





Development Services Department  
Staff Recommendations Concerning Required Findings

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Project: 4213 Waters Edge Cove Bulkhead

Ordinance Standard: LDC 25-8-368(D)2

Variance Request: Approval for their newly construction bulkhead which is wider than allowed by code.

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Include an explanation with each applicable finding of fact.

A. Land Use Commission variance determinations from Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

Yes / No Yes. According to an engineer, when the lake level was lowered, the loss of hydrostatic pressure resulted in partial collapse of the old bulkhead structure, necessitating repair. Without such work, it is possible the entire structure could have collapsed beyond the footprint of the boat slip, jeopardizing use of the shoreline area they are privy.

2. The variance:

- a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

Yes / No Yes. Because of the existing boat dock impeding full site access and a structural requirement for the concrete bulkhead to be 12" instead of the code-required 6", the now as-built condition was the only option available to achieve protection of the boat slip, yard, and potentially part of a home upon finding their existing bulkhead was failing.

- b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

Yes / No Yes. The existing boat dock impeded access to the site for installation of sheet piling, so the next option was pouring concrete. To ensure structural integrity, the concrete wall needed to be wider than a sheet pile wall.

- c) Does not create a significant probability of harmful environmental consequences.

Yes / No Yes. By preventing the existing, failing structure from collapsing, they have kept a substantial amount of sediment and debris from entering the reservoir.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes / No Yes. The concrete wall will not significantly impact water quality.

B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-422 (Water Quality Transition Zone), Section 25-8-452 (Water Quality Transition Zone), Article 7, Division 1 (Critical Water Quality Zone Restrictions), or Section 25-8-368 (Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long):

1. The criteria for granting a variance in Subsection (A) are met;

Yes / No Yes.

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

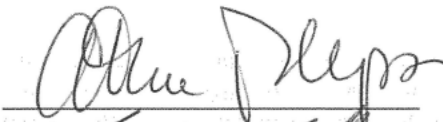
Yes / No Yes. Given the expansive nature of the house and the lack of environmental protections in place when originally built, bank erosion could have significant negative impacts on the residential structure.

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.

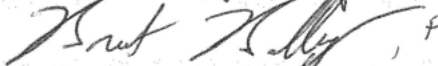
Yes / No Yes. With the existing dock preventing construction equipment access, the materials and process used were the next best viable option.

Staff Recommendation: Approve with conditions.

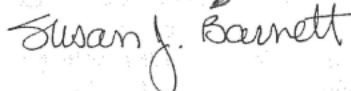
Environmental Reviewer:



Date 10/10/17



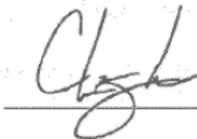
Ph.D. 10/10/17



Environmental Review Manager:

Date October 10, 2017

Environmental Officer



Date October 10, 2017



## ENVIRONMENTAL COMMISSION VARIANCE APPLICATION FORM

### PROJECT DESCRIPTION

#### Applicant Contact Information

Name of Applicant	<i>Karl Buckman and Nelda Sue Yaw</i>
Street Address	<i>4213 Watersedge Cove</i>
City State ZIP Code	<i>Austin, TX 78731</i>
Work Phone	<i>832-495-9062</i>
E-Mail Address	<i>neldasueyaw@gmail.com</i>

#### Variance Case Information

Case Name	<i>4213 Watersedge Cove</i>
Case Number	<i>SP-2017-0146D</i>
Address or Location	<i>4213 Watersedge Cove</i>
Environmental Reviewer Name	<i>Atha Phillips</i>
Environmental Resource Management Reviewer Name	<i>Atha Phillips</i>
Applicable Ordinance	<i>LDC 25-8-368(D)</i>
Watershed Name	<i>Lake Austin</i>
Watershed Classification	<input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input type="checkbox"/> Water Supply Suburban <input checked="" type="checkbox"/> Water Supply Rural <input type="checkbox"/> Barton Springs Zone

Edwards Aquifer Recharge Zone	<input type="checkbox"/> Barton Springs Segment <input type="checkbox"/> Northern Edwards Segment <input checked="" type="checkbox"/> Not in Edwards Aquifer Zones
Edwards Aquifer Contributing Zone	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Distance to Nearest Classified Waterway	<i>The property is on the shoreline of Lake Austin</i>
Water and Waste Water service to be provided by	<i>Austin Water</i>
Request	The variance request is as follows (Cite code references:  <i>LDC 28-8-368(D), Bulkhead replacement wider than allowable width</i>

Impervious cover	Existing	Proposed
square footage:	_____	_____
acreage:	_____	_____
percentage:	_____	_____
Provide general description of the property (slope range, elevation range, summary of vegetation / trees, summary of the geology, CWQZ, WQTZ, CEFs, floodplain, heritage trees, any other notable or outstanding characteristics of the property)	<i>The project entails the construction of a boat dock and partial construction of a bulkhead at a 0.8 ac lot in the Watersedge subdivision. The existing home is currently under renovation and as close as 10ft from the shoreline of Lake Austin. The shoreline and house are protected by a bulkhead that extends along the lakefront and wraps around the cut-in slip housing the boat dock. When the lake was lowered, the contractor for the house noticed that the bulkhead in the cut-in slip was failing. He constructed a concrete bulkhead within the cut-in slip to reinforce the existing, failing, bulkhead. He didn't modify the rest of the bulkhead, he just constructed within the cut-in slip. The contractor wasn't aware of the permitting requirements for bulkheads on Lake Austin and thought that he could repair the bulkhead because it was failing. The unpermitted bulkhead work was discovered when plans for permitting a new boat dock were underway and so is being permitted with a new Site Plan Permit application for the boat dock. An aerial photo showing the proximity of the house to the shoreline is included as Attachment 1; the Site Plan and Erosion and Sedimentation Control Plan sheet from the Site Plan is included as Attachment 2; a photo of the bulkhead is included as Attachment 3; and the bulkhead structural detail with a sealed letter from the structural engineer is included as Attachment 4.</i>	

Clearly indicate in what way the proposed project does not comply with current Code (include maps and exhibits)	<i>In order to repair a failing bulkhead within an existing cut-in slip, a new concrete bulkhead was installed in front of the failing bulkhead while the lake was down. The shoreline was located at the face of the failing bulkhead. The new bulkhead is 12" thick. The allowable width of a replacement bulkhead constructed lakeside of the shoreline is 6". The new bulkhead is 6" too thick within the cut-in slip.</i>
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## FINDINGS OF FACT

As required in LDC Section 25-8-41, in order to grant a variance the Land Use Commission must make the following findings of fact:

Include an explanation with each applicable finding of fact.

Project: 4213 Watersedge Cove

Ordinance: LDC 28-8-368(D)

A. Land Use Commission variance determinations from Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

☒ Yes / No [provide summary of justification for determination]  
See Attachment 5

2. The variance:
  - a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

☒ Yes / No [provide summary of justification for determination]  
See Attachment 5

- b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

☒ Yes / No [provide summary justification for determination]  
See Attachment 5

- c) Does not create a significant probability of harmful environmental consequences.

☒ Yes / No [provide summary justification for determination]  
*See Attachment 5*

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

☒ Yes / No [provide summary justification for determination]  
*See Attachment 5*

- B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-422 (Water Quality Transition Zone), Section 25-8-452 (Water Quality Transition Zone), Article 7, Division 1 (Critical Water Quality Zone Restrictions), or Section 25-8-652 (Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long):

1. The criteria for granting a variance in Subsection (A) are met;

☒ Yes / No [provide summary of justification for determination]  
*See Attachment 5*

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

☒ Yes / No [provide summary of justification for determination]  
*See Attachment 5*

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.

☒ Yes / No [provide summary of justification for determination]  
*See Attachment 5*

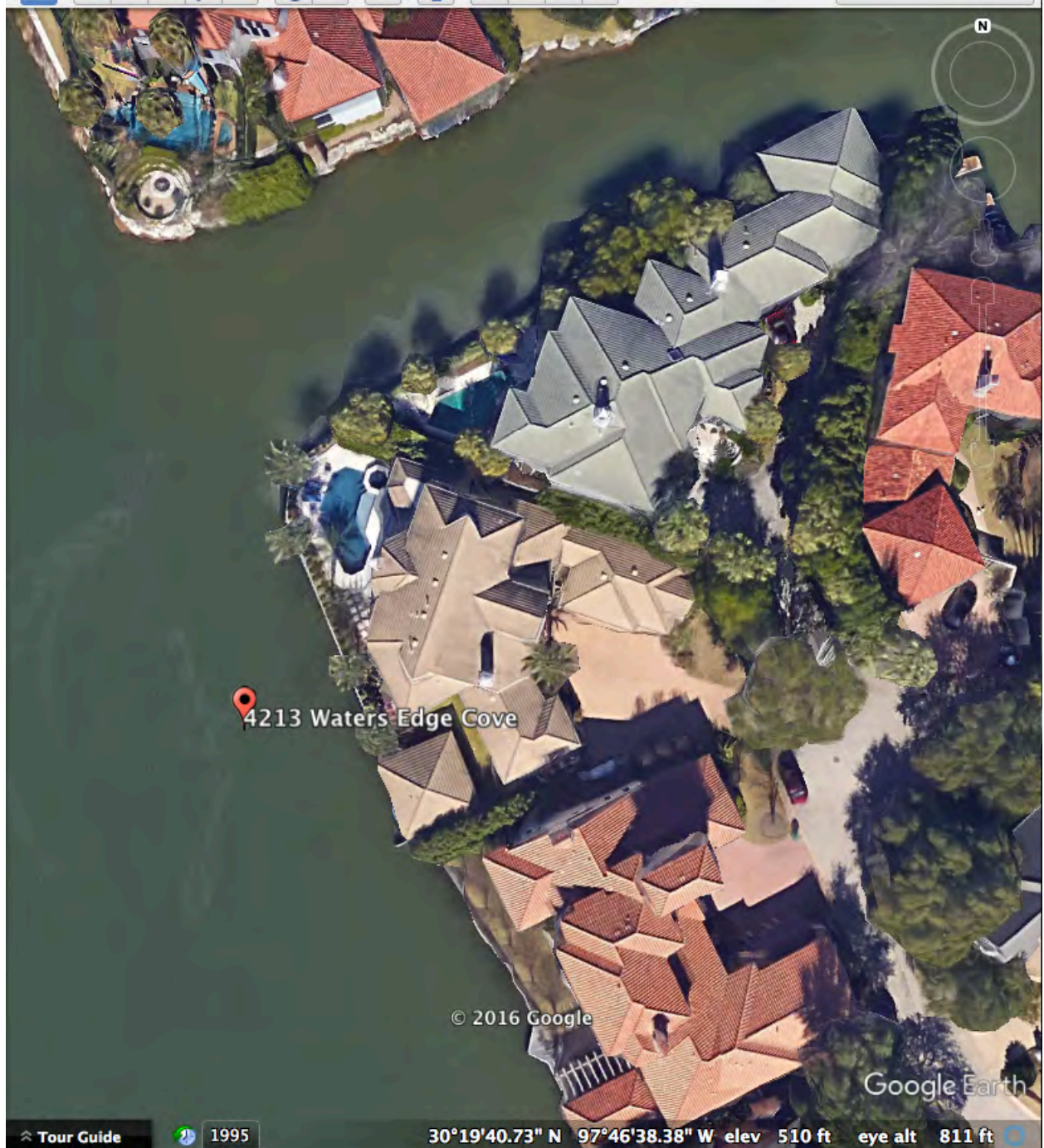
*See Attachment 5*

**\*\*Variance approval requires all above affirmative findings.**

*ATTACHMENT 1*

*AERIAL PHOTO*





*ATTACHMENT 2*

*SITE PLAN AND EROSION and  
SEDIMENTATION CONTROL SHEET*



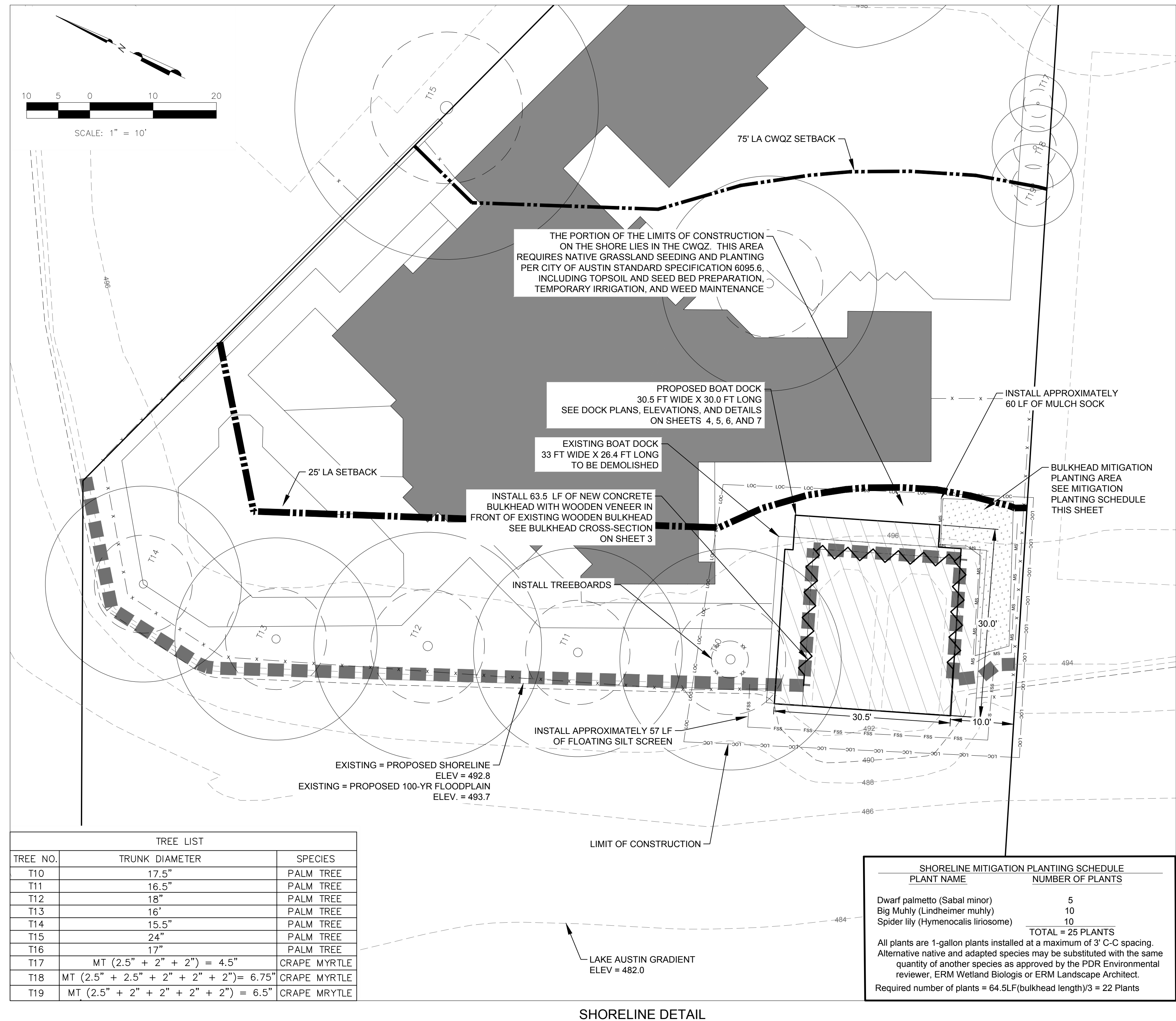
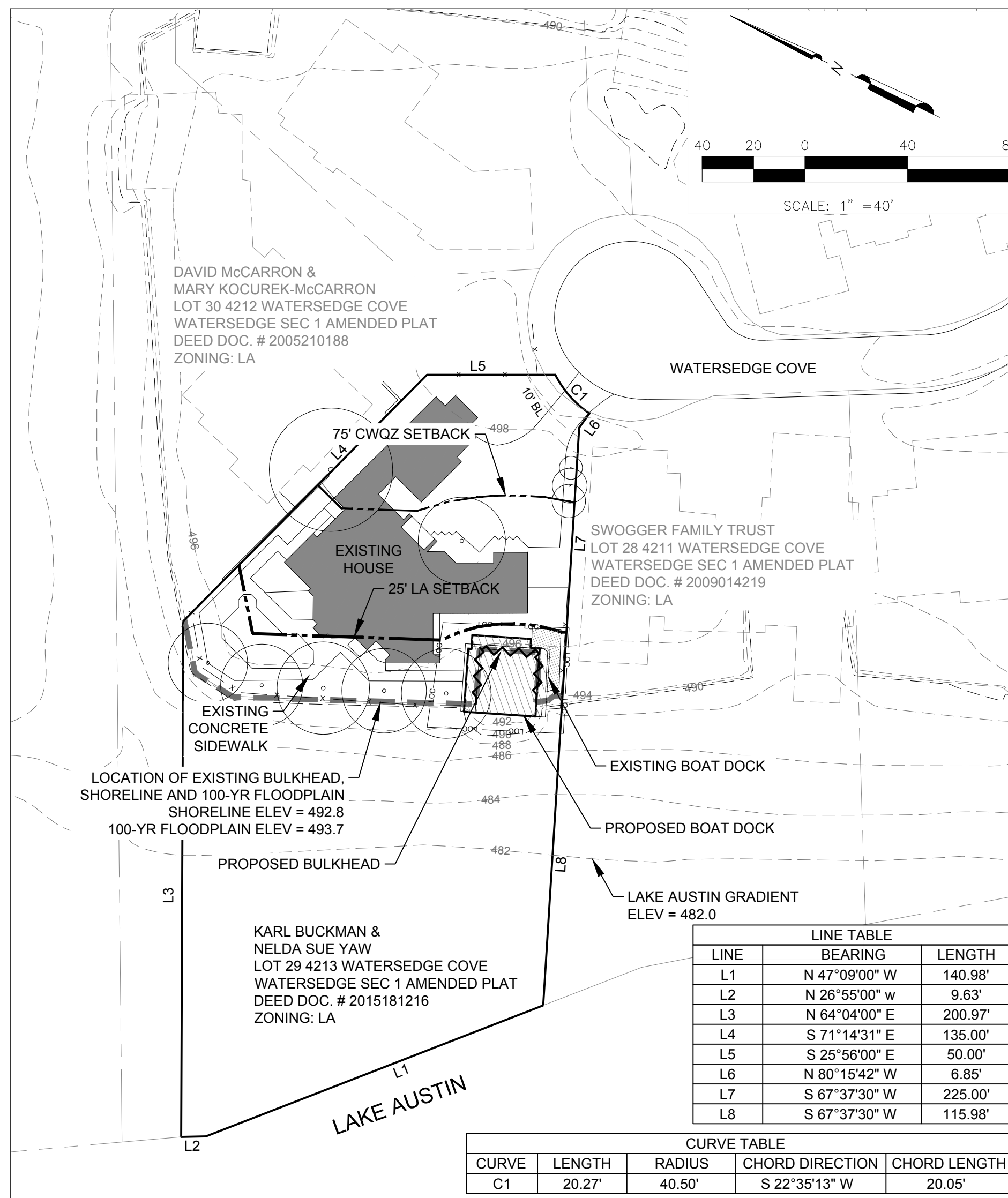
# 4213 WATERSEDGE COVE

NOTES:

1. SHORELINE IMPROVEMENTS ARE AUTHORIZED WITH THIS SITE PLAN.
2. CONTAINERS OF HAZARDOUS MATERIALS, FUEL, OIL, HERBICIDES, INSECTICIDES, FERTILIZERS, OR OTHER POLLUTANTS WILL NOT BE STORED ON DOCKS EXTENDING INTO OR ABOVE LAKE AUSTIN.
3. FOR LA ZONING, PERMANENT IMPROVEMENTS ARE PROHIBITED WITHIN THE SHORELINE SETBACK AREA, EXCEPT FOR RETAINING WALLS, PIERS, WHARVES, BOATHOUSES, MARINAS, OR A DRIVE TO ACCESS THE STRUCTURES [LDC 25-2-551 (B)(2)].
4. NO WATER OR WASTEWATER UTILITIES ARE PROPOSED WITH THIS DEVELOPMENT.
5. DOCK SHALL BE AT LEAST 66% OPEN.
6. PILINGS SHALL BE 6-5/8" DIAMETER STEEL PIPE.
7. THE SITE IS WITHIN THE CITY OF AUSTIN FULL PURPOSE BOUNDARIES.
8. PERMANENT IMPROVEMENTS ARE PROHIBITED WITHIN THE SHORELINE SETBACK AREA, EXCEPT FOR RETAINING WALLS, PIERS, WHARVES, BOATHOUSES, MARINAS, OR A DRIVE TO ACCESS THE STRUCTURES LDC 25-2-551.

ATTENTION INSPECTOR NOTES:

1. COMPLIANCE WITH BUILDING CODE REQUIRED AND IS TO BE REVIEWED FOR COMPLIANCE DURING BUILDING CODE REVIEW.
2. FOR THE BUILDING PERMIT, A SIGNED AND SEALED LETTER SHALL BE SUBMITTED TO THE CITY OF AUSTIN, PER THE LAND DEVELOPMENT CODE, 25-12-3 1612.4, CERTIFYING THAT THE STRUCTURE IS IN ACCORDANCE WITH ASCE 24, FLOOD RESISTANT DESIGN AND CONSTRUCTION.
3. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.



TREE LIST		
TREE NO.	TRUNK DIAMETER	SPECIES
T10	17.5"	PALM TREE
T11	16.5"	PALM TREE
T12	18"	PALM TREE
T13	16'	PALM TREE
T14	15.5"	PALM TREE
T15	24"	PALM TREE
T16	17"	PALM TREE
T17	MT (2.5" + 2" + 2") = 4.5"	CRAPE MYRTLE
T18	MT (2.5" + 2.5" + 2" + 2" + 2")= 6.75"	CRAPE MYRTLE
T19	MT (2.5" + 2" + 2" + 2" + 2") = 6.5"	CRAPE MYRTLE

SHORELINE MITIGATION PLANTING SCHEDULE	
PLANT NAME	NUMBER OF PLANTS
Dwarf palmetto (Sabal minor)	5
Big Muhly (Lindheimer muhly)	10
Spider lily (Hymenocallis liriosome)	10
	<b>TOTAL = 25 PLANTS</b>

All plants are 1-gallon plants installed at a maximum of 3' C-C spacing.

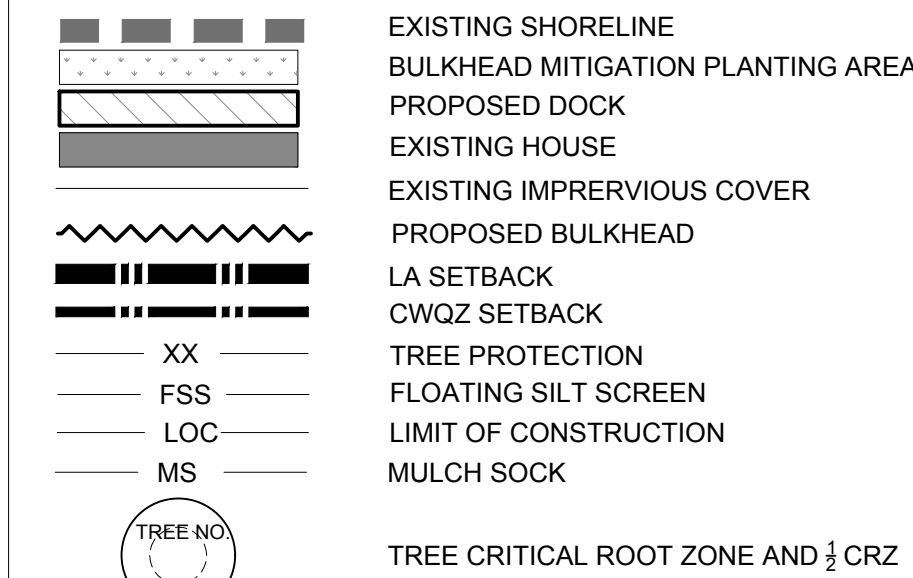
Alternative native and adapted species may be substituted with the same quantity of another species as approved by the RDR Environmental reviewer, ERM Wetland Biologists or ERM Landscape Architect.

Required number of plants =  $64.5\text{LF}(\text{bulkhead length})/3 = 22 \text{ Plants}$

All plants are 1-gallon plants installed at a maximum of 3' C-C spacing. Alternative native and adapted species may be substituted with the same quantity of another species as approved by the PDR Environmental reviewer, ERM Wetland Biologists or ERM Landscape Architect.

Required number of plants =  $64.5\text{LF}(\text{bulkhead length})/3 = 22 \text{ Plants}$

## LEGEND



EXISTING SHORELINE LENGTH = 208'  
ALLOWABLE DOCK WIDTH = 20% OF 208' = 41.6'  
PROPOSED DOCK WIDTH = 30.5' = 14.7%  
PROPOSED DOCK LENGTH = 30'  
DOCK FOOTPRINT = 889 SF

Janis Smith Consulting, LLC

1505 Westover Road • Austin, Texas 78703 • 512-914-3729

Texas Board of Professional Engineers Registration Number F-16978

Texas Board of Professional Engineers Registration Number F-16978

4213 WATERSEGE COVE

## SITE PLAN & EROSION AND

# SOLUBLE POLYMER-CONTROLLED PI ANIONIC POLYMERIZATION

DESIGNED: JJS
APPROVED:
SCALE: AS SHOWN
4213 WATERSEED
DATE: MAY 22, 2011
SHEET

2

SP-2017-0146D

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*ATTACHMENT 3*  
*PHOTO OF THE BULKHEAD*



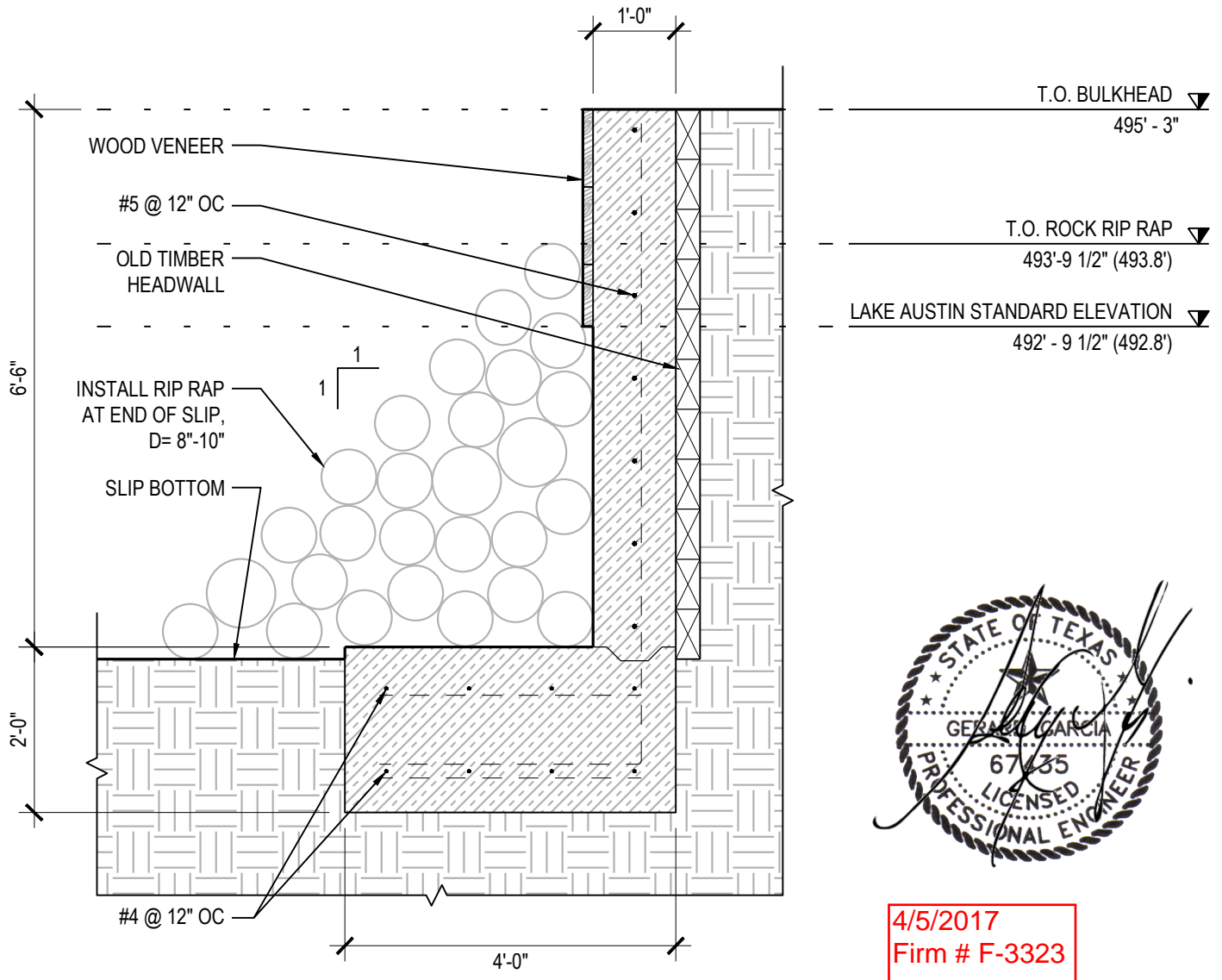


*ATTACHMENT 4*

*BULKHEAD STRUCTURAL DETAIL*

*and*

*SEALED LETTER FROM STRUCTURAL ENGINEER*



# CONCRETE HEADWALL SECTION DETAIL 01

SCALE: 1/2" = 1'-0"



October 5, 2017

City of Austin  
Department of Building Inspections  
P.O. Box 1088  
Austin, Texas 78767

**RE: 1603-4213 Waters Edge Cove  
Austin, TX**

To Whom It May Concern:

This letter serves to describe the design approach for the concrete bulkhead replacement for the above mentioned project.

Based on the required height of the bulkhead (approximately 6.5 feet) and the lateral loads induced, structural requirements dictated a 12" thick wall. A 6" concrete wall was found not to be structurally sufficient.

The option of a sheet pile installation was not considered as the existing overhang of the boat dock roof did not allow for proper access for pile driving equipment.

If you have any questions, please feel free to contact this office at 512.499.0919.

Sincerely,

  
Jerry Garcia, PE  
License 67435





*ATTACHMENT 5*  
*FINDINGS OF FACT*

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

**YES. When the lake was lowered, it became apparent that the bulkhead within the slip was failing. With the close proximity of the house to the existing bulkhead (10 ft. in some places), it's not recommended that the existing bulkhead is removed. The only way to repair a failing bulkhead in this situation is to install a new bulkhead lakeside of the existing wall. Sheetpile, which would not have required a variance, wasn't an option because there isn't enough vertical clearance underneath the dock roof to install a 6.5' tall sheetpile wall. A concrete wall was the only repair available, and a 12" thick concrete wall design was required per the structural engineer (see his sealed letter in Attachment 4). This wall was the only repair available to the owner without demolishing the dock.**

2. The variance:

a. Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

**YES. This design is the only repair available to the owner to repair a failing bulkhead which was 10ft. from the house.**

b. Is the minimum deviation from the code requirement necessary to allow reasonable use of the property;

**YES. The only code-compliant repair would have been sheetpile, and it wasn't possible to install it without tearing down the dock. A 6" concrete bulkhead wasn't a viable structural option. A 12" concrete bulkhead, constructed in front of the existing, failed, bulkhead was the only option to reinforce a bulkhead constructed as little as 10 ft. from the house.**

c. Does not create a significant probability of harmful environmental consequences.

**YES. There are no negative environmental consequences of the wall. The concrete wall will eliminate soil leaching into the lake from the prior failing bulkhead.**

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

**YES. Water quality will not be ill-affected by the wall.**

A. 1. The criteria for granting a variance in Subsection (A) are met:

***YES. Please see answers to A (1), (2), and (3).***

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entirety of the property;

***YES. There was no method of implementing a code-compliant repair of the bulkhead without demolishing the dock.***

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property;

***YES. The extra 6" required to install a structurally sound bulkhead was the minimum deviation from the code.***