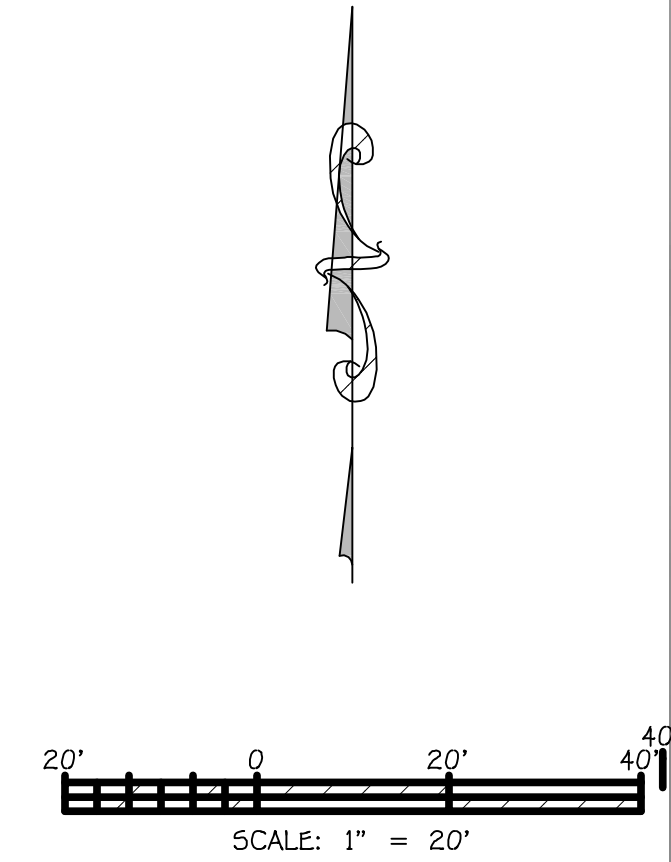


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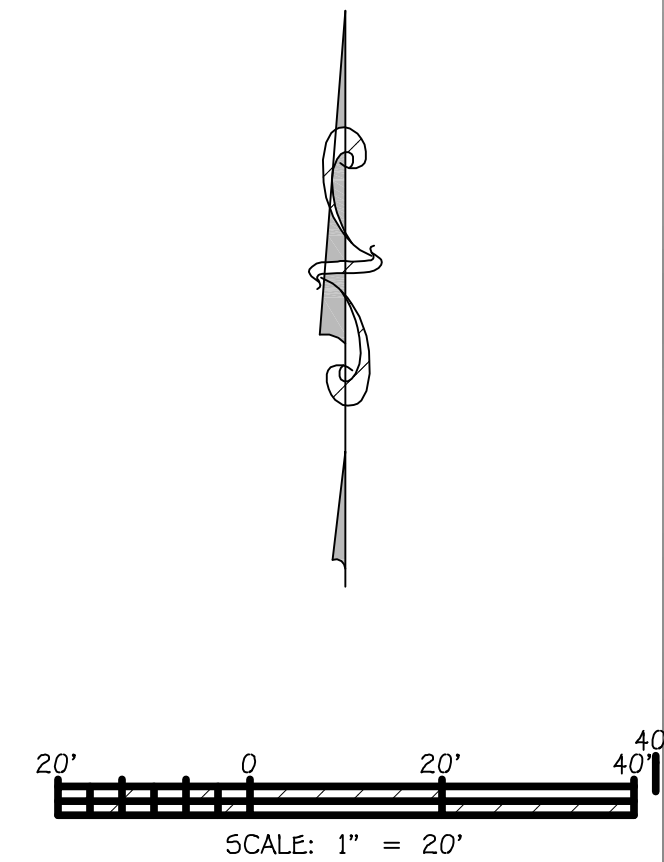
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610 PINELLAS BAYWAY, SUITE 5201, ST PETERSBURG, FLORIDA 33715
PHONE: 813-817-1115

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OF 1

JOHN AND MARILYN CONNELLY
JOHNSON POPE BOKOR RUPPEL & BURNS, LLP

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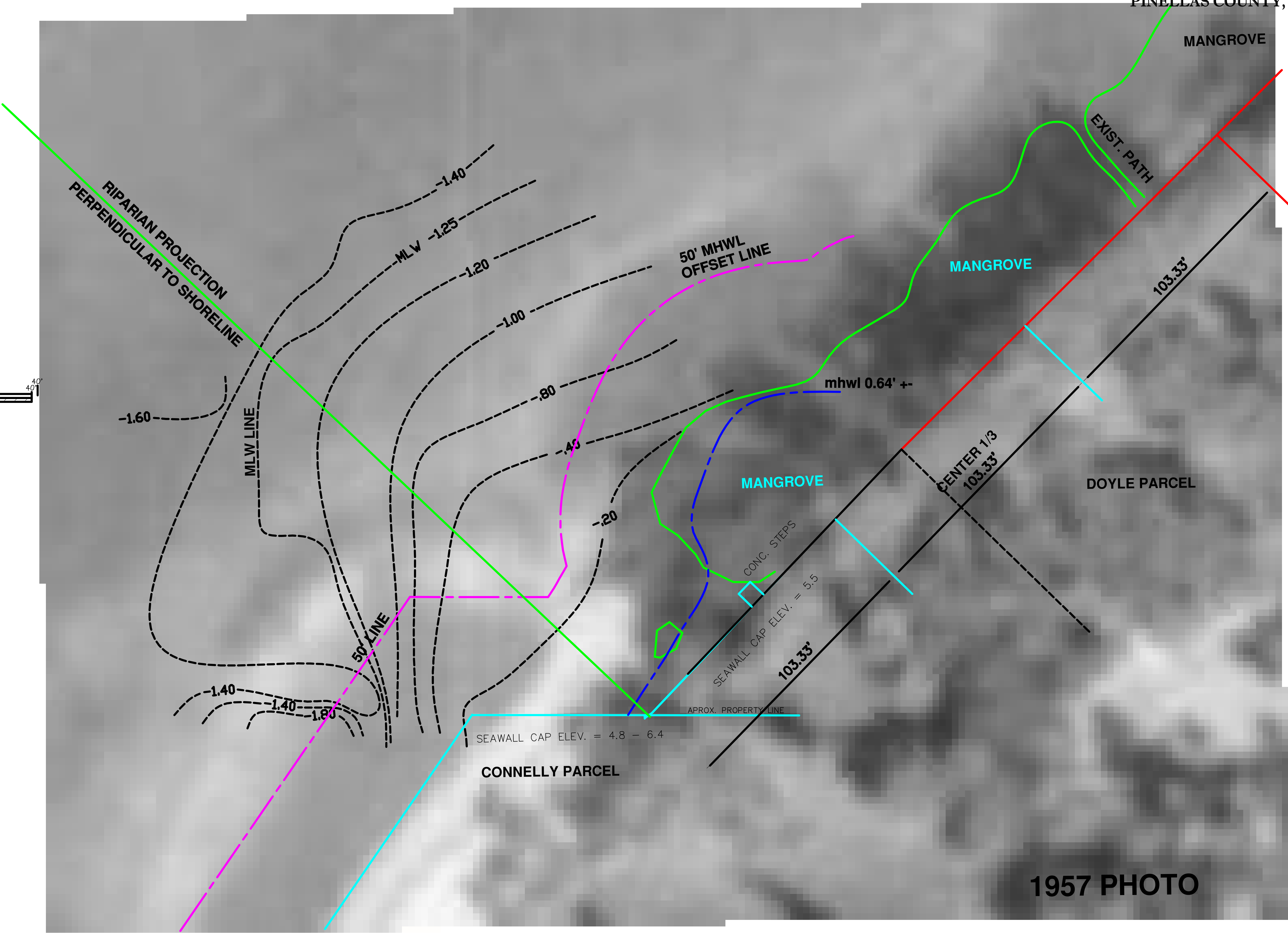
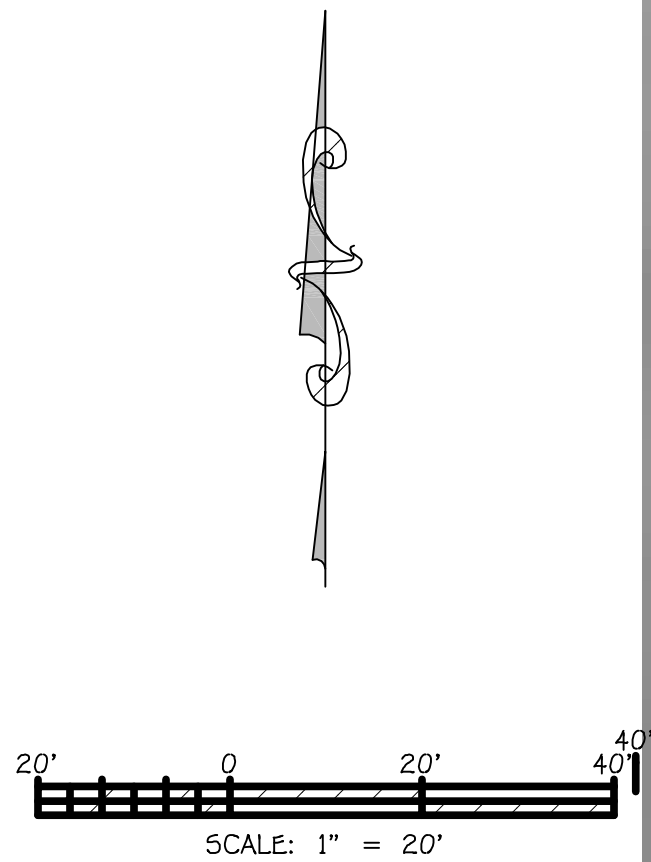
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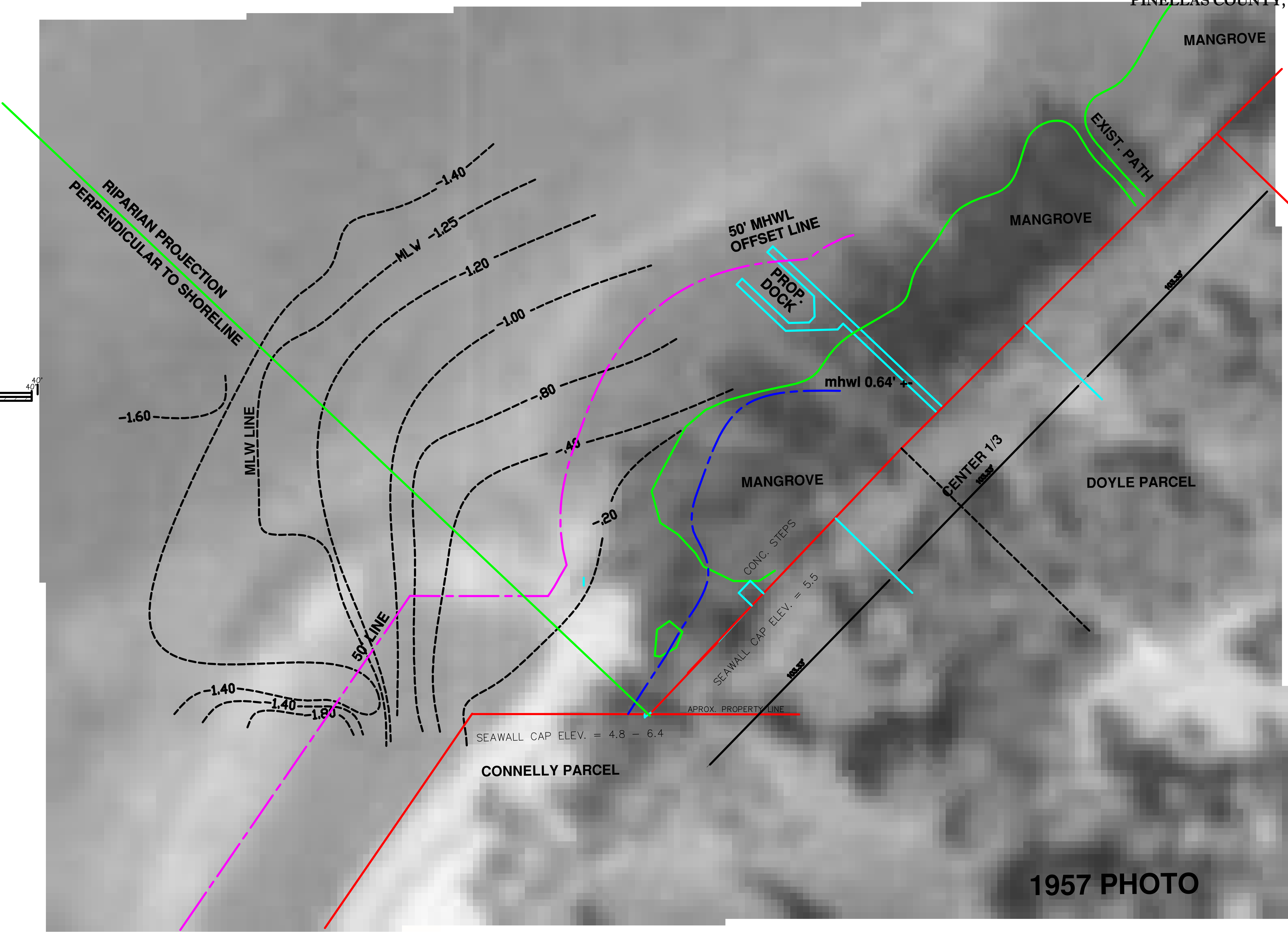
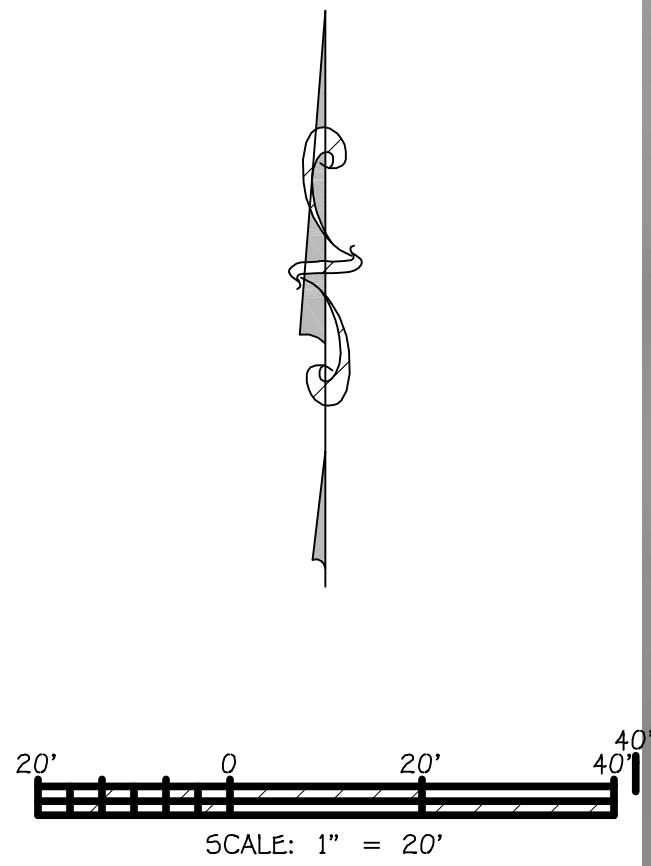
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WILLIAM C. WARD
PROFESSIONAL LAND SURVEYOR NO. 4815
STATE OF FLORIDA

3-08-17
DATE

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| CONNELLY - DOYLE | | SPECIFIC PURPOSE TOPOGRAPHIC SURVEY | | AND RIPARIAN BOUNDARY EXHIBIT 2 | | 1 HARBORSIDE CIRCLE NORTH | | BELLEAIR, FLORIDA 34643 | |
| SHEET NO. | | 1 | | OF | | 1 | | | |
| WILLIAM C. WARD, PLS | | Professional Land Surveyor | | SURVEYOR MAPS & PLANS | | 600 PINELLAS BLVD., SUITE 400, ST. PETERSBURG, FLORIDA 33715 | | PHONE: 813-817-1115 | |
| NO. | | REVISION | | DATE | | BY | | | |



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PROFESSIONAL LAND SURVEYOR NO. 4815
STATE OF FLORIDA

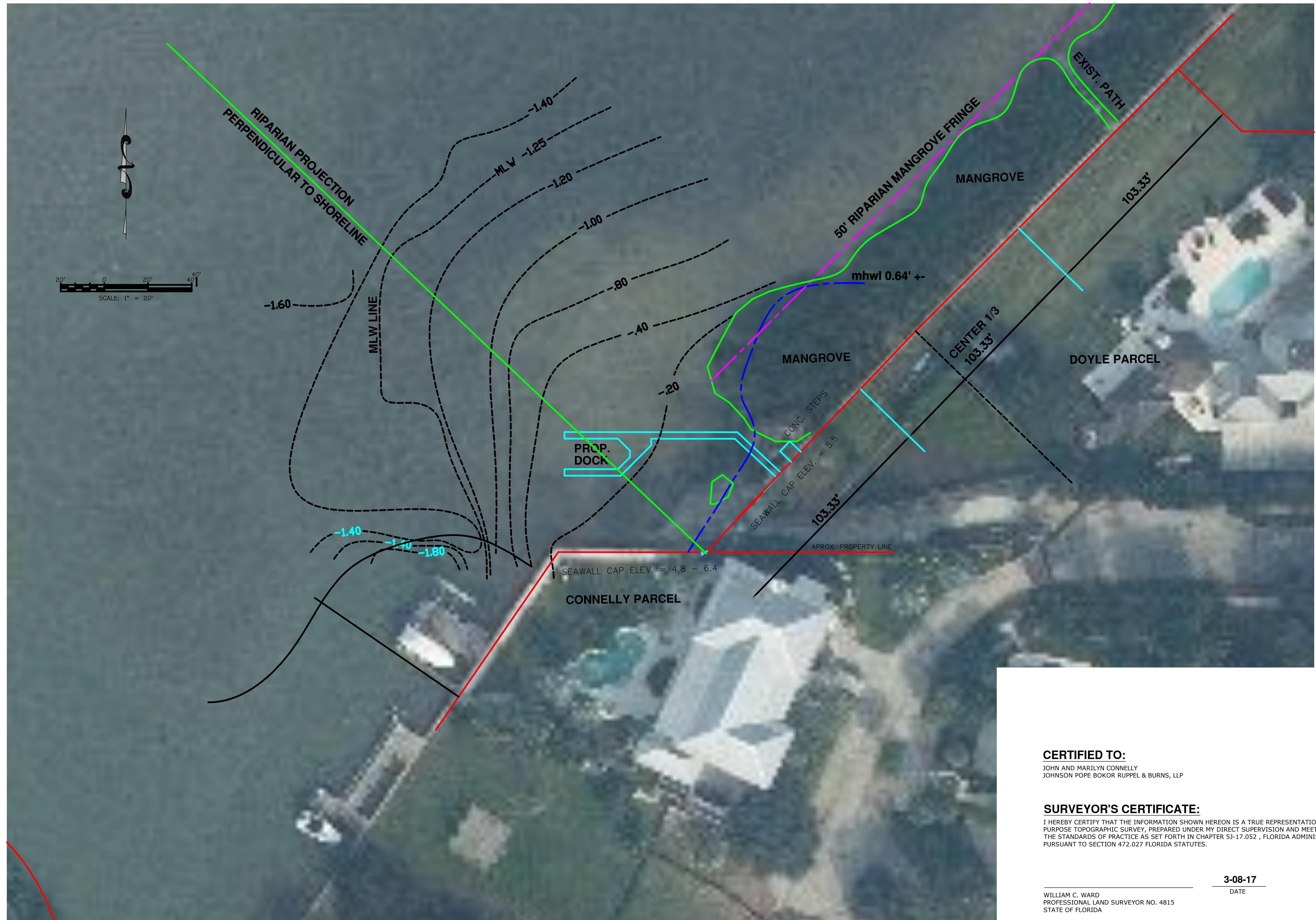
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| CONNELLY - DOYLE | | SPECIFIC PURPOSE TOPOGRAPHIC SURVEY | | AND RIPARIAN BOUNDARY EXHIBIT 3 | | 1 HARBORSIDE CIRCLE NORTH | | BELLEAIR, FLORIDA 34643 | | WILLIAM C. WARD, PLS | | Professional Land Surveyor | |
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STATE PLANE GRID
FLORIDA WEST ZONE NAD 1983 2011
"large bay with an irregular shoreline"

**SECTION 29, TOWNSHIP 29 SOUTH, RANGE 15 EAST
PINELLAS COUNTY, FLORIDA**



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JOHN AND MARILYN CONNELLY
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WILLIAM C. WARD
PROFESSIONAL LAND SURVEYOR NO. 4815
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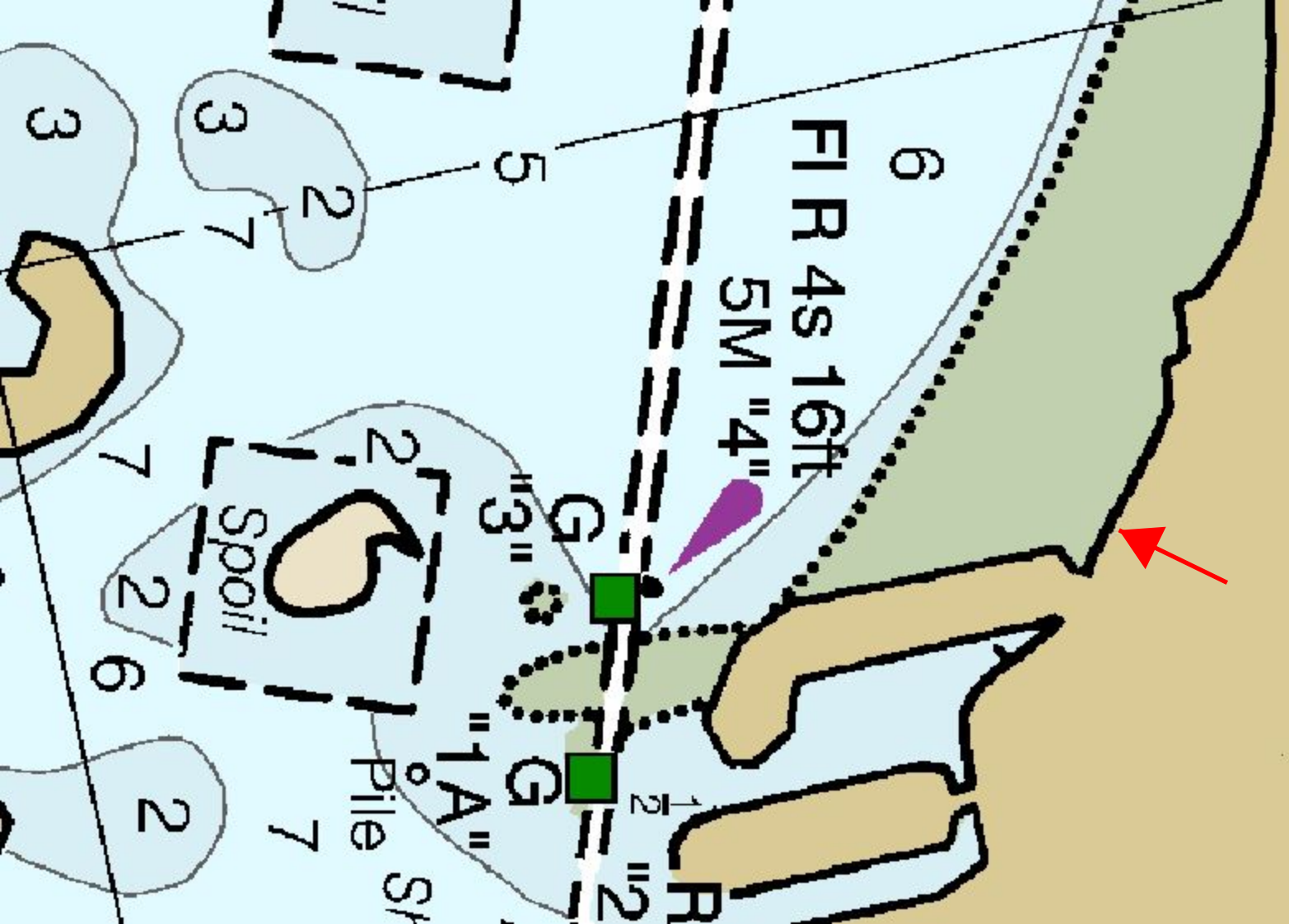
**SPECIFIC PURPOSE TOPOGRAPHIC SURVEY
AND RIPARIAN BOUNDARY EXHIBIT 5
1 HARBORSIDE CIRCLE NORTH
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2009 "Update" Study –
Riparian Allocation Guidelines and Recommendations

Dave Gibson
May, 2009

Introduction: The following findings are the result of this current research. Florida's landmark riparian case *Hayes v. Bowman* (1957) indicated that each allocation must be an "equitable" allocation – meaning that the "equity" being apportioned must be identified and divided fairly between riparian owners so that each owner is equally "happy" or "unhappy" with the allocation. No single owner can be singled out as receiving a lesser share of the "equity". Therefore, any allocation must start with the question, "What is the main equity being apportioned here?" Meaning, what are these riparian owners mainly concerned about? What particular riparian use of the water would they "squabble" about? This concept also recognizes that any riparian allocation must be a "neighborhood" allocation – to develop a methodology that if applied up and down the shore would give equity for the entire neighborhood of riparian owners.

Florida's Ch. 253 Florida Statutes and case law recognize two riparian rights that become involved in riparian apportionment: (1) the right of ingress/egress to navigable water – the right to build a dock over the shallow foreshore to reach navigable waters for navigation purposes, and (2) the right of view over the water body toward its navigational channel.

The principles cited in the 1986 research are confirmed by this research. However at that time, single family residential docks were the issue. Therefore, that research report called for a "near-shore" solution where the riparian zone between the shore and the "line of deep water" must be equitably apportioned between riparian owners. The principles stated in that report and confirmed by this research are as follows:

A. Near-shore Apportioning the Right of Ingress/Egress – Common Law Single Family Docking

(Guideline A1) The common law riparian right of ingress/egress is meant to provide the riparian upland owner access by building a dock out to deep water – water deep enough to dock a boat typical of the neighborhood. Once that boat leaves the dock and moves waterward, then there is general navigation for all boaters without individual navigational riparian rights.

(Guideline A2) Therefore the "equity" to be apportioned is access to the line of deep water. It is important to establish a line of deep water off shore. The common law right of ingress/egress stops at that line, and riparian owners do not have any docking "rights" waterward of that line.

(Guideline A3) Every near-shore riparian zone for ingress/egress has four riparian boundaries: (1) an "outer" line, (2) an "inner" line, (3) the "left" side riparian line (on the left when viewed waterward from the shore), and (4) the "right" side riparian line. The inner line is the sovereign boundary – the Mean High Water Line or the Ordinary High Water Line. A riparian parcel's two side riparian lines intersect the MHWL or OHWL (not the generalized line) giving two "shore points". The riparian lines extend into the water from these shore points.

(Guideline A4) If a shore frontage is needed for perpendicular construction or a "cove" apportionment method, this line is "generalized" to smooth out the minor indentations and projections of the shore giving the generalized shape of the shore in the vicinity. Each upland riparian parcel's side lines when extended to this generalized shore give the riparian shore "frontage."

(Guideline A5) The "outer line" is the line of deep water, established for the customary boat of the neighborhood. The best evidence of this line is the "pier-head line" – the generalized line joining the heads of existing single family docks in the neighborhood. With the pier-head line, the riparian owners over many years have indicated where the water first becomes deep enough for the customary boat of the neighborhood. In general, this line should

not exceed a water depth of -4 ft below MLW (using language from U. S. Army Corps of Engineers permitting rules and an existing administrative rule for docks in the Florida Keys and other endangered/protected areas).

(Guideline A6) The side riparian lines proceed from the shore point to the outer line following shore/channel geometry. The side riparian lines are NOT the extension of the side upland parcel lines. Florida case law is very clear on this.

(Guideline A6a) Channel Perpendicular Method -- For narrow water bodies such as rivers, long narrow lakes, or where a marked navigational channel is very close to shore, "direct" access to that channel becomes the main equity to apportion. *Hayes v. Bowman* constructed a perpendicular at the channel line and extended it back to the "shore points." This is the most-direct access to the channel – shortest distance to reach the channel by boat and shortest distance to view the channel from shore (nearest view of passing boats). In rivers and narrow lakes which have no marked channel, the "channel" line is taken as the median line located midway between the banks. In circular lakes or semi-circular ends of long lakes, the "center point" is taken as the channel, with radial riparian lines taken to this point.

(Guideline A6b) Shore Perpendicular Method -- For large water bodies, such as the ocean, wide rivers, wide lakes, and large bays, the riparian lines are constructed perpendicular with the generalized shore and extended out to the line of deep water. The ocean has no channel and in wide rivers and large bays, there is no "equity" of concern in a distant marked channel, since owners with equitable access to the near shore line of deep water can use general navigation to reach that channel.

(Guideline A6c) Cove Method – When the shore has significant indentations (coves), neither of the previous allocations may produce an equitable result. For example, shore coves on a river may completely deny riparian access by channel perpendiculars. Also on large water bodies, shore perpendiculars in a cove may intersect before reaching the deep water line, denying riparian access. These inequities may be addressed by the "cove" method where the line of deep water is proportioned according to each upland parcel's frontage on the generalized shoreline. Once a boat leaves a dock on the deep water line in a cove, then it generally navigates the cove to gain access to the river. General procedures for the cove method:

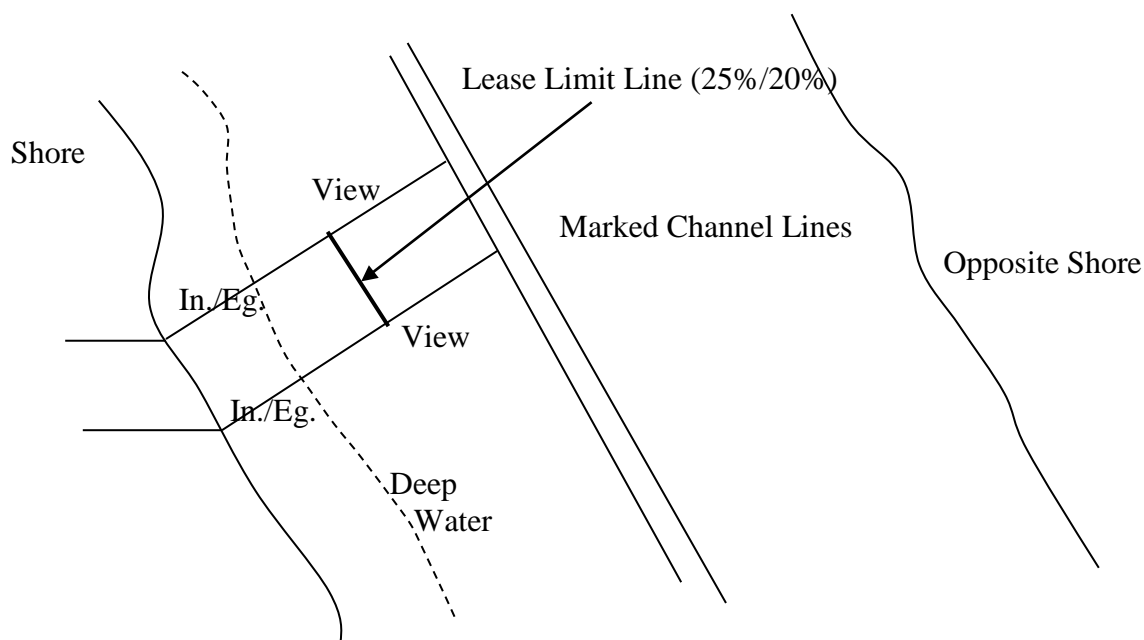
1. Determine the limits of the cove – these will be the limits of the inequity zone where methods (a) and (b) do not give reasonable results including adjacent properties if necessary for an equitable solution. The limits of the allocation are shore points, generally termed points A and B.
2. Determine the actual MHW/OHW line, and extend the side parcel lines to this line for the cove's shore points.
3. Generalize the MHW/OHW line averaging out small indentations/projections. The shore frontage is the length on this line between intersections with the side parcel lines.
4. Determine the outer line (line of deep water). Find the points A' and B' that determine the limits of the outer line, opposite shore points A and B.
5. Calculate the total length of the inner line along the generalized sovereign boundary from A to B. This is the sum of each parcel's shore frontage on the generalized line.
6. Calculate the total length of the outer line from A' to B'.
7. Calculate the outer/inner ratio by dividing the outer line's length by the inner line's length. Multiply this ratio times each parcel's shore frontage to determine each parcel's equitable distance on the outer line. Determine each point on the outer line using these distances.
8. Extend riparian side lines from the shore points on the actual MHW/OHW line to these outer line points.

B. Apportioning the Riparian Right of View

The 1986 study and this study confirm that Florida case law recognizes the common law riparian right of view in the direction of the channel or center region of a water body. However, case law does not make a distinction about methods for determining the "equity" of view verses the "equity" of the ingress/egress. The presumption is that

there is only one riparian zone for both view and ingress/egress. The 1986 study with a single family dock focus, the riparian zone was determined by the "dominant" riparian equity – building a dock to deep water. The right of view would simply be the extension of those side lines out into the water body. The 1957 Hayes v. Bowman case was actually a view case. Also, the more recent 1998 Kiesel case in Lee County confirmed the riparian right of view to the nearest edge of the navigation channel.

(Guideline B.1.) The "view riparian zone" has three new riparian lines: (1) the left view line – the extension of the left ingress/egress line, (2) the right view line – the extension of the right ingress/egress line, and (3) the closest channel line being the waterward limit of the right of view.



C. Apportioning Commercial Marina Leasing

By state statutes and rules, any commercial use of submerged lands must lease the submerged lands from the state – termed a Submerged Land Lease SLL. Even though the riparian owner has an undeniable right to ingress/egress for a single family dock (except in special public trust circumstances), it must be noted that marina leasing is NOT a common law riparian right, meaning that the upland owner does not have an undeniable right to lease submerged lands for commercial use. The state may choose to lease or not depending on state policy. The state in its public trust duty has a current policy of encouraging public access marinas, so that an increasing number of public members have access to navigable waters, thereby encouraging further economic development of the state.

Therefore, since the original 1986 study, large commercial marinas have leased state submerged lands. The overall impact of this state commercial leasing activity is to create a third "equity" – the equitable apportionment of submerged lands for commercial purposes. This is becoming a major and perhaps dominant concern of many riparian owners. It is not a riparian right, just equity. Therefore, today, we have three "equities" to address: (1) ingress/egress, (2) view, and (3) commercial leasing. Today's riparian allocation must achieve a balancing of all three equities. An increasing number of riparian conflicts are surfacing where commercial leasing is being done in a previous residential community with developing conflicts between our three equities. Traditional "neighborhood" residences place single family ingress/egress and view as the dominant equity. A County Park would place view as the dominant equity. However, neighboring commercial owners place commercial leasing as the highest equity of concern. Therefore these conflicting equities make today's riparian allocation quite challenging. In many cases, unavoidable conflicts arise for courts to address.

In most cases, the three equities harmonize well. The typical lease begins at the shore, proceeds waterward through the ingress/egress zone and continues out through the view zone to an outside lease line. State rules limit the position of this outside lease line to 25% of the width of the water body (or 20% in an Aquatic Preserve) so that at least 50% (or 60% in an Aquatic Preserve) of the water body is open water. Of course, the intent of these provisions is to maintain open navigation in the water body. If the channel is offset very near one side, then reasonable offset from the channel line will control over the 25%/20% line. In addition, state rules also require all marina physical facilities including mooring pilings to be at least 25 ft inside the side riparian lines to provide space for boat navigation and turning between marinas.

(Guideline C.1.) The state realizes that a marina should not block a neighbor's common law riparian rights, therefore the state has had a policy of only leasing within an owner's riparian zone. Therefore, marina leasing uses the side riparian lines and produces only one new line: the waterward lease limit line (the 25%, or 20% line, or channel line offset). A typical waterward lease limit line has been added to the above figure.

The Effect of Commercial Marina Leasing on View

With only single family docking, each riparian owner would actually have a fairly wide view of the water body.

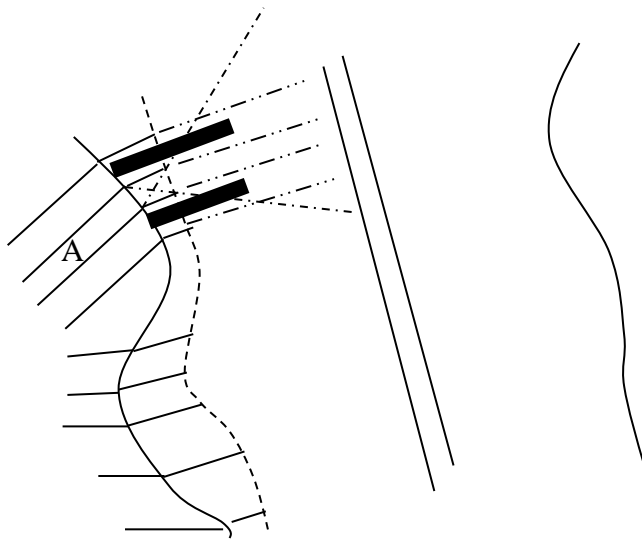


Figure: Riparian Right of View vs. Wide-Angle View

For example in the above figure, the west bank of a narrow water course has numerous riparian parcels with various directions approaching the water. The banks are curving, but not severe enough to declare a cove. The narrow Parcel A is shown with a riparian allocation perpendicular with the marked channel edge. The dashed line off shore is the line of deep water. The ingress/egress riparian zone is the near shore zone. The riparian right of view zone is found by extending these lines out to the channel edge. However, that parcel would actually have a wide view of the channel by the crossing dashed lines. If a person stood on the most southern shore point, looking northward as far as possible, the northerly neighbor's single family dock/boats would limit the view line as shown. Likewise, the other crossing view line is found by standing on the northerly shore point looking southeast past the southerly neighbor's dock/boats. Likewise the parcel south would also have a wide angle view, with some of that view overlapping the view zone of Parcel A. Therefore, even though lot owners had a narrow exclusive riparian right of view zone, they became accustomed to a wide non-exclusive view of the water. However, this wide angle view is not a riparian right, only the narrow zone.

When the state issues Submerged Land Leases for commercial marinas to the parcels north and south of A with marinas built in the zones shown by the wide lines, then A's wide angle view is narrowed significantly. A's riparian right of view is still open. Owner A will be very unhappy to have the lesser view, however, A's riparian right of view zone is intact.

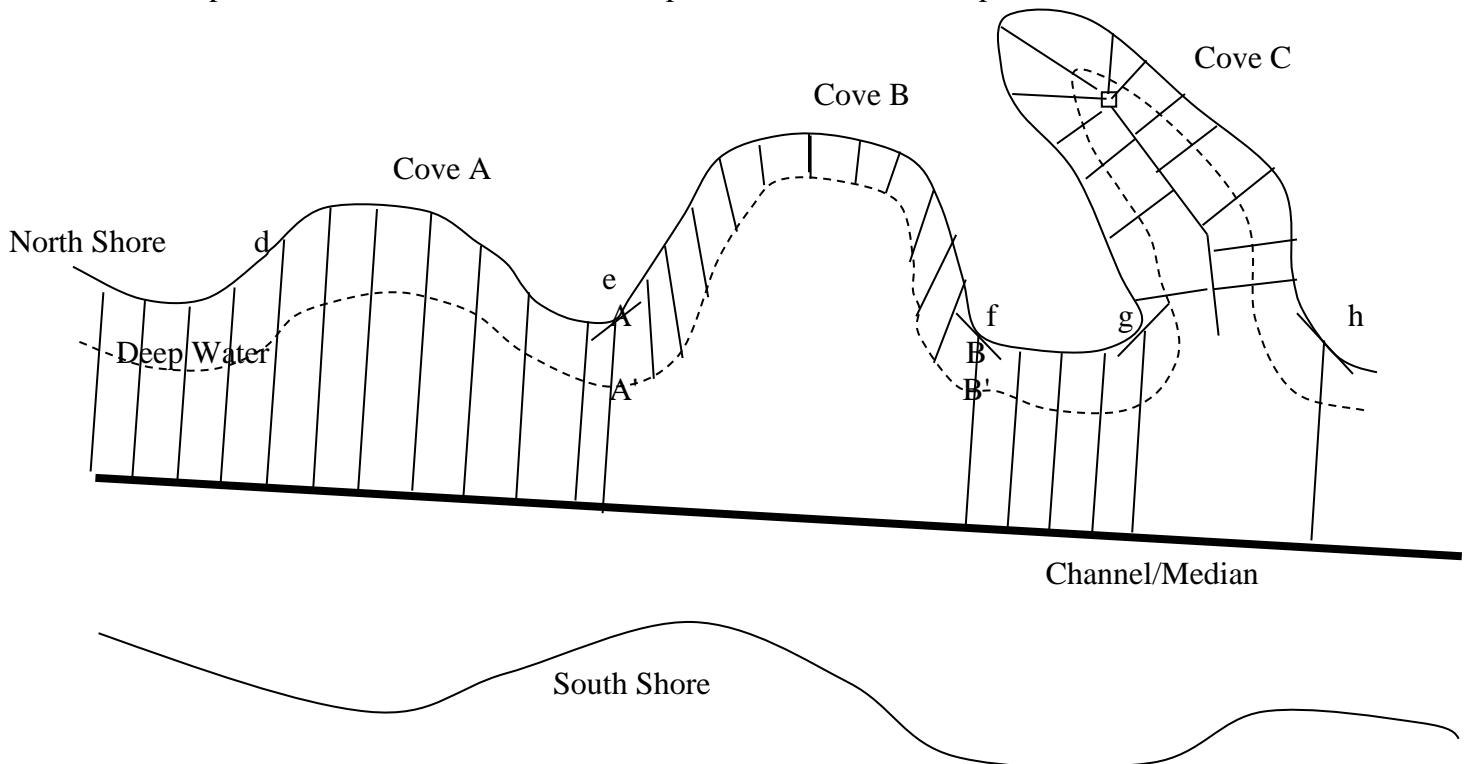
D. Apportionment of an Entire Narrow Water Body for Ingress/Egress, View

Commercial marina leasing has now made the allocation of the entire water body a consideration. Consider the water body shown in the following figure. It could be a river, a long lake, or intra-coastal waterway and a marked channel is present, therefore, the dominant riparian construction is perpendicular with the channel. The north shore is undulating with three "coves" to investigate: a (A) "shallow cove," not indented enough to require a cove method apportionment, a (B) "deep cove," deep requiring a cove apportionment, and a (C) "hidden cove" which departs to form its own geometry. The deep water line is shown as a dashed line.

Shallow Cove A is called "shallow" because the intersection between the shore and riparian lines are at 45 degrees or less throughout the cove. This "45 degree rule" is presented here for consideration. At a location such as "d" where the shore and riparian line are at 45 degrees, the width of the riparian zone is $0.71 \times$ the frontage distance, but these zone widths still give sufficient width for dock building out to the deep water line (dashed) and leasing/view out to the channel line. In the Hayes v Bowman case, this angle was about 55 - 60 degrees which caused a reduced riparian zone width 0.85 times the lot frontage. Therefore, the landmark case in Florida recognized that the riparian zone width may be significantly less than the riparian frontage width.

Deep Cove B begins at location "e" where the angle exceeds 45 degrees. This is the beginning of a deep cove B calling for a cove apportionment. The beginning points on the cove are A and A'. The end of the cove at point "f" is identified as points B and B', where the channel perpendicular and the shore make an angle of 45 degrees. The deep water line from A' to B' is apportioned according to relative shore frontages between A and B.

Cove C begins at "g" and ends at "h", again using the 45 degree rule. However, since this cove has its own geometry separate from the main water body, each riparian parcel fronts on this cove (not on the main water body). Therefore, perpendiculars are constructed perpendicular with the cove's median lines. At the north end of the cove, a center point is chosen at the deep water end, and riparian lines are connected with the central point for parcels northwest of that point. This allocates the line of deep water between those riparian owners.

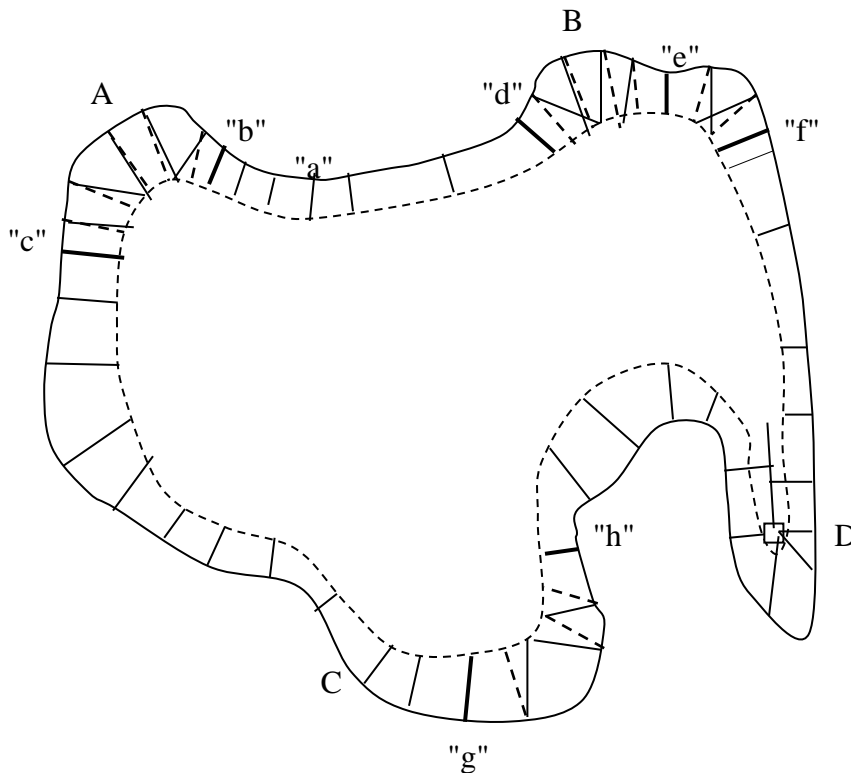


E. Apportionment of a Wide Water Body with Coves for Ingress/Egress, View

The figure shown below is the generalized shore and deep water line of a wide water body without a channel, such as a large lake or bay. In this allocation, the dominant riparian construction is perpendicular with the generalized shore out to the deep water line for ingress/egress. Consider the lands between the shore and deep water to be non-navigable, such as water grass regions. At many shore areas such as at "a", shore perpendiculars provide clear equity of ingress/egress to deep water.

However, in Cove A, the significant distance of deep water off shore causes shore perpendiculars (solid lines) to intersect before reaching deep water, thereby causing inequity. Therefore, an apportionment of the line of deep water is required for all parcels in the cove. The cove limits are placed where the increased separation between the deep water line and shore commences on each side, for example at "b" and "c." Apportioning the line of deep water according to shore frontage gives the equitable apportionment lines shown. Another apportionment was required between "d" and "e", between "e" and "f", and between "g" and "h". At Cove D, a center point was taken for the end of the deep water line, and riparian lines were connected to that point.

Apportionment of the remaining bed for view and commercial leasing has many possibilities, but one is shown on the figure. A single central point of the deep water area is taken on the west. Another single central point of the deep water area is constructed on the east. A median line joins these points. The narrow cove has its own geometry as shown. All riparian lines are constructed toward these central points or perpendicular with the median line.

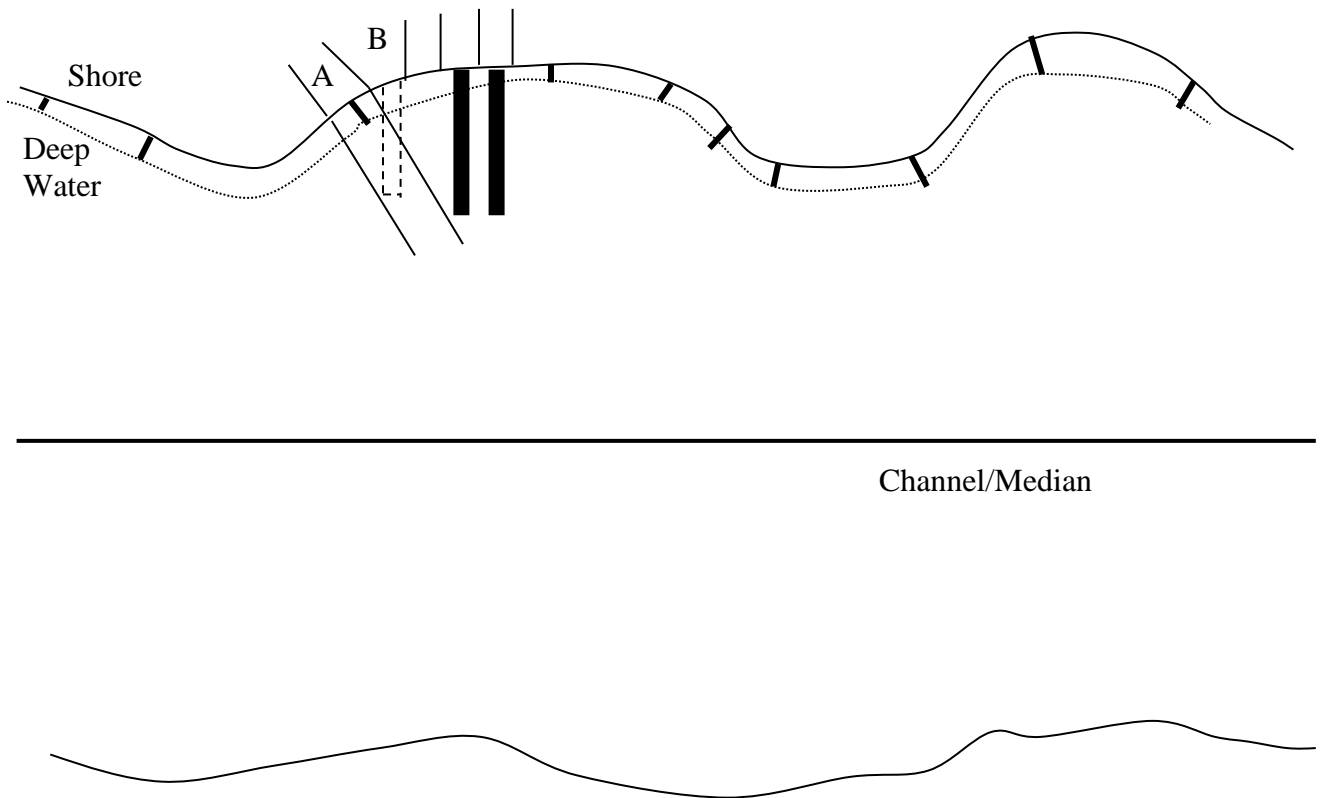


F. A Changing Equity – Commercial Leasing is Becoming the Main Consideration – Riparian Lines Move

The above cases D and E only allocated the near shore area for ingress/egress and view. In recent years, the possibility of building a commercial marina on leased submerged lands is becoming a prime ownership interest, making the upland properties very valuable, much more valuable than for single family docking. Therefore, the adjacent riparian owners are looking for equity in lease zones a far distance out into the water body, as opposed to private docking in the near shore. A recent trial-court civil case in Florida's panhandle held that the new equity is now more important than the older.

As shown in the figure below, the water body was over ½ mile wide, and its shore was developed into single family housing on large lots in the 1960s. Most owners built single family docks, and since the water body was wide, the docks were generally built perpendicular with the shore since the distant channel and opposite shore had little equity considerations. The shore is undulating with shallow coves similar to the figure below. Typical single family docks are shown out to deep water. The water body was considered "large" therefore docks were perpendicular with the shore. East of owner B, large commercial marinas were leased and built. B then applied for the shown SLL (dashed line) to also build a marina. Owner A claimed the proposed new marina interfered with his dock and violated his riparian right of view, and took the case to civil court for a riparian determination.

The two easterly marinas were leased with riparian lines both perpendicular with the shore and the channel because the shore parallels the channel at that place. B's application used a riparian construction perpendicular with the channel. A was claiming a riparian zone (view mainly) perpendicular with the shore, consistent with the traditional single family docks in the area. After hearing testimony from both sides, the judge held for person B's lease application, and against A's argument. Essentially, the new "equity" of commercial leasing, was judged more important than the traditional equity of view in the extended ingress/egress zone. The water body which had been treated "large" for 40 years had instantly become "small" because of the large size of the marinas. When A complained about the "taking" of his riparian area, the judge simply indicated that A still has a riparian zone for view and marina construction, but it's located perpendicular with the channel line. An allocation must assess whether the new "equity" now supersedes the older one.



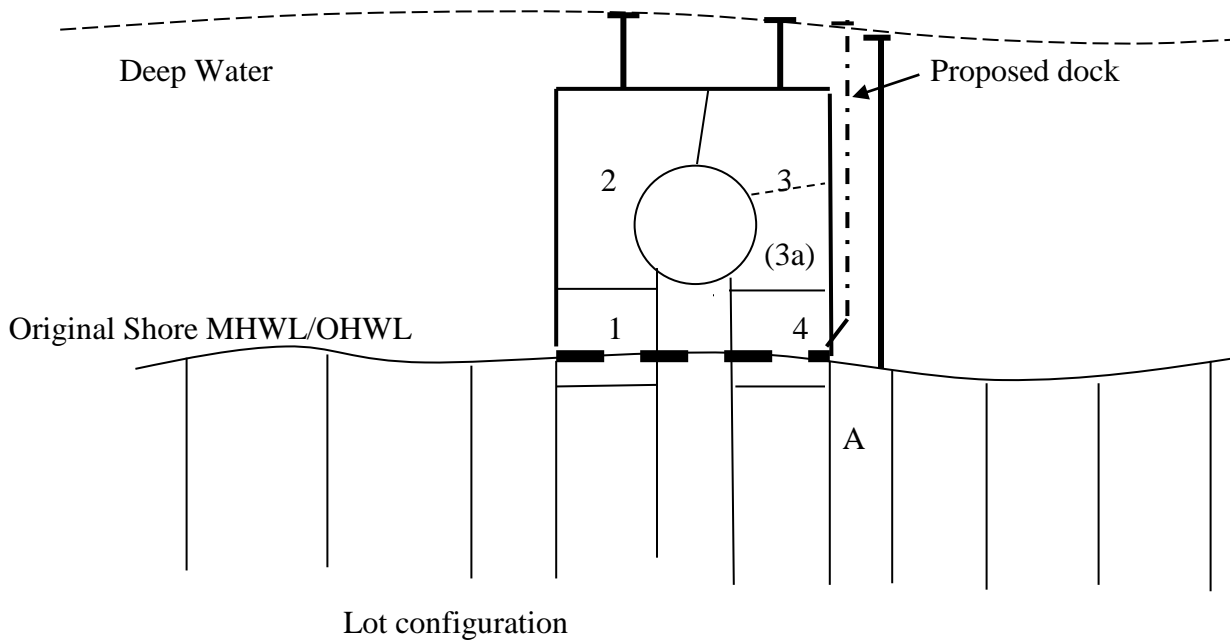
D. The Effect of Artificial Filling and Bulkheading

Another area of study is the riparian effect of perpendicular "push out" filling, quite common before the 1970s. For example, the figure shows a "push out" bulkheading and filling on a wide water body. Owner A had a dock before the filling as shown out to deep water. During development, the developer assured Lot A's owner that there would be no docks on the lateral bulkhead to interfere with A's riparian rights. The buyers of Lots 2 and 3 soon built docks to deep water. Now, 50 years after the filling, the current owner of Lot 4 wishes to build a long dock to deep water as shown dashed. Assurances the developer gave to former owners of Lot A were not in writing and cannot be documented.

The question here is equity. The owner of Lot A, not a party to the push out development has enjoyed the riparian zone of ingress/egress and view just east of the bulkhead, and does not feel the proposed dock is equitable, since it would cause the loss of view of the open water. Another riparian conflict is with owner of Lot 3. If Lot 4's small waterfront on the lateral bulkhead gives riparian rights to build such a dock, then all the footage of Lot 3's frontage on that bulkhead should give the same rights. Lot 3's owner is contemplating splitting the lot into two parts as shown, and feels the proposed dock would cause the new Lot 3a to lose riparian rights.

The recommended solution to this situation is to recognize "senior rights" in these riparian situations. The "senior" and original riparian rights shown by the bold dashed line were "pushed out" and transferred to the outside bulkhead only. The waterward side of Lots 2 and 3 are exercising those riparian rights.

However the "new" artificial water-frontage created on a lateral bulkhead does not face open water, but only the shallow lateral waters. These rights are "junior." A dock built perpendicular with those bulkheads into the lateral water would violate the "senior" riparian rights of a lot such as "A". In concept, Lot A's senior rights could prevent any form of docking for Lots 3 and 4 on the lateral waters.



E. Established "Neighborhood" Allocations – Tend to Follow Established Methods in Single Family "Dock Neighborhoods"

The question often arises whether to use (a) perpendicular with the shore or (b) perpendicular with a nearby channel for near shore allocation. Often, the “dock neighborhood” will give that answer. In some neighborhoods, riparian owners have built many neighboring docks according to some single method: perpendicular with the shore, on projection of lot lines, perpendicular with the channel line. Since these neighborhoods have had harmony and therefore equity for many decades, a current day allocation should try to accept and continue the "neighborhood" near shore allocation method as much as possible for existing docks, but only in the near shore ingress/egress zone. Once the allocation gets to deep water, the allocation should become theoretical in the apportionment of the deep water zone among riparian owners.

However, this concept is a general guideline only. Acceptance of existing near shore neighborhood methods is only done in the following circumstances:

1. The existing method is consistent in the neighborhood.
2. The existing docks do not encroach outside of a "theoretical" line by significant amounts.
3. No inequities would be caused by continuing the existing methodology for existing docks.
4. This solution is used only for existing properties within the dock neighborhood, not for new docks outside the neighborhood. It would however be applied to new docks at properties within the neighborhood.

F. The Impact of Offshore Private Submerged Parcels on Riparian Allocation

For many decades, Florida had a very important riparian right that does not exist today – the right to fill. Starting with the early Riparian Act of 1856, riparian owners were granted title to any land filled all the way to the edge of the main navigational channel. This was done to improve the economy of trade using boats and to reduce the undesirable (in those days) near shore swamps thereby making Florida a more desirable vacation destination. The term “direct access” to the channel as a riparian right, mainly referred to the right to fill, and the direction of this right was perpendicular with the channel line (to give the least fill to the channel edge).

This right to fill gradually underwent legislative modification. With the Butler Act of the 1920’s, the riparian owner who filled then had to petition the state for title to the submerged lands filled. In 1953, the riparian owner first had to purchase a submerged lands deed from the state before filling, however, the right to fill still existed and was greatly used in the 50s and 60s to create vast regions of bulk-headed/filled extensions to the natural uplands. *Hayes v. Bowman*, our landmark 1957 case in Pinellas County, was a conflict between the right to fill for developer Bowman and the right of view for parcel owner Hayes. In 1957, the Bulkhead Act allowed counties to file a recorded plat showing a Bulkhead Line offshore which set a waterward limit of the right to fill. Eventually with the environmental movement of the late 60s, the riparian right to fill completely went away in the early 70s. Since many fills did not follow legislative provisions, dealing with “illegal fills” became a big problem for the state in the 80s and 90s. In 1993, the legislature passed an act that “disclaimed” state title to any fill placed before January, 1974. Thereby, many illegal fills became legally owned by the riparian owner.

During these periods of great filling activity, mainly the 1920s, 50s, and 60s, the Trustees had a policy of selling submerged land parcels. Many people bought these parcels with the intent to someday fill and extend the natural shoreline. However, many submerged parcels were never filled, and still remain today with a chain of title from the Trustees to the initial purchaser and down to the current owner. In some cases, the submerged parcel is owned by a different party than the adjacent upland parcel. The question arises as to the riparian rights of the upland riparian owner when the state no longer owns the submerged lands in front of the riparian parcel.

Several concepts and principles are proposed:

- (1) The submerged parcel has no riparian rights attached (view, docking, navigation, etc). The owner merely owns the bed, not the water above the bed.
- (2) Riparian rights are attached only to the riparian upland parcels, and the sale of offshore submerged lands, even those lands adjacent to the shore, did not sever those riparian rights from the upland parcel.
- (3) This means that the submerged lands owner cannot deprive the upland riparian owner from the right to build a dock to deep water for ingress and egress, even though the dock pilings would be placed on the submerged parcel.
- (4) Also the submerged lands owner cannot block the riparian owner’s right of view out toward the center channel of the water body.
- (5) For commercial marina development, there is significant value of owning both an upland riparian parcel and the adjacent submerged lands. Since the state is not the owner of the submerged lands, then the provisions of Chapter 18-21 do not apply, since this chapter deals with management of state owned sovereign lands. A state submerged lands lease is not needed. However, the state’s resource management function still applies under other statutes and rules.
- (6) However, if the submerged owner does not own the adjacent uplands, then they can do nothing with the submerged parcel to hinder the upland riparian rights.

Selected Case References Used in the 1985 and 2009 Studies – please note that these cases mainly deal with apportionment “allocation” issues. The summary statements are written by myself.

Freed v. Miami Beach Pier Corporation FL 93 Fla. 888; 112 So. 841; 1927 allocation neighbors cannot stop further pier construction, even though it is not perpendicular with shore, due to not objecting until late in construction and minor violation.

Hayes v. Bowman FL 91 So. 2d 795; 1957 allocation right of view is "as near as practicable" in direction of channel requiring equitable apportionment.

Lee County v. Kiesel FL 705 So. 2d 1013; 1998 allocation court found that bridge over Caloosahatchee River blocked riparian's right of view

Merrill-Stevens Company v. Durkee FL 62 Fla. 549; 57 So. 428; 1911 allocation court confirmed that riparian division lines are perpendicular with river channel, not along projection of upland property lines.

Sullivan v. Moreno FL 19 Fla. 200; 1882 allocation court overturned a lower court's injunction stopping a wharf builder from building in front of neighbors land. Could not support injunction based on riparian considerations.

Miller v. Hepburn KY 71 Ky. 326; 1871 allocation riparian division

Wood v. Appal. PA 63 Pa. 210; 1870 allocation riparian division

Cramer v. Romine (& TITF) FL 114 So. 2d 629 1959 allocation Monroe County trial court ordered the state deed of submerged lands to Cramer to be voided because the location of the deeded submerged lands violated the riparian rights of the neighbors.

Johnson v. McCowen FL 348 So. 2d 357; 1977 allocation allocation of accretion among riparian owners according to Hays v. Bowman principles, not extension of upland line.

Lake Conway Shores Homeowners Assoc. v. Driscoll FL 476 So. 2d 1306; 1985 allocation court reversed Orange County trial court order to remove Homeowner's dock because the trial court's riparian division method was not equitable.

Johnson v. Tlush FL 468 So. 2d 1023; 1985 allocation court affirmed lower court order to remove dock which violated the riparian rights of other owners.

Gillian v. Knighton FL 420 So. 2d 924; 1982 allocation court found that equitable division of accretion was not on extension of upland boundary and remanded case requiring trial court to apply equitable principles.

Johnson v. McCowen FL 348 So. 2d 357; 1977 allocation court affirmed riparian line by a survey that followed equitable principles of Hays v. Bowman

Bliss v. Kinsey FL 233 So. 2d 191; 1970 allocation land between meander line and shore must be equitable apportioned, not project government lot lines.

Nosek v. Stryker WI 103 Wis. 2d 633; 309 N.W.2d 868; 1981 allocation affirmed trial court finding that the landowners' pier needed to be erected only far enough to reach the nearest point of navigable water. The trial court had the power to order the movement of that pier toward that point. A trial court could order a pier to be placed in such a position that it went to the most direct point of navigable water

Hefferline v. Langkow WA 15 Wn. App. 896; 552 P.2d 1079; 1976 allocation apportion riparian rights according to the amount of shoreline each part owned out to line of deep water.

Spath v. Larsen WA 20 Wn.2d 500; 148 P.2d 834; 1944 allocation Describes cove method of apportioning outer line in proportion to shore frontage.

Joyce v. Templeton MD 57 Md. App. 101; 468 A.2d 1369 1984 allocation court adopted apportionment by extending property line to center point of cove

Cordovana v. Vipond VA 198 Va. 353; 94 S.E.2d 295; 1956 allocation Court ordered apportioning line of navigability: to measure the length of the shore and determine the portion to which each riparian proprietor was entitled; measure the length of the line of navigability, and give to each proprietor the same proportion of it that he was entitled to of the shore line; and then draw straight lines from the points of division for each proprietor on the line of navigability to the extremities of his lines on the shore.

Sanders Yacht Yard, Inc. v. Crockett's Landing, Inc. VA 65 Va. Cir. 514; 2001 allocation commercial marina extended past a "line of navigability" at -8ft and into the riparian zone of a neighbor. Neighbor could continue using dock by prescription.

Allen v. Wood (Simpson, pg. 208) MA 152 NE 237; 1926 allocation court "modeled" shore line with two circular curves and constructed riparian lines along the radials.

Johnston v. Jones (Simpson, pg. 209) IL 66 U.S. 209; 1861 allocation leading U.S. supreme court case calling for proportionate frontage method for accretions. Also, called for "general line" of the shore should be taken as opposed to the "actual line" – eliminating deep indentations and sharp projections – to find the "general available line of the land upon the river."

Hathaway v. City of Milwaukee (Simpson, p. 213) WI 111 NW 570; 1907 allocation court applied a modified shoreline apportionment because new shoreline was of strange shape. City Street shared in the apportionment

Emerson v. Taylor (Simpson, p. 214) ME 9 ME 42; 1800 allocation court bisected angles at shore points between chords across property frontage.

Guidelines for Allocation of Riparian Rights

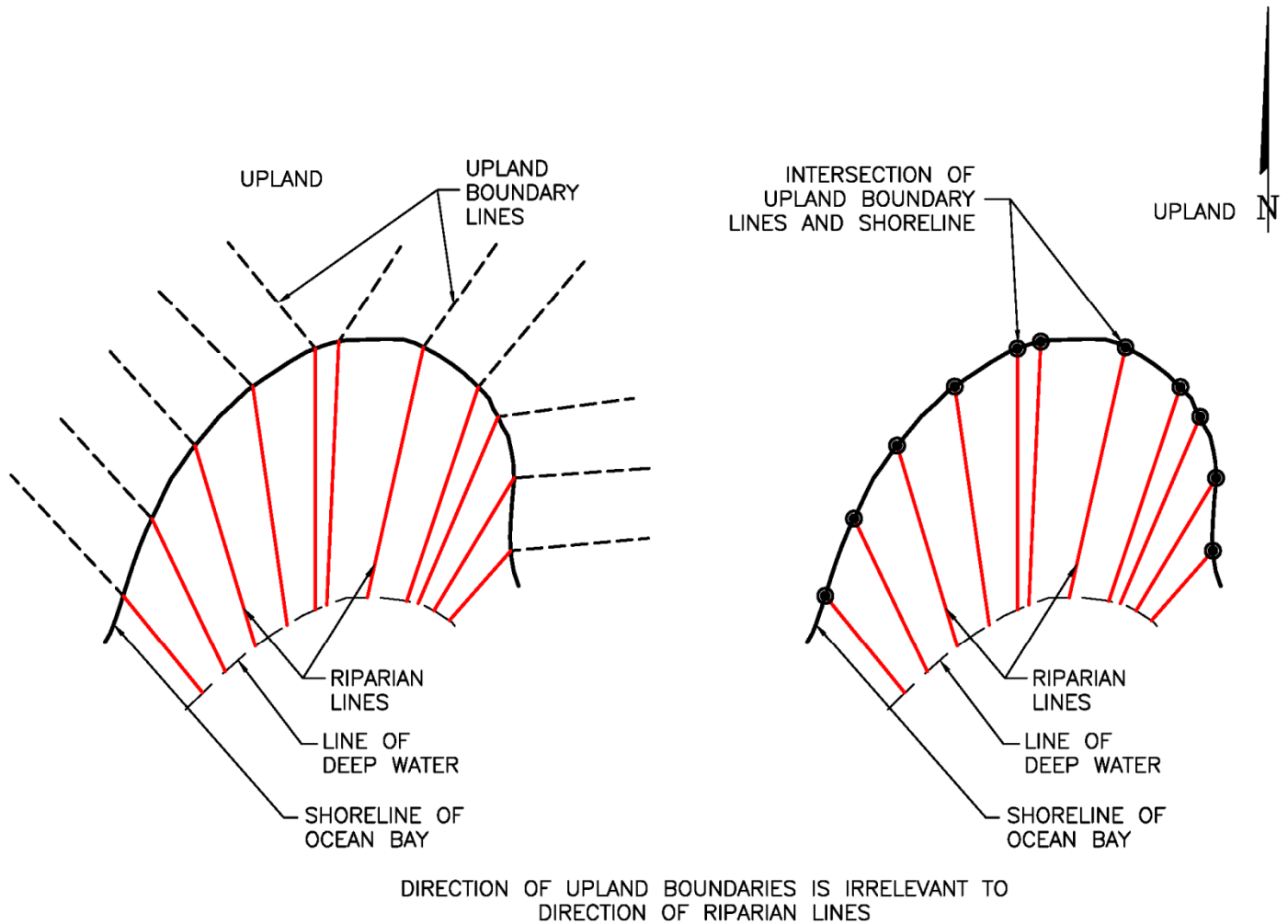
The 1985 and 2009 Studies

In 1985 and again in 2009, the Bureau of Survey and Mapping sponsored a study of the effect of shoreline and channel geometry on the division of riparian rights. This study was prepared by Dr. David Gibson, Associate Professor at the University of Florida. The research was intended to analyze existing methods for making allocations of riparian rights together with a study of different shoreline configurations. The result was a set of recommended guidelines.

This document concentrates on the two riparian right “equities” of dominant interest among waterfront owners: (1) right of ingress/egress to navigable waters – the right to build a dock out to deep water, (2) right of view out to the edge of the main navigational channel (view). The following are conclusions from the studies and examples of riparian rights allocations.

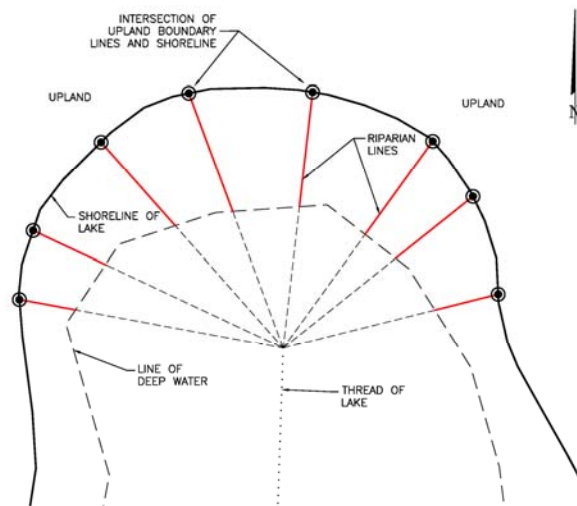
Conclusions from Literature Study

1. Docking is a near-shore consideration and is limited by the line of deep water (line of navigability or line of navigation). The great weight of research indicates that when docking is the primary issue, courts will usually apportion the space between the shore and the line of navigability.
2. In considering docking when the shore is relatively straight on a large body of water (one without a nearby channel or thread), such as the ocean, a large lake, ocean bay or wide river, the dominant construction makes division lines perpendicular with the general direction of the shore extended to the line of navigable water. The shore’s general direction requires smoothing of smaller indentations and projections, and perpendiculars are constructed with the “smoothed” shore from the place where the side lot line hits the Mean High Water Line or Ordinary High Water Line.
3. Along a river without a marked channel and the opposite bank is in proximity to the area of concern, the dominant technique is to construct riparian lines perpendicular with the stream’s thread (median). The stream’s thread should be found as the median line of the water surface half way between the banks during ordinary stages of water height.
4. Along a river or other water body with a nearby marked navigation channel and a regular shore, most courts construct perpendiculars with the nearest channel edge as opposed to the thread. It appears that the proximity of a channel edge, or any other similarly established outer line, will most likely be used by courts for the apportionment using perpendiculars if the shore is relatively straight.
5. The direction of upland boundaries is largely ignored when apportioning riparian rights. The public’s mistaken belief that riparian lines are on the extension of their side upland lines is the most frequent cause of riparian disputes. Instead, the water body must be **equitably apportioned** as if all waterfront owners were standing on the shore looking out over the water body – see example below.



6. When the shore is irregular in the form of a cove or projection into an ocean, ocean bay, lake or river, most courts apportion the line of deep water to divide riparian rights as opposed to any perpendicular method – see example above.

7. Methods of apportionment designed for the whole water body, such as the center point method in lakes, thread of lakes, perpendiculars to channels or threads, should be used mainly for those riparian rights that require apportion of the entire water surface. They may also be used to determine direction but not the terminus of near-shore division lines when they give substantially the same apportionment as a near-shore method. This would be true in round lakes with concentric water depth contour lines, along rivers with parallel banks and parallel channel, and along long lakes with consistent water depth contours – see example below.



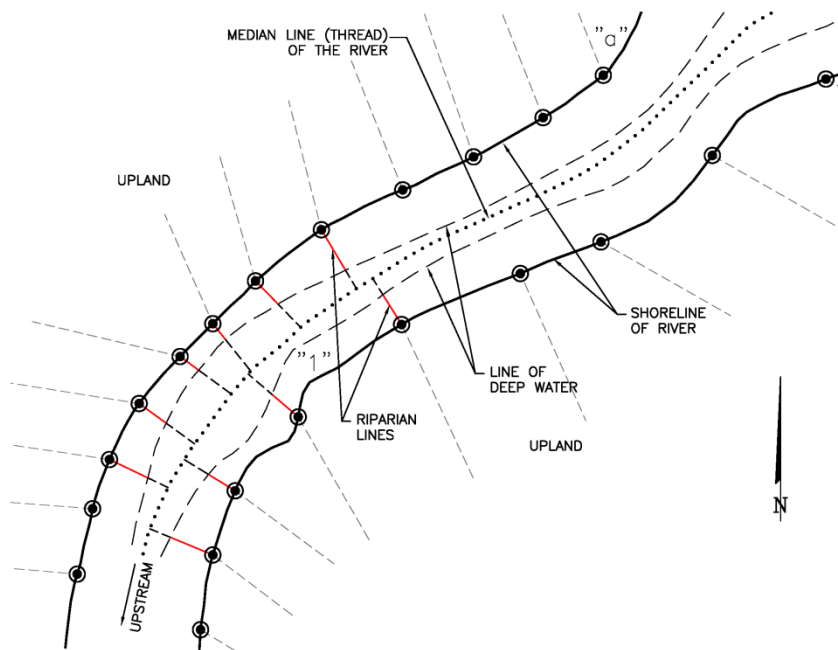
8. The apportionment of the line of deep water is the most universal technique for division of riparian rights that will give the same solution as more traditional techniques in many cases and will follow dominant national case law where the shore is irregular.

Recommended Procedures and Water Body Classifications

In explaining allocation procedures, reference will be made to several sketches which were constructed to show numerous cases of water boundaries. It is presumed that the main considerations are docking, view and access to navigation channels. It should be noted that the upland boundaries of the lots surrounding the water are shown only as very light dashed lines for the reasons stated in no. 5 above.

River, No Marked Channel, Parallel Banks – Perpendicular with Median Line In the river example below, the water body would be classified as (1) being a narrow river where the opposite bank is of a consideration and (2) as having generally parallel banks without deep coves and projections.

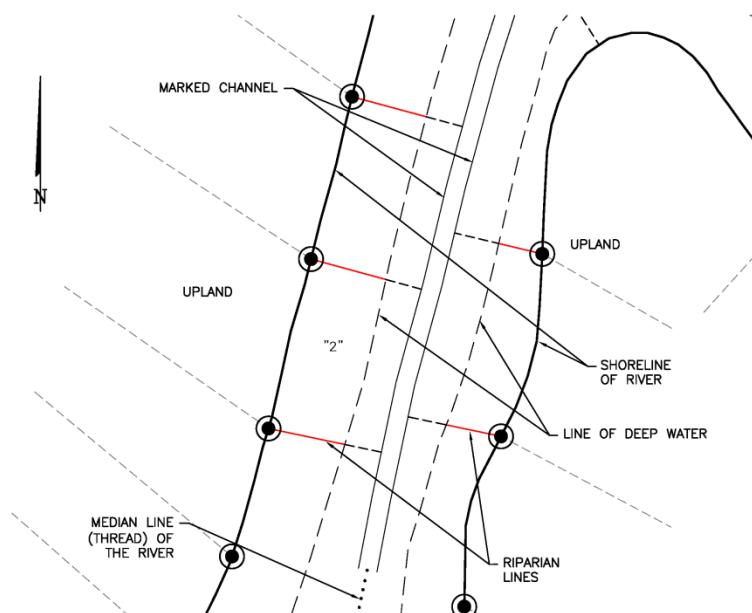
The main technique to be applied here is the “perpendicular with the stream’s thread” method. The banks being the limit of water at its ordinary stage would be determined. A median line would be constructed exactly midway between the banks at their ordinary stage of water. Perpendiculars would be constructed at the thread and produced back to the shore points. Docking and access rights would stop at the line of deep water – see example below.



For example, at area "1", the red riparian line is the "docking" line shown perpendicular with the dotted median line stopping at the line of deep water. The dashed extension of the riparian line is the "view" line out to the median line. These lines are: not on the extension of the upland side line, not perpendicular with the water boundary, or not perpendicular with the line of deep water.

Other docking and view riparian lines are shown in the neighborhood. This same technique would be used on the entire river upstream of point "a". None of the coves are deep and no inequity would result.

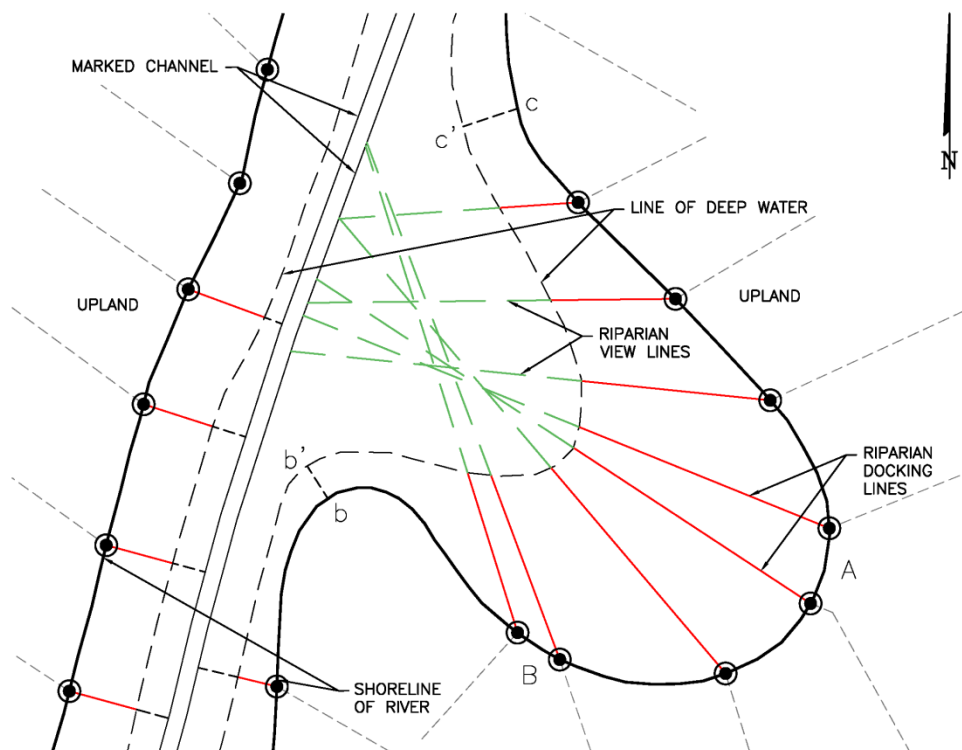
River, Marked Channel, Parallel Banks – Perpendicular with the Channel Line Downstream of the above example a maintained and marked channel exists that would take over from the thread for the apportionment base line. The channel probably has an east and west edge, and perpendiculars would be constructed at the nearest edge and run back to shore – see example below.



For example, at area “2” above, perpendiculars are constructed at the nearest channel edge and run back to shore.

Deep Cove on One Bank – Apportion Line of Navigability The deep cove on the east bank in the following example requires special treatment. Inequities are obvious; if the typical solution of extending the lot lines is applied, persons “A” and “B” would be entirely cut off from navigable water and the channel. If the previous technique of perpendiculars from the channel were applied, then person “B” would receive nothing. Therefore, the line of navigability should be apportioned.

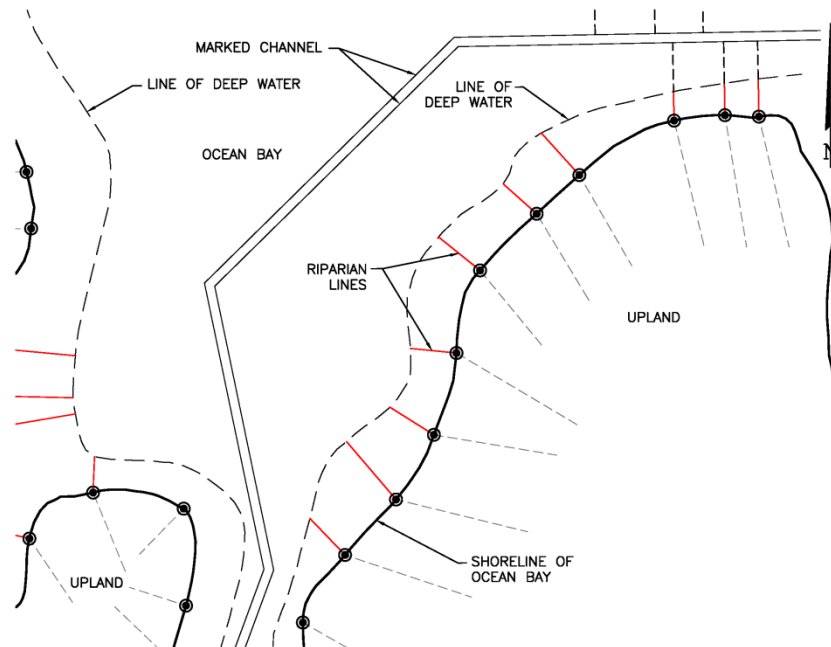
Finding the cove limits (headland points) would be a critical decision. The headlands of the cove would be identified as points “b” and “c” the places where the east river bank departs its generally parallel course and enters the cove. As a general rule the “45 degree method” can be used to find the headlands –where the shore first departs at a 45 degree angle from the general direction of the water body.



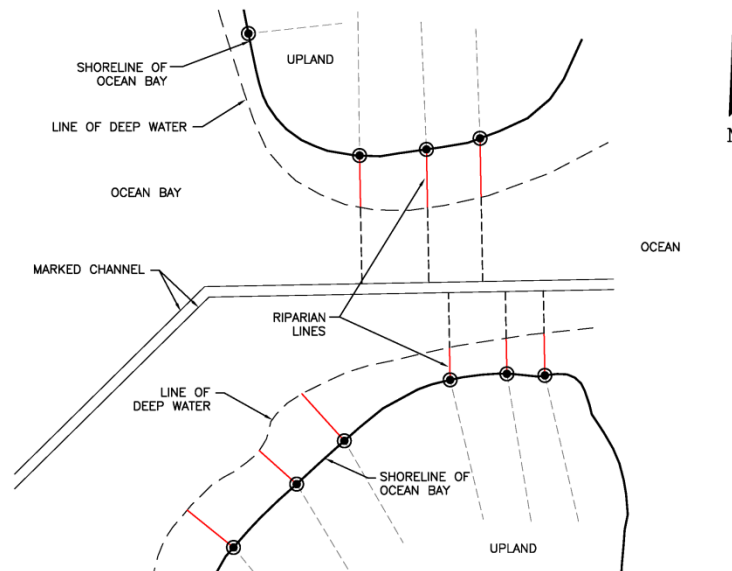
Points b' and c' would be established directly opposite the headland shore points using perpendiculars with the line of navigability. Between b' and c', the line of navigability would be divided in proportion to frontage. For example if the total distance b' to c' on the “outer line” is only 700 ft and the shore frontage from b to c is 1000 ft then each foot of shore frontage only receives 0.70 ft on the outer line – equitable apportionment. Straight lines would run back to shore points. The view zones would be the extension of the docking lines out to the channel line, (however view zones are not exclusive and they may overlap).

Large Water Body -- Perpendicular with Shore Northerly of the above example, on the east side of the ocean bay, the shore and the marked channel are diverging from each other. Since docking is a near-shore

consideration, then a near-shore solution is called for. The dominant method is to construct perpendiculars with the generalized shore, projecting these riparian lines out to the line of deep water.



Inlet Channel – Perpendicular with Channel Line At the inlet of the ocean bay, the proximity of the channel is now the important consideration, and perpendiculars would be dropped from it as shown.



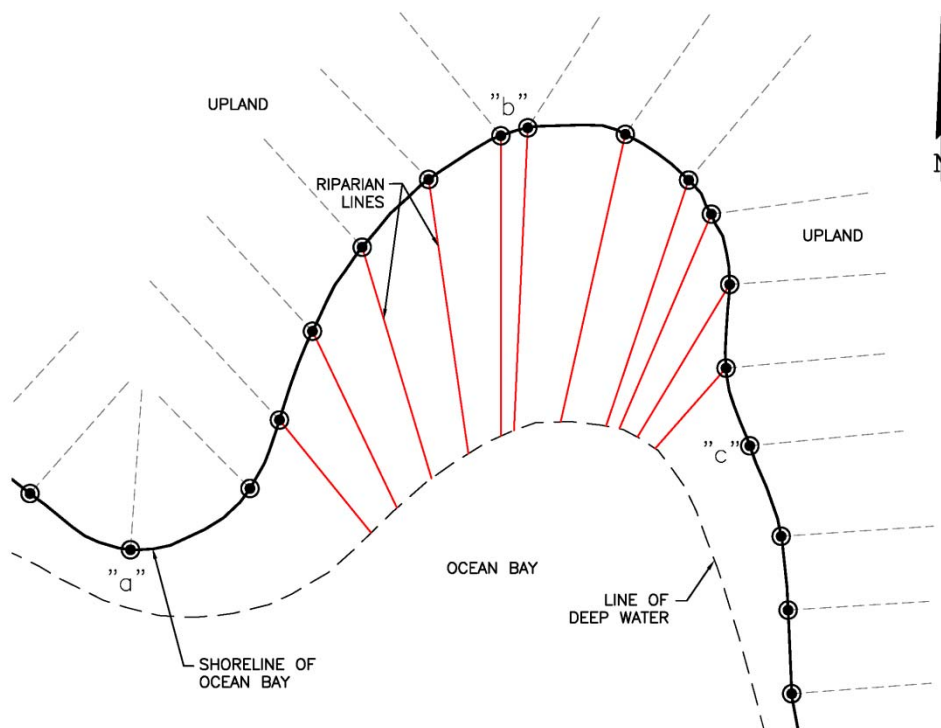
Coves

Large Bay Cove – Apportion Line of Navigability Around the ocean bay, the dominant construction is perpendicular with the generalized shore direction, projecting these out to the line of deep water.

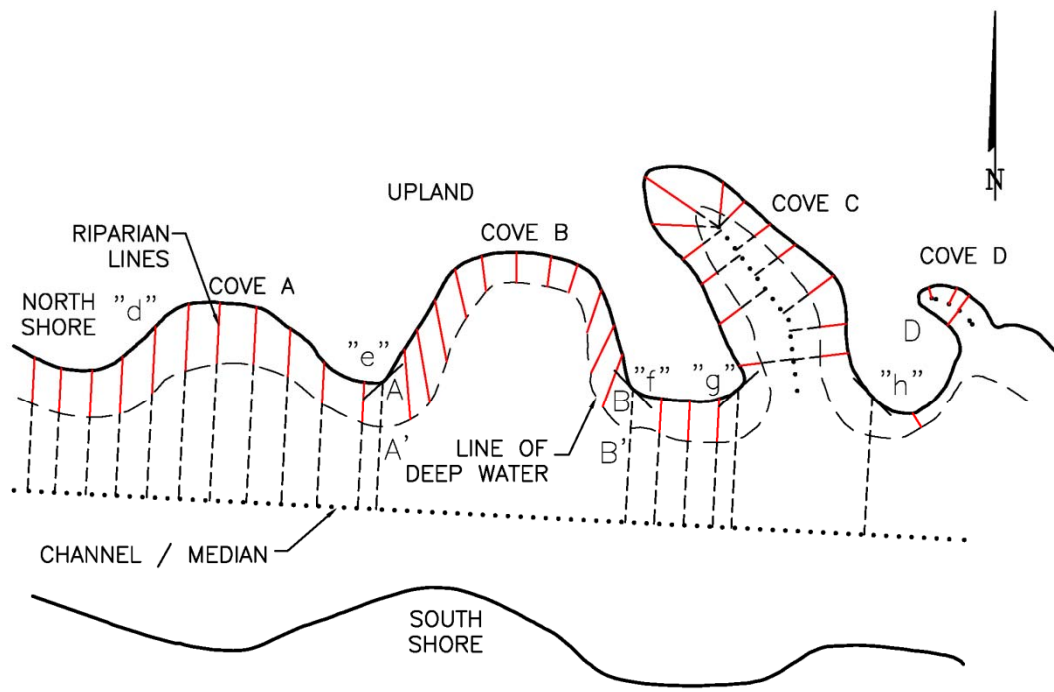
However, the large cove on the north side of the bay calls for apportioning the line of navigability. The main question would be determining the apportionment limits. There is a well-defined headland on the cove's west end at "a," but on the east side the cove's beginning is not so well defined.

As a guideline for thought, there is no use apportioning lots in which a more basic method works; therefore, start at the point of greatest inequity, point "b" in this case, and go in each direction until straight-line projections will intersect the line of navigability at nearly right angles well clear of the problem area, such as at "c" in this case. Apportionment between "a" and "c" will give each owner a portion of the line of deep water for constructing a dock.

A problem is noticed for owner "b". Due to small frontage, that lot will receive a very small portion of deep water frontage, perhaps not enough on which to build a dock without conflict with adjoiners. This is a situation for the neighbors or courts to address. The surveyor should not attempt to solve this situation. Instead, the surveyor should rely on geometric construction principles. After the "theoretical" riparian lines are determined, let the owners negotiate a solution (riparian boundary agreement or license) or let the courts decide an equitable solution.



Commercial marina leasing has now made the allocation of the entire water body a consideration. Consider the water body shown in the following figure. It could be a river, a long lake, or intra-coastal waterway and a marked channel is present, therefore, the dominant riparian construction is perpendicular with the channel. The north shore is undulating with three "coves" to investigate: a (A) "shallow cove," not indented enough to require a cove method apportionment, a (B) "deep cove," requiring a cove apportionment, and (C & D) "hidden coves" which departs to form its own geometry. The deep water line, shown as a dashed line, illustrates that cove C contains deep water while cove D does not.



Shallow Cove A is called "shallow" because the intersection between the shore and riparian lines are at 45 degrees or less throughout the cove. This "45 degree rule" is presented here for consideration. At a location such as "d" where the shore and riparian line are at 45 degrees, the width of the riparian zone is 0.71 times the frontage distance, but these zone widths still give sufficient width for dock building out to the deep water line (dashed) and leasing/view out to the channel line. In the Florida case *Hayes v Bowman*, this angle was about 55 - 60 degrees which caused a reduced riparian zone width 0.85 times the lot frontage. Therefore, it was recognized that the riparian zone width may be significantly less than the riparian frontage width.

Deep Cove B begins at location "e" where the angle exceeds 45 degrees. This is the beginning of a deep cove B calling for a cove apportionment. The beginning points on the cove are A and A'. The end of the cove at point "f" is identified as points B and B', where the channel perpendicular and the shore make an angle of 45 degrees. The deep water line from A' to B' is apportioned according to relative shore frontages between A and B.

Hidden Cove C begins at "g" and ends at "h", again using the 45 degree rule. However, since this cove has its own geometry separate from the main water body, each riparian parcel fronts on this cove (not on the main water body). Therefore, perpendiculars are constructed with the cove's median lines. At the north end of the cove, a center point is chosen at the deep water end, and riparian lines are connected with the central point for parcels northwest of that point. This allocates the line of deep water between those riparian owners.

In **Hidden Cove D** apportionment of the line of navigability would give the lot at "D" no deep water frontage. Courts could treat this cove as a separate shallow water body. Since it is shallow, the owners could have the riparian right of ingress/egress only to the shallow waters for small boats, but not to the line of deeper water.

They could also have the right of view to the cove's median line as shown. However, to solve this question, courts would have to address the issues involved and therefore it is outside of the scope of this report.

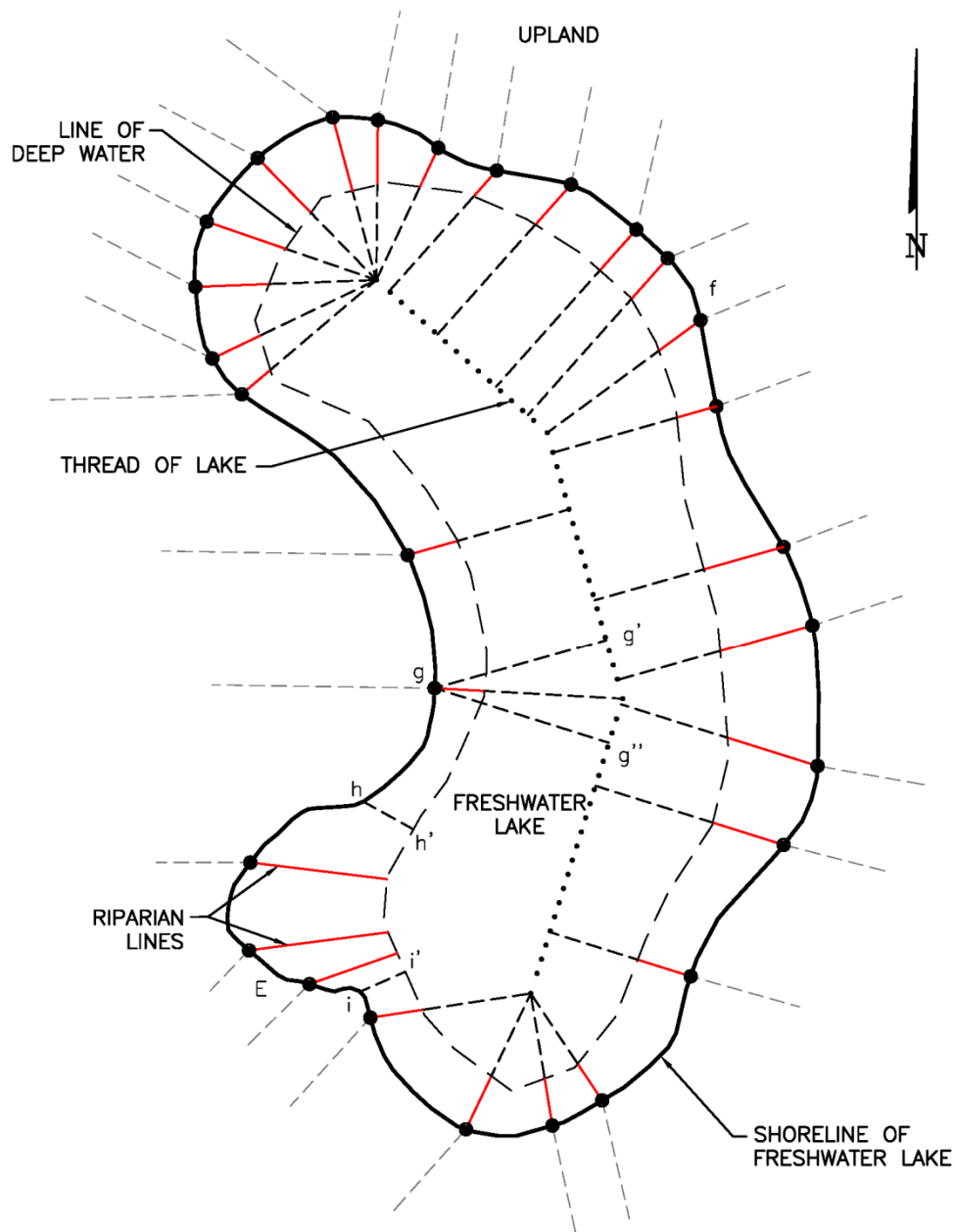
Of course, outside hidden cove D, riparian owners have clear access to deep water as shown.

Long Fresh Water Lake – Radials to End Center Points – Perpendicular with the Median Line (Thread) To apportion riparian rights in a "long lake", the traditional approach would establish center points in the semi-circular lake ends together with a thread midway between the banks. Around the lake ends, lines would radiate from center points to shore points, and along the thread, perpendiculars would be constructed and run back to shore points.

However, several geometric problems are encountered. At point "f", it's impossible to drop a perpendicular to either line of the thread. Therefore an equitable approach would be to extend the riparian line to the angle point in the thread as shown.

Similarly, at point "g" on the west shore, two perpendiculars are possible, each dropped to a different line of the thread. Which one? Again an equitable approach would be to draw the riparian line to the angle point in the thread.

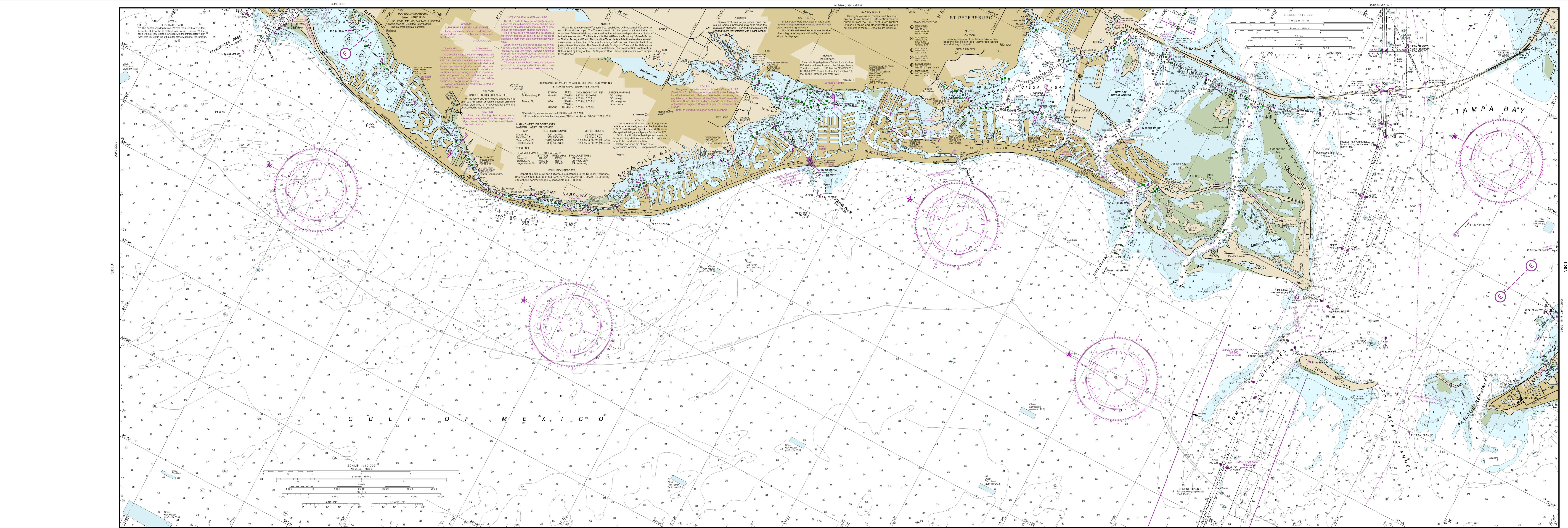
At parcel "E" there is a deep cove, and a perpendicular with the thread construction would be inequitable. This should then be apportionment of the line of deep water by the cove method with headlands identified at points "h" and "i."



SUMMARY STATEMENTS – Please note that this document presents guidelines for a wide range of riparian situations. However, there are always unique situations that need to be addressed. The courts require that the allocation be “equitable” for the whole neighborhood. The geometric method, if extended up and down the shore, should be equitable for the whole neighborhood of riparian owners. In addition to a survey map of the parcel, it is recommended that a surveyor submit a riparian “report” that depicts the equity when the allocation is applied to the whole neighborhood.

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NAUTICAL CHART 11411
INTRACOASTAL WATERWAY
FLORIDA
TAMPA BAY TO
PORT RICHEY



Chart 11411
Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL COAST SERVICE
COAST SURVEY

MECHANICAL PROJECTION AT SCALE 1:40,000
SOUNDINGS IN FEET
MEAN LOW WATER
North American Datum of 1983
(WGS 84 Datum of 1984)
HEIGHTS IN FEET MEASUREMENT
AUTHORITIES

