



ENVIRONMENTAL BOARD VARIANCE APPLICATION TEMPLATE

Attached at Pages 42 - 44 are a request for variance letter and preliminary findings of fact regarding the application of LDC 25-8-281(C).2.b to the proposed Iles Boat Dock at 2415 Big Horn Drive, Austin, Texas 78734. The request was submitted by Ash Tariq, Advanced Consulting Engineers, dated October 3, 2014.

PROJECT DESCRIPTION

Applicant Contact Information

Name of Applicant	Travis J. Iles
Street Address	7605 Rockpoint Circle
City State ZIP Code	Austin, Texas 78731
Work Phone	512-914-9939

Variance Case Information

Case Name	Iles Boat Dock
Case Number	SP-2014-0212DS
Address or Location	2415 Big Horn Drive
Environmental Reviewer Name	Liz Johnston
Applicable Ordinance	LDC 25-8-281(C).2.b
Watershed Name	Lake Austin
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	0' – Waterfront on Lake Austin, CWQZ.
Water and Waste Water service to be provided by	N/A
Request	<p>The variance request is as follows (Cite code references):</p> <p>Proposed construction of the Iles Boat Dock is within the 150 foot "buffer zone" of a Bluff designated as a Critical Environmental Feature (CEF) [No other CEFs are on or within 150 feet of the project site]. Construction of the project is prohibited within the buffer zone pursuant to LDC 25-8-281(C).2.b. Pursuant to LDC 25-8-41(A)&(D), it is requested that the Land Use Commission make findings of fact in support of <i>Granting</i> a variance to the requirements of LDC 25-8-281(C).2.b and that a variance be <i>Granted</i> to allow construction of the proposed Iles Boat Dock project based upon the information in this Variance Application and supplementary documents.</p>

Impervious cover	Existing	Proposed
square footage:	<u>0</u>	<u>600+/-</u>
acreage:	<u>.35</u>	<u>.35</u>
percentage:	<u>0%</u>	<u>~3.93%</u>
		(not incl. 17% impervious coverage % of home that dock is an accessory use to – 20.93% total)
Provide general description of the property (slope range, elevation range, summary of vegetation / trees, summary of the	2415 Big Horn Drive, Austin, Texas 78734 Apache Shores, Lot 659, Section 2, Travis County Zoned SF-2. [Proposed construction of a single-family home with accessory boat dock within current zoning restrictions]	

<p>geology, CWQZ, WQTZ, CEFs, floodplain, heritage trees, any other notable or outstanding characteristics of the property)</p>	<p>Slope range: 0 – 15% beginning at proposed dock access at ~509' elevation, at location of proposed dock construction within CEF. Slope range is varied. Generally see Site Plan at Pg. 3 of 5.</p> <p>Elevation range: ~592' at western, high side of lot; ~534' to ~536' at mid-lot where CEF begins and ends, south to north respectively, across lot; ~510' at proposed access to dock via ramp/stairs; & ~492' at eastern, shoreline side of lot. See ERI Figure 4 at Pg. 15 & Site Plan at Pg. 3 of 5.</p> <p>Summary of vegetation / trees: The site is a vacant lot densely wooded on the western portion (upslope from the CEF Bluff at ~524' - ~536'). Below the CEF Bluff at ~525' elevation the lot levels to a maintained Bermuda grass area extending to an access road. To the east of the access road, the site elevation, ~509', declines to the waterfront at the proposed location for the Iles Boat Dock. Trees relevant to the proposed project are more fully described below under the "Heritage tree" caption. See ERI at Pg. 4 and Site Plan at Pg. 3 of 5.</p> <p>Geology: Property reflects site is underlain by the Lower Cretaceous Upper and Lower Glen Rose formations. See ERI at Pg. 3.</p> <p>CWQZ: The construction does not propose any Critical Water Quality Zone modifications. The proposed construction is within the CWQZ as it is situated on Lake Austin waterfront. See ERI at Pg. 1 and ERI Figure 5 at Pg. 16.</p> <p>WQTZ: The construction does not impact any Water Quality Transition Zones. See ERI Figure 5 at Pg. 16.</p> <p>CEFs: One Bluff, Critical Environmental Feature, is within 150 feet of the Iles Boat Dock project. See ERI Figure 4 at Pg. 15 and Site Plan at Pg. 3 of 5.</p> <p>Floodplain: The Iles Boat Dock project lies within the City of Austin Fully Developed Floodplain. See ERI Figure 6 at Pg. 17</p> <p>Heritage trees: There are several heritage trees on the lot, including two Elms, multiple Live Oaks, a Pecan, and a Sycamore. The Elms and Live Oaks are on the high side of the Bluff (elevation +590') and un-impacted by dock construction. The Sycamore [T54 – 32"] and the Pecan [T55 – 33"] are the only trees between the CEF and the Iles Boat Dock. The Sycamore and the Pecan are impacted by the proposed Iles Boat Dock. Construction design and location have been altered to mitigate impact to these trees and to ensure the ¼ critical root zones are not affected after coordination with the City Arborist. See Site Plan at Pg. 3 of 5.</p> <p>Other notable characteristics: Proposed construction is minimal to existing dock features on existent lots with same shoreline frontage. Pictures of adjacent lots and dockage attached and described below.</p>	
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Clearly indicate in what way the proposed project does not comply with current Code (include maps and exhibits)	Proposed construction of the Iles Boat Dock is within the 150 foot "buffer zone" of a Bluff designated as a Critical Environmental Feature (CEF) [No other CEFs are on or within 150 feet of the project site]. Construction of the project is prohibited with the buffer zone pursuant to LDC 25-8-281(C).2.b. The proposed Iles Boat Dock is otherwise compliant with the LDC.
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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: Iles Boat Dock / SP-2014-0212DS

Ordinance: LDC 25-8-281(C).2.b.

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 or the safety of property given to owners of other similarly situated property with approximately contemporaneous development.

Yes/No

YES. A strict application of LDC 25-8-281(C).2.b as applied to the Iles Boat Dock would deprive the Iles of privileges and enjoyment afforded to other property owners similarly situated and geographically located on Lake Austin waterfront in the Apache Shores subdivision, including property owners with boat docks situated within one or more CEFs..

Apache Shores, Section 2, was subdivided during the late 1960's. Waterfront lots surrounding and including the Iles property were subdivided with ~75' of waterfront shoreline. The Travis County Appraisal District (TCAD) map of the area generally reflects the subdivision of the lots surrounding 2415 Big Horn Drive. See TCAD Property Map at Page 56 [Please note that Property ID No. 143197 is a double lot under single ownership].

The Iles' lot and approximately 10 homes and 2 additional lots are accessed from a paved alley that runs north/south between the CEF and shoreline. These homes/lots generally have functioning boat docks of varying sizes and build dates as accessory uses. Photographs of these similarly situated docks are attached at Pages 33 - 41 with brief descriptions.

Two of the docks shown at Pages 34 - 35 were developed near in time [2012] to the time period the Iles Boat Dock project was submitted to the COA Planning and Development Review Department [Summer 2014] as follows:

The Andrews [2405 Big Horn Drive] constructed a dock two lots immediately south of the proposed Iles Boat Dock project. This dock was permitted through the COA during the 2012 time period and designated as "New" work-type construction. A picture of this dock is attached at Page 34. Copies of TCAD and COA Permit Case information are attached at Pages 45 - 50. The Andrews' dock is substantially similar to the scope of proposed construction for the Iles Boat Dock. The CEF bluff is prominent to both the Andrews' and Iles' lots.

Eight lots immediately south of the proposed Iles Boat Dock project another dock was developed near in time to the Iles' proposed project. The Finch's [2305 Big Horn Drive] dock was permitted through the COA during the 2011 and 2012 time period and designated as "New" work-type construction. This project also had construction components dealing with the renovation of decking, and shoreline/bulkhead modifications. A picture of this dock is attached at Page 35. Copies of TCAD and COA Permit Case information are attached at Pages 51 - 55. The CEF bluff is prominent to the Finch's lot. The Iles Boat Dock Project does not propose shoreline/bulkhead modifications and requests construction within the COA's current building restrictions with respect to dock width and other requirements and requests no additional variances. The Iles project is designated as a "Small Project" under the COA's standards.

Based on the foregoing, the Iles Boat Dock project conforms to the areas general character and usage, will not impair adjacent properties' use of conforming property, and does not impair the purpose of the regulation. The requested variance does not request a change to the current zoning. It is requested that the Land Use Commission find that the application of LCD 25-8-281(C).2.b will deprive the Iles' of a privilege afforded to similarly situated property owners within the immediate location of the proposed construction.

2. The variance:

- a) Is not based on a condition caused by the method chosen by the applicant to develop the property, unless the development method provides greater overall environmental protection than is achievable without the variance;

Yes/No

YES. The requested variance for construction of the proposed Iles Boat Dock is not caused by the method or manner in which development of the Iles Boat has been proposed. The project has been submitted to the COA in conformity with the COA's regulations, except LCD 25-8-281(C).2.b., forming the basis for this variance request. The necessity of the requested variance is due to a slight portion of

the proposed dock being located within the 150' buffer zone for a bluff prominent to the Iles' lot and those lots similarly situated adjacent to the Iles' lot.

- b) Is the minimum change necessary to avoid the deprivation of a privilege given to other property owners and to allow a reasonable use of the property;

Yes/No

YES. The granting of the variance will allow the Iles waterfront property to enjoy the privileges afforded to other similarly situated property owners and presents a minimum departure from the terms of the ordinance as only a small portion of the proposed dock lies within the 150' CEF buffer zone. Reference can be made to the dock's of adjacent properties. See photos at Pages 33 - 41.

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

Yes/No

YES. The granting of the Iles Boat Dock variance is not anticipated to create harmful environmental consequences. No major effects are anticipated on the environment and the existing and future drainage system in the area, nor on the natural and traditional characteristics of the land [Please see Advanced Consulting Engineers findings of fact at Pages 42 – 44 and Site Plan notes at 1 & 2 of 5]. The Iles project has been designed to minimally impact the natural contours of the area. See generally the general Site Plan at 3 of 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

YES. The granting of the Iles Boat Dock variance will result in water quality at least equal to the water quality achievable without the variance. The Iles Boat Dock proposes no waterfront uses different from or in excess of the usages predominant on the waterway in the immediate area.

- B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-393 (Water Quality Transition Zone), Section 25-8-423 (Water Quality Transition Zone), Section 25-8-453 (Water Quality Transition Zone), or Article 7, Division 1 (Critical Water Quality Zone Restrictions):

1. The criteria for granting a variance in Section A are met;

December 29, 2014

Yes/No **YES.** Based on the foregoing.

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

Yes/No **YES.** Based on the foregoing, including the purposes for which the property was initially subdivided, and a CWQZ variance is not required for a project designated as “small project,” such as the Iles Boat Dock proposal, the granting of the variance will allow for a reasonable use of the entirety of the Iles’ property for the purpose it was intended.

3. The variance is the minimum change necessary to allow a reasonable, economic use of the entire property.

Yes/No **YES.** Based on the foregoing, and existing uses of similarly situated properties.

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

Exhibits for Board Backup and/or Presentation

Please attach and paginate.

- Aerial photos of the site (backup and presentation)
- Site photos (backup and presentation)
- Aerial photos of the vicinity (backup and presentation)
- Context Map—A map illustrating the subject property in relation to developments in the vicinity to include nearby major streets and waterways (backup and presentation)
- Topographic Map - A topographic map is recommended if a significant grade change on the subject site exists or if there is a significant difference in grade in relation to adjacent properties. (backup and presentation)
- For cut/fill variances, a plan sheet showing areas and depth of cut/fill with topographic elevations. (backup and presentation)
- Site plan showing existing conditions if development exists currently on the property (presentation only)
- Proposed Site Plan- full size electronic or at least legible 11x17 showing proposed development, include tree survey if required as part of site or subdivision plan (backup and presentation)
- Environmental Map – A map that shows pertinent features including Floodplain, CWQZ, WQTZ, CEFs, Setbacks, Recharge Zone, etc. (backup and presentation)
- An Environmental Assessment pursuant to ECM 1.3.0 (if required by 25-8-121) (backup only)
- Applicant's variance request letter (backup only)

Case No.:

(City use only)

Environmental Resource Inventory

For the City of Austin

Relating to the Land Development Code (LDC) Section 25-8, Title 30-5, ECM 1.3.0 & 1.10.0
Effective October 28, 2013

1. SITE/PROJECT NAME: 2415 Big Horn Drive
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#s): 834919
3. ADDRESS/LOCATION OF PROJECT: 2415 Big Horn Drive
4. WATERSHED: Lake Austin
5. THIS SITE IS WITHIN THE (Check all that apply):
 - Edwards Aquifer Recharge Zone* (See note below)..... ☐ YES ☒ NO
 - Edwards Aquifer Contributing Zone* ☐ YES ☒ NO
 - Edwards Aquifer 1500-ft Verification Zone* ☐ YES ☒ NO
 - Barton Springs Zone* ☐ YES ☒ NO

*(as defined by the City of Austin - LDC 25-8-2)

Note: If the property is over the Edwards Aquifer Recharge zone, the Hydrogeologic Report and karst surveys must be completed and signed by a Professional Geoscientist Licensed in the State of Texas.

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION?... ☐ YES** ☒ NO
If yes, then check all that apply:
 - ☐ (1) The floodplain modifications proposed are necessary to protect the public health and safety;
 - ☐ (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a functional assessment of floodplain health as prescribed by the Environmental Criteria Manual, or
 - ☐ (3) The floodplain modifications proposed are necessary for development allowed in the critical water quality zone under Section 25-8-261 or 25-8-262 of the LDC.
 - ☐ (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a functional assessment of floodplain health.

** If yes, then a functional assessment must be completed and attached to the ERI (see Section 1.7 and Appendix X in the Environmental Criteria Manual for forms and guidance) unless conditions 1 or 3 above apply.

7. IF THE SITE IS WITHIN AN URBAN OR SUBURBAN WATERSHED, DOES THIS PROJECT PROPOSE A UTILITY LINE PARALLEL TO AND WITHIN THE CRITICAL WATER QUALITY ZONE?..... ☐ YES*** ☒ NO

***If yes, then riparian restoration is required by Section 25-8-261(E) of the LDC and a functional assessment must be completed and attached to the ERI (see Section 1.5 and Appendix X in the Environmental Criteria Manual for forms and guidance).

8. There is a total of 1 (#s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site (Please provide the number of CEFs):

 (#s) Spring(s)/Seep(s) (#s) Point Recharge Feature(s) 1 (#s) Bluff(s)
 (#s) Canyon Rimrock(s) (#s) Wetland(s)

Note: Standard buffers for CEFs are 150 feet, with a maximum of 300 feet for point recharge features. Except for wetlands, if the standard buffer is not provided, you must provide a written request for an administrative variance from Section 25-8-281(C)(1) and provide written findings of fact to support your request. Request forms for administrative variances from requirements stated in LDC 25-8-281 are available from Watershed Protection Department.

9. The following site maps are attached at the end of this report (Check all that apply and provide):

All ERI reports must include:

- ☒ **Site Specific Geologic Map with 2-ft Topography**
- ☒ **Historic Aerial Photo of the Site**
- ☒ **Site Soil Map**
- ☒ **Critical Environmental Features and Well Location Map on current Aerial Photo with 2-ft Topography**

Only if present on site (Maps can be combined):

- ☐ **Edwards Aquifer Recharge Zone with the 1500-ft Verification Zone**
(Only if site is over or within 1500 feet the recharge zone)
- ☐ **Edwards Aquifer Contributing Zone**
- ☒ **Water Quality Transition Zone (WQTZ)**
- ☒ **Critical Water Quality Zone (CWQZ)**
- ☒ **City of Austin Fully Developed Floodplains for all water courses with up to 64-acres of drainage**

10. **HYDROGEOLOGIC REPORT** – Provide a description of site soils, topography, and site specific geology below (Attach additional sheets if needed):

Surface Soils on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups*. If there is more than one soil unit on the project site, show each soil unit on the site soils map.

Soil Series Unit Names, Infiltration Characteristics & Thickness			*Soil Hydrologic Groups Definitions (Abbreviated)
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)	
Brackett soils and Rock outcrop, steep (BoF)	D	0 to 4.0	<p>A. Soils having a <u>high infiltration</u> rate when thoroughly wetted.</p> <p>B. Soils having a <u>moderate infiltration</u> rate when thoroughly wetted.</p> <p>C. Soils having a <u>slow infiltration</u> rate when thoroughly wetted.</p> <p>D. Soils having a <u>very slow infiltration</u> rate when thoroughly wetted.</p> <p>**Subgroup Classification – See <u>Classification of Soil Series</u> Table in County Soil Survey.</p>
I Hardman fine sandy loam, 5 to 12% slopes (HaE)	A	0 to 4.9	

Description of Site Topography and Drainage *(Attach additional sheets if needed):*

This site is within the Lake Austin watershed (COA, 2012). Topographically, the site ranges from approximately 510 to 585 feet above mean sea level (USGS, 1986). Drainage on the subject site occurs by overland sheet flow in a west-to-east direction into Lake Austin.

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
Lower Cretaceous	Glen Rose	Upper
Lower Cretaceous	Glen Rose	Lower

Brief description of site geology *(Attach additional sheets if needed):*

A review of existing literature shows the site is underlain by the upper Glen Rose formation Kgr(u) and the lower Glen Rose formation Kgr(l) (UT-BEG, 1981). The upper member of the Glen Rose Limestone is relatively impermeable and described as the lower confining unit of the Edwards Aquifer. It has a maximum thickness of about 350 to 500 feet. Stair-step topography is characteristic of the upper member of the Glen Rose Limestone. The Upper Glen Rose Limestone is described as yellowish-tan, thinly bedded limestone and marl (Garner and Young, 1976). The upper member of the Glen Rose Limestone is relatively more thinly bedded, more dolomitic, and less fossiliferous than the lower member of the Glen Rose Limestone. The top of the upper member of the Glen Rose Limestone is red-stained, lumpy, irregular, and bored, with oysters cemented onto the surface (Rose, 1972).

Wells– Identify all recorded and unrecorded wells on site (test holes, monitoring, water, oil, unplugged, capped and/or abandoned wells, etc.):

There are 0 (#) wells present on the project site and the locations are shown and labeled

- ☐ (#s) The wells are not in use and have been properly abandoned.
- ☐ (#s) The wells are not in use and will be properly abandoned.
- ☐ (#s) The wells are in use and comply with 16 TAC Chapter 76.

There are 0 (#s) wells that are off-site and within 150 feet of this site.

11. THE VEGETATION REPORT – Provide the information requested below:

Brief description of site plant communities (Attach additional sheets if needed):

The subject site is a vacant lot within a developed single-family residential community. The subject site is densely wooded on the western portion with a cleared mowed area on the eastern portion adjacent to the unnamed access road.

There is woodland community on site ☒ YES ☐ NO (Check one).

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
live oak	<i>Quercus virginiana</i>
cedar elm	<i>Ulmus crassifolia</i>
Chinaberry tree	<i>Melia azedarach</i>

There is grassland/prairie/savanna on site ☒ YES ☐ NO (Check one).

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
bermudagrass	<i>Cynodon dactylon</i>

There is hydrophytic vegetation on site ☐ YES ☒ NO (Check one).

If yes, list the dominant species in table below (next page):

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status

A tree survey of all trees with a diameter of at least eight inches measured four and one-half feet above natural grade level has been completed on the site.

☒ YES ☐ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

Wastewater for the site will be treated by (Check of that Apply):

- ☒ On-site system(s)
☐ City of Austin Centralized sewage collection system
☐ Other Centralized collection system

Note: All sites that receive water or wastewater service from the Austin Water Utility must comply with Chapter 15-12 of Austin City Code and wells must be registered with the City of Austin

The site sewage collection system is designed and will be constructed to in accordance to all State, County and City standard specifications.

☒ YES ☐ NO (Check one).

Calculations of the size of the drainfield or wastewater irrigation area(s) are attached at the end of this report or shown on the site plan.

☒ YES ☐ NO ☐ Not Applicable (Check one).

Wastewater lines are proposed within the Critical Water Quality Zone?

☐ YES ☒ NO (Check one). If yes, then provide justification below:

Is the project site is over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

If yes, then describe the wastewater disposal systems proposed for the site, its treatment level and effects on receiving watercourses or the Edwards Aquifer.

13. One (1) hard copy and one (1) electronic copy of the completed assessment have been provided.

Date(s) ERI Field Assessment was performed: 20 March 2014

Date(s)

My signature certifies that to the best of my knowledge, the responses on this form accurately reflect all information requested.

Shannon Dorsey

Print Name

Signature

Horizon Environmental Services, Inc.

Name of Company

(512)328-2430

Telephone

shannon_dorsey@horizon-esi.com

Email Address

4/9/2014

Date

For project sites within the Edwards Aquifer Recharge Zone, my signature and seal also certifies that I am a licensed Professional Geoscientist in the State of Texas as defined by ECM 1.12.3(A).

P.O.
Seal

City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

1	Project Name:	2415 Blair Hom Drive
2	Project Address:	2415 Blair Hom Drive
3	Site Visit Date:	3/29/2014
4	Environmental Resource Inventory Date:	3/9/2014

5	Primary Contact Name:	Shenguo Dong
6	Phone Number:	1712121-2430
7	Prepared By:	Li Fan
8	Email Address:	shenguo.dong@terpennEast.com


[illegible]

Please state the method of coordinate data collection and the approximate precision and accuracy of the points and the unit of measurement.


Method	GPS	Surveyed	Other
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City of Austin Use Only
CASE NUMBER:


For rimrock, locate the midpoint of the segment that describes the feature.



For wetlands, locate the approximate centroid of the feature and the estimated area.



For a spring or seep, locate the source of groundwater that feeds a pool or stream.





Environmental Services, Inc.

ATTACHMENT A
CEF DESCRIPTION AND REFERENCES

140059 ERI Attachments

CORPORATE HEADQUARTERS
1507 South IH 35 ★ Austin, Texas 78741 ★ 512.328.2430 ★ Fax 512.328.1804 ★ www.horizon-esi.com
Certified WBE/HUB/DBE/SBE

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1.0 CRITICAL ENVIRONMENTAL FEATURES

The City of Austin definition of a critical environmental feature (CEF) includes caves, sinkholes, springs, wetlands, bluffs, canyon rimrock, water wells within the Edwards Aquifer, and significant recharge features located over the Edwards Aquifer Recharge Zone. One potential CEF as defined by the City of Austin was found on or within 150 feet from the subject site. One potential bluff CEF (CEF 1) was located in the middle of the subject site. No other CEFs were found on or within 150 feet from the subject site. CEF feature dimensions and locations are provided on the City of Austin CEF worksheet in Appendix C, and photographs are provided in Appendix B.

If the subject site is proposed for future development, the City of Austin generally requires 150-foot buffer zones be placed on all CEFs.

2.0 REFERENCES

(COA) City of Austin. *City of Austin GIS Data Sets*. Year 2003 2-foot contours of the City of Austin and ETJ only <ftp://ftp.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html>. 2003.

_____. *City of Austin GIS Data Sets*. Watershed Regulation Areas. <ftp://ftp.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html>. 30 October 2012.

_____. *City of Austin GIS Data Sets*. Water Quality Creek Buffers. <ftp://ftp.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html>. 7 November 2013.

_____. *City of Austin GIS*. Development Web Map <<http://www.austintexas.gov/GIS/developmentwebmap/Viewer.aspx>>. Accessed 9 April 2014.

Garner, L.E., and K.P. Young. *Environmental Geology of the Austin Area: An Aid to Urban Planning*. Report of Investigations 86. The University of Texas at Austin, Bureau of Economic Geology. 1976.

Rose, P.R. *Edwards Group, Surface and Subsurface, Central Texas*. Report of Investigations 74. The University of Texas at Austin, Bureau of Economic Geology. 1972.

(USDA) US Department of Agriculture. National Agriculture Imagery Program, Farm Service Agency, Aerial Photography Field Office. Travis County, Texas. 2012.

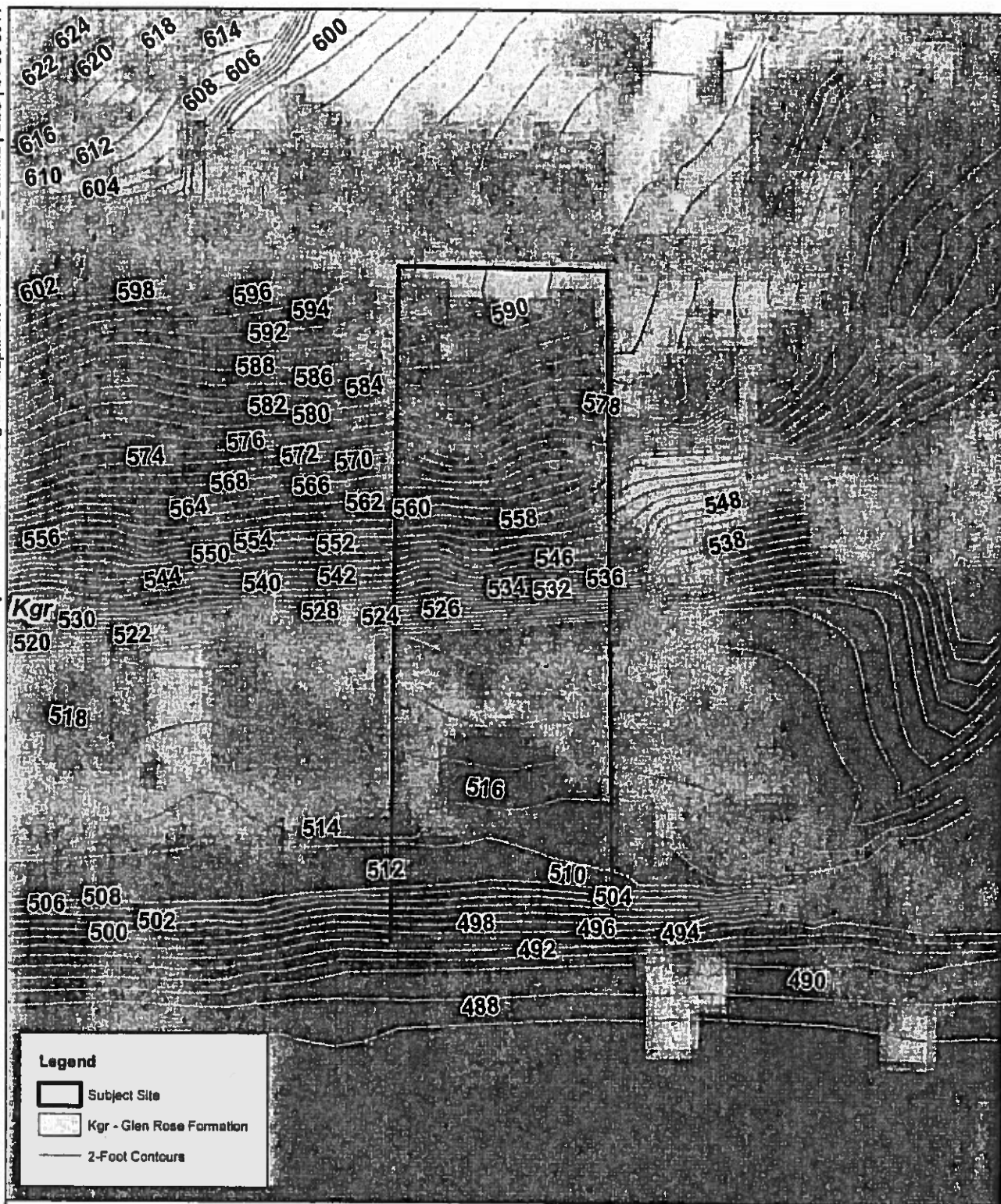
(USGS) US Geological Survey. 7.5-minute series topographic maps, Bee Cave, Texas, quadrangle. 1986.

_____. US Geological Survey. Digital Orthophoto Quarter-Quadrangle, Bee Cave, Texas. 1995.

(UT-BEG) University of Texas Bureau of Economic Geology, C.V. Proctor, Jr., T.E. Brown, J.H. McGowen, N.B. Waechter, and V.E. Barnes. *Geologic Atlas of Texas*, Austin Sheet, Francis Luther Whitney Memorial Edition. 1974; revised 1981.

Werchan, Leroy E., A.C. Lowther, and Robert N. Ramsey. *Soil Survey of Travis County, Texas*.
US Department of Agriculture, Natural Resources Conservation Service (formerly
Soil Conservation Service), in cooperation with the Texas Agricultural Experiment
Station. 1974.

ATTACHMENT B
FIGURES



MAP SOURCE: UT-BEG, 1981, COA, 2003; USDA, 2012.

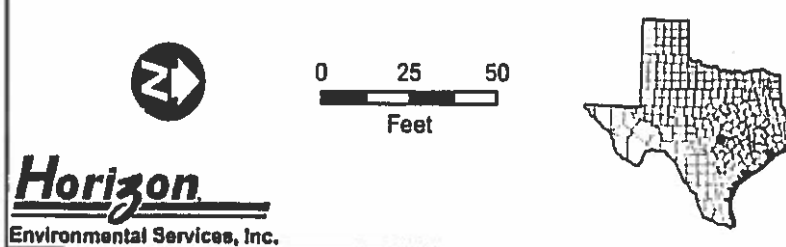


FIGURE 1
GEOLOGIC MAP
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS



Legend

 Subject Site

MAP SOURCE: USGS, 1995.

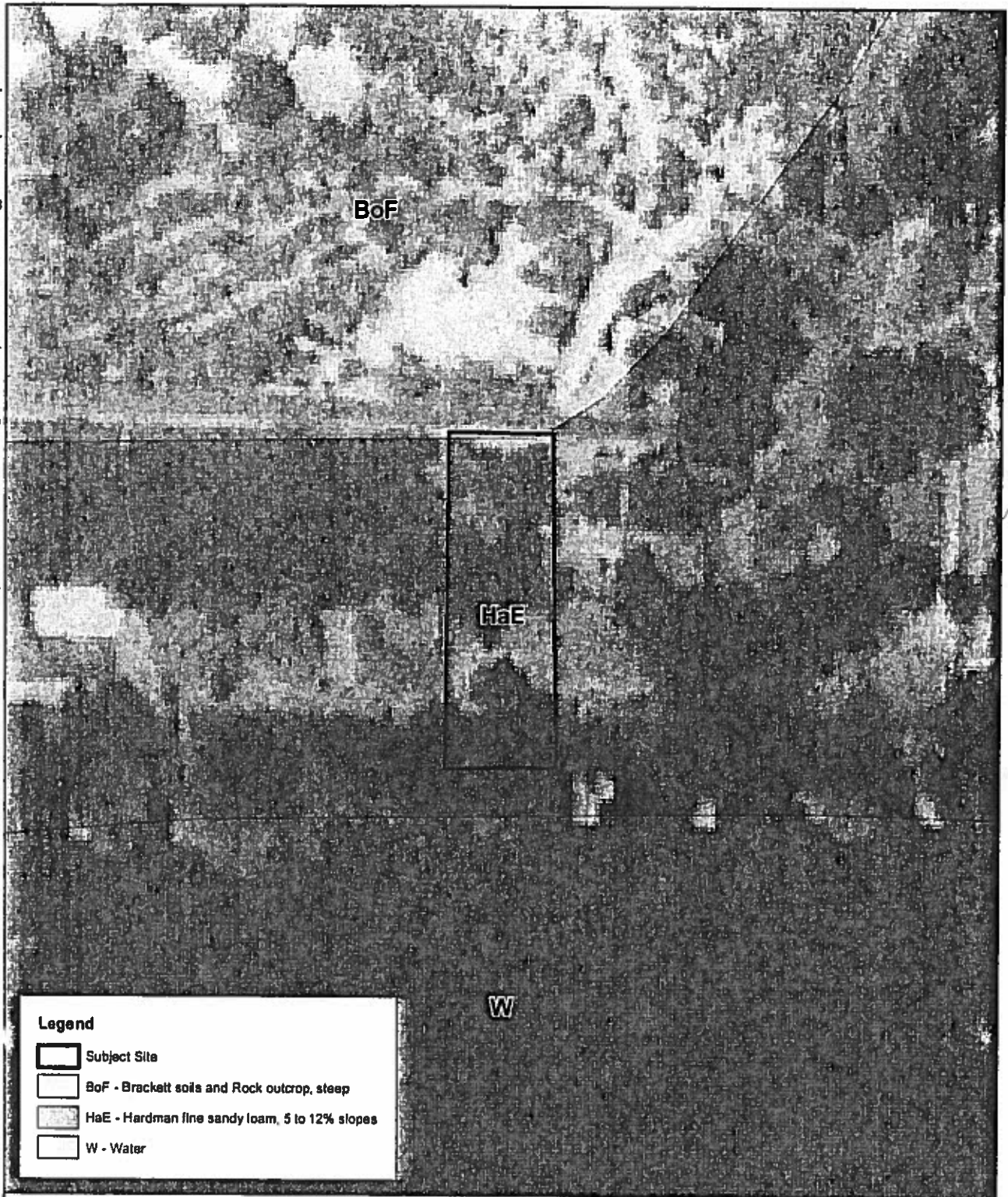


0 50 100
Feet



Horizon
Environmental Services, Inc.

FIGURE 2
1995 AERIAL PHOTOGRAPHY
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS



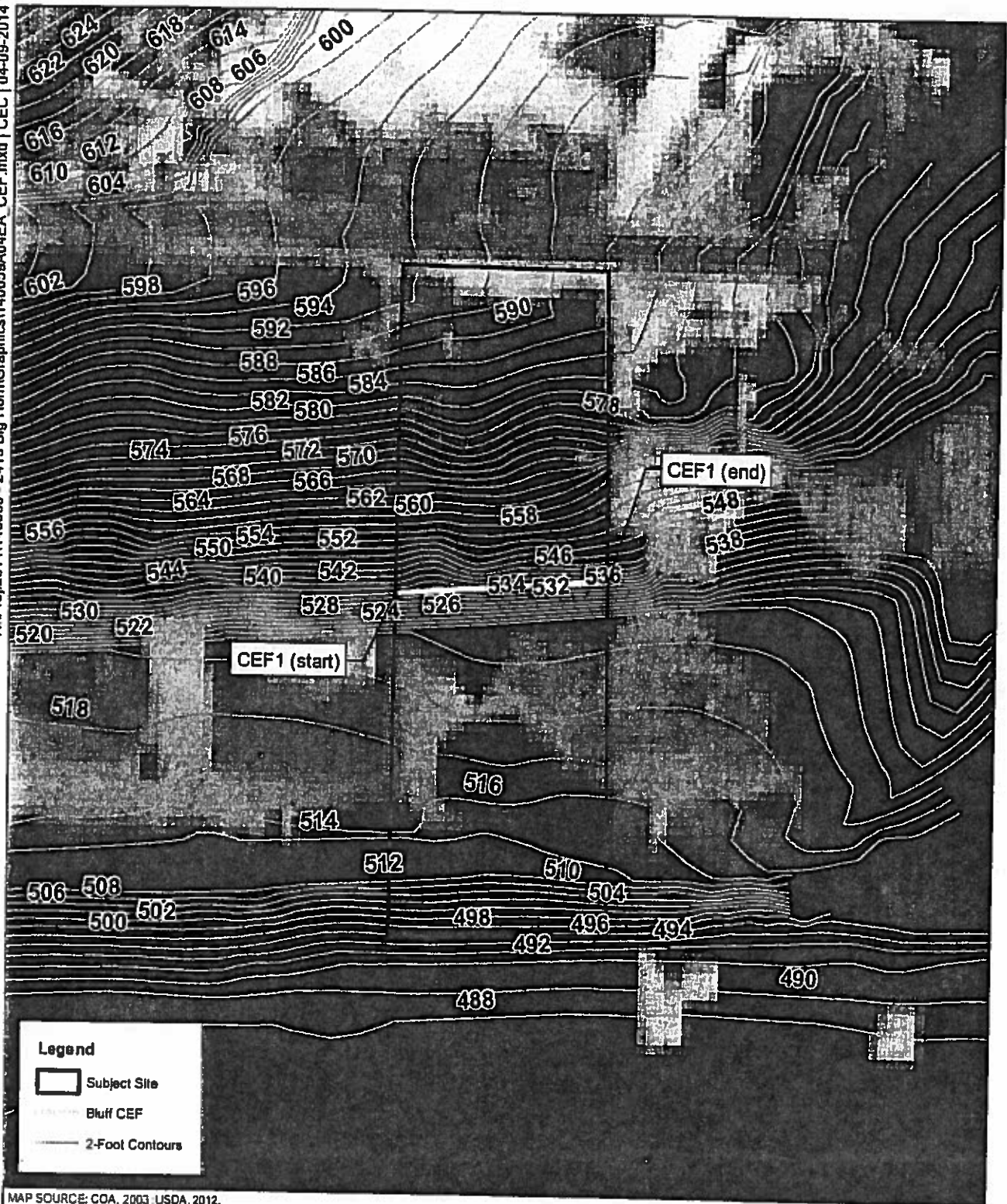
MAP SOURCE: Werchan et al., 1974, USDA, 2012.



0 50 100
Feet



FIGURE 3
SURFACE SOIL MAP
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS



0 25 50
Feet



Horizon
Environmental Services, Inc.

FIGURE 4
CEF MAP
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS

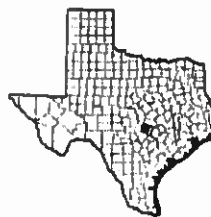
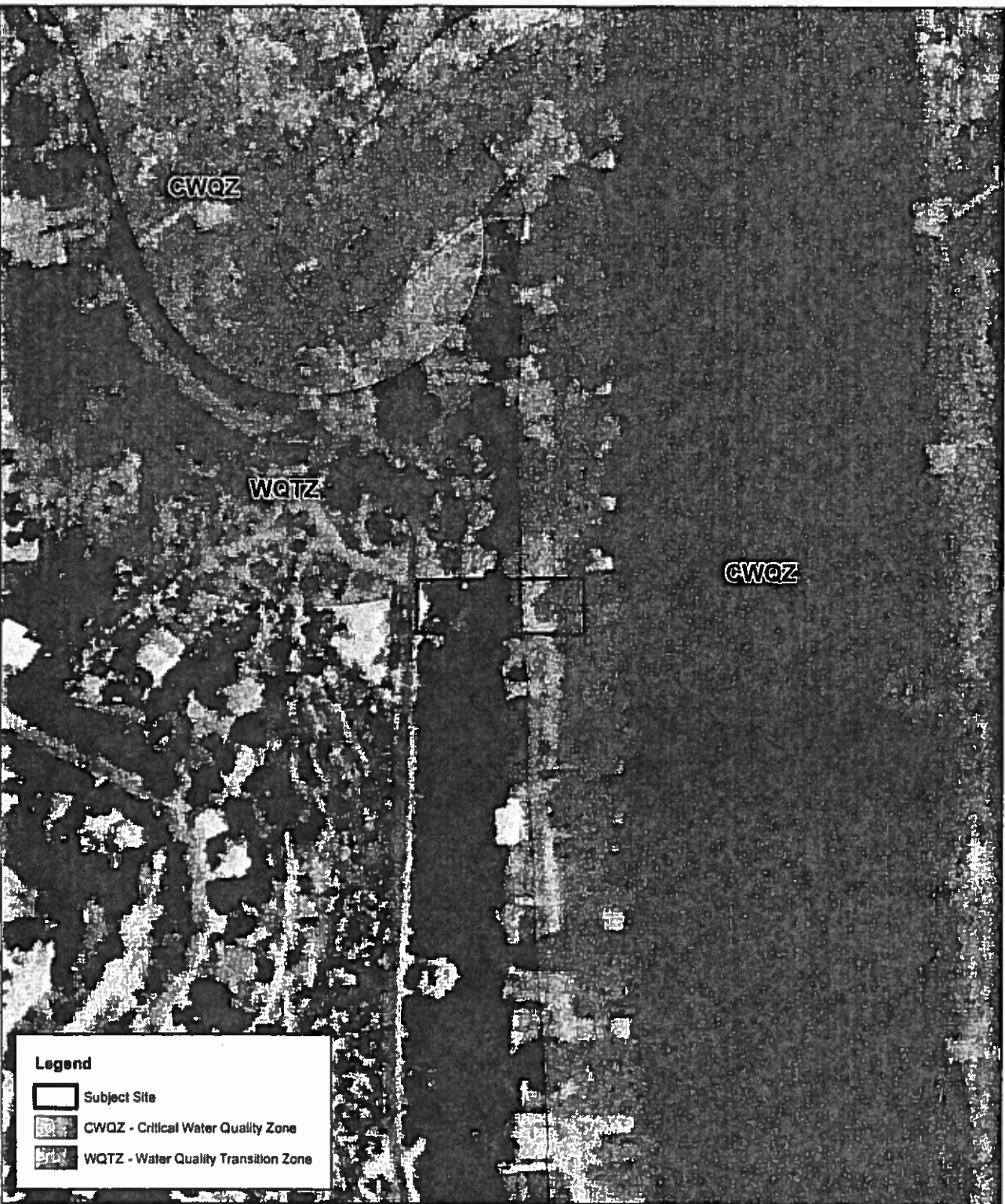
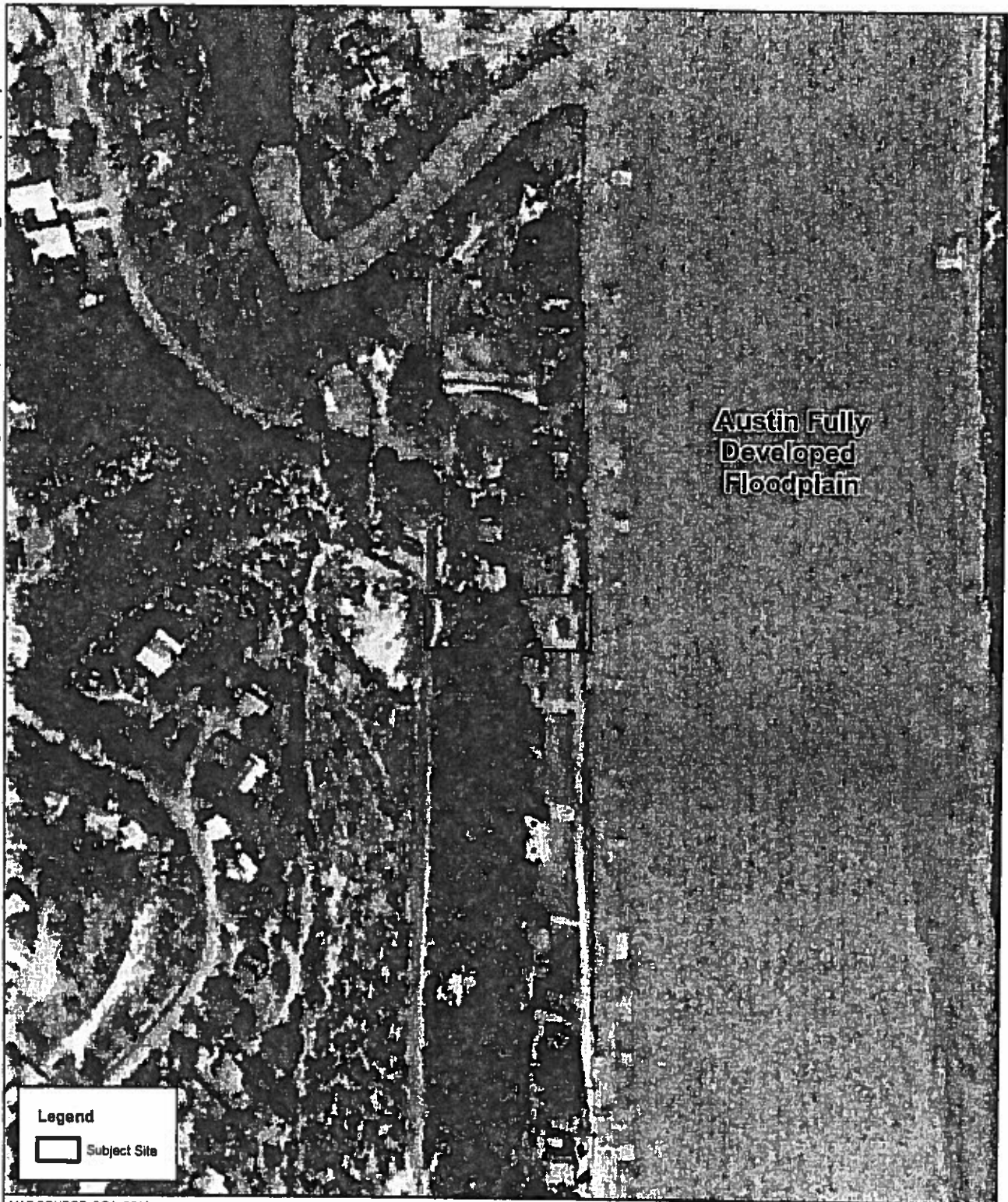


FIGURE 5
WATER QUALITY ZONE MAP
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS



MAP SOURCE: COA, 2014.



0 100 200
Feet

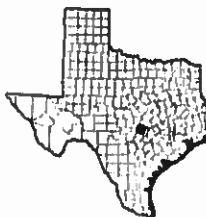


FIGURE 6
AUSTIN FULLY DEVELOPED
FLOODPLAIN MAP
2415 BIG HORN DRIVE
AUSTIN
TRAVIS COUNTY, TEXAS

ATTACHMENT C
SITE PHOTOGRAPHS

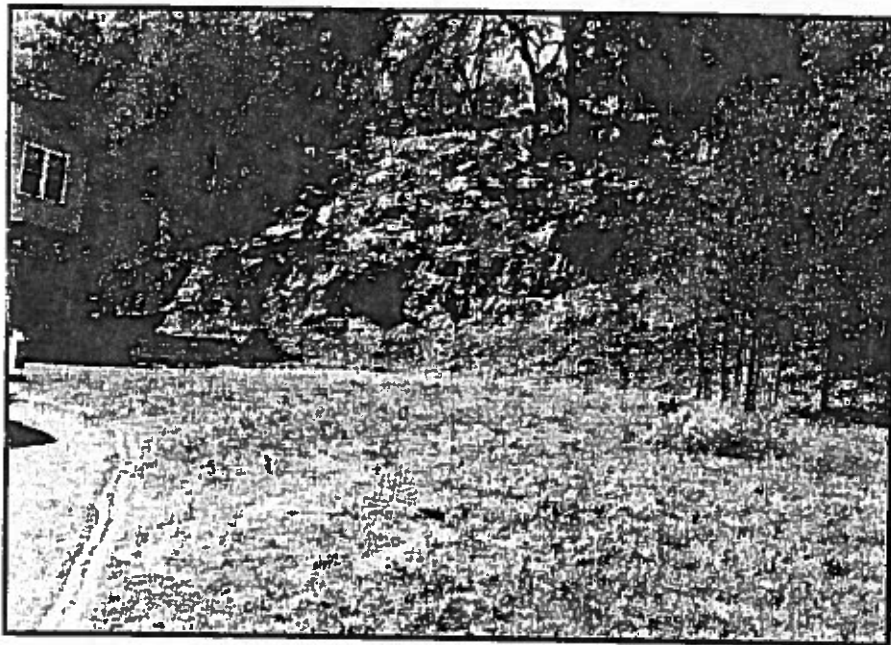


PHOTO 1
View of Bluff CEF, facing west

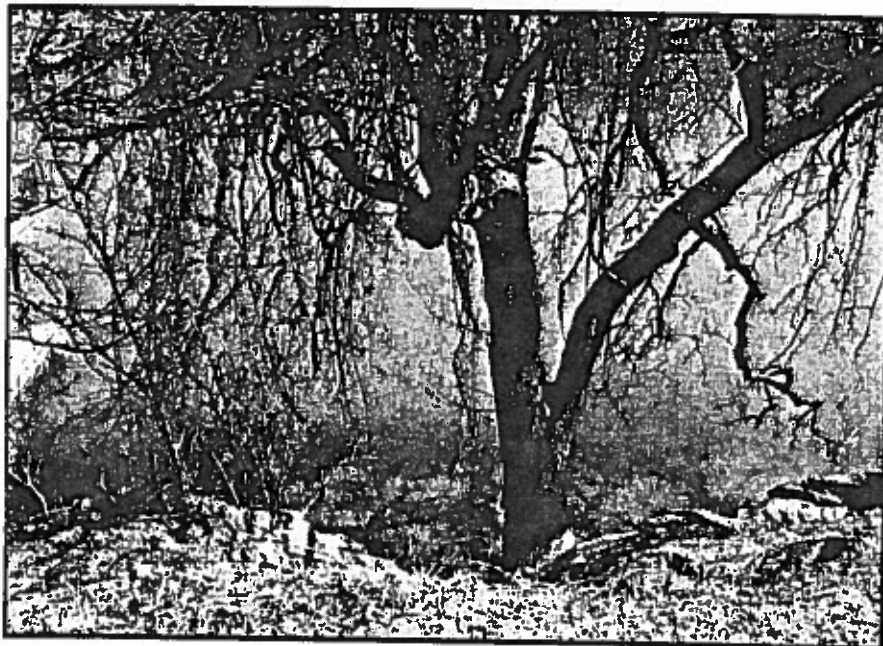


PHOTO 2
View of Lake Austin to the east of the Subject Site

ATTACHMENT D
WASTEWATER DRAIN FIELD PLAN



12713 MAJESTIC OAKS DRIVE
AUSTIN, TEXAS 78732
OFFICE: (512) 583-1397
DELCON@AUSTIN.RR.COM

E N V I R O N M E N T A L S Y S T E M S . L L C .

February 5, 2014

The City of Austin Water Utility
Utility Development Services Division
625 East 10th Street
Austin, Texas 78701
Attn: Ms. Katherine Jashinski, Graduate Engineer

Re: The Denise and Thomas Iles Residence
C/o Cornerstone Group Architects
2415 Big Horn Drive, Austin, Texas 78734
Lot 659, Apache Shore, Section 2, Travis County

Ms. Jashinski,

The following are calculations and design drawings for a conventional septic tank, AdvanTex residential treatment unit and drip emitter disposal field to serve a proposed four-bedroom single-family residence containing approximately 3,421 square feet of conditioned living space located at the above referenced address. A grade cut is proposed along the rear of the house in order to allow enough space in the front yard for the proposed system. The system has been sized in accordance with Chapter 285 of the TCEQ OSSF Rule, December 2012 and the additional criteria of The City of Austin.

For your reference, I have included a summary of the system components:

- One 1,000-gallon single-compartment concrete septic "trash" tank
- One AdvanTex AX20-RT residential treatment unit with pumps and controls
- 750 linear feet of emitter tubing developing 1,500 square feet of net application area

Please feel free to contact me with any questions or comments.

Respectfully,

Derrick E. Lormand, R.S.
Managing Partner
Delcon Environmental Systems, LLC



Site Evaluation Form

Address: 2415 Big Horn Drive, Austin, Texas 78734
Subdivision: Apache Shores Sec: 2 Lot: 659 Blk:
Or, Survey: Abstract: Acres:
Slope: Flat (Under 2%) [] Slight (2% to 15%) [X] Severe (Over 15%) [X]
Site Drainage: Poor [] Adequate [] Good [X] Other []
Outside 100-Year Flood Plain [] In 100 Year Flood Plain [X] In 100 Year Flood Plain/Floodway []
Water Supply: Public [X] Community [] Private []
Other wells within 100 feet of property lines: Yes [] No [X] (If yes, shown on site plan)

Soil Evaluation

Profile Hole Number 1

Depth	Texture (USDA)	Description
0" - 9"	Class III	Tan to brown gray clay loam with some grass roots (possibly imported)
9" - 41"	Class III	Off white to light gray clay loam with some loose limestone rocks (<30%)
@ 41"	No Class	Fractured limestone rock - bottom of hole - restrictive horizon

Profile Hole Number 2

Depth	Texture (USDA)	Description
0" - 10"	Class III	Tan to brown gray clay loam with some grass roots (possibly imported)
10" - 37"	Class III	Off white to brown clay loam with some loose limestone rocks (<30%)
@ 37"	No Class	Fractured limestone rock - bottom of hole - restrictive horizon

Indication of Seasonal Water Table: YES [] NO [X]
If yes, at what depth: None observed
Property Located Within Edwards Aquifer Recharge Zone: YES [] NO [X]
Indication of Recharge Features within 150 feet: YES [] NO [X]
Is Soil Suitable for a Standard System YES [] NO [X]
Application Rate: 0.20 Gal/SF*Day

I, Derrick E. Lormand, a Registered Professional Sanitarian and Licensed Site Evaluator, conducted the site evaluation at the referenced location. I certify that these results are true and correct for the property evaluated.

Date of Site Visit: 10/27/2011


Derrick E. Lormand, R.S., OS# 0026727

Design Calculations

2/5/2014

2415 Big Horn Drive

Design Basis

Per The Texas Commission on Environmental Quality's (TCEQ)

Health and Safety Code Chapter 366, On-Site Sewage Disposal Systems, September 11, 2007

On-Site Sewage Facilities, Title 30, TAC Chapter 285, Effective December 2012

Proposed single-family residence

Number of Equivalent Bedrooms = 4

HVAC Living Space = 3,421 Square Feet (SF)

Estimated Wastewater Flow Rate, Q = 300 Gallons Per Day (GPD)

(Per TCEQ OSSF Title 30 TAC Chapter 285, Table III)

Long-Term Soil Loading Rate, Ra = 0.2 GPD/SF

(Refer to Site Evaluation for soil loading rate determination)

Treatment Tank Determination

Oreco Systems, Inc. AdvanTex residential treatment unit

Recommended Septic Tank Volume 1000 Gallons

AdvanTex Treatment Unit AX20-RT

Drainfield Calculation

Minimum Required Application Area = $Q / Ra = 1500$ SF

Emitters are assumed to achieve 4 square feet of application area each.

Thus, Required Number of Emitters = 750 Emitters

Proposed Number of Emitters = 375 Emitters = 1500 SF

Effluent Pump Performance Requirements

Flow Rate per Emitter = 0.01 Gallons Per Minute

(Refer to emitter tubing specifications for this flow rate determination)

Flow Rate of Emitters = 3.75 GPM

It is recommended to include an additional 1.6 gallons per minute for each emitter tubing connecting to a return line in order to achieve an appropriate flushing (scouring) velocity

Flow Rate per Return Line Connection = 1.6 GPM

Number of Return Line Connections = 3 Connections

Flow Rate for Connections = 4.8 GPM

Required Flow Rate = 8.55 GPM

Total System Head = Friction Head + Elevation Head + Operating Head

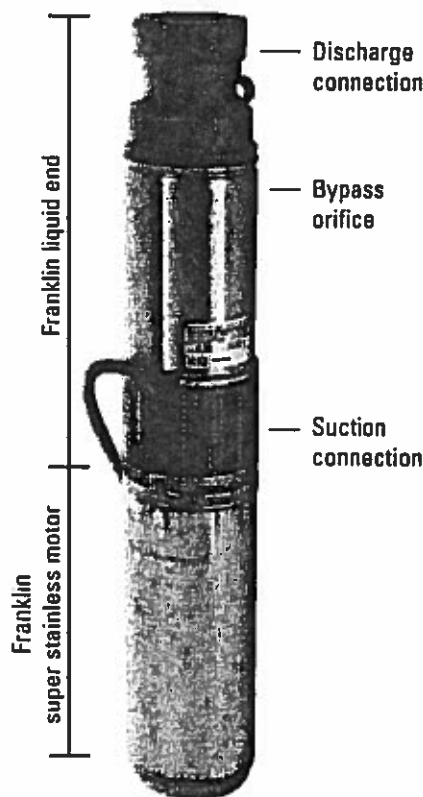
Pipe Friction Head Determination		Pipe Length (Feet)	Pipe Diameter (Inches)	Flow Rate (GPM)	Head Loss (Feet)
Supply Pipe		32	1	8.55	1.2
		12	1	5.85	0.2
		12	1	2.9	0.1
		Friction Loss in Supply Pipe =			1.5
Return Pipe		12	1	1.6	0.1
		8	1	3.2	0.1
		38	1	4.8	0.4
		Friction Loss in Return Pipe =			0.6
		Total Pipe Friction Loss =			2.1
		Add 20% for joints, elbows, tees, etc. =			2.5

Total Pipe Friction Head = 2.5 Feet
 Disk Filter Head Loss = 10 Feet
 Elevation Head Loss = 8 Feet
 Operating Head = 82 Feet
 Total System Head = 102.5 Feet (44.1 psi)

Calculated System Work Point =	8.55	GPM Operating At
	102.5	Feet of Head



High-Head Effluent Pumps from Orenco® are used in a variety of applications, including pressurized drainfields, packed bed filters, mounds, aerobic units, effluent irrigation, effluent sewers, wetlands, lagoons, and more. These pumps are designed to be used with a Biotube® pump vault or after a secondary treatment system.



Powered by
Franklin Electric

- Minimum 24-hour run-dry capability with no deterioration in pump life or performance*
- 1/8-inch (3-mm) bypass orifice (patent pending) to ensure flow recirculation for motor cooling and to prevent air bind
- Liquid end repair kits available for better long-term cost of ownership
- TRI-SEAL™ floating impeller design on 10, 20, and 30 gpm (0.6, 1.3, and 1.9 L/sec) models; floating stack design on 50 and 75 gpm (3.2 and 4.7 L/sec) models
- Super stainless Franklin Electric motor, rated for continuous use and frequent cycling
- Type SOOW 600-V motor cable (suitable for Class I, Division 1 and Division 2 applications)
- Five-year warranty on pump or retrofit liquid end from date of manufacture against defects in materials or workmanship

* Not applicable for 5-hp (3.73 kW) models

See specifications chart, pages 2-3, for a list of standard pumps.
For a complete list of available pumps, call Orendo.

The diagram shows a motor with a terminal box on the left and a nameplate on the right. The terminal box has five terminals labeled 1, 2, 3, 4, and 5. The nameplate contains the following information:

- 1/2 hp (0.37 kW)
- 115V (115V)
- 60 Hz
- 1.75 A
- 1.75 in. dia.

Below the nameplate, there are several options for the motor's specifications, each with a corresponding terminal box configuration:

- Cord length, ft (m):**
 - Blank = 10 (3)
 - 20' = 20 (6)
 - 30 = 30 (9)
 - 50 = 50 (15)
- Voltage, nameplate:**
 - 1 = 115 (1/2 hp (0.37 kW) only)
 - 200 = 200
 - 2 = 230 (220 if 50 Hz)
 - 4 = 460
- Frequency:**
 - 1 = single-phase 60 Hz
 - 3 = three-phase 60 Hz
 - 5 = single-phase 50 Hz
- Horsepower (kW):**
 - 05 = 1/2 hp (0.37)
 - 07 = 3/4 hp (0.56)
 - 10 = 1 hp (0.75)
 - 15 = 1 1/2 hp (1.1)
 - 20 = 2 hp (1.5)
 - 30 = 3 hp (2.24)
 - 50 = 5 hp (3.73)
- Nominal flow, gpm (L/sec):**
 - 10 = 10 (0.6)
 - 20 = 20 (1.3)
 - 30 = 30 (1.9)
 - 50 = 50 (3.2)
 - 75 = 75 (4.7)

Pump (PF Series)

¹ Note: 20 front ends are available only for single phase pumps through 1 1/2 hp.

PF Series 4" Submersible Effluent Pumps (continued)

Specifications, 60 Hz

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Impellers	Discharge size and material ¹	Length, in. (mm)	Min. liquid level, ² in. (mm)	Weight ³ lb (kg)	Rated cycles/day
PF100511 ⁴	10 (0.6)	0.5 (0.37)	1	115	120	12.7	12.7	6	1 1/4 in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF100512	10 (0.6)	0.5 (0.37)	1	230	240	6.3	6.3	6	1 1/4 in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF10053200	10 (0.6)	0.5 (0.37)	3	200	208	3.8	3.8	6	1 1/4 in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF100712 ^{4, 5}	10 (0.6)	0.75 (0.56)	1	230	240	8.3	8.3	8	1 1/4 in. GFP	25.9 (658)	17 (432)	30 (14)	300
PF10073200 ^{4, 5}	10 (0.6)	0.75 (0.56)	3	200	208	5.1	5.2	8	1 1/4 in. GFP	25.4 (645)	17 (432)	31 (14)	300
PF101012 ^{4, 5}	10 (0.6)	1 (0.75)	1	230	240	9.6	9.6	9	1 1/4 in. GFP	27.9 (709)	18 (457)	33 (15)	100
PF10103200 ^{4, 5}	10 (0.6)	1 (0.75)	3	200	208	5.5	5.5	9	1 1/4 in. GFP	27.3 (693)	18 (457)	37 (17)	300
PF102012 ^{4, 5, 7, 8}	10 (0.6)	2 (1.49)	1	230	240	12.1	12.1	18	1 1/4 in. SS	39.5 (1003)	22 (559)	48 (22)	100
PF102032	10 (0.6)	2 (1.49)	3	230	240	7.5	7.6	18	1 1/4 in. SS	37.9 (963)	20 (508)	44 (20)	300
PF10203200 ^{4, 8}	10 (0.6)	2 (1.49)	3	200	208	8.7	8.7	18	1 1/4 in. SS	37.9 (963)	20 (508)	44 (20)	300
PF200511	20 (1.5)	0.5 (0.37)	1	115	120	12.3	12.5	4	1 1/4 in. GFP	22.3 (566)	18 (457)	25 (11)	300
PF200512	20 (1.5)	0.5 (0.37)	1	230	240	6.4	6.5	4	1 1/4 in. GFP	22.5 (572)	18 (457)	26 (12)	300
PF200532	20 (1.5)	0.5 (0.37)	3	230	240	2.9	2.9	4	1 1/4 in. GFP	22.3 (566)	18 (457)	26 (12)	300
PF20053200	20 (1.5)	0.5 (0.37)	3	200	208	3.7	3.8	4	1 1/4 in. GFP	22.3 (566)	18 (457)	26 (12)	300
PF201012 ^{4, 5}	20 (1.5)	1 (0.75)	1	230	240	10.5	10.5	7	1 1/4 in. GFP	28.4 (721)	20 (508)	33 (15)	100
PF20103200 ^{4, 5}	20 (1.5)	1 (0.75)	3	200	208	5.8	5.9	7	1 1/4 in. GFP	27.8 (708)	20 (508)	33 (15)	300
PF201512 ^{4, 5}	20 (1.5)	1.5 (1.11)	1	230	240	12.4	12.6	9	1 1/4 in. GFP	34.0 (864)	24 (610)	41 (19)	100
PF20153200 ^{4, 5}	20 (1.5)	1.5 (1.11)	3	200	208	7.1	7.2	9	1 1/4 in. GFP	30.7 (780)	20 (508)	35 (16)	300
PF300511	30 (1.9)	0.5 (0.37)	1	115	120	11.8	11.8	3	1 1/4 in. GFP	21.3 (541)	20 (508)	28 (13)	300
PF300512	30 (1.9)	0.5 (0.37)	1	230	240	6.2	6.2	3	1 1/4 in. GFP	21.3 (541)	20 (508)	25 (11)	300
PF30053200	30 (1.9)	0.5 (0.37)	3	200	208	3.6	3.6	3	1 1/4 in. GFP	21.3 (541)	20 (508)	25 (11)	300
PF300712	30 (1.9)	0.75 (0.56)	1	230	240	8.5	8.5	5	1 1/4 in. GFP	24.8 (630)	21 (533)	29 (13)	300
PF30073200	30 (1.9)	0.75 (0.56)	3	200	208	4.9	4.9	5	1 1/4 in. GFP	24.6 (625)	21 (533)	30 (14)	300
PF301012 ⁴	30 (1.9)	1 (0.75)	1	230	240	10.4	10.4	6	1 1/4 in. GFP	27.0 (686)	22 (559)	32 (15)	100
PF30103200 ⁴	30 (1.9)	1 (0.75)	3	200	208	5.8	5.8	6	1 1/4 in. GFP	26.4 (671)	22 (559)	33 (15)	300
PF301512 ^{4, 5}	30 (1.9)	1.5 (1.11)	1	230	240	12.6	12.8	8	1 1/4 in. GFP	32.8 (833)	24 (610)	40 (18)	100
PF30153200 ^{4, 5}	30 (1.9)	1.5 (1.11)	3	200	208	6.9	6.9	8	1 1/4 in. GFP	29.8 (757)	22 (559)	34 (15)	300
PF301534	30 (1.9)	1.5 (1.11)	3	460	480	2.8	2.8	8	1 1/4 in. GFP	29.5 (685)	22 (559)	34 (15)	300
PF302012 ^{4, 5, 7}	30 (1.9)	2 (1.49)	1	230	240	11	11	10	1 1/4 in. SS	35.5 (902)	26 (660)	44 (20)	100
PF30203200 ^{4, 5}	30 (1.9)	2 (1.49)	3	200	208	9.3	9.3	10	1 1/4 in. SS	34.0 (864)	24 (610)	41 (19)	300
PF303012 ^{4, 7, 8}	30 (1.9)	3 (2.23)	1	230	240	16.8	16.8	14	1 1/4 in. SS	44.5 (1130)	33 (838)	54 (24)	100
PF303032 ^{4, 8}	30 (1.9)	3 (2.23)	3	230	240	10	10.1	14	1 1/4 in. SS	44.3 (1125)	27 (686)	52 (24)	300
PF305012 ^{4, 7, 8}	30 (1.9)	5 (3.73)	1	230	240	25.6	25.8	23	1 1/4 in. SS	66.5 (1689)	53 (1346)	82 (37)	100
PF305032 ^{4, 8}	30 (1.9)	5 (3.73)	3	230	240	16.6	16.6	23	1 1/4 in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF30503200	30 (1.9)	5 (3.73)	3	200	208	18.7	18.7	23	1 1/4 in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF500511	50 (3.2)	0.5 (0.37)	1	115	120	12.1	12.1	2	2 in. SS	20.3 (516)	24 (610)	27 (12)	300
PF500512	50 (3.2)	0.5 (0.37)	1	230	240	6.2	6.2	2	2 in. SS	20.3 (516)	24 (610)	27 (12)	300
PF500532	50 (3.2)	0.5 (0.37)	3	230	240	3.0	3.0	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF50053200	50 (3.2)	0.5 (0.37)	3	200	208	3.7	3.7	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500534	50 (3.2)	0.5 (0.37)	3	460	480	1.5	1.5	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500712	50 (3.2)	0.75 (0.56)	1	230	240	8.5	8.5	3	2 in. SS	23.7 (602)	25 (635)	31 (14)	300
PF500732	50 (3.2)	0.75 (0.56)	3	230	240	3.9	3.9	3	2 in. SS	23.7 (602)	25 (635)	32 (15)	300
PF50073200	50 (3.2)	0.75 (0.56)	3	200	208	4.9	4.9	3	2 in. SS	23.1 (587)	26 (660)	32 (15)	300
PF500734	50 (3.2)	0.75 (0.56)	3	460	480	1.8	1.8	3	2 in. SS	34.8 (884)	25 (635)	31 (14)	300
PF501012	50 (3.2)	1 (0.75)	1	230	240	10.1	10.1	4	2 in. SS	27.0 (686)	26 (660)	35 (16)	100
PF50103200	50 (3.2)	1 (0.75)	3	200	208	5.7	5.7	4	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF501034	50 (3.2)	1 (0.75)	3	460	480	2.2	2.2	4	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF501512 ⁴	50 (3.2)	1.5 (1.11)	1	230	240	12.5	12.6	5	2 in. SS	32.5 (826)	30 (762)	41 (19)	100
PF50153200 ⁴	50 (3.2)	1.5 (1.11)	3	200	208	7	7	5	2 in. SS	29.3 (744)	26 (660)	35 (16)	300
PF503012 ^{4, 5, 7, 8}	50 (3.2)	3 (2.23)	1	230	240	17.7	17.7	8	2 in. SS	43 (1092)	37 (940)	55 (25)	100

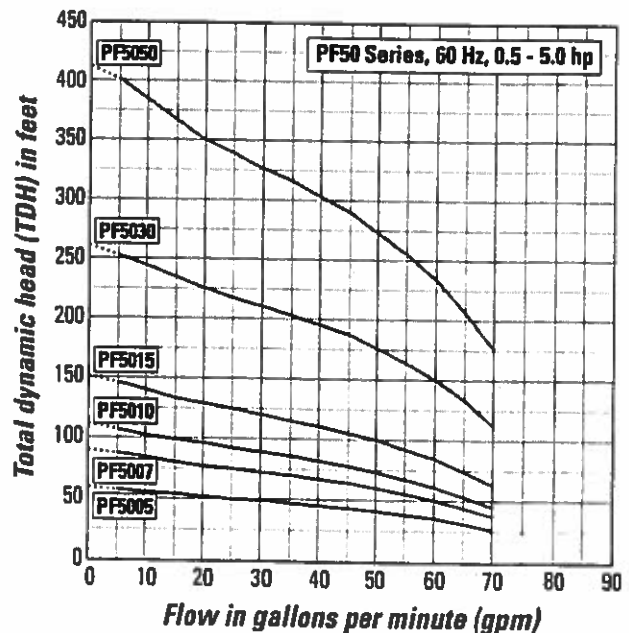
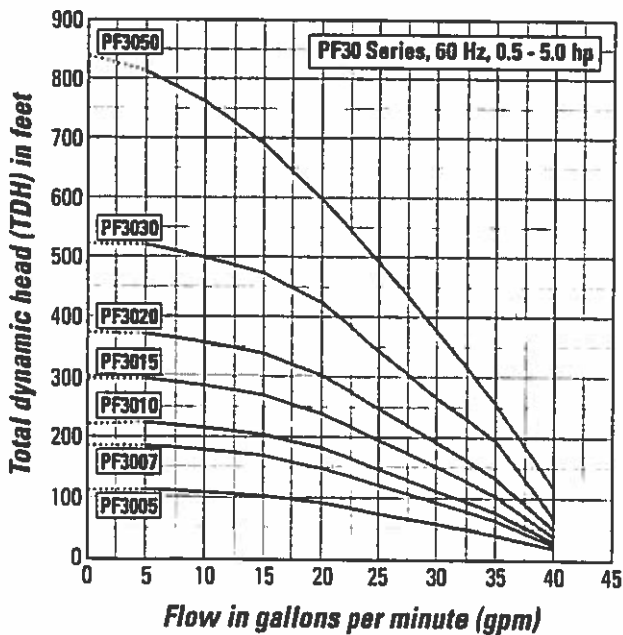
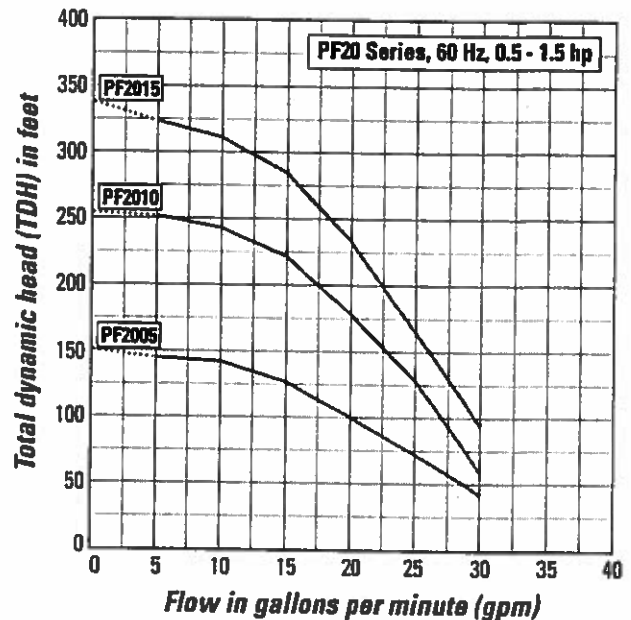
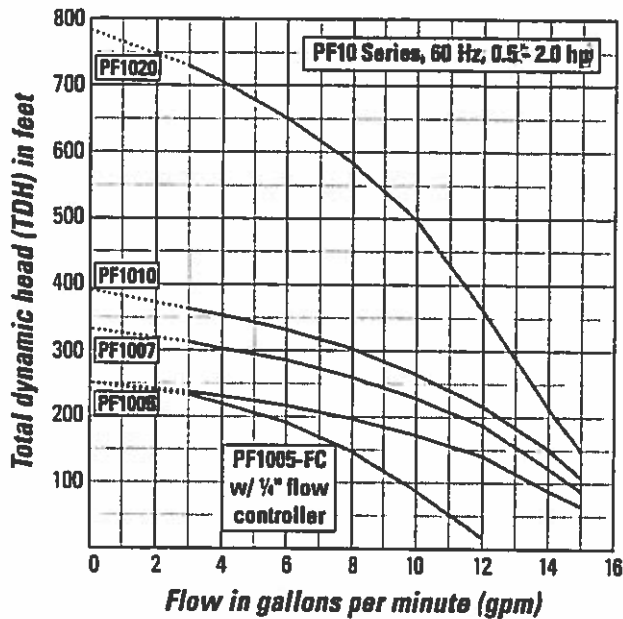
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PF Series High-Head Effluent Pumps (continued)

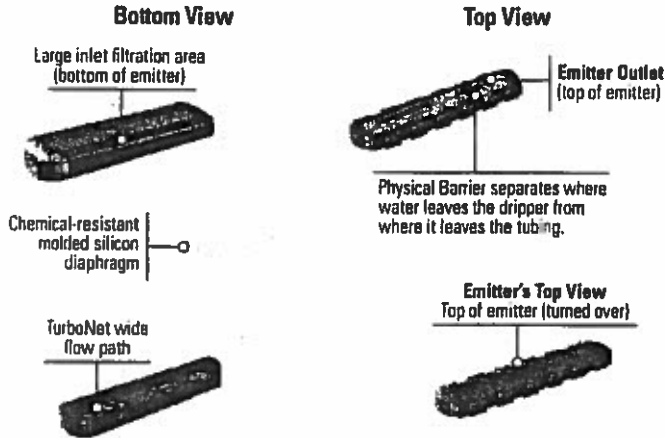
Using a Pump Curve

A *pump curve* helps you determine the best pump for your system. Pump curves show the relationship between flow (gpm or L/sec) and pressure (total dynamic head, or TDH), providing a graphical representation of a pump's optimal performance range. Pumps perform best at their *nominal flow rate* — the value, measured in gpm, expressed by the first two numerals in an Orenco pump nomenclature. At low flow rates, TDH varies from pump to pump, so it is represented as a dashed line in the pump curves. For most accurate pump specification, use Orenco's PumpSelect™ software.

60 Hz Models



EXPLODED VIEW OF BIOLINE EMITTER



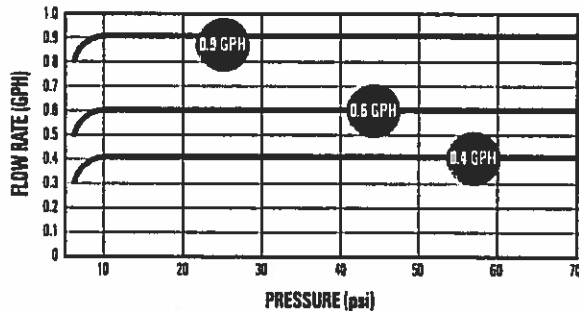
BIOLINE EMITTER OPERATION

Bioline® dripperline emitters are pressure compensating - delivering the water uniformly into the soil for further treatment or for reuse by the landscape. These unique emitters allow the tubing to be installed on flat topography or steep slopes.

Bioline emitters are protected against microbial slime. Each emitter is impregnated with an antimicrobial agent to resist biological build-up.

Netafim emitters are continuously self-cleaning during operation, not just at the beginning and end of a cycle. The result is dependable, clog-free operation, year after year.

DRIPPER FLOW RATE VS. PRESSURE



FLOW PER 100 FEET

DRIPPER SPACING	0.4 GPH DRIPPER		0.6 GPH DRIPPER		0.9 GPH DRIPPER	
	GPH	GPM	GPH	GPM	GPH	GPM
12"	40.0	0.67	61.0	1.02	92.0	1.53
18"	26.7	0.44	41.0	0.68	61.0	1.02
24"	20.0	0.34	31.0	0.51	46.0	0.77

SPECIFYING INFORMATION

SAMPLE MODEL NUMBER

A Bioline Dripperline = 08WRAM

1 DRIPPER FLOW RATE
0.4 GPH = .4
0.6 GPH = .6
0.9 GPH = .9

2 DRIPPER SPACING
12" = 12
18" = 18
24" = 24

3 COIL LENGTH
500' = V500
1,000' = V

08WRAM.6-24 V

BLANK Tubing Model Number: 250' = 08WRAM-250

ORDERING INFORMATION

FLOW RATE	DRIPPER SPACING	COIL LENGTH	MODEL NUMBER
0.4 GPH	12"	1,000' 500'	08WRAM.4-12V 08WRAM.4-12V500
0.4 GPH	18"	1,000' 500'	08WRAM.4-18V 08WRAM.4-18V500
0.4 GPH	24"	1,000' 500'	08WRAM.4-24V 08WRAM.4-24V500
0.6 GPH	12"	1,000' 500'	08WRAM.6-12V 08WRAM.6-12V500
0.6 GPH	18"	1,000' 500'	08WRAM.6-18V 08WRAM.6-18V500
0.6 GPH	24"	1,000' 500'	08WRAM.6-24V 08WRAM.6-24V500
0.9 GPH	12"	1,000' 500'	08WRAM.9-12V 08WRAM.9-12V500
0.9 GPH	18"	1,000' 500'	08WRAM.9-18V 08WRAM.9-18V500
0.9 GPH	24"	1,000' 500'	08WRAM.9-24V 08WRAM.9-24V500
Blank Tubing 17mm		250'	08WRAM-250



12713 MAJESTIC OAKS DRIVE
AUSTIN, TEXAS 78732
(512) 583-1397
DELCON@AUSTIN.RR.COM

E N V I R O N M E N T A L S Y S T E M S . L . L . C .

The on site wastewater system has been designed to dispose of the specified wastewater flow rate. In addition to the proper design and construction of the system, it is the owner's responsibility to properly maintain the system. The following care should be taken to help ensure proper operation and high quality effluent:

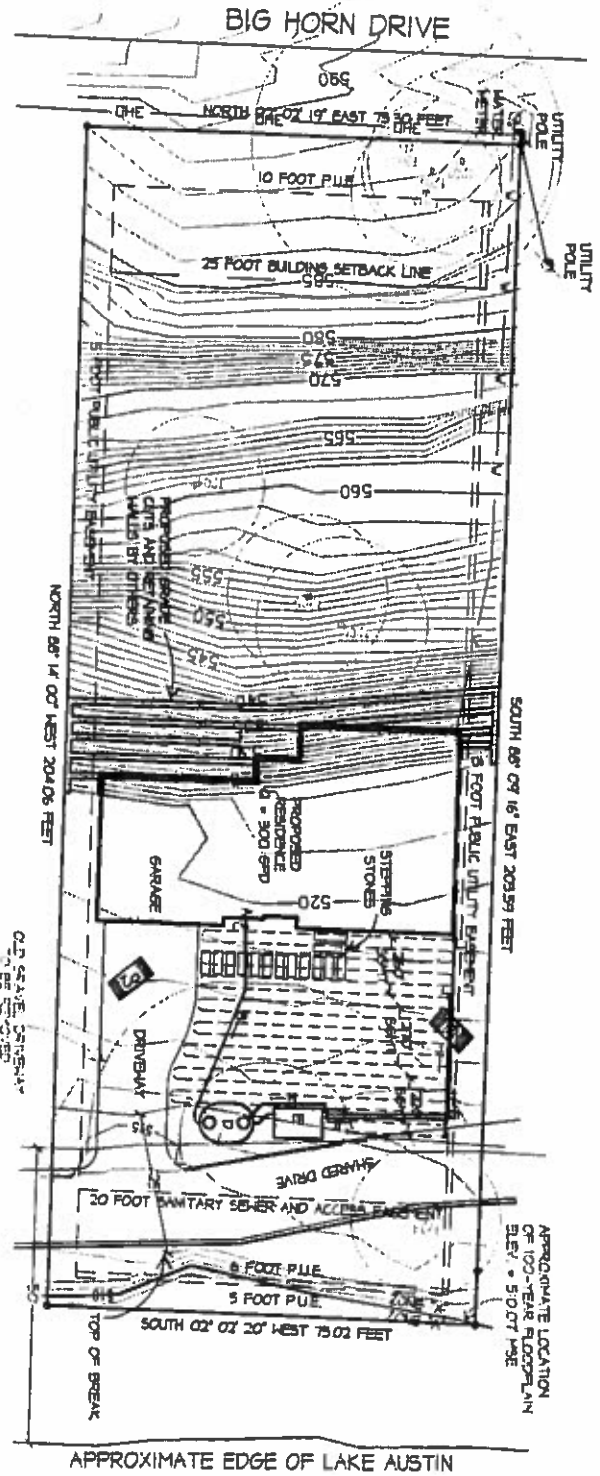
Do Not:

1. Pour strong disinfectants or bleaches, other than small amounts used in day to day house cleaning and laundries into the system.
2. Discharge from any type of water softener into the system.
3. Put coffee grounds, chemical wastes, paint or paint thinner, oils or grease (such as used cooking grease), pet shampoo or pet dip disinfectant into the system.
4. Permit disposable diapers, tampons, sanitary napkins, large quantities of paper products, tobacco products or similar items to enter the system.
5. Overload the system with large amounts of wastewater.
6. Plant large trees or shrubs near the system tanks or disposal field – the root systems may damage the installed system components.

Do:

1. Maintain the vegetation (grass) in the disposal field area.
2. Conserve water usage as much as possible. Maintain low-flow plumbing fixtures throughout the structure.
3. Monitor the drainfield periodically for signs of effluent surfacing and odors.
4. Use care when digging in the vicinity of the system tanks or drainfield to avoid damaging any of the disposal system's components.

It is recommended that the tanks be inspected periodically by a trained service person to determine the frequency of solids removal, and to review the mechanical operation of the system.



- LEGEND:**
- A. SEWER STEP-OUT
 - B. 100-000 GALLON PER HOUR PUMP
 - C. 100-000 GALLON PER HOUR PUMP
 - D. 1000-GALLON PER HOUR TANK
 - E. ADVANCED TREATMENT UNIT
 - F. FIELD BOX
 - G. 10 PAC SAFETY LINE
 - H. 10 PAC RETURN LINE
 - I. VALVE BREAKER VALVES

A PORTION OF THIS PROPERTY LIES WITHIN A 100-YEAR FLOOD PLAIN PER FIRM RATE MAPS.

DRAINAGE SHALL CONSIST OF A TOTAL OF 750 LINEAR FEET OF PITTER TUBING CONTAINING 375 BATTERS DEVELOPING 1500 SQUARE FEET OF APPLICATION AREA.

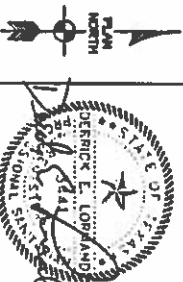
SETBACK REQUIREMENTS:

INSTALLER SHALL ACHIEVE ALL MINIMUM REQUIRED SEPARATION DISTANCES AS SET FORTH BY THE TCEQ IN TITLE 30, THE CHAPTER 205, EFFECTIVE DECEMBER 2012, AND ANY ADDITIONAL LOCAL REQUIREMENTS.

MINIMUM SEPARATION FROM TANK: 5 FEET TO FOUNDATIONS, SWAMPING POOLS AND PROPERTY LINES, ONE FOOT TO EXISTING 15 FEET TO DRAINAGE ELEVATIONS AND GRADE BREAKS, 10 FEET TO WATER LINES, 50 FEET TO EXISTING OR PROPOSED WATER HELLS.

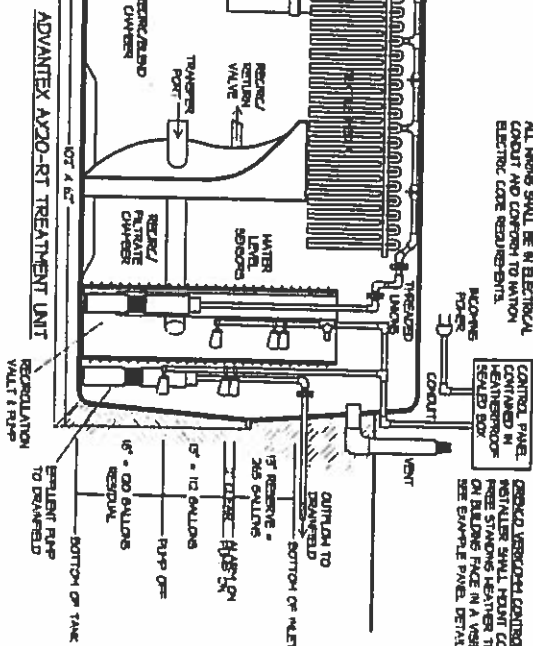
MINIMUM SEPARATION FROM DRAINAGE: ONE FOOT FROM FOUNDATIONS AND ELEVATIONS, 5 FEET FROM PROPERTY LINES AND SWAMPING POOLS, 25 FEET FROM GRADE BREAKS, 10 FEET FROM WATER LINES, 100 FEET FROM EXISTING OR PROPOSED WATER HELLS.

NO.	DATE	DESCRIPTION
1	02/05/2014	REVISION
2	02/05/2014	REVISION
3	02/05/2014	REVISION
4	02/05/2014	REVISION
5	02/05/2014	REVISION
6	02/05/2014	REVISION
7	02/05/2014	REVISION
8	02/05/2014	REVISION
9	02/05/2014	REVISION
10	02/05/2014	REVISION



DELCON ENVIRONMENTAL SYSTEMS, L.L.C.
12713 MAJESTIC OAKS DRIVE
AUSTIN, TEXAS 78732
(512) 589-1297

CLIENT: THE LBS RESIDENCE C/O CCA PARTNERS
STREET: 2415 BIG HORN DRIVE, AUSTIN, TEXAS 78724
LOT SUBDIVISION: LOT 659, APACHE SHORES, SECTION 2
PERMIT AUTHORITY: THE CITY OF AUSTIN
DATE: 02/05/2014
SCALE: 1" = 20'




CONTROL PANEL CONTAINED IN HEATHERPROOF SEALED BOX

SEEKING VERBODEN CONTROL PANEL INSTALLER SHALL MOUNT CONTROL PANEL FREE STANDING HEATHER TREATED POST ON BUILDING FACE IN A VISIBLE LOCATION SEE SAMPLE PANEL DETAIL BELOW.

EFFICIENT PUMP
DESIGNED FOR SERIES SUPER-SILENT EFFICIENT PUMP HOUSE, FM-40-05M
POLYMER CONCRETE
15 VOL. 1 SINGLE PHASE 60 HERTZ

TREATMENT METHOD: ABOVE TREATMENT DUTY WITH ASSISTANCE DROP BOTTOM APPLICATION SOL. APPLICATION RATE = 0.20 GALLONS PER SQUARE FOOT PER DAY + 15% TEST DROF MONITORING RQ-276/2-01 REVISED DECEMBER 2001, TABLE A.



STATE OF TEXAS
 DEPARTMENT OF AGRICULTURE
 DERRICK E. LONG AND
 JAMES E. LONG, JR.
 COMMISSIONERS

DELCON

ENVIRONMENTAL SYSTEMS, L.L.C.

12713 MAESTRIC CARS DRIVE
 AUSTIN TEXAS 78732
 (512) 355-1597

CLIENT	THE LBS RESOURCE CO (LA PARKERS)
PROJECT	245 SH HOUS DRIVE, AUSTIN TEXAS 78724
LOT NUMBER	LOT 6334 OF THE 5800 BLOCK, SECTION 2
159811 ALBERTSON	159811 ALBERTSON



DELCON ENVIRONMENTAL SYSTEMS, L.L.C.

12715 MAESTRO OAKS DRIVE
ALSTIN TEXAS 76132
(817) 563-1971

CLIENT:	THE ELKS RESERVATION AND C&A PARTNERS
STREET:	3415 BAYBORN DRIVE ALSTIN TEXAS 76132
LOT/SECTION:	LOT 629 PHASE FOUR ALSTIN SECTION 3
PLAT/BLK/DIST:	THE CITY OF ALSTIN
DATE:	
SCALE 1" = 1'-0"	

GENERAL NOTES.

1. ON-SITE SERVICE FACILITY PERMIT OR AUTHORIZATION TO CONSTRUCT SHALL BE OBTAINED FROM THE LOCAL PERMITTING AUTHORITY AND POSTED ON SITE IN A HIGHLY VISIBLE LOCATION PRIOR TO THE COMMENCEMENT OF THE INSTALLATION OF THIS SYSTEM. NO WORK MAY BEGIN UNTIL THE PERMIT TO CONSTRUCT HAS BEEN POSTED ON SITE.
2. THE INSTALLATION OF THIS SYSTEM MUST BE PERFORMED BY A STATE LICENSED LICENSED HOLDING A CURRENT CLASS I OR CLASS II CERTIFICATE OR BY A STATE LICENSED APPRENTICE OPERATING UNDER THE DIRECT SUPERVISION OF A STATE LICENSED INSTALLER. THE APPRENTICE MUST MAINTAIN CURRENT PROOF OF LICENSE AT THE JOB SITE. THIS LICENSE MUST BE MADE AVAILABLE FOR REVIEW UPON REQUEST.
3. THIS PLAN IS SITE SPECIFIC. THIS DESIGN AND THE INFORMATION CONTAINED WITHIN REMAIN THE OWNERSHIP OF THE DESIGNER AND DELCON ENVIRONMENTAL SYSTEMS, LLC. ADDITIONAL COPIES OF THIS DESIGN MAY BE PRINTED AND REPRODUCED OR OBTAINED FROM DELCON ENVIRONMENTAL SYSTEMS, LLC FOR CONVENIENCE ASSOCIATED WITH THE PERMIT REVIEW, INSPECTION, INSTALLATION AND LICOENSING OF THIS SYSTEM. ADDITIONAL FEES MAY BE REQUIRED. ELECTRONIC COPIES OF THIS DESIGN THAT INCLUDE THE SEAL AND SIGNATURE OF THE DESIGNER ARE VALID AND SHALL BE CONSIDERED AS ORIGINAL COPIES.
4. THE LAWS AND REGULATIONS CONTAINED IN THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY TITLE 20 TEXAS ADMINISTRATIVE CODE CHAPTER 205 FOR ON-SITE SERVICE FACILITIES ADOPTED MAY 2001, EFFECTIVE JUNE 2001 AND MOST RECENTLY REVISED DECEMBER 3, 2012 GOVERN THE DESIGN, PERMIT AND INSTALLATION OF THIS SYSTEM. ANY ADDITIONAL REGULATIONS ADOPTED BY THE LOCAL PERMITTING AUTHORITY ABOVE AND BEYOND THE REQUIREMENTS OF THE STATE MANUAL SHALL SUPERSEDE. ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFIC STIPULATIONS LISTED IN THE PERMIT TO CONSTRUCT OR THIS DESIGN SHALL BE STRICTLY FOLLOWED.
5. IT IS THE RESPONSIBILITY OF THE INSTALLER TO READ AND UNDERSTAND THE LAWS REGARDING THE INSTALLATION OF ON-SITE SERVICE FACILITIES. THE SPECIAL CONDITIONS (IF ANY) CONTAINED IN THE PERMIT OR AUTHORIZATION TO CONSTRUCT AND THE REQUIREMENTS AND SPECIFICATIONS OF THIS DESIGN.
6. THIS PLAN IS INTENDED FOR USE AS A SEPTIC SYSTEM INSTALLATION GUIDE. THE PROPERTY DESCRIPTION, DIMENSIONS AND LOCATION OF ALL SITE FEATURES HAVE BEEN DEVELOPED FROM SURVEYS (IF PROVIDED), GLOBAL POSITIONING SYSTEM DATA, AERIAL PHOTOGRAPHY, SITE PLANS, SITE VISITS, FIELD MEASUREMENTS AND ANY ADDITIONAL INFORMATION PROVIDED BY THE BALDER, INSTALLERS AND OWNER. THIS SITE PLAN IS NOT A LEVEL, LAND SURVEY OR PLAT MAP AND SHOULD NOT BE TREATED AS SUCH.
7. TREES AND VEGETATION WITHIN THE VICINITY OF THE PROPOSED SYSTEM SHALL BE PROTECTED. IT IS POSSIBLE THAT DAMAGE MAY OCCUR TO TREES AND VEGETATION DURING THE INSTALLATION OF THIS SYSTEM. NEITHER THE DESIGNER NOR THE INSTALLER SHALL BE RESPONSIBLE FOR DAMAGE TO VEGETATION AND/OR TREES CAUSED DURING CONSTRUCTION. NEITHER THE DESIGNER NOR THE INSTALLER SHALL BE RESPONSIBLE FOR VEGETATION RELOCATION ABOVE AND BEYOND THE SPECIFIC STIPULATIONS CONTAINED IN THIS DESIGN. REMOVAL AND/OR TRIMMING OF TREES AND VEGETATION MAY BE REQUIRED TO PROPERLY INSTALL AND OPERATE THIS SYSTEM.
8. NO WATER WALLS MAY BE INSTALLED CLOSER THAN 150 FEET FROM THIS SYSTEM. ALL WATER SUPPLY LINES (INCLUDING IRRIGATION SYSTEM LINES) SHALL REMAIN AT LEAST 10 FEET AWAY FROM ALL SEPTIC SYSTEM COMPONENTS UNLESS NOTED OTHERWISE ON PLAN AND SPECIFICALLY ADDRESSED AND APPROVED BY THE PERMITTING AUTHORITY.
9. NO AUTOMATIC WATER SPRINKLER SYSTEM MAY BE INSTALLED TO DIRECTLY IRRIGATE THE VEGETATION ABOVE THE APPLICATION FIELD. HAND WATERING IS PERMISSIBLE TO HELP MAINTAIN APPLICATION FIELD VEGETATION. A MAINTENANCE CONTRACT WITH AN LICENSED AND CERTIFIED MAINTENANCE PROVIDER MAY BE REQUIRED BY STATE LAW WITH THIS SYSTEM.
10. REGULAR, PERIODIC MAINTENANCE IS NECESSARY TO MAINTAIN OPTIMUM SYSTEM PERFORMANCE AND ENVIRONMENTAL PROTECTION. IT IS HEAVILY RECOMMENDED THAT PERIODIC ROUTINE MAINTENANCE BE PERFORMED AT THREE-MONTH INTERVALS.
11. TO THE BEST OF MY KNOWLEDGE, THERE APPEAR TO BE NO EDWARDS' ADAPTER REDUCING FEATURES WITHIN 150 FEET OF THIS SYSTEM.
12. IT IS MY PROFESSIONAL OPINION THAT THIS ON-SITE SERVICE FACILITY CAN BE OPERATED WITHOUT CAUSING A THREAT OR HAZARD TO THE PUBLIC HEALTH OR TO THE ENVIRONMENT. THIS SYSTEM MUST BE PROPERLY INSTALLED AND MAINTAINED TO ACHIEVE THE DESIRED LEVEL OF TREATMENT AND DISPOSAL, TO PREVENT THREATS OR HAZARD TO THE PUBLIC HEALTH OR TO THE ENVIRONMENT.

INSPECTION AND COORDINATION NOTES.

1. THE INSTALLER SHALL COOPERATE WITH THE PERMITTING AUTHORITY TO SCHEDULE ALL REQUIRED INSPECTIONS THROUGHOUT THE INSTALLATION PROCESS. THE INSTALLER MAY CONTACT THE PERMITTING AUTHORITY TO OBTAIN A SCHEDULE OF INSPECTIONS REQUIRED FOR THIS SYSTEM. SEVERAL INSPECTIONS MAY BE REQUIRED AFTER MAINTAINING CONSTRUCTION. ADDITIONAL INSPECTION FEES MAY BE REQUIRED BASED ON THE RESULTS OF INSPECTIONS. THE INSTALLER RELATES FROM THE PERMITTED DESIGN PRODUCT DELCON ENVIRONMENTAL SYSTEMS, LLC.
2. NO PERSON OR COMPONENT OF THIS SYSTEM SHALL BE COVERED UNTIL REVIEWED AND APPROVED BY THE PERMITTING AUTHORITY. THE DESIGNER SHALL BE NOTIFIED TO PERFORM AN INSPECTION AT LEAST 48 HOURS IN ADVANCE PRIOR TO COVERING ANY SYSTEM COMPONENTS.
3. PERMANENT UTILITIES INCLUDING WATER, ELECTRIC AND POSSIBLY TELEPHONE SERVICE SHALL BE CONNECTED TO THIS SYSTEM AS A CONDITION OF FINAL APPROVAL.
4. THE DESIGNER SHALL DELIVER TO THE PERMITTING AUTHORITY AN APPROVAL/CERTIFICATION LETTER UPON REVIEWING THE INSTALLED SYSTEM INDICATING COMPLIANCE WITH THE DESIGN. AN AS BUILT DRAWING MAY BE REQUIRED AND INCLUDED WITH THE FINAL APPROVAL LETTER. APPROVAL SHALL NOT BE GRANTED UNTIL ALL INSPECTIONS ARE COMPLETED. ALL REQUIREMENTS ARE ACHIEVED AND ALL FEES TO THE DESIGNER AND PERMITTING AUTHORITY ARE PAID IN FULL.
5. A LICENSE TO OPERATE WILL BE ISSUED BY THE PERMITTING AUTHORITY UPON INSTALLATION COMPLETION AND WRITING APPROVAL/CERTIFICATION FROM DELCON ENVIRONMENTAL SYSTEMS, LLC. USE OF THIS ON-SITE SERVICE FACILITY WITHOUT A LICENSE TO OPERATE IS A VIOLATION OF STATE AND LOCAL LAW AND IS SUBJECT TO FINES AND ADDITIONAL LEGAL ACTION INCLUDING PROPERTY CONDEMNATION AND INDEMNIFICATION.

FIELD VERIFICATION AND ALTERATION NOTES.

1. THE INSTALLER SHALL FIELD VERIFY ALL DIMENSIONS (INCLUDING TOPOGRAHY, INFORMATION OF CURRENT GRADES) OF THIS DESIGN PRIOR TO CONSTRUCTION. AS SITE CONDITIONS MAY CHANGE DURING THE INTERIM BETWEEN THE PERMIT ISSUANCE AND SYSTEM INSTALLATION.
2. THE INSTALLER SHALL STRICTLY ADHERE TO THE DESIGN (BOTH DIMENSIONS AND EQUIPMENT SPECIFICATIONS) AND TO ANY ADDITIONAL REQUIREMENTS OF THE PERMIT TO CONSTRUCT. ANY DISCREPANCIES BETWEEN THE DESIGN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED BY THE INSTALLER TO THE DESIGNER AND/OR THE PERMITTING AUTHORITY PRIOR TO CONSTRUCTION.
3. THE INSTALLER IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE INSTALLER SHALL CONTACT DIG TESTS OR OTHER UTILITY LOCATING ORGANIZATION TO CONFIRM THE LOCATION OF ALL PERMIT UTILITIES WITHIN THE VICINITY OF THIS ON-SITE SERVICE FACILITY. ANY UNDETERMINED UTILITIES DISCOVERED SHALL BE REPORTED TO DELCON ENVIRONMENTAL SYSTEMS, LLC AND/OR THE PERMITTING AUTHORITY. DESIGN APPLICATIONS MAY BE REQUIRED TO ACCOMMODATE DISCOVERED UTILITIES.
4. IF A FIELD DISCREPANCY IS DISCOVERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE ISSUE IS RESOLVED BY DELCON ENVIRONMENTAL SYSTEMS, LLC AND THE PERMITTING AUTHORITY. DESIGN CHANGES REQUESTED DUE TO FIELD LOCATIONS MAY REQUIRE ADDITIONAL DESIGN FEES, ADDITIONAL PERMITTING FEES AND ADDITIONAL TIME. FIELD CHANGES MADE WITHOUT PRIOR APPROVAL AND AUTHORIZATION FROM BOTH DELCON ENVIRONMENTAL SYSTEMS, LLC AND THE PERMITTING AUTHORITY MAY VOID PERMIT AND COULD RESULT IN LEGAL ACTIONS AGAINST THE INSTALLER.

PERMITS NOTES.

1. ALL PERMITS REQUIRED WITH THIS SYSTEM SHALL COMESET OF SCHEDULE 40 PVC UNLESS NOTED OTHERWISE ON SITE PLAN OR SECTION DETAILS. ALL CONNECTIONS SHALL BE PROPERLY ADDED USING APPROPRIATE PROPER WATERSHED AND MAY BE PRESSURE TESTED TO VERIFY INTEGRITY.
2. GRAVITY-FED SEWER AND MANHOLESS LINES SHALL MAINTAIN AT LEAST 4" OF VERTICAL FALL PER LINEAR FOOT OF RUN THROUGHOUT ENTIRE RUN. NO LOCAL LOW SPOTS OR DIPS WITHIN LINES. NO HARD 90 DEGREE ELBOWS OR FITTINGS SHALL BE USED WITH GRAVITY-FED SEWER LINES. A 1/4" OR 1/2" DEGREE SWEETING ELBOWS SHALL BE USED.
3. SEWER LINES SHALL BE EMBEDDED IN CLEAN COMPACTED SAND TO AVOID SPRINKLING, SETTING AND PUNCTURES.
4. A MINIMUM OF 4" OF SOIL COVER SHALL BE PLACED ABOVE ALL PVC PIPES FOR PROTECTION.
5. INSTALLER SHALL VERIFY ON PLAN THE SPECIFIC USE OF PURPLE COLORED PVC PIPE.

TANK NOTES.

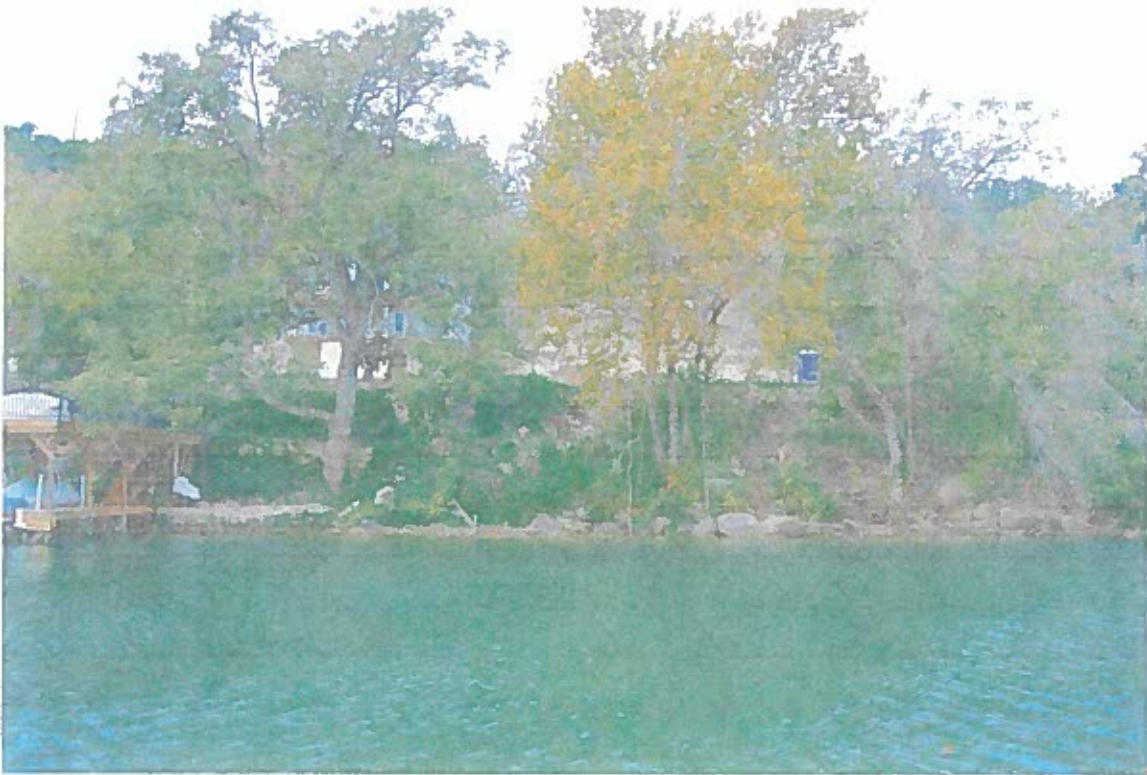
1. CONCRETE TANKS SHALL BE MANUFACTURED IN COMPLIANCE WITH ASTM C 1207, STANDARD SPECIFICATION FOR PRECAST CONCRETE SEPTIC TANKS. ALL TANKS SHALL BE REINFORCED.
2. PLASTIC (POLYETHYLENE) OR FIBERGLASS TANKS SHALL BE RATED FOR USE AS UNDERGROUND SEPTIC EFFLUENT AND/OR PUMP TANKS. SEPTIC INSTRUCTIONS ASSOCIATED WITH INSTALLATION AND BACK-FILLING SHALL BE STRICTLY FOLLOWED.
3. TANKS SHALL BE BUILT ON SLOPED SAND CUSHION AND SET LEVEL TO WITHIN 1/8" OF FINISH GRADE. TANKS SHALL BE PROTECTED FROM DAMAGE BY ANY LEANS OR WEIGHTS SHALL BE PLACED TO HOLD WATER. DRAIN TANKS ARE REQUIRED AND APPROVED BY THE PERMITTING AUTHORITY. THE WATER LEVEL WITHIN THE PUMP TANK (OR PUMP CHAMBER) MUST BE LOWERED TO THE NORMAL OPERATING LEVEL. DO NOT DISCHARGE EXCESS WATER INTO THE DRAINAGE. EXCESS WATER SHALL BE REMOVED FROM TANK WITHOUT DRAINING DRAINAGE.
5. INLET PIPES AND OUTLET PIPES SHALL BE SEALED WITH GROUT, EXPANSIVE FOAM OR SLOUGH TO PREVENT LEAKING. ROOTS AND INSECTICIDE PIPES SHALL BE SEALED WITH GROUT, EXPANSIVE FOAM OR SLOUGH TO PREVENT WATER, SOIL OR INSECT INFILTRATION INTO TANKS.
6. TANK EXCAVATION SHALL BE BACKFILLED WITH CLEAN CLASS # 8 OR CLASS # 56 SOIL FREE OF ROCK. ROCKS, CONSTRUCTION DEBRIS, TRASH, CRUMBS AND CLASS # 56 SOIL ARE UNACCEPTABLE BACKFILL MATERIALS. DEPTH OF SOIL ABOVE TANK LIDS SHALL NOT EXCEED 12 INCHES UNLESS SPECIFICALLY ADDRESSED BY THIS DESIGN AND APPROVED BY THE PERMITTING AUTHORITY.
7. THE MANUFACTURER SHALL BE NOTIFIED BY THE DESIGNER AND APPROVED BY THE PERMITTING AUTHORITY.

PLANTED NOTES.

1. ALL ROADS AND EXISTING VEGETATION (EXCEPT DESIRED TREES) SHALL BE REMOVED FROM PROPOSED PLANTED LOCATION AS PREPARATION FOR SYSTEM INSTALLATION. ANY REMAINING ROCK EXPOSURES SHALL BE COVERED WITH AT LEAST 3" OF LOAM TOPSOIL TO PROMOTE VEGETATIVE GROWTH.
2. INSTALLER SHALL IMMEDIATELY ESTABLISH VEGETATION ON NEWLY CONSTRUCTED DRAINAGE. ACCEPTABLE GRASSES INCLUDE BERMUDA, SAINT AUGUSTINE, RYE, ZOYLA, TIF OR A COMBINATION FOR WARM-SEASON GROWTH. CLAY LOAM BACKED 500 MAY NOT BE USED. HYDROMULCH, RAIN SEED OR SANDY LOAM BACKED 500 ARE ACCEPTABLE METHODS FOR ESTABLISHING VEGETATION.
3. APPLICATION AREA SHALL BE CROWNED SUFFICIENTLY TO SPEED RUNOFF WATER TO SITE PLAN FOR THE USE OF DIVERSION DEVICES OR TOWARDS.



Shoreline of proposed Iles boat dock



Shoreline view of proposed Iles Boat Dock Property ID # 834919.

Westward view of shoreline for proposed Iles Boat Dock, trees within proposed construction are visible and reflected at Site Plan at Pg. 3 of 5. See TCAD map with Property ID #s at Page 56.

2012 constructed dock – 2 lots south of Iles proposed boat dock

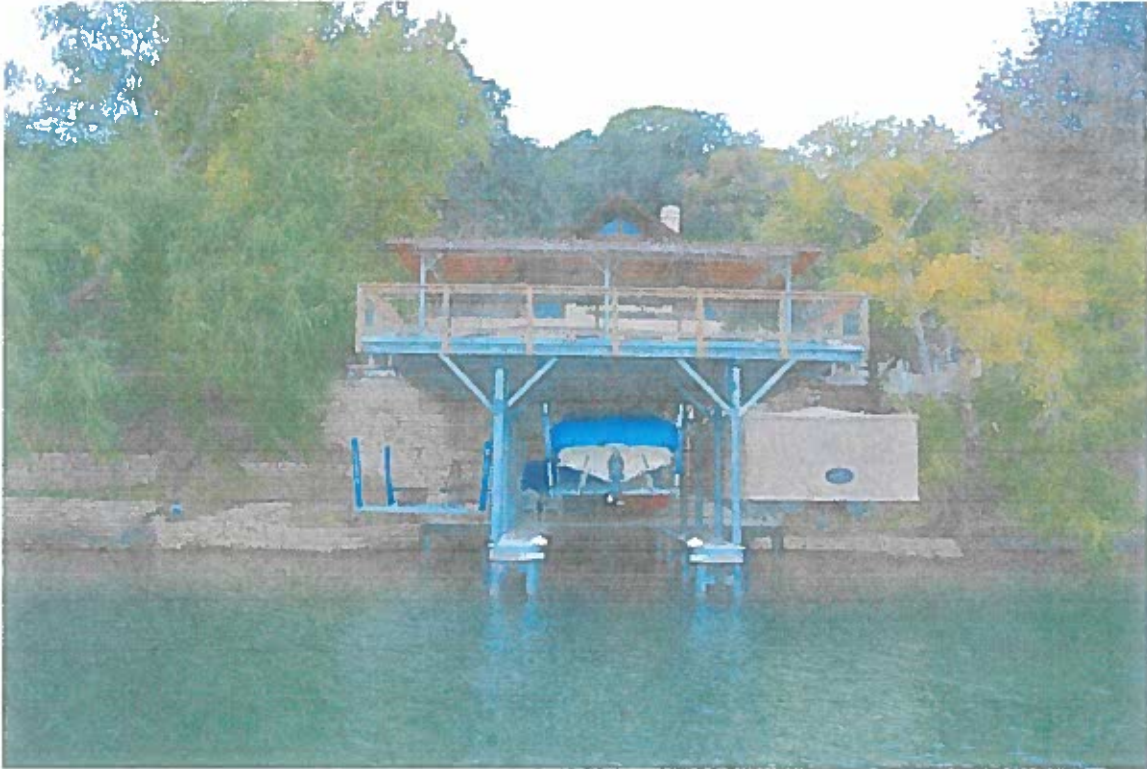


View of existing dock for TCAD Property ID #146477.

As described in the Environmental Board Variance Application, dock is a new dock construction for the dock located two lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

"New" work-type construction of the Andrews' dock at 2405 Big Horn Drive. The Andrews dock was permitted during 2012. Copies of TCAD and COA Permit Case information attached at Pages 45 – 50.

2012 constructed dock – 8 lots south of Iles' proposed boat

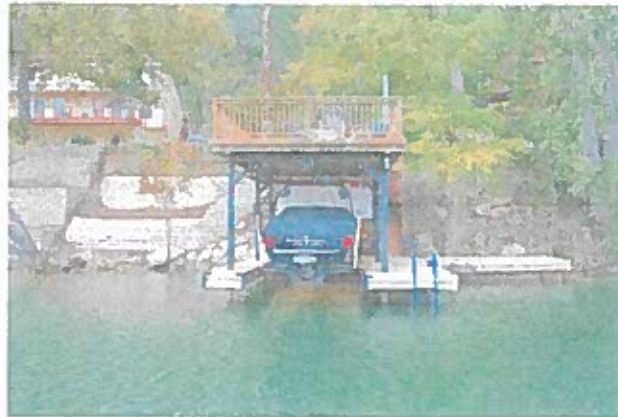


View of existing dock for TCAD Property ID #143195.

As described in the Environmental Board Variance Application, dock is a new construction, steel, superstructure dock located eight lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

"New" work-type construction of the Finch's dock at 2305 Big Horn Drive. The Finch's dock was permitted during 2012. Copies of TCAD and COA Permit Case information attached at Pages 51 – 55.

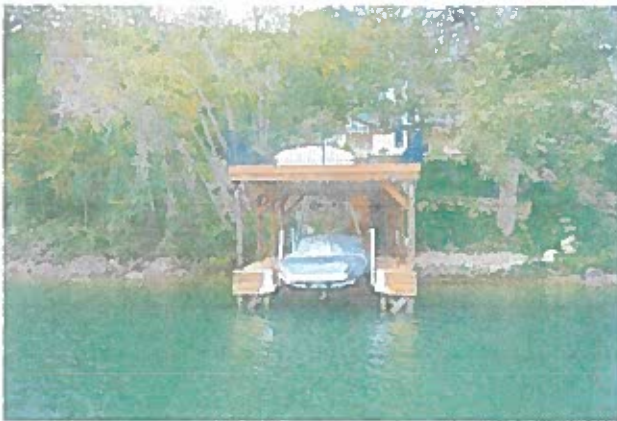
Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #143200.

Steel superstructure dock construction for the Dock located three lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

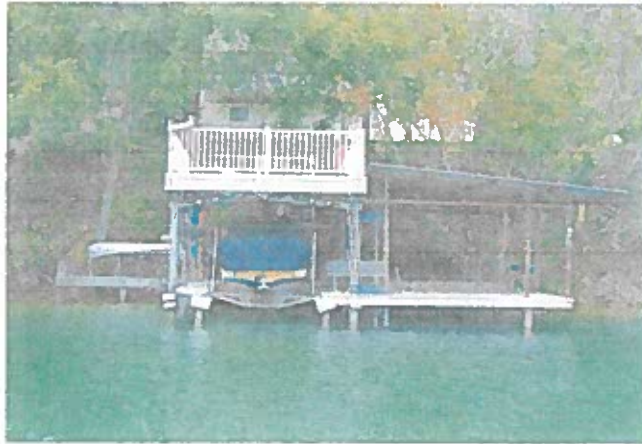
Dock is currently an accessory use to an undeveloped lot.



View of existing dock for TCAD Property ID #834920.

Dock located immediately south (one lot) of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

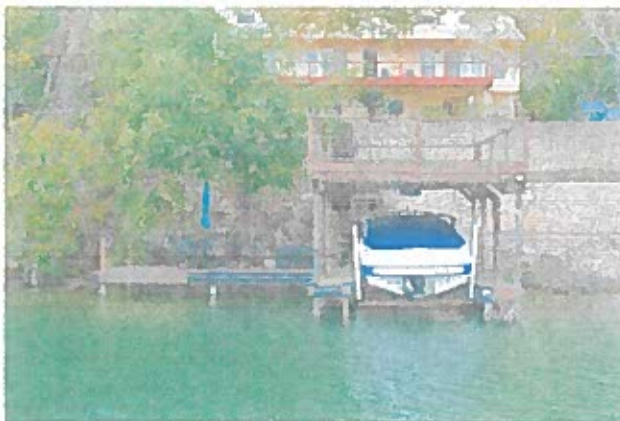
Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #143197.

Existing Dock located five/six lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

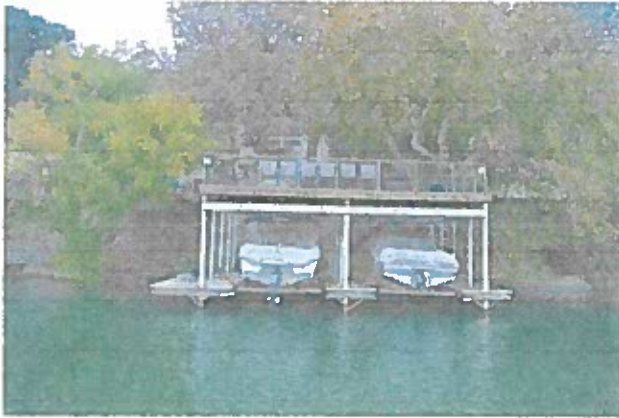
As noted in the Environmental Board Variance Application, Property ID #143197 is a double lot under single ownership.



View of existing dock for TCAD Property ID #143199.

Existing Dock located four lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

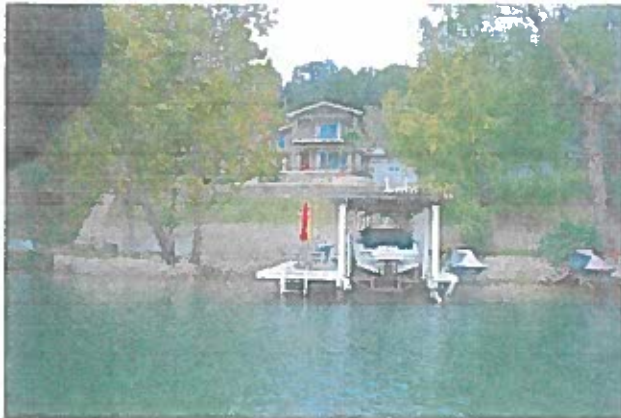
Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #143196.

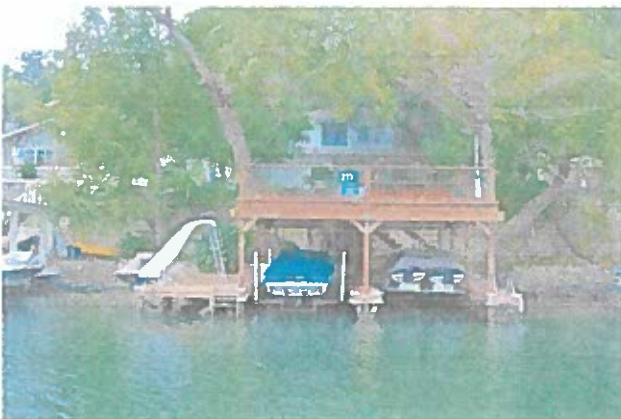
Existing Dock located seven lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #143193.

Existing Dock located ten lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.



View of existing dock for TCAD Property ID #143194.

Existing Dock located nine lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #143191.

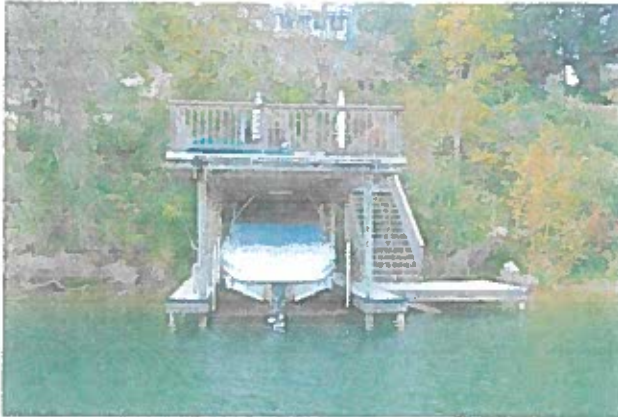
Existing Dock located twelve lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.



View of existing dock for TCAD Property ID #143192.

Existing Dock located eleven lots south of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

Existing docks near Iles' proposed dock



View of existing dock for TCAD Property ID #146479.

Dock located immediately north (one lot) of proposed Iles Boat Dock with similar shoreline frontage (+/-75'). See TCAD map with Property ID #s at Page 56.

ADVANCED CONSULTING ENGINEERS

Civil Engineering Consultants, Planners
ADV Consulting Engineers, Inc. dba
T.B.P.E. Firm No. F-10
5524 Bee Cave Road, Suite 1-4
Austin, Texas 78748



www.acengr.com

Phone: (512) 444-1739
Fax: (512) 732-8333

October 3, 2014

Director
Planning and Development Review Department
City of Austin
P.O. Box 1088
Austin, Texas 78767

Re.: Iles Boat Dock
2415 Big Horn Drive, Austin, Texas.
SP-2014-0212DS
Variance from 'Bluff Critical Environmental Feature', LDC 25-8-281(C).2.B

Dear Sir,

This is a request for a variance from the requirements of LDC 25-8-281(C).2.B for the 'Bluff Critical Environmental Feature' as per the 'Environmental Resource Inventory' (ERI) dated 4/9/14 prepared by Horizontal Environmental for allowance to construct a boat dock.

We hope the variance will be approved in the spirit of the ordinance.

Sincerely,

Ashraf Tariq, P.E.
President

at:la

APPENDIX U FINDINGS OF FACT

Watershed Variances - Findings of Fact

Project: Iles Boat Dock, SP-2014-0212DS

Ordinance Standard: Variance from the requirements of LDC 25-8-281(C).2.B to allow to construct a boat dock in the Critical Environmental Feature Bluff 150' setback.

JUSTIFICATION:

1. Are there special circumstances applicable to the property involved where strict application deprives such property owner of privileges or safety enjoyed by other similarly situated property with similarly timed development? YES/NO

YES

The site will primarily serve as a single slip Boat dock with limits of construction for a small project. Serving the boat dock owner in this area. As the lots are restricted to acreage, maximum availability and usage of available land was of prime importance for the proposed boat dock. There is no deprivation of privileges enjoyed by the property owners due to the boat dock being located in the 150' CEF bluff setback. The dock will be only used as a boat dock only and no other use.

Does the project demonstrate minimum departures from the terms of the ordinance necessary to avoid such deprivation of privileges enjoyed by such other property and to facilitate a reasonable use, and which will not create significant probabilities of harmful environment consequences?

YES/NO

YES

The project demonstrates minimum departure from the terms of the ordinance, as it is only in a small area of the boat dock where the CEF bluff 150' setback encroaches into the dock. Whereby facilitating reasonable use of the proposed site. No major effect anticipated on the environment and on the existing and future drainage system in the area and on the natural and traditional characteristics of the land.

2. The proposal does not provide special privileges not enjoyed by other similarly situated properties with similarly timed development, and is not based on a special or unique condition which was created as a result of the method by which a person voluntarily subdivided land. YES/NO

YES

No special privileges enjoyed by the occupants of this facility in comparison to other similarly situated properties with similarly timed development. No special or unique conditions created by the boat dock.

3. For a variance from the requirements for development within the Critical Water Quality Zone and/or Water Quality Transition Zone: Does the application of restriction leave the property owner without any reasonable, economic use of the entire property? YES/NO

YES

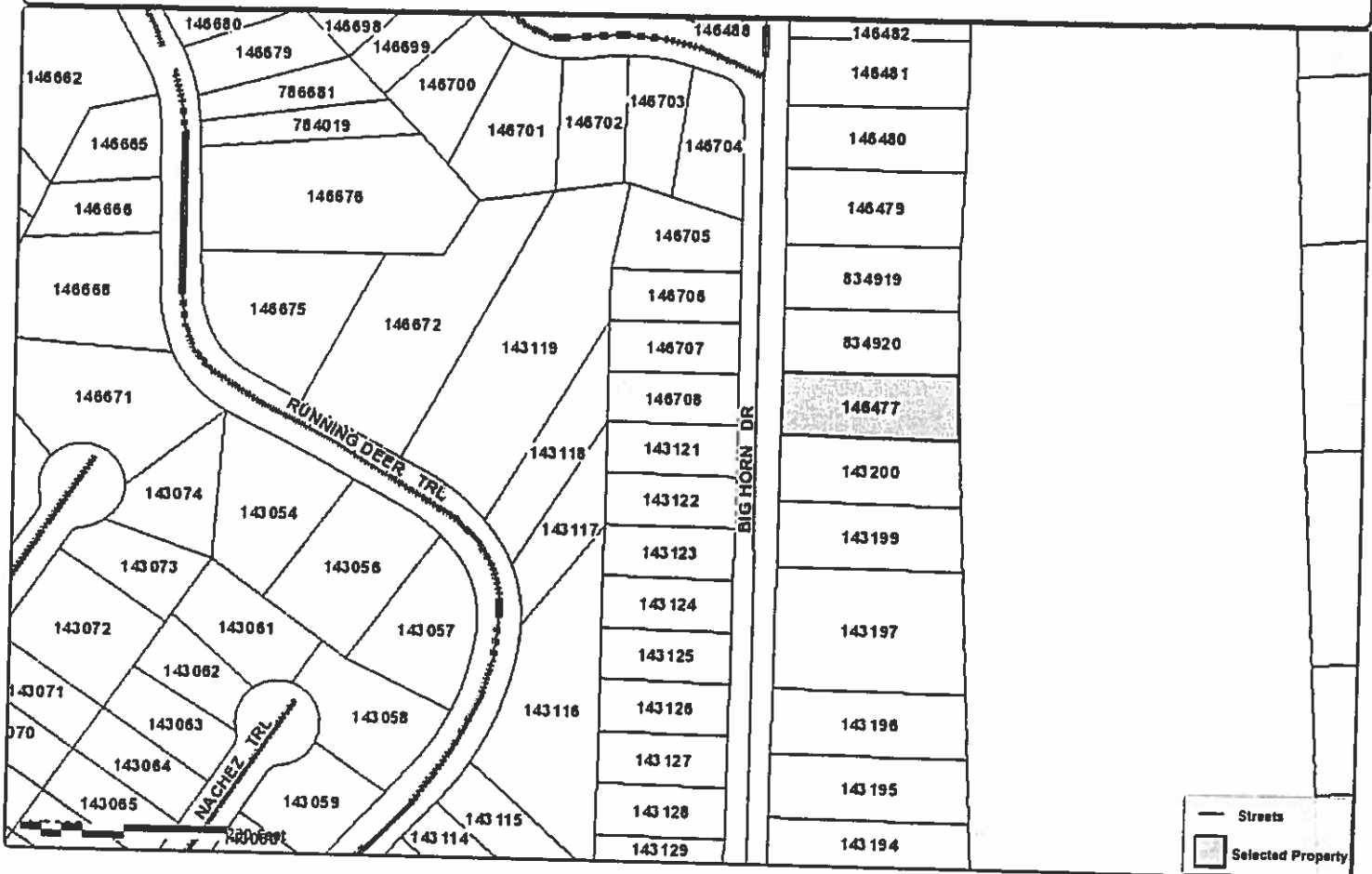
The CWQZ variance is not required for a small project like this boat dock.

4. For variance in the Barton Springs Zone, in addition to the above findings, the following additional findings must be included: Does the proposal demonstrate water quality equal to or better than would have resulted had development proceeded without the variance? YES/NO

NOT APPLICABLE

The site is not situated in the Barton Springs Zone.

Travis CAD - Map of Property ID 146477 for Year 2014



Property Details

Account

Property ID: 146477

Geo ID: 0145550101

Type: Real

Legal Description: LOT 661-A BLK A APACHE SHORES SEC 4

Location

Situs Address: 2405 BIG HORN DR TX 78734

Neighborhood: APACHE SHORES WATERFRONT

Mapsc: 491S

Jurisdictions: 52, 0A, 2J, 03, 07

Owner

Owner Name: ANDREWS JAMES B II & VILMA
Mailing Address: , 4409 ACACIA ST, BELLAIRE, TX 77401

Property

Appraised Value: \$736,684.00

<http://propaccess.traviscad.org/Map/View/Map/1/146477/2014>

Map Disclaimer: This tax map was compiled solely for the use of TCAD. Areas depicted by these digital products are approximate, and are not necessarily accurate to mapping, surveying or engineering standards. Conclusions drawn from this information are the responsibility of the user. The TCAD makes no claims, promises or guarantees about the accuracy, completeness or adequacy of this information and expressly disclaims liability for any errors and omissions. The mapped data does not constitute a legal document.

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PERMITS/CASES

PUBLIC INFORMATION

Public Search

Issued Construction Permits

REGISTERED USERS

New Registration

Update Registration

Permit Assign and Pay

My Permits/Cases

My Licenses

Request / Cancel / View Inspections

My Escrow Accounts

Reports

Login

HELP

Web Help

FEEDBACK

Contact PDR

#.	Permit/Complaint	Case Number	Description	Sub Type	Work Type	Project Name	Status	Related Folders
1	2013-030811 SC	SP-2012-0033DS	Approved Correction 1C			2405 Big Horn Boat Dock	Approved	Yes
2	2013-025625 SC	SP-2012-0033DS	Denid Correctin 1C (2nd Submtl)			2405 Big Horn Boat Dock	Review Completed	Yes
3	2013-013252 SC	SP-2012-0033DS	Denied Correction 1C			2405 Big Horn Boat Dock	Review Completed	Yes
4	2012-092743 EP	2012-092743 EP	Single Boat Dock (30'x14')with other associated improvments as per the approved plans	Residential	New	2405 BIG HORN DR	Final	Yes
5	2012-068772 BP	2012-068772 BP	Single Boat Dock (30'x14')with other associated improvments as per the approved plans	R- 437 Residential Boat Dock	New	2405 BIG HORN DR	Final	Yes
6	2012-068258 EV	SP-2012-0033DS		Site Plan		2405 Big Horn Boat Dock	Closed	Yes

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2012-068772

Highland Lakes Engineering
Box 1164
Kingsland, Texas 78369
830-637-9584
TX.REG. F-1909

DATE: 10-17-2012

RE: Project Name: Boat Dock
Address: 2405 Big Horn
Permit/SP Number: 2012-0033DS 2012-068772RP

Prior to preparation of this letter, I, the undersigned professional, made the final visual inspection after construction and reviewed the available record information of the above-referenced project. As of this date, I determined that the project was constructed in accordance with applicable building codes and is structurally acceptable for the intended purpose. Improvements were constructed in general conformance with the approved City of Austin Site Plan and City of Austin Construction standards, including compliance set forth in the Land Development Code 25-12-3 1612.4 and ASCE 24 and therefore verify the boat dock is constructed to defined specification and acceptance of this project to date. I, therefore, recommend acceptance of the referenced project.

BC Shaw
Bradley W. Shaw, PE

10/12/2012



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PUBLIC INFORMATION

FOLDER DETAILS

Public Search	Permit/Complaint	Case Number	Description	Sub Type	Work Type	Project Name	Status	Application Date	Issue Date	Expir Date
Issued Construction Permits	2012-009451 SP	SP-2012-0033DS	The applicant is proposing to construct a boat dock with associated improvements.	Site Plan Administrative Small Project	Boat Docks/Shoreline Modification	2405 Big Horn Boat Dock	Approved and Released	Jan 31, 2012	Jul 9, 2012	Jan 31, 2015

REGISTERED USERS

New Registration

Related Folder

Update Registration

FOLDER INFO

Permit Assign and Pay	Information Description	Value
My Permits/Cases	Case Manager	Michelle Casillas
	Application Date	Jan 31, 2012
	Application Expiration Date	Aug 01, 2012
My Licenses	Smart Growth Zone	DWPZ
	1704 Flag?	No
Request / Cancel / View Inspections	Description of Proposed Development	Boat dock
	Watershed I	Lake Austin
My Escrow Accounts	Watershed Classification I	Watersupply Rural
	Aquifer Recharge Zone	Yes
Reports	Land Development Jurisdiction	Full-Purpose
	Existing Zoning	LA - LAKE AUSTIN
Login	Existing Land Use	boat dock
	Proposed Land Use	boat dock
HELP	Neighborhood Plan Area ?	No
	Flood Plain	Yes
Web Help	Master Report Due Date	Jul 23, 2012
	Master Report Created Date	Jun 22, 2012
FEEDBACK	Review Completed Date	Jul 09, 2012
Contact PDR	Electric Utility Provider	COA
	Water Utility Provider	COA
	Wastewater Utility Provider	COA
	Fiscal Surety - Erosion	0
	Fiscal Surety Total Amount	0
	Limits of Construction [LOC] (Acres)	.01
	Limits of Construction [LOC] (Square Feet)	435.6
	Gross Site Area (Acres)	.01
	Gross Site Area (Square Footage)	435.6
	Addressing Reviewer	Kelly Delisio
	Environmental Reviewer	Jeb Brown
	Flood Plain Reviewer	Kevin Shunk
	Mapping Reviewer	Mapping Review
	Parks Reviewer	Chris Yanez
	Planner 1 Reviewer	Elsa Garza
	Site Plan Reviewer	Michelle Casillas
	Wetlands Biologist Reviewer	Andrew Clamann

PROPERTY DETAILS

Number	Pre. Street	Street Type	Dir	Suite Type	Suite Number	City	State	Zip	Legal Desc
2405	BIG HORN	DRIVE				AUSTIN	TX	78734	

PEOPLE DETAILS

Desc.	Organization Name	Address	City	State	Postal	Phone1
Applicant	What's Up...Dock (Dawn Cunningham)	PO BOX 1430	DRIPPING SPRINGS	TX	78620	(512)844-2434
Billed To	DBA MESQUITE BANDIT (Dawn Cunningham)	P.O. BOX 1430	Dripping Springs	TX	78620	(512)844-2434

FOLDER FEE

Fee Description	Fee Amount	Balance
Fair Notice Fee	\$200.00	\$0.00
Sm Proj-Consolidated Env Insp	\$85.00	\$0.00

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Sm Proj-Const Only Dev Review Boat Dock	\$110.00	\$0.00
Sm Proj-Const Only Env Review Boat Dock	\$55.00	\$0.00
Sm Proj-Const Only Env Review Boat Dk-Pk	\$75.00	\$0.00
Fair Notice Credit	-\$200.00	\$0.00

PROCESSES AND NOTES

Process Description	Status	TOD	Schedule Date	Start Date	End Date	Assigned Staff	# of Atte
Initial Intake	Closed		Jan 31, 2012	Jan 31, 2012	Jan 31, 2012	Intake Group	
Completeness Check Letter	Closed		Feb 1, 2012	Feb 6, 2012	Feb 6, 2012	Planner 1 Review	
Completeness Check	Closed		Feb 6, 2012	Feb 6, 2012	Feb 6, 2012	Intake Group	
Completeness Check	Closed		Feb 29, 2012	Feb 28, 2012	Feb 28, 2012	Intake Group	
Submittal Intake	Closed		Feb 28, 2012	Mar 5, 2012	Mar 5, 2012	Intake Group	
Initial Distribution	Closed		Mar 5, 2012	Mar 5, 2012	Mar 5, 2012	Intake Group	
Case Manager Review	Rejected		Mar 5, 2012	Mar 16, 2012	Mar 16, 2012	Cindy Casillas (512-974-3437)	
Environmental Review	Rejected		Mar 5, 2012	Mar 12, 2012	Mar 12, 2012	Jeb Brown (512-974-2709)	
Parks Review	Rejected		Mar 5, 2012	Mar 9, 2012	Mar 9, 2012	Chris Yanez (512-974-9455)	
Site Plan Review	Rejected		Mar 5, 2012	Mar 12, 2012	Mar 12, 2012	Michelle Casillas (512-974-2024)	
Mapping Review	Approved		Mar 5, 2012	Mar 6, 2012	Mar 6, 2012	Richard Sigmon (512-974-2288)	
Planner 1 Review	Rejected		Mar 5, 2012	Mar 16, 2012	Mar 16, 2012	Cindy Casillas (512-974-3437)	
Case Manager Review	Rejected		Apr 9, 2012	Apr 24, 2012	Apr 24, 2012	Elsa Garza (512-974-2308)	
Environmental Review	Rejected		Apr 9, 2012	Apr 18, 2012	Apr 18, 2012	Jeb Brown (512-974-2709)	
Parks Review	Informal Update Req'd		Apr 9, 2012	Apr 24, 2012	Apr 24, 2012	Chris Yanez (512-974-9455)	
Planner 1 Review	Rejected		Apr 9, 2012	Apr 24, 2012	Apr 24, 2012	Elsa Garza (512-974-2308)	
Site Plan Review	Informal Update Req'd		Apr 9, 2012	Apr 19, 2012	Apr 19, 2012	Michelle Casillas (512-974-2024)	
Wetlands Biologist Review	Approved		Apr 9, 2012	Apr 18, 2012	Apr 18, 2012	Andrew Clamann (512-974-2694)	
Case Manager Review	Informal Update Req'd		Jun 11, 2012	Jun 22, 2012	Jun 22, 2012	Michelle Casillas (512-974-2024)	
Environmental Review	Approved		Jun 11, 2012	Jun 22, 2012	Jun 22, 2012	Brad Jackson (512-974-3410)	
Parks Review	Approved		Jun 11, 2012	Jun 22, 2012	Jun 22, 2012	Michelle Casillas (512-974-2024)	
Planner 1 Review	Informal Update Req'd		Jun 11, 2012	Jun 22, 2012	Jun 22, 2012	Michelle Casillas (512-974-2024)	
Site Plan Review	Informal Update Req'd		Jun 11, 2012	Jun 22, 2012	Jun 22, 2012	Michelle Casillas (512-974-2024)	
Case Manager Review	Approved		Jul 9, 2012	Jul 9, 2012	Jul 9, 2012	Michelle Casillas (512-974-2024)	
Planner 1 Review	Closed		Jul 9, 2012		Jul 9, 2012	Elsa Garza (512-974-2308)	
Site Plan Review	Closed		Jul 9, 2012		Jul 9, 2012	Michelle Casillas (512-974-2024)	
Adjust Review Due Dates	Open		Mar 5, 2012			Intake Group	
Completeness Check Update	Closed		Feb 6, 2012	Feb 24, 2012	Feb 24, 2012	Intake Group	
Completeness Check Letter	Closed		Feb 25, 2012	Feb 28, 2012	Feb 28, 2012	Planner 1 Review	
Flood Plain Review	Approved		Mar 5, 2012	Mar 9, 2012	Mar 9, 2012	David Marquez (512-974-3389)	
Wetlands Biologist Review	Rejected		Mar 5, 2012	Mar 15, 2012	Mar 15, 2012	Andrew Clamann (512-974-2694)	
Awaiting Update	Closed		Jun 22, 2012	Jul 9, 2012	Jul 9, 2012	Michelle Casillas (512-974-2024)	
Awaiting Update	Closed		Mar 16, 2012	Apr 9, 2012	Apr 9, 2012	Intake Group	
Update Distribution	Closed		Apr 9, 2012	Apr 9, 2012	Apr 9, 2012	Rosemary Avila (512-974-2784)	
Awaiting Update	Closed		Apr 24, 2012	Jun 11, 2012	Jun 11, 2012	Intake Group	
Update Distribution	Closed		Jun 11, 2012	Jun 11, 2012	Jun 11, 2012	Carmen Amaro (512-974-2350)	
Update Distribution	Closed		Jul 9, 2012	Jul 9, 2012	Jul 9, 2012		

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Michelle Casillas
(512-974-2024)

FOLDER ATTACHMENT

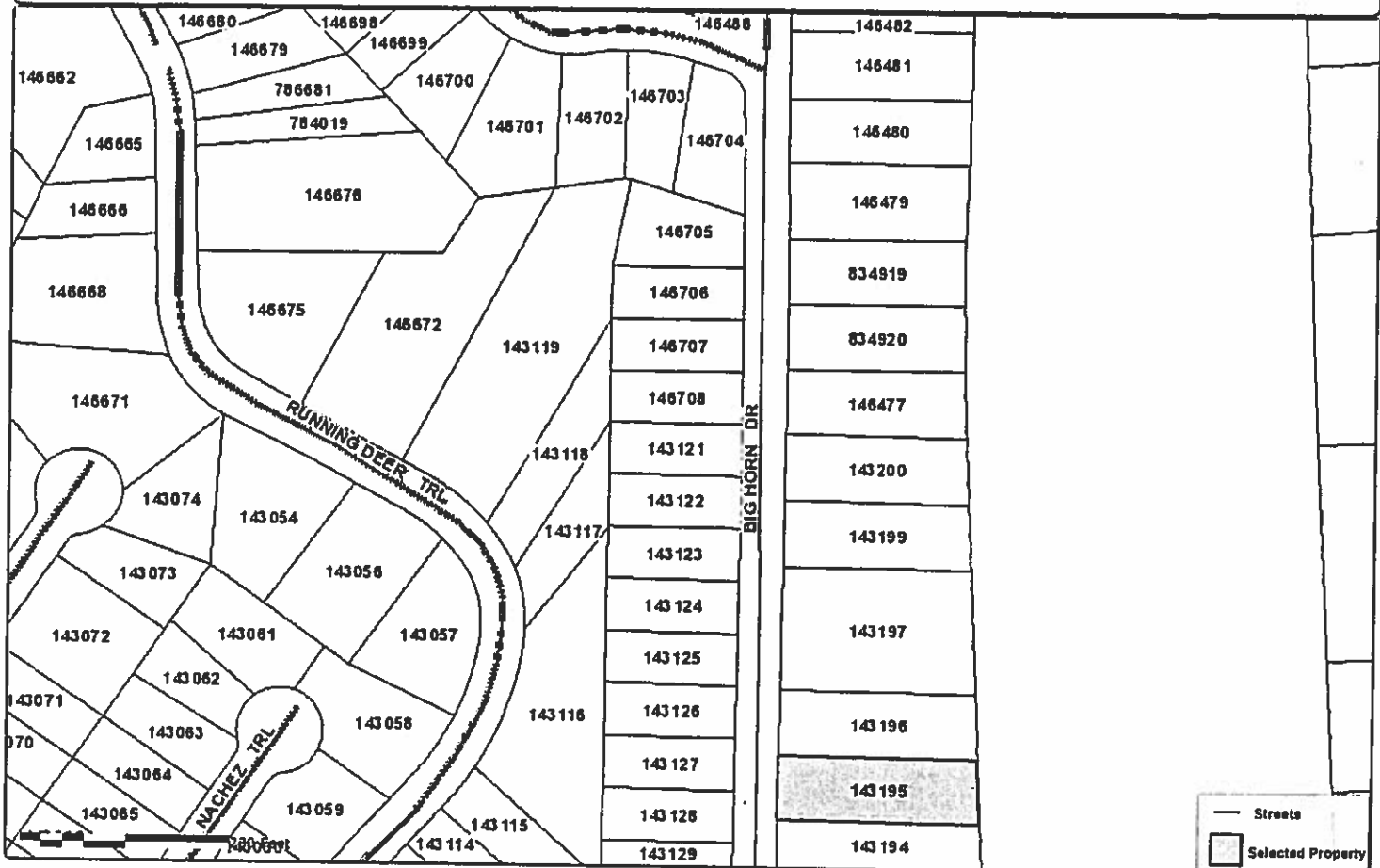
Description	Detail	
SP-2012-0033DS-Case Info	Case filed 01/31/2012/Formal Submittal filed 03/05/2012	View Attachment
SP-2012-0033DS-Update #1	filed 04/09/2012	View Attachment
SP-2012-0033DS-Update #2	filed 05/11/2012	View Attachment
SPL-SP-2012-0033DS_0-001		View Attachment
SPL-SP-2012-0033DS_0-002		View Attachment
SPL-SP-2012-0033DS_0-002(1)		View Attachment
SPL-SP-2012-0033DS_0-003		View Attachment
SPL-SP-2012-0033DS_0-003(1)		View Attachment
SPL-SP-2012-0033DS_0-004		View Attachment
Site Development Permit		View Attachment
U2 - Master Comment Report		View Attachment
Update 1 Master Report		View Attachment
update 0 master comment report		View Attachment

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Travis CAD - Map of Property ID 143195 for Year 2014



Property Details

Account

Property ID: 143195
Geo ID: 0143550521
Type: Real

Legal Description: LOT 667-A BLK A APACHE SHORES SEC 4

Location

Situs Address: 2305 BIG HORN DR TX 78734
Neighborhood: APACHE SHORES WATERFRONT
Mapsc0: 4915
Jurisdictions: 07, 03, 0A, 2J, 52

Owner

Owner Name: FINCH GARY E & PATTI G
Mailing Address: , 2202 QUARTERPATH DR, , RICHMOND, TX 77406-6630

Property

Appraised Value: \$865,025.00

<http://propaccess.traviscad.org/Map/View/Map/1/143195/2014>

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PUBLIC INFORMATION

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Public Search

PERMITS/CASES

	#.	Permit/Complaint	Case Number	Description	Sub Type	Work Type	Project Name	Status	Related Folders
Issued Construction Permits				Add new awning cover structure with 4 posts for boat located on lot.	R- 330 Accessory Use to Primary	New	2305 BIG HORN DR	Expired	Yes
REGISTERED USERS	1	2012-098450 BP							
New Registration				add new electric GFI outlets on boat dock	Residential	Remodel	2305 BIG HORN DR	Final	Yes
Update Registration	2	2012-085511 EP	2012-085511 EP						
Permit Assign and Pay				Add new awning cover structure with 4 posts for boat located on lot.	R- 330 Accessory Use to Primary	New	2305 BIG HORN DR	New Application Required	Yes
My Permits/Cases	3	2012-075464 PR	2012-075464 PR						
My Licenses				New Single Slip Boat Dock With Deck Over	R- 437 Residential Boat Dock	New	2305 BIG HORN DR	Final	Yes
Request / Cancel / View Inspections	4	2012-011598 EP	2012-011598 EP						
My Escrow Accounts	5	2012-011611 EP	2012-011611 EP	Rebuild upper deck and add partial roof cover	R- 435 Renovations/Remodel	Remodel	2305 BIG HORN DR	Final	Yes
Reports				Rebuild upper deck and add partial roof cover	R- 435 Renovations/Remodel	Remodel	2305 BIG HORN DR	Final	Yes
Login	6	2012-011609 BP	2012-011609 BP						
HELP				Demolition to include only upper deck	R- 849 Demolition All Other Bldgs Res	Demolition	2305 BIG HORN DR	Final	No
Web Help	7	2012-011604 BP	2012-011604 BP						
FEEDBACK	8	2012-011598 BP	2012-011598 BP	New Single Slip Boat Dock With Deck Over	R- 437 Residential Boat Dock	New	2305 BIG HORN DR	Final	Yes
Contact PDR				approved correction			MARIO ACOSTA BOAT DOCK & DECK	Approved	Yes
	9	2012-003459 SC	SP-88-0019D				MARIO ACOSTA BOAT DOCK & DECK	Review Completed	Yes
	10	2011-109566 SC	SP-88-0019D	Deneid Correction					

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12-011609



Kastel Consulting, Inc.

Kastel Consulting Inc
Engineering Consultants
5114 Balcones Woods Drive, Suite 307
Austin, TX 78759
(512) 917-2272 fax (512) 338-4308

ENGINEERING REPORT

DATE: June 1, 2012

City of Austin
Permits/Development

Re: Demo Permit 2012-011604-BP
Remodel Permit 2012-011609-BP
Building Permit 2012-011598-BP

RE: Engineering Inspection – 2305 Blg Horn Drive, Austin, TX 78734

On this date Kastel Consulting Inc., performed an on-site visual inspection of a steel framed structure at the subject property.

Kastel Consulting Inc., prepared the structural framing plans, attached, for the structure that sits directly in the water. Plans and specifications, attached, were prepared in accordance with ASCE 24 and IBC 1612.4 guidelines for structures located in a flood zone.

The purpose of this inspection was to determine that the structure was built to the plans and specifications as prepared by Kastel Consulting, Inc.

In addition to the inspection of the structure as designed by Kastel Consulting Inc., an inspection was performed on an additional structure linking the dock to the land.

CONCLUSIONS:

Kastel Consulting Inc., prepared structural plans for the subject property and has verified all work performed in the field conforms to plans and specifications as indicated above.. All connectors, bracing and steel supports as specified have been installed in accordance with plans and specifications.

All work observed at the subject property appears to have been constructed using good workmanship practices, complies with or exceeds the 2006 International Building Code, is built in accordance with normally accepted design and construction methods and is adequate for support of this structure.

Engineering Inspection, June 1, 2012
2305 Big Horn Dr, Austin, TX.

As a licensed Engineer in the State of Texas, I certify by on-site visual inspection, that the work performed appears to have been completed to meet general engineering criteria.

RECOMMENDATIONS:

Additional modifications are not necessary at this time.

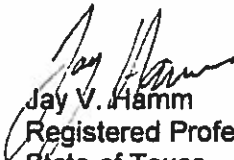
AGREEMENTS:

Opinions expressed in this report are based on sound engineering judgment and evaluation regarding past performance of the property inspected on the day of this inspection.

This report also gives engineering advice with regard to the best and most economical method to stabilize and maintain the property if necessary. This advice assumes normally expected subsurface conditions and conventional construction methods. This report or engineer does not warrant or predict the future performance of the structure. The information provided in this report is intended for the private use of our client. If you have any questions or comments regarding this report or if we can be of further assistance, please call.



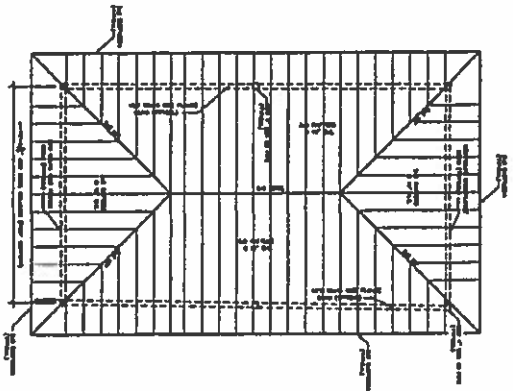
Steve Oliver
Managing Partner
512-917-2272



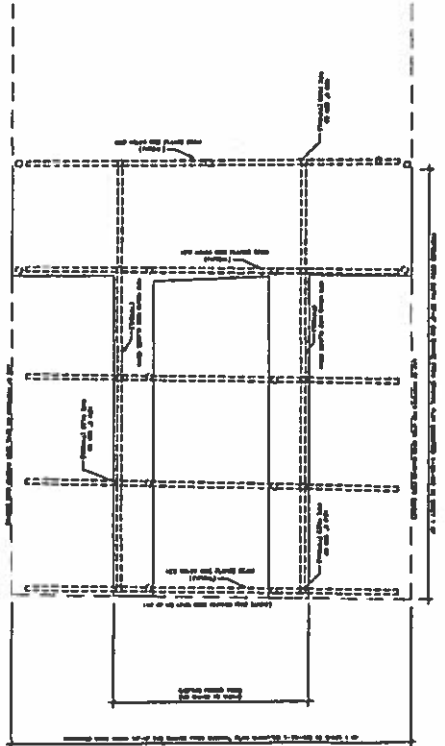
Jay V. Hamm
Registered Professional Engineer
State of Texas
No. 46400



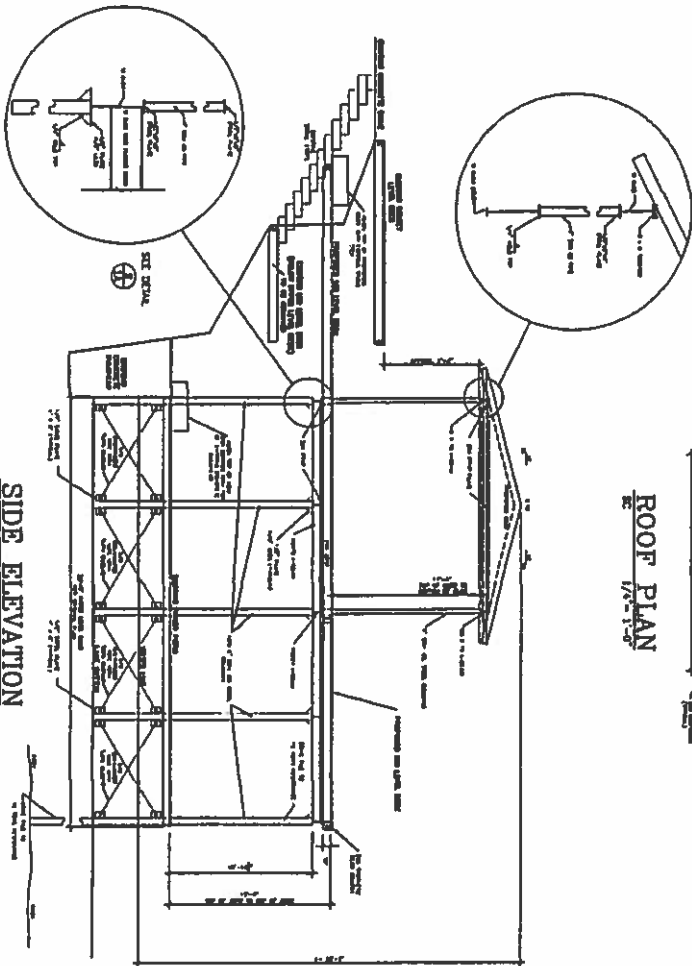
060112_2305 Big Horn



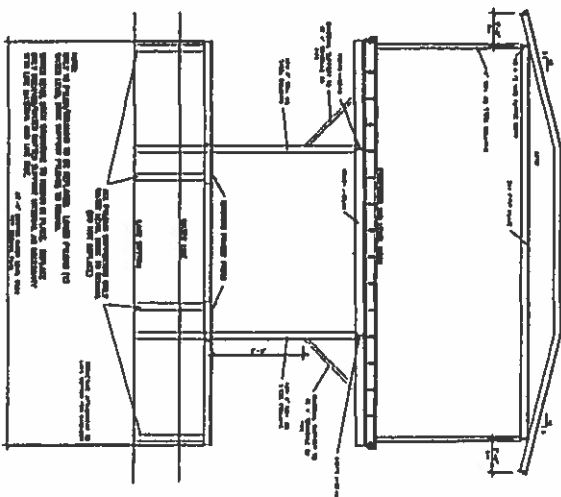
ROOF PLAN
1/8" = 1'-0"



LOWER FRAMING PLAN
1/8" = 1'-0"

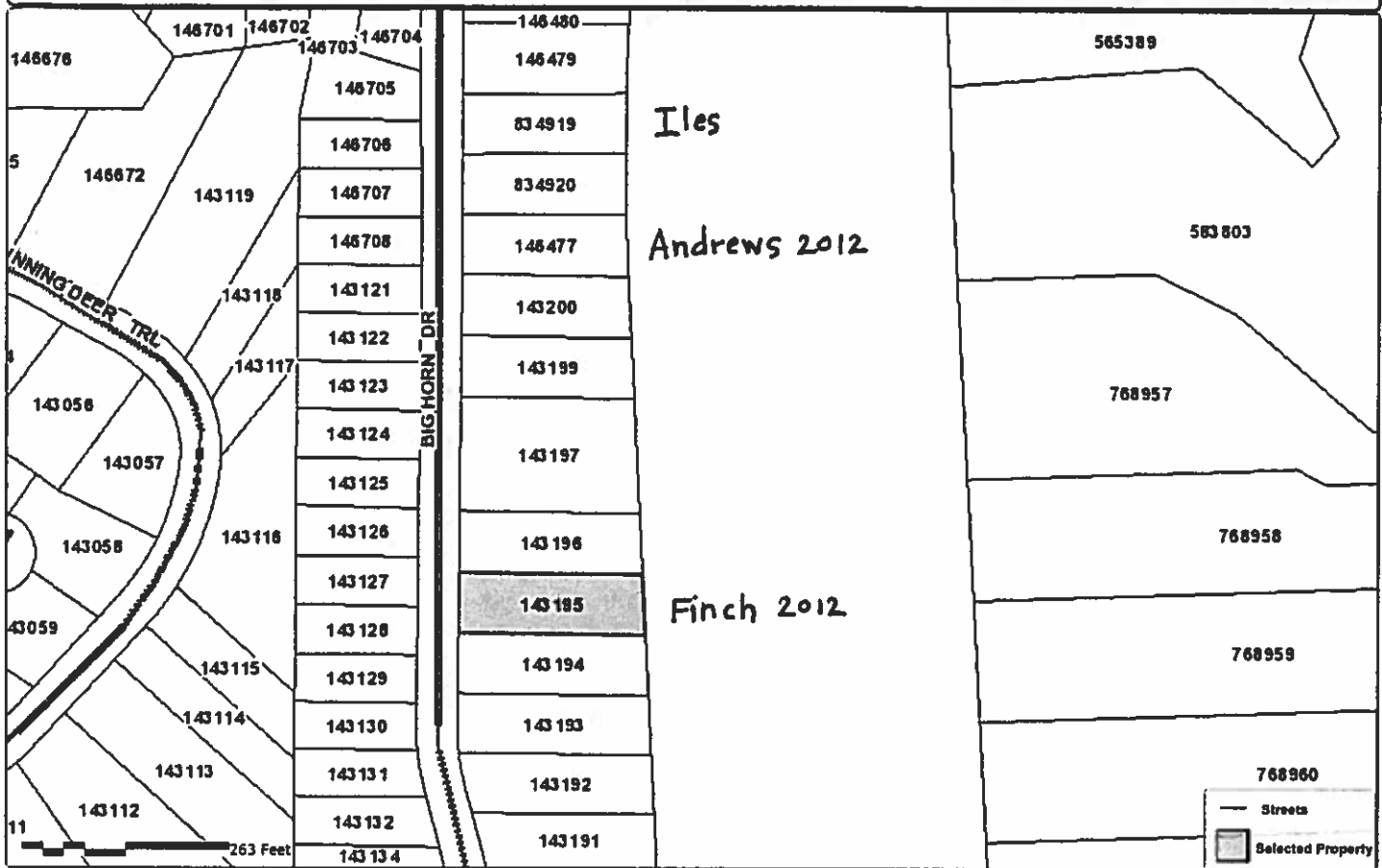


SIDE ELEVATION
1/8" = 1'-0"



SIDE ELEVATION
1/8" = 1'-0"

Travis CAD - Map of Property ID 143195 for Year 2014



Property Details

Account

Property ID: 143195

Geo ID: 0143550521

Type: Real

Legal Description: LOT 667-A BLK A APACHE SHORES SEC 4

Location

Situs Address: 2305 BIG HORN DR TX 78734

Neighborhood: APACHE SHORES WATERFRONT

Mapsc0: 491S

Jurisdictions: 52, 03, 0A, 2J, 07

Owner

Owner Name: FINCH GARY E & PATTI G

Mailing Address: , 2202 QUARTERPATH DR, , RICHMOND, TX 77406-6630

Property

Appraised Value: \$865,025.00

<http://propaccess.traviscad.org/Map/View/Map/1/143195/2014>

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