractors in its reservoirs in the late 1930s by providing drawings to sportsmen clubs on construction of log and brush fish attractors. In 1953, TVA assisted the Mississippi Game and Fish Commission in placement of approximately 100 fish attractors in Pickwick Reservoir. For the next 20 years TVA and Valley State resource agencies were not very active in fish attractor placement.

By the early 1970s, increasing fishing pressure and deteriorating reservoir habitat led to renewed interest in fish attractors. TVA developed guidelines for fish attractor placement in 1972 (Construction of Fish Attractors in TVA Reservoirs). In 1977, TVA initiated a fish attractor placement program in most reservoirs throughout the system. To assure that these fish attractors did not interfere with other reservoir uses, were not water safety hazards, and were environmentally beneficial, an Environmental Evaluation Record (EER) was prepared in 1975. Between 1975 and 1980, all attractors were sited and placed by TVA and State resource agencies in accordance with the EER.

In 1980, TVA terminated its fish attractor placement program. All attractors installed between 1980 and 1992 were put in place by State conservation agencies. Guidelines were revised and an Environmental Review (ER) was prepared in 1990 to allow more flexibility in attractor placement. TVA became active in a fish attractor program again in 1993. In cooperation with the Tennessee Wildlife Resources Agency (TWRA), the Norris Reservoir Task Force, and volunteers, TVA installed fish attractors on Norris Reservoir. In 1995, similar cooperative projects were conducted in the Holston River watershed and on Chickamauga and Kentucky Reservoirs. Under ER guidelines covering the installation of fish attractors in TVA reservoirs, there have been no associated problems such as damage to TVA generating facilities, blockage, personal injury, property damage, or dislodgment creating shoreline debris.

TVA revised fish attractor placement guidelines to be more responsive to the needs of sport fishermen and dock owners on its reservoirs. Shoreline angling comprises a substantial portion of total angling in TVA reservoirs. By allowing attractor placement around private docks and at other approved locations on TVA reservoirs, shoreline angling opportunities will be enhanced. However, individuals installing attractor units and private dock owners must understand that placement of attractors in public waters allows for their use by the public (i.e., they are not private fish attractors). Allowing individuals and dock owners to install approved attractors would aid in getting more fish cover in appropriate locations.

The following guidelines for fish attractor placement will supersede those set out in the 1990 Environmental Review, Construction of Fish Attractors in TVA Reservoirs.

Site Approval

Applicants should request assistance from TVA in evaluating proposed sites for fish attractors. The appropriate [Regional Watershed Office](#) can determine whether the proposal meets fish attractor guidelines, if proposed attractor placement will be beneficial to resident aquatic organisms, and if there are any navigation, recreation, or land rights concerns.

Applicants (individuals, sportsmen's or civic groups, and/or state or federal conservation agencies) should submit a request to the appropriate TVA [Regional Watershed Office](#) including: application for TVA Section 26(a) review and approval, a site map, detailed plans, and evidence of land rights if private property is involved. Staff at the Watershed Office will inform the applicant of TVA's determination including NEPA documentation. Due to the positive impact on the aquatic environment, all normal 26(a) and land use fees will be waived for fish attractor placement requests. However, if other structures (i.e., dock, decking, etc.) are included in the permit request, the standard fee will be required. Permitted individuals, groups, or agencies installing each fish attractor will be solely responsible for installation and maintenance of the attractor.

Criteria For Attractor Placement

1. Attractors will be located in areas where natural cover is sparse or absent, but not in mainstem or secondary marked navigation channels or other reservoir areas where such structures would impede recreational boating. Any unit that is not constructed in accordance with approved plans, creates a safety hazard, or is involved in a reported boating accident will require modification or removal at the owner's expense within 30 days of notification by TVA.
2. All floatable materials will be permanently anchored. Each separable piece of floatable attractor will be tightly lashed into the structure. The entire structure will be securely anchored to the bottom in such a way as to prevent its floatage, floatage of any of its member pieces, and excessive chafing of its lashings or anchor lines. Approved anchoring materials include rocks or rock-filled mesh bags, concrete blocks or slabs, ceramic tiles, or other suitable-weight material that, if exposed, does not detract from the natural aesthetics of the surrounding area.
3. Units may be designed from brush piles, stake beds, rock piles, log cribs (i.e., a stack or pile of logs), and spawning benches. Any vegetation removed from TVA land for use in fish attractor construction must be approved by TVA and be consistent with TVA vegetation removal guidelines. It is recommended these guidelines also be used for flowage easement lands with signed approval of the landowner required. Unit design may vary depending upon terrain. Automobile tires and construction materials such as concrete blocks and ceramic tiles are not to be used in the construction of attractors with the following exceptions: concrete blocks and/or ceramic tiles can be used to anchor brush piles or spawning benches, ceramic tile shelters may be used in areas where the top of the attractor unit is at least five feet below the water surface at minimum pool elevation, and wooden stake beds are acceptable. All attractors will be installed such that they detract as little as possible from the aesthetics of surrounding areas and with concern to personal safety.
4. Native vegetation planting using flood-tolerant species is recommended at sites that are gently sloping, are protected from severe wave action, have soils conducive to plant growth, do not have high populations of potentially destructive animals (i.e., geese, deer, etc.) and that have little or no existing cover. Figure 1 illustrates general placement for flood-tolerant grasses, shrubs, and trees in reservoirs with minimal annual fluctuation in water levels. The grasses should be planted near the

average winter water level, shrubs and/or some tree varieties should be planted in the average summer water level areas, and less flood-tolerant trees should be located in riparian areas to help stabilize the bank and provide overhead cover. Figure 2 shows suggested planting areas for tributary reservoirs with large annual drawdowns. Native aquatic vegetation can also be planted in suitable shallow shoreline habitats. Table 1 lists examples of flood-tolerant and aquatic species recommended for planting.

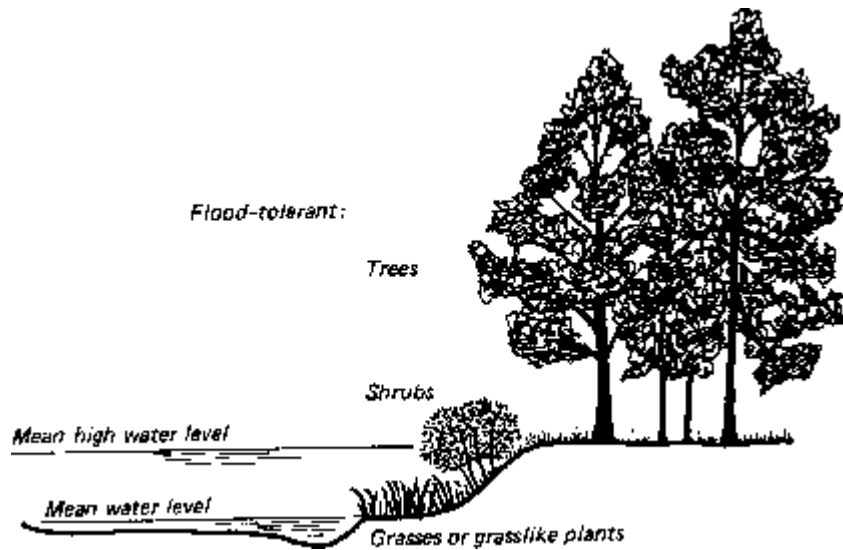


Figure 1. Placement of native vegetation on mainstem reservoirs.

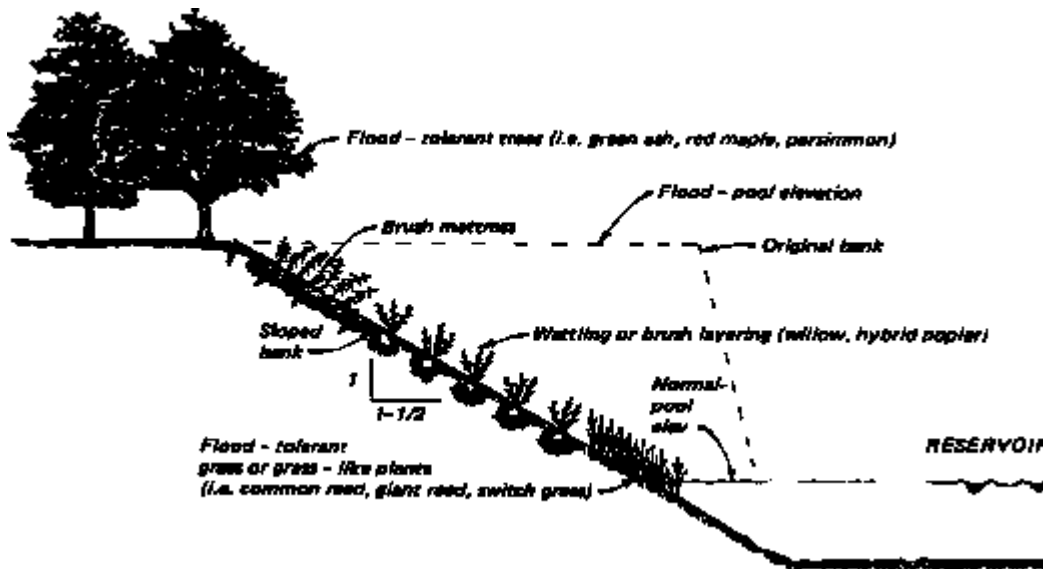


Figure 2. Placement of native vegetation on tributary reservoirs with large annual drawdown.

Table 1. Recommended flood-tolerant and aquatic species. (V=Very Tolerant, M=Moderately Tolerant)

Trees		Flood-Tolerance
Green Ash	(Fraxinus pennsylvanica)	V
Cottonwood	(Populus spp.)	M
Red Maple	(Acer rubrum)	V
Persimmon	(Diospyros virginiana)	M
Sycamore	(Platanus occidentalis)	M
Water Elm	(Planera aquatica)	V
Tupelo Gum	(Nyssa aquatica)	V
Bald Cypress	(Taxodium distichum)	V
Willow	(Salix spp.)	V
Shrubs		
Buttonbush	(Cephalanthus occidentalis)	V
Swamp Loosestrife	(Decodon verticillatus)	V
Grasses		
Spike Rush	(Eleocharis acicularis)	V
Sedge	(Carex spp.)	V
River Cane	(Arundinaria gigantea)	V
Maidencane	(Panicum hemitomom)	M
Bulrush	(Scirpus spp.)	M
Cattail	(Typha spp.)	V
Waterwillow	(Justicia americana)	M
Aquatic Vegetation		
American Lotus	(Nelumbo lutea)	V
American Pondweed	(Potamogeton nodosus)	V
Eel Grass	(Vallisneria americana)	V

The following procedures will be employed by TVA to insure that attractors are installed in accordance with these guidelines.

Attractor Installation

Installation of fish attractors will be allowed only at sites approved by the appropriate TVA [Regional Watershed Office](#). Permitted individuals, groups or agencies will be solely responsible for installing fish attractors in accordance with approved plans and following permit guidelines provided by TVA.. TVA personnel will not routinely accompany or assist permit holders in installing attractors and devices used to mark attractor locations.

Attractor Maintenance

Permitted individuals, groups, or agencies installing each fish attractor will be solely responsible for maintaining the attractor and associated marker buoys and poles. TVA will not routinely monitor fish attractors to assure proper maintenance. If TVA personnel observe attractors in need of maintenance during the course of duties on the reservoirs or receive complaints about attractors in disrepair, the individual, group, or agency responsible for the attractor will be notified and requested to make necessary repairs or remove the attractor within 30 days.

The following addresses specific guidelines for fish attractor placement in various location types in both tributary and mainstem reservoirs.

I. Guidelines for Attractor Placement in Tributary Reservoirs, Excluding Tellico and Melton Hill

A. Underwater Islands (at summer pool)

Attractor units will be installed in a rectangular configuration with the tops of the units being a minimum of five feet below the highest elevation of the island. The area shall not exceed 100 yards in length and 50 yards in width. Sites will be marked with approved fish attractor buoys at each end (See Figures 3 and 4).

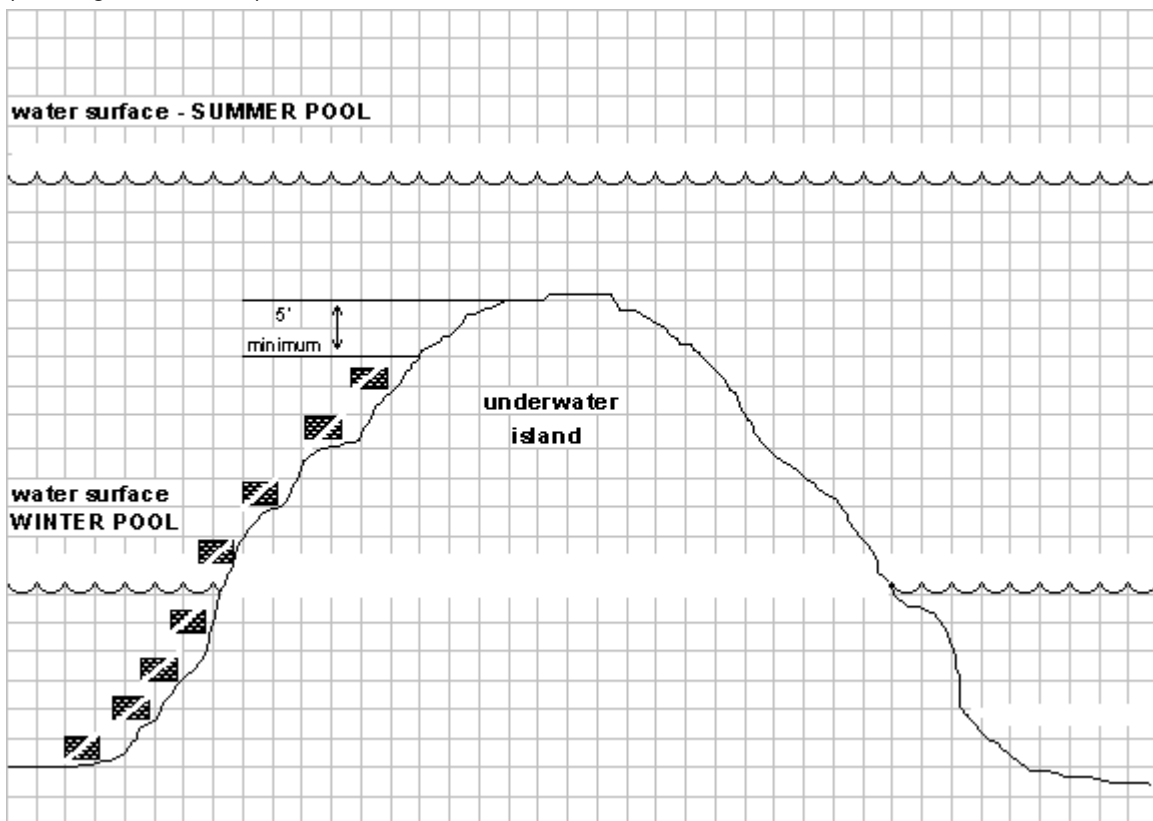


Figure 3. Underwater Island (Side view) - Tributary Reservoirs except Tellico and Melton Hill.

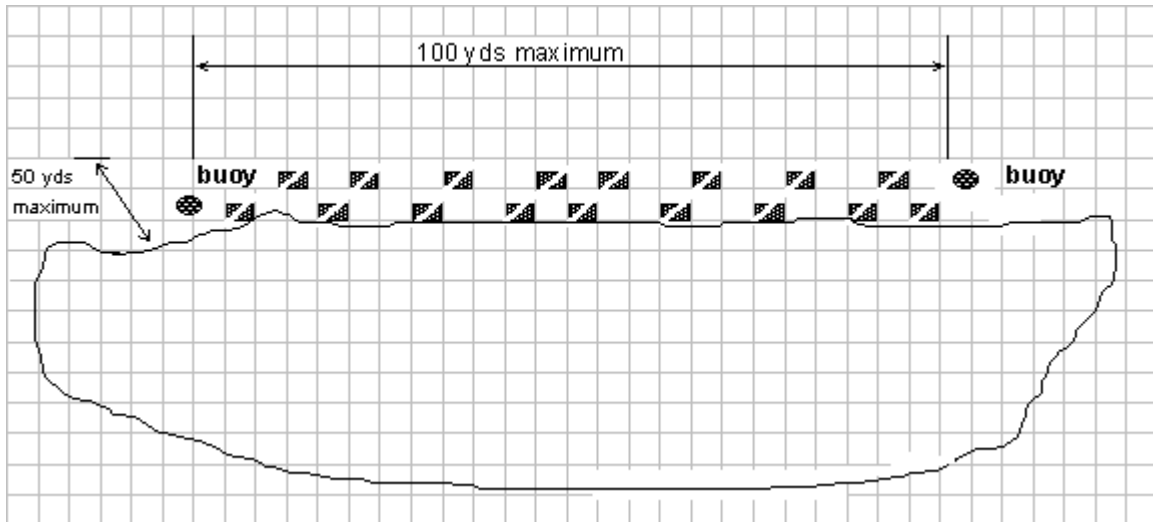


Figure 4. Underwater Islands (Top view) - Tributary Reservoirs except Tellico and Melton Hill.

B. Docks / Private Shoreline

Attractor units installed in the vicinity of stationary docks should not project more than 30 feet out from any point on the dock in order to avoid boating hazards, and in no instance project into the navigation channel. Attractor units installed on private property without docks, or in the vicinity of moveable floating docks, must not extend more than 30 feet into the reservoir from full pool shoreline elevation (See Figure 5). The width of the attractor units shall not exceed the boundaries of the landowner's adjacent property. Attractor units installed may consist of brush piles, stake beds, native vegetation, rock piles, log cribs (i.e., a stack or pile of logs), and/or spawning benches. Spawning benches should be constructed using one of two methods, depending on location: (1) in an area away from a dock, two logs or poles should be buried in the substrate a minimum of 24 inches with a cross-member nailed or bolted to their tops; rock sacks should be used to anchor this type of structure; (2) on a pole-type stationary dock, a cross-member should be nailed or bolted to dock supports. For either design, the cross-member should be suspended one to two feet above the substrate.

II. Guidelines for Attractor Placement in Mainstem Reservoirs, Including Tellico and Melton Hill

A. Abandoned Roadbeds

Attractor units will be installed on the shoulder of the abandoned roadbed with the tops of the units not exceeding the adjacent highest elevation of the roadbed. The area shall not exceed 100 yards in length and 50 yards in width. Sites initiating along the shoreline will be marked with a painted wooden post/white PVC pipe (minimum diameter 2 inches) placed above full pool or with a fish attractor notification sign at least 1 foot by 2 feet attached to an adjacent tree. Open water ends will be marked with anchored fish attractor buoys extending no less than three feet above the water surface (See Figure 6).

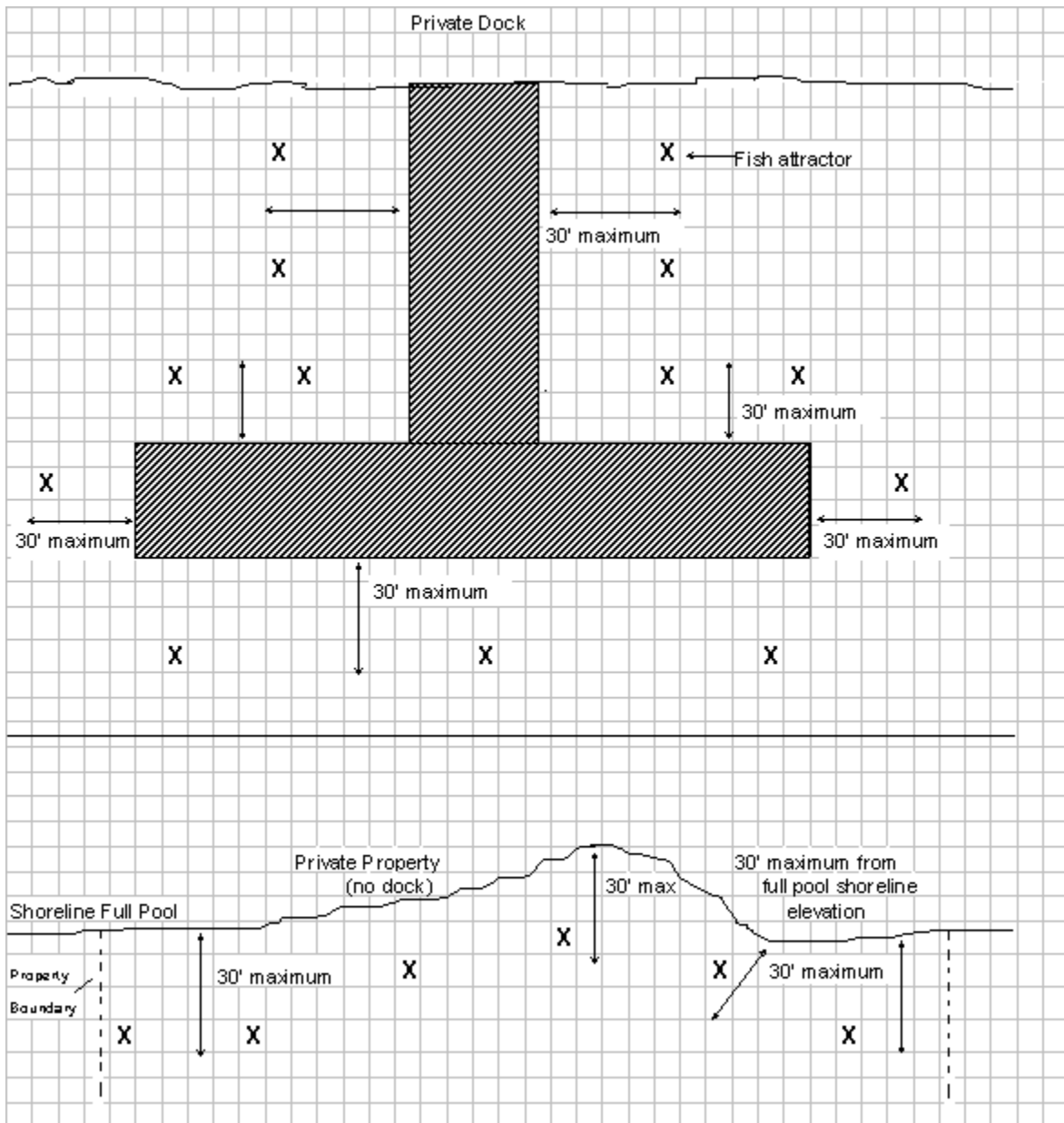


Figure 5. Dock (Top view); No Dock (Bottom View)

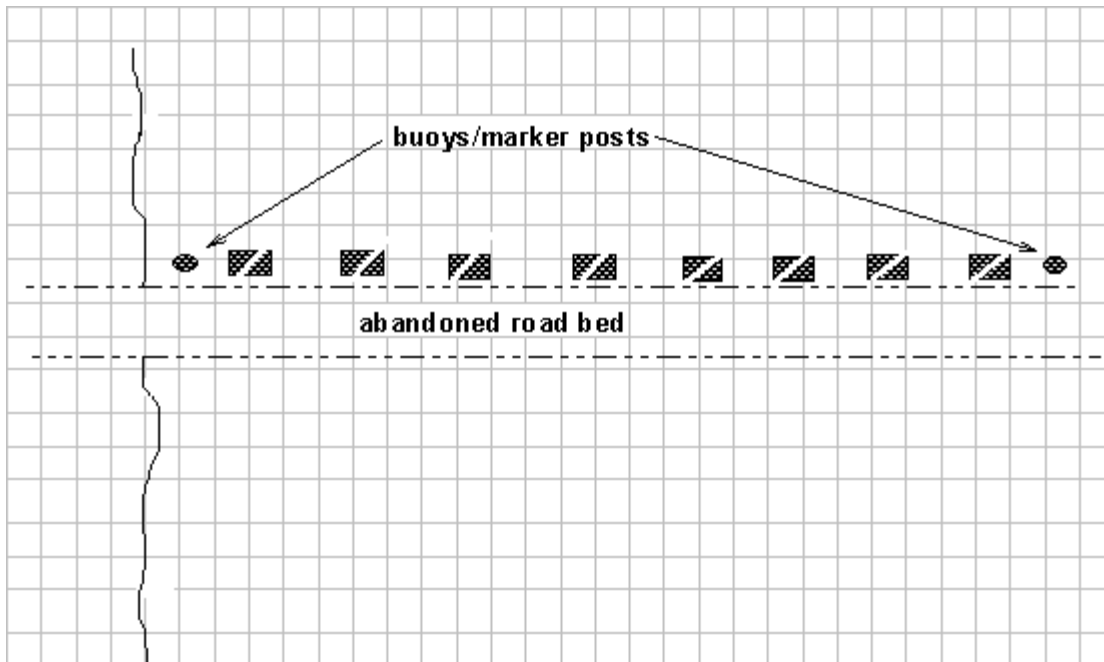


Figure 6. Abandoned Road Bed (Top view) - Mainstem Reservoirs, Tellico, and Melton Hill.

B. Embayment Flats

Attractor units can be placed in the backs of embayments in water depths less than five feet at summer pool elevation. These areas are expansive mud flats at winter pool elevation.

NOTE: These flats are shallow areas that are not used for high-speed recreation boating due to extreme hazards which currently exist.

C. Main Lake Islands

Attractors will be placed on the downstream points of main lake islands. The first attractor unit will be placed above summer pool elevation at the furthestmost downstream exposed point of the island at summer pool elevation. The remainder of the attractor units will extend in a continuous straight line parallel to the river channel not to exceed 100 yards in length. The beginning unit on the island shall be marked with a painted wooden post or white PVC pipe (minimum diameter 2 inches) at least six feet tall, or with a fish attractor notification sign at least 1 foot by 2 feet attached to an adjacent tree (See Figure 7). Open water terminating units shall be marked with an anchored buoy extending at least 3 feet above the surface (See Figure 8).

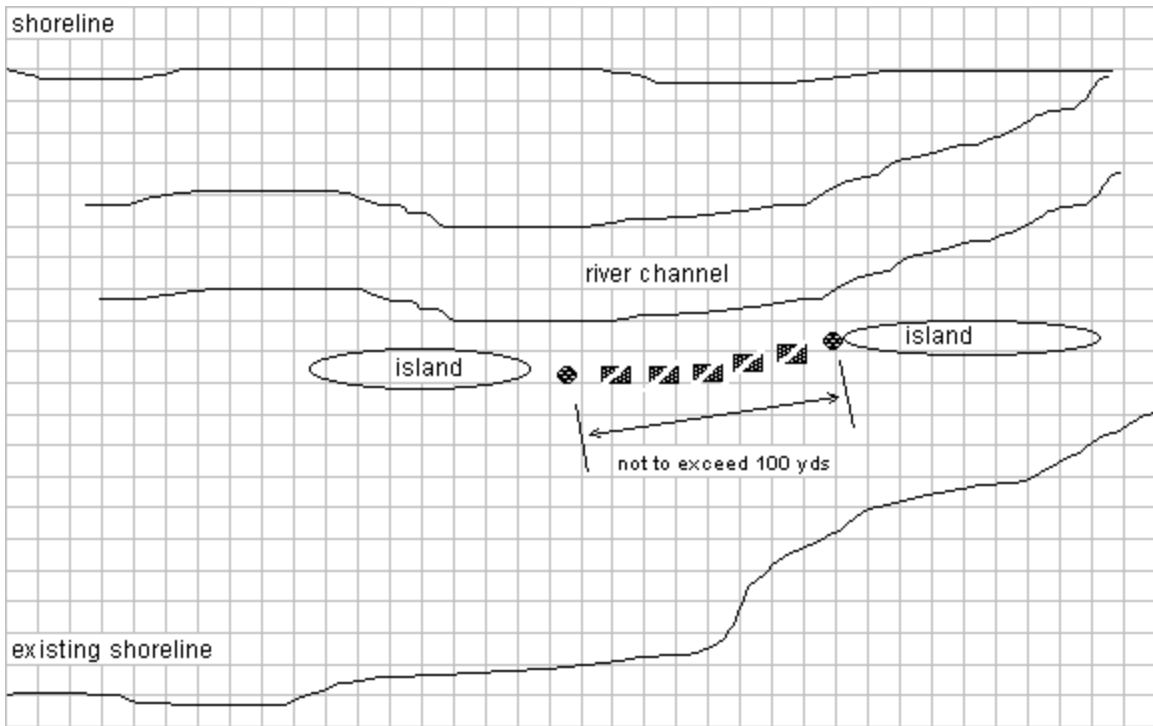


Figure 7. Main Lake Islands (Top view) - Mainstem Reservoirs, Tellico, and Melton Hill.

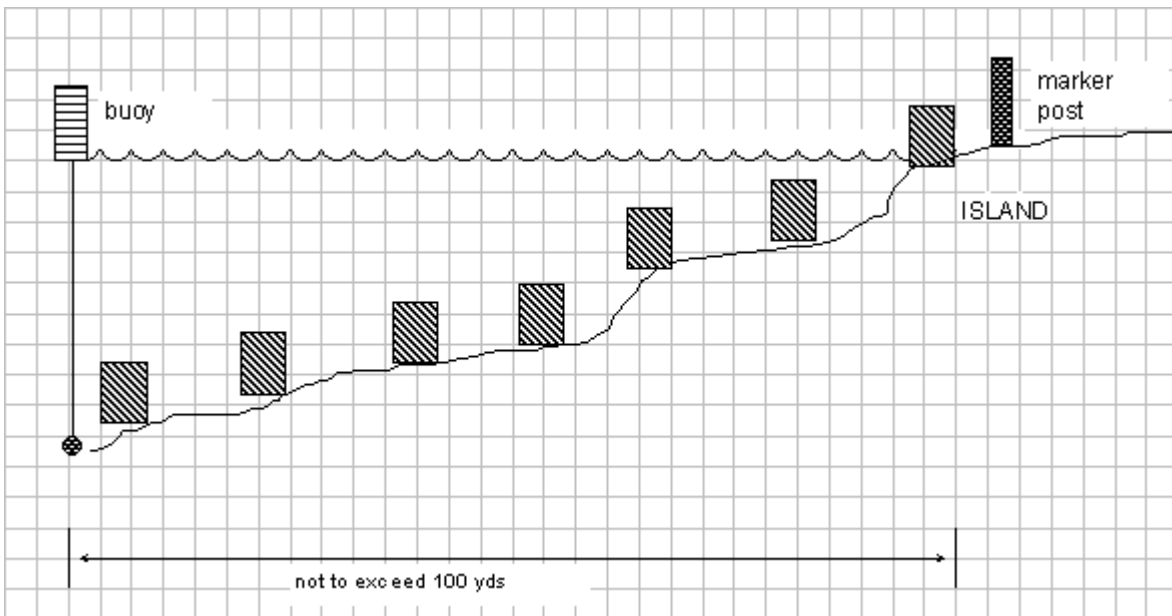


Figure 8. Main Lake Islands (Side view) - Mainstem Reservoirs, Tellico, and Melton Hill.

D. Docks / Private Shoreline

Attractor units cannot be installed in front of docks constructed along shoreline that has been identified with a green-line or red-line navigation restriction in order to avoid interference with

commercial and recreational navigation. Maps showing navigation restricted shoreline are located in the applicable Land Management Offices. Attractors constructed at docks on navigation restricted shoreline can be installed on either side of the dock provided the attractor units do not extend farther from the bank than the riverward edge of the dock. Attractor units installed on private property along shoreline with a navigation restriction should be reviewed by TVA Navigation prior to approval. Guidelines discussed for tributary reservoir docks apply to attractor units in the vicinity of docks and on private property along shoreline that does not have a navigation restriction.

III. Proposed Guidelines for Attractor Placement for Both Tributary and Mainstem Reservoirs

A. Across Cove

Attractor units will start above summer pool elevation and proceed in a straight line perpendicular to the contour across the width of the cove to the opposite shoreline, terminating above summer pool elevation. Both ends will be clearly marked at the first attractor unit with a painted wooden post or white PVC pipe (minimum diameter 2 inches) at least 6 feet tall, or with a fish attractor notification sign at least 1 foot by 2 feet attached to an adjacent tree. Distance between individual units will not exceed 50 feet. Placement will begin a minimum of 200 feet from the mouth of the cove (See Figures 10 and 11). Attractor units for these sites may only consist of brush piles or other materials that are less likely to damage boats or cause personal injury if struck.

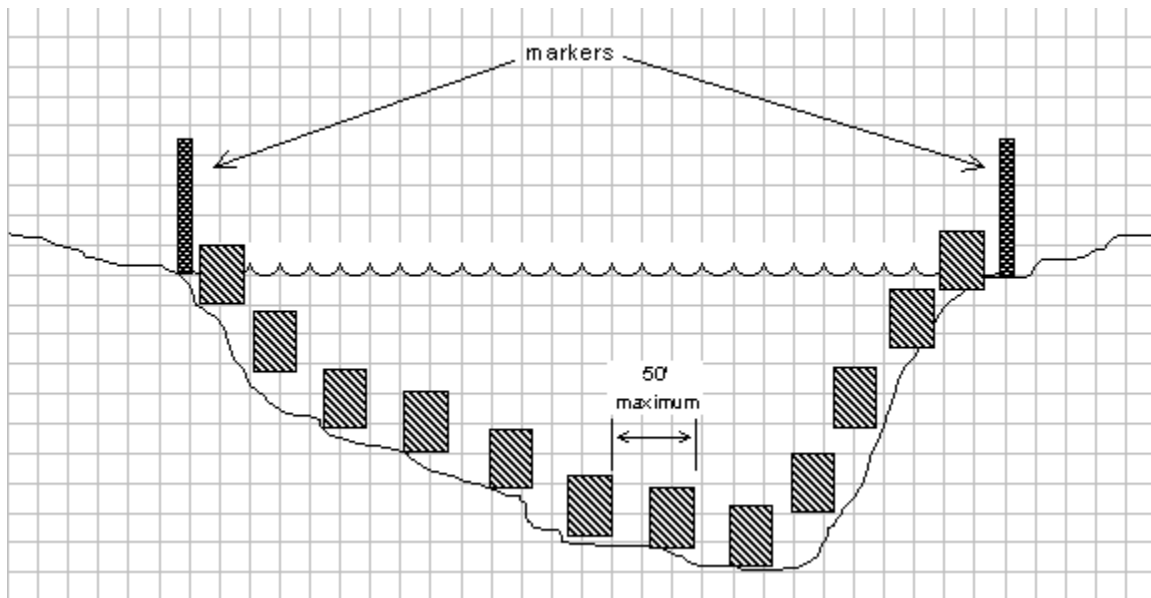


Figure 10. Across Cove (Side view)

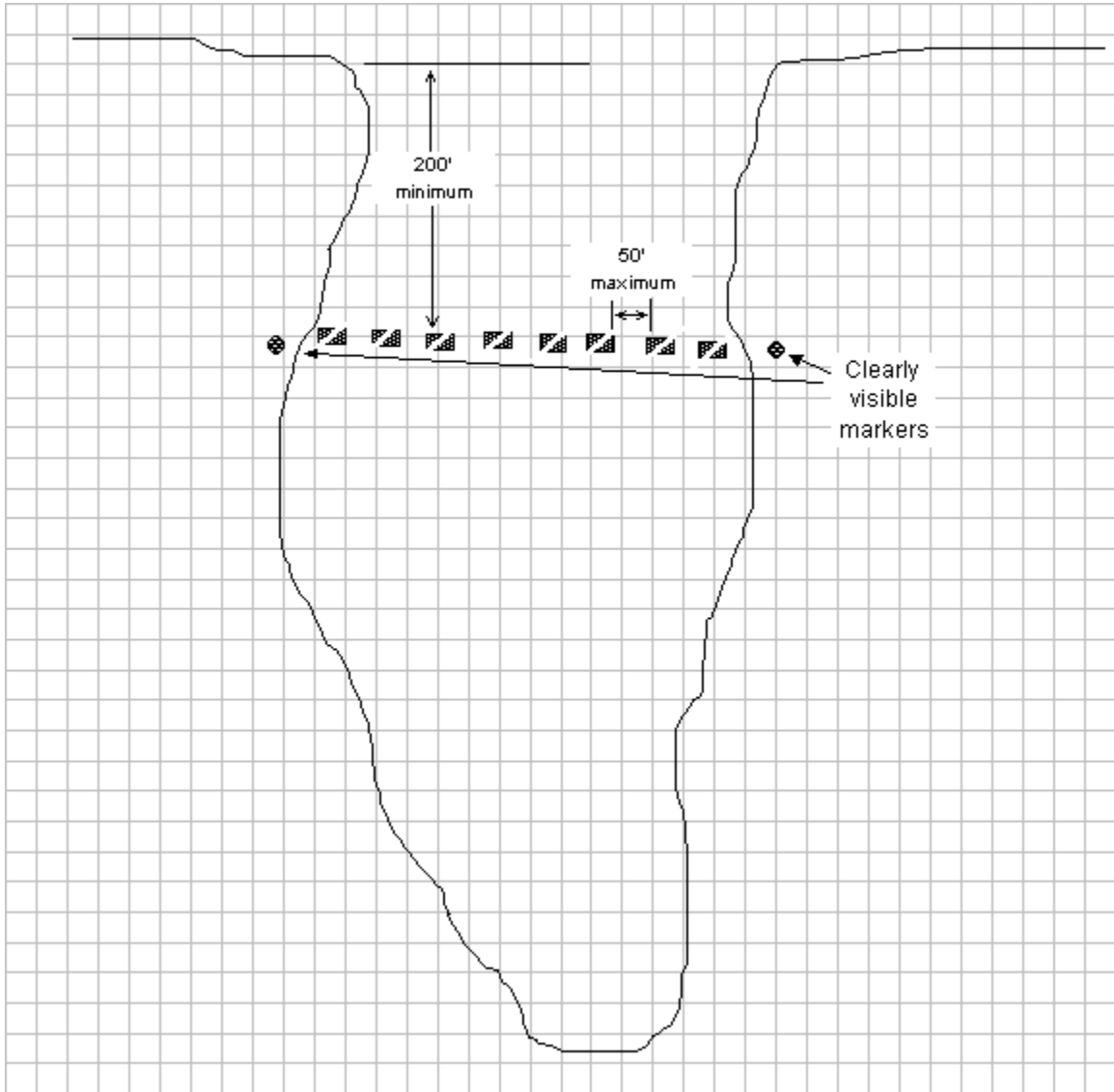


Figure 11. Across Coves (Top view)

B. Main Channel Points

Attractors will be placed on the sides and parallel to the point. The attractors will be marked clearly on the shoreline with a painted wooden post or white PVC pipe (minimum diameter 2 inches) at least 6 feet tall, or a fish attractor notification sign at least 1 foot by 2 feet attached to an adjacent tree. Attractor units will be placed in a line out from the marker with the top of each unit being at least two feet below the highest adjacent contour of the point (See Figures 12 and 13). Attractors are "sheltered" by the point; the crest of the point is higher than the adjacent attractor.

C. Secondary Channel Points

Same guidelines as main channel points.

D. Tertiary Channel Points

Same guidelines as main channel and secondary channel points.

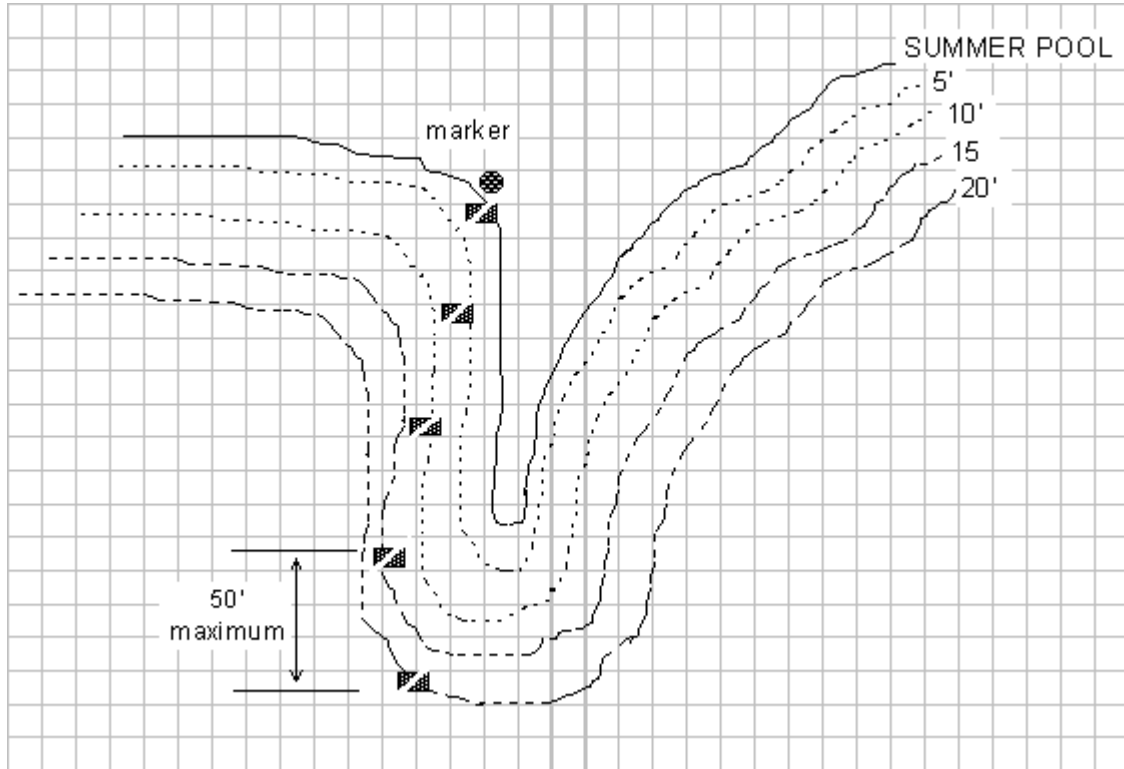


Figure 12. Main Channel Points (Top view)

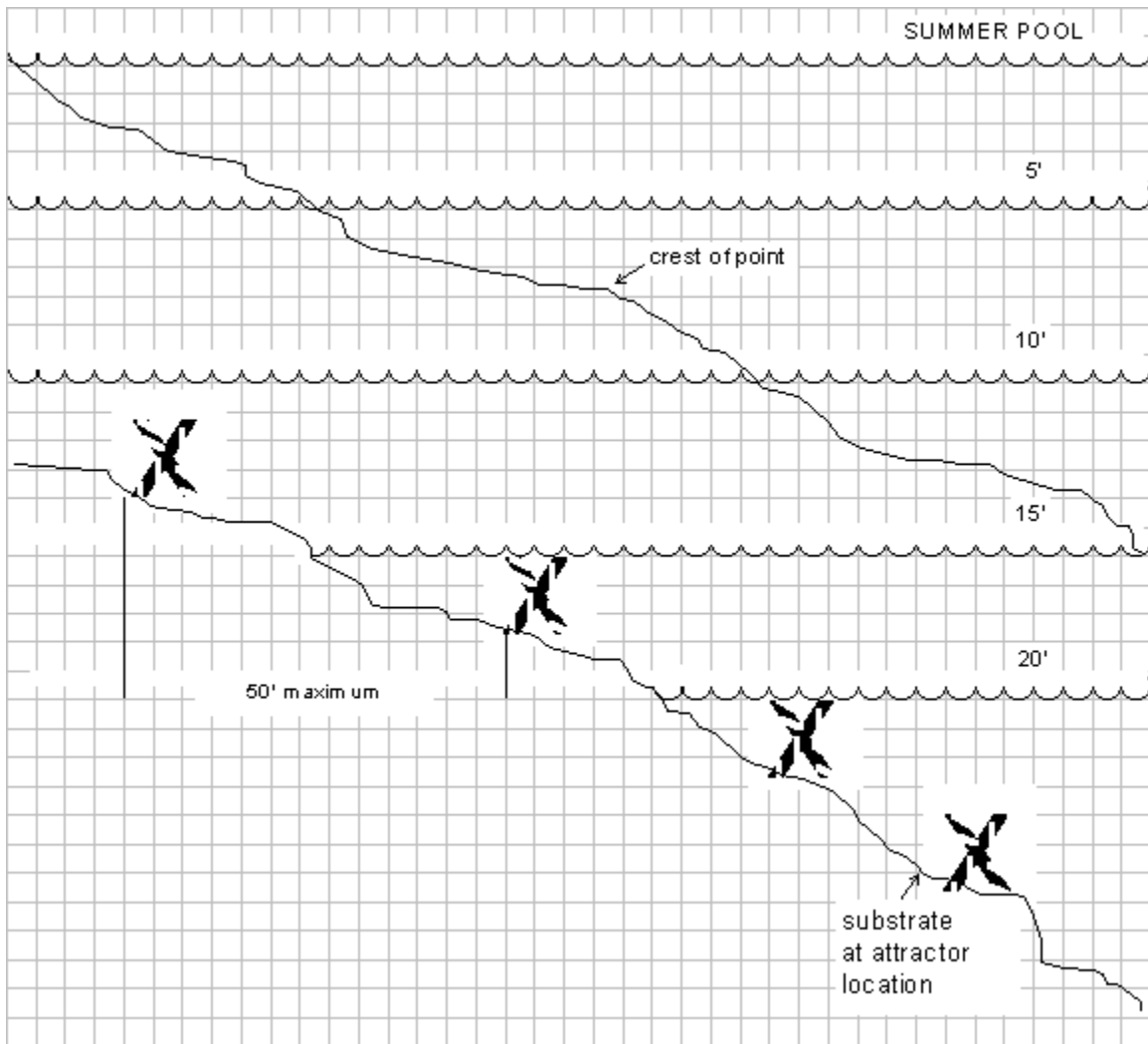


Figure 13. Main Channel Points (Side view)

E. Heads of Coves

Attractors will be installed adjacent to the drainage channel from a point just above the water surface at summer pool elevation to a point no further than an imaginary line between the two points forming the cove. The land end of the site will be marked with a painted wooden post or white PVC pipe (minimum diameter 2 inches) at least 6 feet tall, or a fish attractor notification sign at least 1 foot by 2 feet attached to an adjacent tree (See Figures 14 and 15).

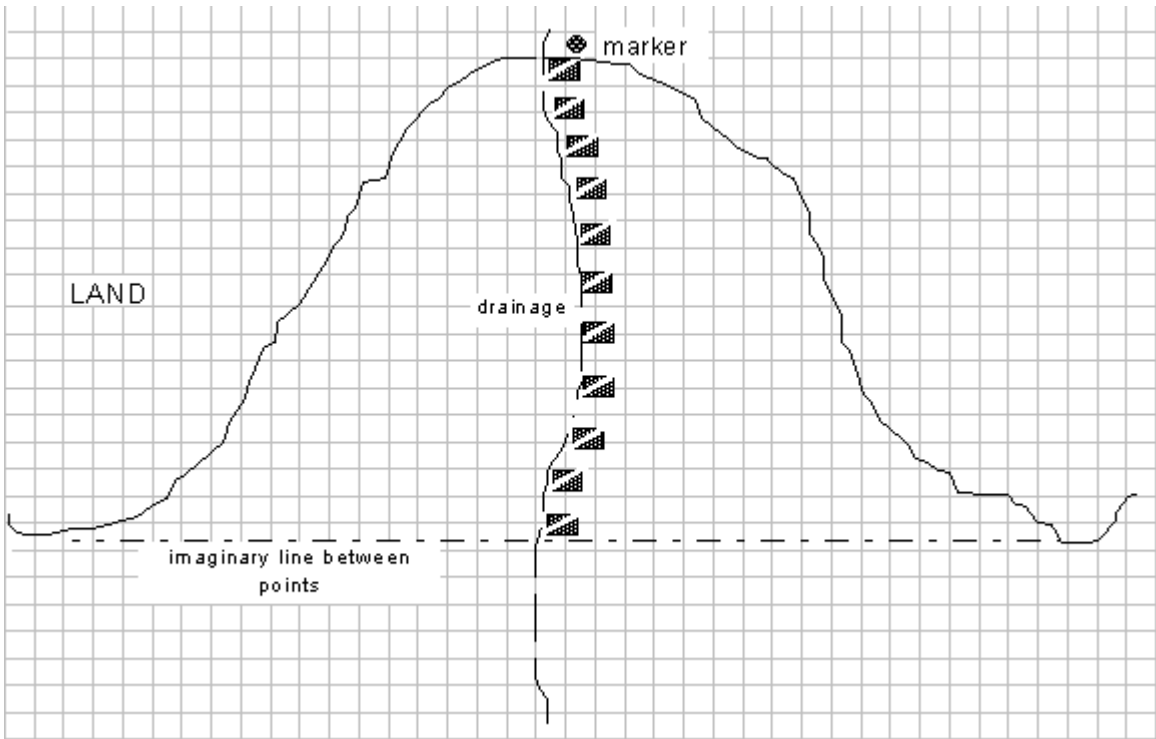


Figure 14. Heads of Coves (Top view)

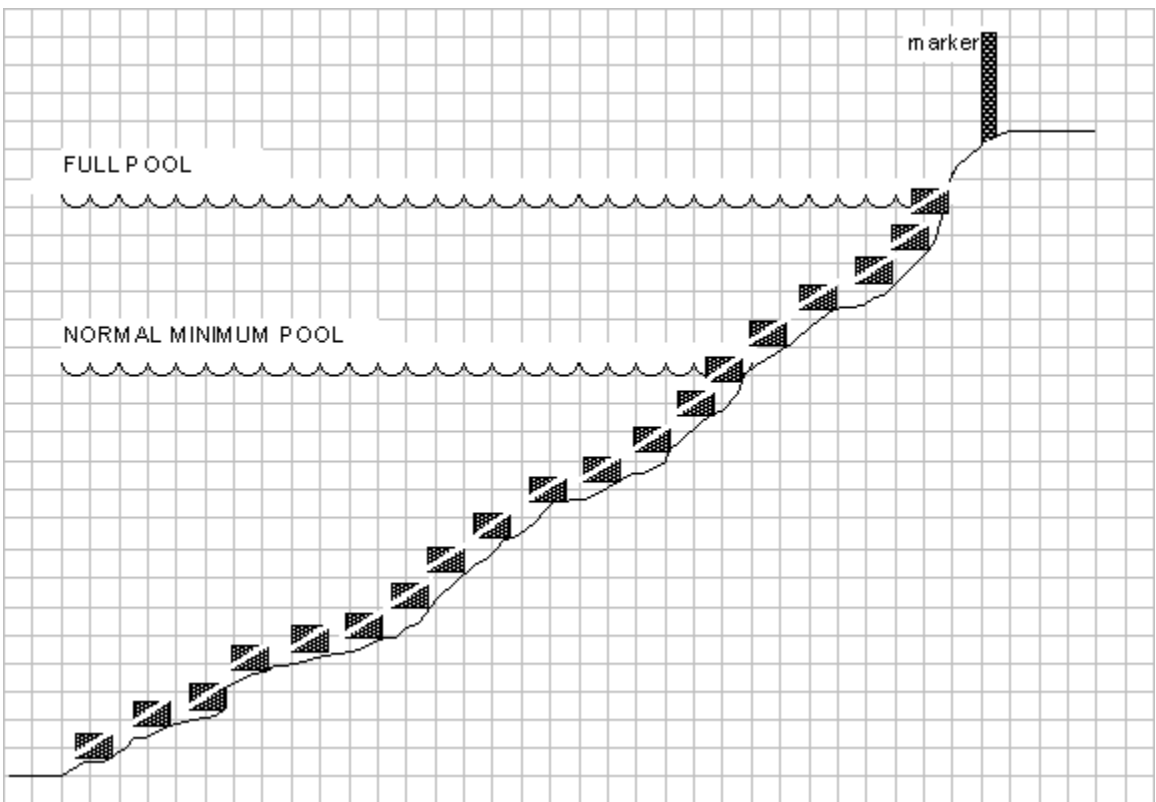


Figure 15. Heads of Coves (Side View)

F. Bridge Pilings

Attractors can be installed around (not to exceed 15 feet from) bridge pilings, including abandoned bridges that protrude a minimum of five feet above summer pool elevation. Attractors will be marked with fish attractor notification signs attached to the pilings (See Figure 9).

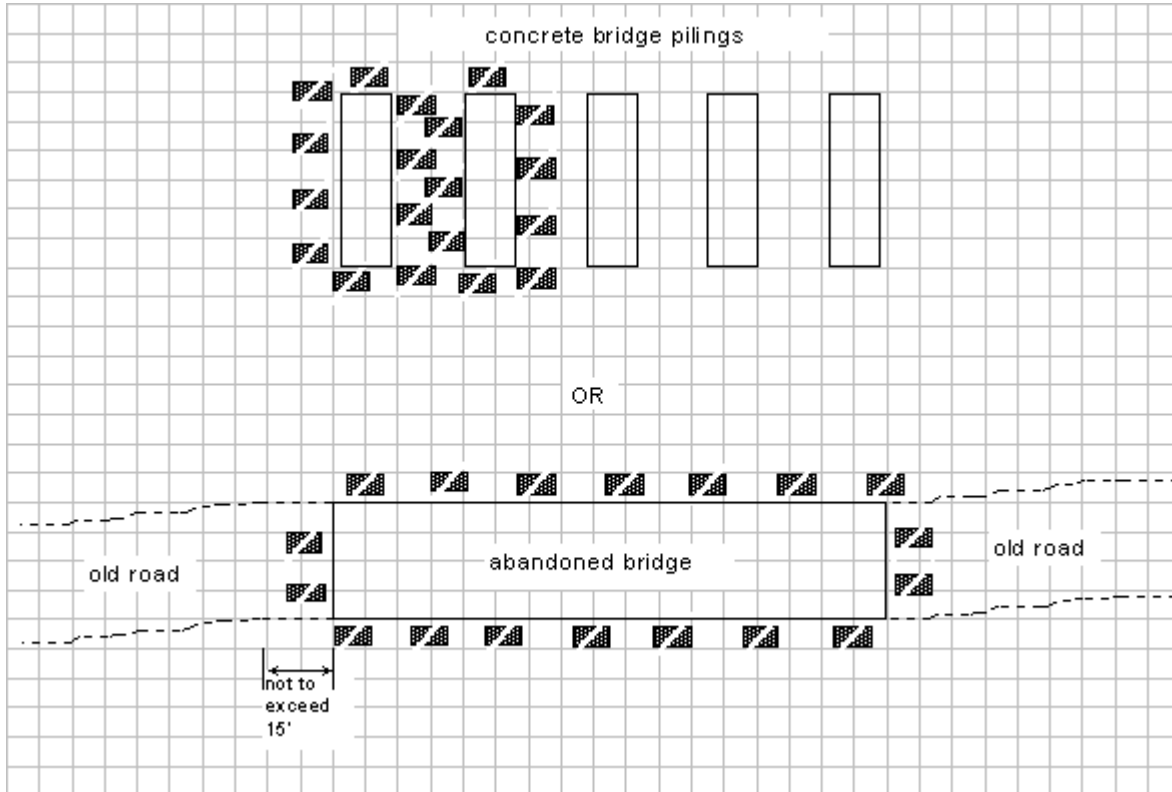


Figure 9. Bridge Pilings

G. Deepwater Attractors

Attractors shall be placed in a rectangular configuration not to exceed 200 yards in length and 50 yards in width. An anchored fish attractor buoy extending at least 3 feet above the water's surface will be located at each end of the site. The highest point of the attractors shall not be higher than five feet below normal minimum pool elevation (See Figure 16).

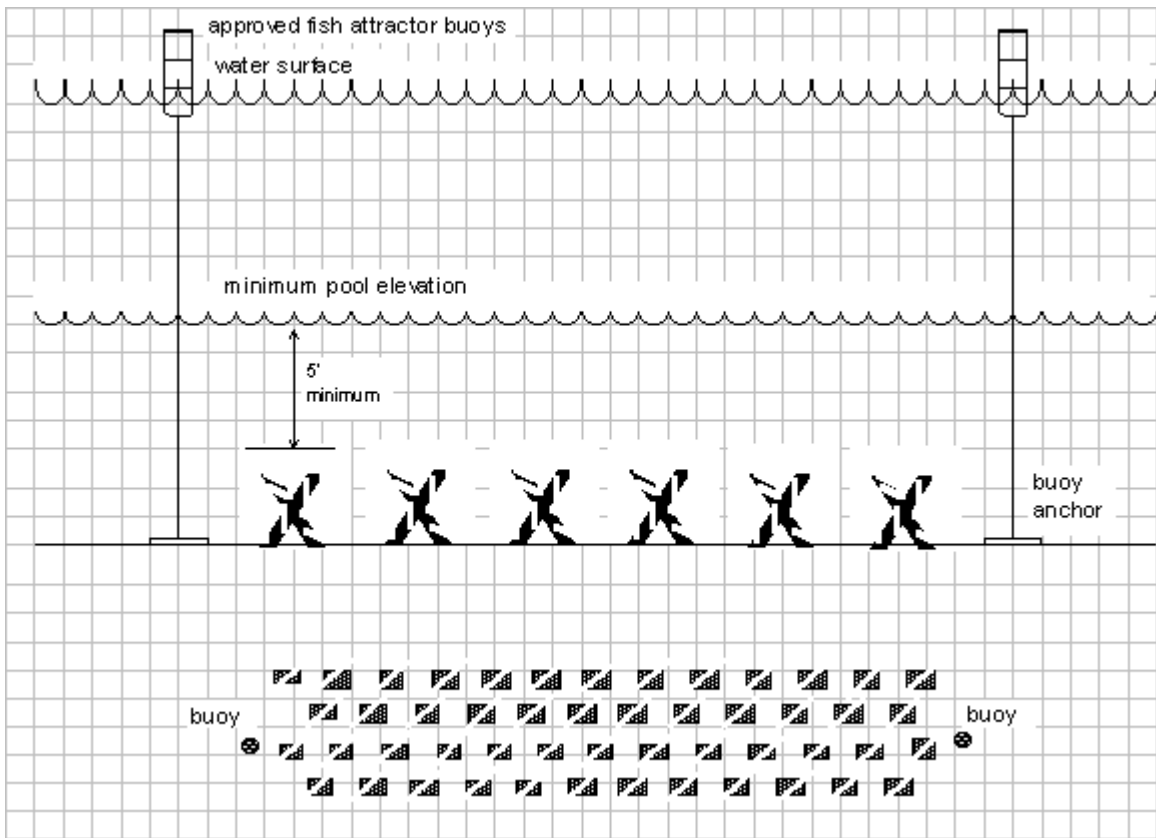


Figure 16. Deepwater Areas (Side and top view)