



December 23, 2021

Srini Sirigiri

**RE: Site Investigation Report
Whitewater Springs, Section Five Subdivision
1 Tanager Bend, Bertram, Texas, in Burnet County, Texas**

Dear Mr. Sirigiri:

We have completed our site investigation of the referenced property and offer the following information.

PROPERTY DESCRIPTION

According to the Purchase Contract and exhibit provided by the Client, the subject property consists of 31 legally platted lots out of the Whitewater Springs, Section Five subdivision. Lot sizes vary from 3.78 acres to 19.62 acres. Two of these lots are identified as Designated Well Lots. The original subdivision plat contained areas identified as Common Reserve and Private Streets that are not part of any of the 31 lots but are for the use and benefit of the entire Whitewater Springs subdivision. These parcels are owned by the Whitewater Springs Property Owners Association (POA) and for the benefit of the entire Whitewater Springs development. **See attached Lot exhibit.**

The subject property is located within Burnet County and is not within any municipalities extra-territorial jurisdiction (ETJ). There are no physical site improvements on the subject property, including streets, drainage, electric, or utilities, with the exception of a large 10+ acre pond located on one of the common reserve lots fronting Tanager Bend.

The subject property has approximately 12,500 linear feet of frontage on platted private streets. These private streets have a right-of-way width of 60 feet and are unpaved.

PHYSICAL SITE CHARACTERISTICS

The subject property is an undeveloped property consisting of 31 building lots and several large common reserve areas including dedicated right-of-way for private streets and a large pond located in the center of this section of the subdivision. All of the streets are unpaved but are vehicle accessible as dirt or gravel roads.

The large pond located on the property has been developed as recreational feature surrounded by partially wooded grassland with a developed shore, picnic area, and dock. There are 2 smaller ponds located within the natural drainage feature running between the proposed Crestway Drive and Blue Jay Bend. The subject tract is heavily treed with native hardwood and Juniper Ash trees.

The topography of the site consists of a number of plateaus and natural drainageways that traverse the site. These drainageways are tributaries flowing into Cow Creek located east of the subject property. The high

points of the property range from 1380 feet mean seal level (msl) along the south side, 1340 msl in the center of the property, and 1360 msl along the north end of the subject property. The lower elevations along the 2 drainage features measure approximately 1220 msl. The majority of the lots have slopes that measure between 5% and 15% grade, while only a few of the lots along the south end of the subdivision have slopes that measure 20% grade or more. Generally speaking, grades between 0-15% are considered buildable homesites. We should note that these slope measurements are based on USGS contour mapping at 20 feet intervals. These slopes may be greater when measured at the recommended 1-2 foot intervals. **See attached Topography map.**

FLOODPLAIN

According the most recent FEMA maps, no portion of the subject property is within any defined floodplain. This is not to say that there is not some flooding associated with the Cow Creek tributaries that traverse the subject property, but it is likely not significant and should not affect development of the lots.

HISTORICAL PERMITS

The subject property was legally subdivided as 22 single family lots and recorded on 12/21/1999. In 2000, several of the original lots were replatted into smaller lots, bringing the total number of lots in the subdivision to 31, not including “common reserve” areas that were dedicated to the Whitewater Springs POA.

EASEMENTS AND ENCUMBRANCES

Based on the previously approved subdivision plats, there are several easements and building setbacks associated with each lot in the subdivision. Most of the easements consist of a 12.5’ drainage and utility easement along the side lot lines and a 25’ drainage and utility easement along the front of each lot. Building setbacks range from 15’ along the majority of the side lot lines and 100’ along the front of each lot. Sideyard street setbacks measure 50 feet. There are a few lots in the subdivision (Lots 519B, 520, and 521) that have a 200’ building setback along the rear. Lots 502A, 502B, 503A, and 503B each have a 250’ rear building setback, while Lots 505 and 506A each have a 300’ rear building setback line.

COVENANTS, CONDITIONS AND RESTRICTIONS (CCR’S)

There have been multiple amendments to the original CCR’s affecting Section Five. With the exception of limiting lots sizes to no less than 1 acre in size, these Covenants contain standard language and do not impose any undue restrictions for development of the subject property.

ENDANGERED SPECIES PERMIT/RESTRICTIONS

The subject property is located within a known endangered species habitat area. The Balcones Canyonlands National Wildlife Refuge is located east of the subject property. An Endangered Species Survey was required and performed on the subject property when it was subdivided. This study indicated the property contained and was suitable habitat for the endangered Golden-Cheeked Warbler songbird. As a result, the U.S. Fish and Wildlife Service (FWS) required a mitigation plan to protect this endangered species as a condition of subdivision plat approval.

There were several areas of the subject property, containing a total of 138.5 acres of land area, that were identified and reserved for the native songbird. These areas contain both mitigation land that cannot be

disturbed, and adjoining areas of land that are heavily restricted to clearing and construction activity. These areas affect lots 501A through 506B as shown on the attached Mitigation Plan exhibit. **See attached Mitigation Plan map.**

ZONING

The subject property is located in the county and therefore not subject to any municipal zoning regulations or building permits.

SUBDIVISION

Any resubdivision of the 31 lots into smaller lots will require a resubdivision plat filed with Burnet County for review and approval. Minimum lot frontage is 50 feet and the minimum lot size is ½ acre with a public water supply system and onsite septic, or 1 acre with a septic system and private water well. The subdivision plat process will take 3-6 months to complete.

BOUNDARY STREETS AND ACCESS

As stated previously, the subject property has approximately 12,500 linear feet of frontage on platted private streets. These private streets have a right-of-way width of 60 feet and are unpaved. Development of the subdivision will require the construction of a 22-foot paved section with no curb and gutter. The estimated cost to construct the paved streets is \$1,500,000, \$110 per linear foot.

GRADING AND DRAINAGE

All streets and drainage improvements within the subdivision will be private and maintained by the Whitewater Springs POA. Drainage improvements will include the construction of open channel drainage swales along the streets, including headwalls and culvers where necessary. A large drainage structure will be required on Tanager Bend to cross the existing tributary that drains into the existing recreational pond. As previously stated, the subject property contains 2 tributaries that flow east toward Cow Creek. These tributaries are natural drainage features where all of the stormwater runoff will eventually flow and leave the subdivision. It is impossible to estimate the cost for drainage improvements without a detailed drainage study and design. However, for estimating purposes, we recommend a budget of \$750,000.

Burnet County engineering department will review all street and drainage plans for compliance with environmental regulations, and to ensure that development of the subject property does not create any adverse impacts on surrounding properties. On-site detention ponds might be required to hold the stormwater runoff generated by the new development to the level which existed prior to development, in order to prevent any increased downstream flooding. Given the location of existing tributaries within the subdivision, detention ponds, if required, can be placed in these locations at minimal cost.

WATER AND WASTEWATER SERVICE

The subject property is located within the Whitewater Springs Water Supply Corporation's (WSWSC) Service Area. The WSWSC is a private water supply corporation approved and regulated by the State of Texas as a public water district. This water system was built by the Lower Colorado River Authority (LCRA) and was purchased by Whitewater Springs. The subject property, and the WSWSC, are both within the Water Conservation District of Central Texas (WCD) which regulates all pumping of groundwater in this area. All public wells require the review and approval from the WCD as well as the

Texas Commission on Environmental Quality (TCEQ). Private water wells only require approval from the WCD which are routinely granted provided they meet the minimum lot size requirements. The permitting and approval process for a public water well will take 6-12 months to complete. All of the Whitewater Springs subdivision, including the subject property, has been allocated groundwater to serve all of the proposed lots. According to the WSC board, additional groundwater pumping could be allocated to the WSWSC if additional lots are created. There are no provisions or requirements that fire protection be provided to the subdivision.

The Whitewater Springs development consists of more than 1,000 acres of land and hundreds of residential lots. WSWSC plans call for as many as 20 well sites that will be developed in order to serve all of the lots in the subdivision. Currently, the WSC has 3 fully developed wells with a fourth under construction in Section Six, approximately 9,000 linear feet from the subject property. The three existing water wells are at capacity and the fourth will likely be fully allocated when it is completed. Given these facts, the subject property will need to develop a separate well to serve this section of the subdivision.

State regulations for public water wells require that the well produce a minimum of 0.6 gpm for each single-family home. In this case, the subject property (31 lots) must produce one or more wells that can provide a total flow rate of 19 gpm for a continuous 36-hour period. According to the WSWSC, groundwater in this area is difficult to find. The existing three WSWSC wells were producing 60 gpm at the time they were drilled but now only produce 45 gpm. In producing Well 4, WSWSC drilled several test wells (2 in Section Five) of which one produced 50 gpm, two produced 20 gpm, and three produced 15 gpm. Some of these test wells located behind the subject property only produced 2-3 gpm.

Lots 502B (6.19 acres) and 516 (6.0 acres) have been identified in the CCR's as "Designated Well Lots". No private water wells may be located within 1,800 feet of a Designated Well Lot. However, the owner of any Designated Well Lot may file an instrument in the Property Records of Burnet County removing such lot from the list of Designated Well Lots. Test wells were drilled on Lots 502B and 512B (5.7 acres) which produced flows of 7-8 gpm and 13-14 gpm flows respectively. We have not found any test well data for Lot 516. The average land area needed for a public water well site is approximately 2 acres to accommodate the well, storage tank, pump station, and spacing and setback requirements.

There is no restriction on placing homes on a Designated Well Lot but there are setback requirements around the well. The setback ranges from 50 feet to 100 feet depending on the flows generated by the well. We have explored the only 2 options for providing water service to the proposed development as discussed below:

1. PUBLIC WELL – This option includes the location and development of 1 or more public water wells somewhere on the subject property. There are currently 2 well sites, located on Lots 502B and 512B, that have been tested and produce a total of 20-22 gpm. This flow rate will serve 33-36 single family homes. Each well site would take up 1-2 acres of land area to accommodate the well, pump house, storage tank, and setbacks.

A public well site will require the development of a well head, a pump station, a chlorinator, and a storage tank. Water from the well will be chlorinated and pumped to the storage tank from which

waterlines will be connected to distribute water to each lot. Based on our interviews with the WSWSC Board members knowledgeable in the development of water wells in this subdivision, interviews with the civil engineer who did the design and development of the Whitewater Springs water wells, and discussions with the drilling contractor who performed test wells in this area, at least 10 test wells will be needed to determine if any more water can be provided to Section Five. The cost to develop a single well includes \$125,000 to produce the well, \$20,000 for a chlorinator, \$500,000 for a pump house, and approximately \$55,000 for a storage tank, for a total cost of \$700,000 per well site. Waterlines from the storage tank to each lot would include approximately 12,500 linear feet of 6-inch waterline at an estimated cost of \$75 per linear foot. This cost includes design and construction with trenching in rock. The total estimated cost to provide water service to the existing 31 lots using the 2 test wells that have been identified on the subject property is shown below:

Water Wells (2 @\$700,000 each)	-	\$1,400,000
Water Distribution System (12,500 lf @ \$75/lf)	-	<u>\$937,500</u>
Total Estimated Cost		\$2,337,500

The cost to develop the public water system will be the responsibility of the developer with the application under the name of the WSC. Once the improvements are complete, the system will be turned over to the WSC for operation and maintenance. The Texas Water Development Board provides forgivable loans for the financing of public water system improvements. Approval of the water system with a public financing option will take 2 years or more to complete and will require state bidding and hiring practices.

Assuming you wish to create more than 33-36 lots through the resubdivision of the property, an additional one or more water wells will have to be developed. You can expect the same cost of \$700,000 per well site plus another \$300,000 to drill 10 test wells to prove additional sites. Assuming there were not additional roads planned with the resubdivision, there would be no additional water distribution costs associated with the increase in the number of lots. These additional wells could be placed on any of the other lots or could be located on the common reserve area between Crestway Drive and Blue Jay Bend.

2. PRIVATE WELLS – Private water wells can be drilled and produced on each lot and are allowed by the POA. Approval is also required from the WSWSC and the WCD who have indicated they would support such a request. The minimum lot size for a private well site is 1 acre for any lot created before 2009, and 2 acres for any lot created after 2009.

Spacing between water wells and septic systems is 100 feet, and setbacks from property lines is 50 feet. This information assumes that all private water wells will produce less than 17.36 gpm. These spacing and setback requirements will increase based on the production flows of the individual water wells, but it is unlikely that any private well will produce more than 17.36 gpm.

According to the Whitewater Springs CCR's, a private water well is allowed provided it is not closer than 1,800 feet from any Designated Well Lot which includes Lots 502B, 516, 216, and

605. All of these lots, except 502B and 516, are more than 1,800 feet away from any lots within the Section Five subdivision. Since you are the owner of these lots, this restriction can be removed with the filing of an instrument in the Property Records of Burnet County removing such lot from the list of Designated Well Lots. The cost to develop a private well is estimated to cost \$50,000.

There is no collective wastewater system in the area and service will be provided by individual on-site wastewater disposal systems (septic). The minimum lot size for a septic system with a collective water system is ½ acre, or 1 acre if the lots are served by both a septic system and a private water well.

ELECTRIC SERVICE

The subject property is within the Pedernales Electric Coop (PEC) service area for electric service. According to PEC, there are no known deficiencies in the area that would prevent service to the subject property. A request for service must be filed based on the proposed subdivision plan, and PEC will design the system improvements needed to serve the project which are paid for by the developer. Assuming underground service is requested, the developer will be responsible for trenching and placement of all conduit and transformer pads which we estimate to cost \$625,000 at \$50 per linear foot. PEC will provide the wire and transformers which are estimated to cost \$7,500 per lot. The total estimated cost to serve the existing 31 lots with underground electric service is \$857,500. We cannot provide a more definitive cost until PEC designs the system, and this estimate is based on experience with other projects. We should note that actual costs can vary dramatically based on geography and other environmental issues, and the only way to determine a more precise cost is to submit the plan to PEC and have them prepare a design and cost estimate.

DEVELOPMENT ANALYSIS

The subject property consists of 31 legally platted lots totaling 247.96 acres of land area for an average lot size of 8 acres. Water service is available through a collective public water system at an estimated cost of \$2,337,500 or \$75,000 per lot. Alternatively, individual water wells could be developed on each lot for an estimated cost of \$50,000 per lot. Wastewater service will be handled through private on-site disposal systems. There is a total of 12,500 linear feet of private roadways that need to be constructed at an estimated cost of \$1,500,000 or \$48,000 per lot. Drainage improvements will also be required at an estimated cost of \$750,000 or \$24,000 per lot. Underground electric service can be provided at an estimated cost of \$857,500 or \$28,000 per lot. The following is a summary of the cost to develop the existing 31 lots before homes can be constructed:

Streets (22' pavement with shoulders)	-	\$1,500,000 (\$48,000 per lot)
Drainage (open ditch along streets, culverts, detention)	-	\$750,000 (\$24,000 per lot)
Water System (wells, storage, pumps, distribution lines)	-	\$2,337,500 (\$75,000 per lot)
Electric (trenching, conduit, transformers, wire)	-	<u>\$857,500 (\$28,000 per lot)</u>
TOTAL ESTIMATED DEVELOPMENT COSTS		\$5,445,000 (\$175,600 per lot)

The use of private individual water wells will result in a net cost savings of approximately \$25,000 per lot, bringing the total development cost to approximately \$150,000 per lot. The estimated \$50,000 cost to install a private water well would be borne by the homeowner at the time they build the house, just as

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with the septic system, resulting in a developer paid cost of approximately \$100,000 per lot. All of the costs stated herein are very general estimates and are not based on any design plans which are necessary to provide an accurate cost. Completed design plans and contractor bids are required to determine actual costs.

We have examined the property using available topographical mapping and the registered U.S. FWS mitigation plan to determine whether the lots could be reduced in size and the density increased in order to reduce the per lot development costs. The use of 20-foot topographical mapping data is very unreliable and a detailed lot layout study is necessary to provide a more accurate lot yield count. However, it appears that a resubdivision of the existing 31 lots could result in the creation of approximately 90 lots. This will result in an average lot size of 2.75 acres. It does not appear that additional streets are needed to increase the number of lots but it will require the development of at least 2 more well sites that produce 16 gpm each. This would result in an additional cost of \$1,700,000 or \$19,000 per lot to develop the wells, for a total per lot cost of approximately \$79,500. Assuming you wish to provide private wells instead of developing the 4 wells likely needed to serve the 90 lots, the total lot cost could be reduced to \$59,500 if you account for the cost of a private well, or \$34,500 if the well is produced by the homebuilder. It is possible that the lot yield could be increased to as many as 120 lots with the construction of additional streets. The additional streets would also increase the total development costs which would likely not result in a significant per lot cost reduction. Further analysis will be required to evaluate the cost benefit of creating 120 lots.

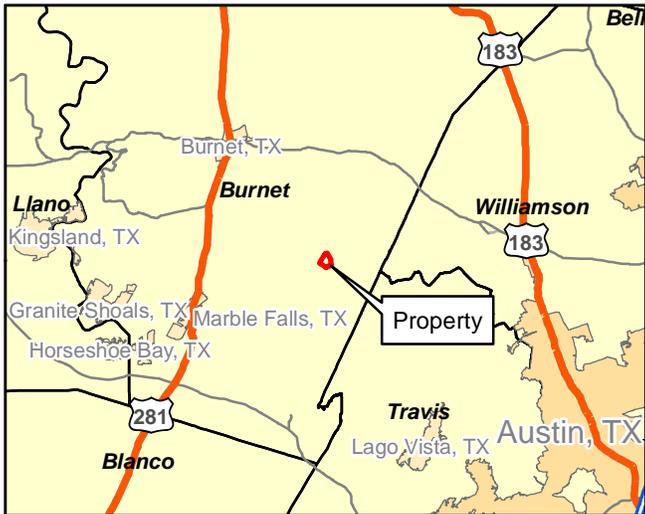
We strongly recommend additional efforts be undertaken to accurately determine whether or not these lot yields can be obtained and to provide a more accurate development cost estimate. This would include the preparation of a topographic survey and preliminary engineering design to get a more accurate development cost estimate. We estimate a budget of \$25,000 would be needed to accomplish this task. If interested, we can provide a more accurate budget.

We hope this information is helpful in your evaluation of this site for development. Please let me know if you have any questions or need any additional information.

Sincerely,



Richard Mathias



Property
 Lat: 30.634321 N
 Long: -98.114386 W

Legend

 Property

Horizon
 Environmental Services, Inc.

Date:	06/29/2021
Drawn:	KRS
HJN NO:	21183.001 PI
Source:	OSM, 2021

Figure 2-1
 Vicinity Map
 Whitewater Springs Section 5 Property
 Bertram, Burnet County, Texas



0 2,000 4,000
 Feet



Legend

 Property

Horizon
Environmental Services, Inc.

Date:	06/29/2021
Drawn:	KRS
HJN NO:	21183.001 PI
Source:	Esri, 2020

Figure 4-2
2020 Aerial Photograph
Whitewater Springs Section 5 Property
Bertram, Burnet County, Texas



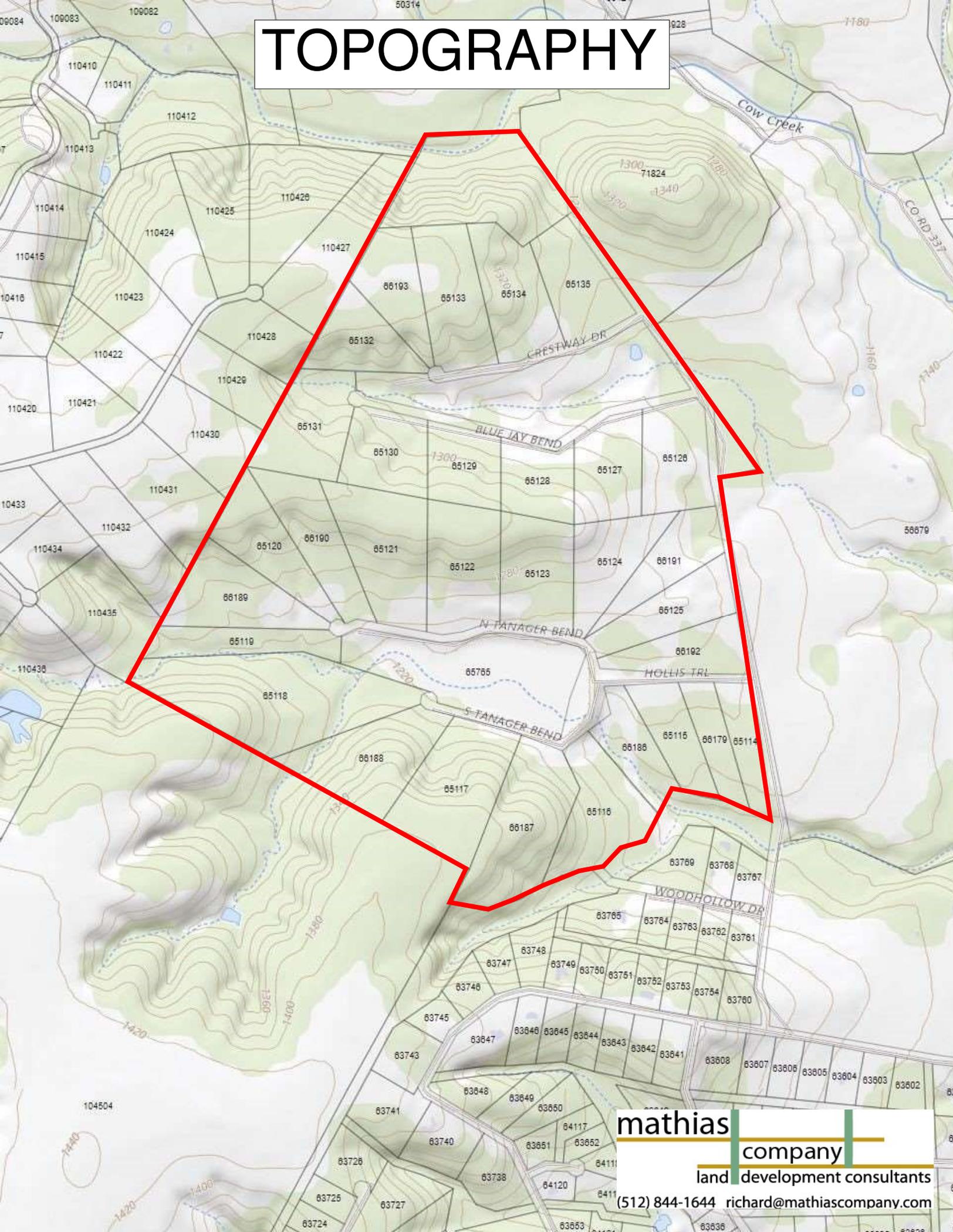
0 350 700
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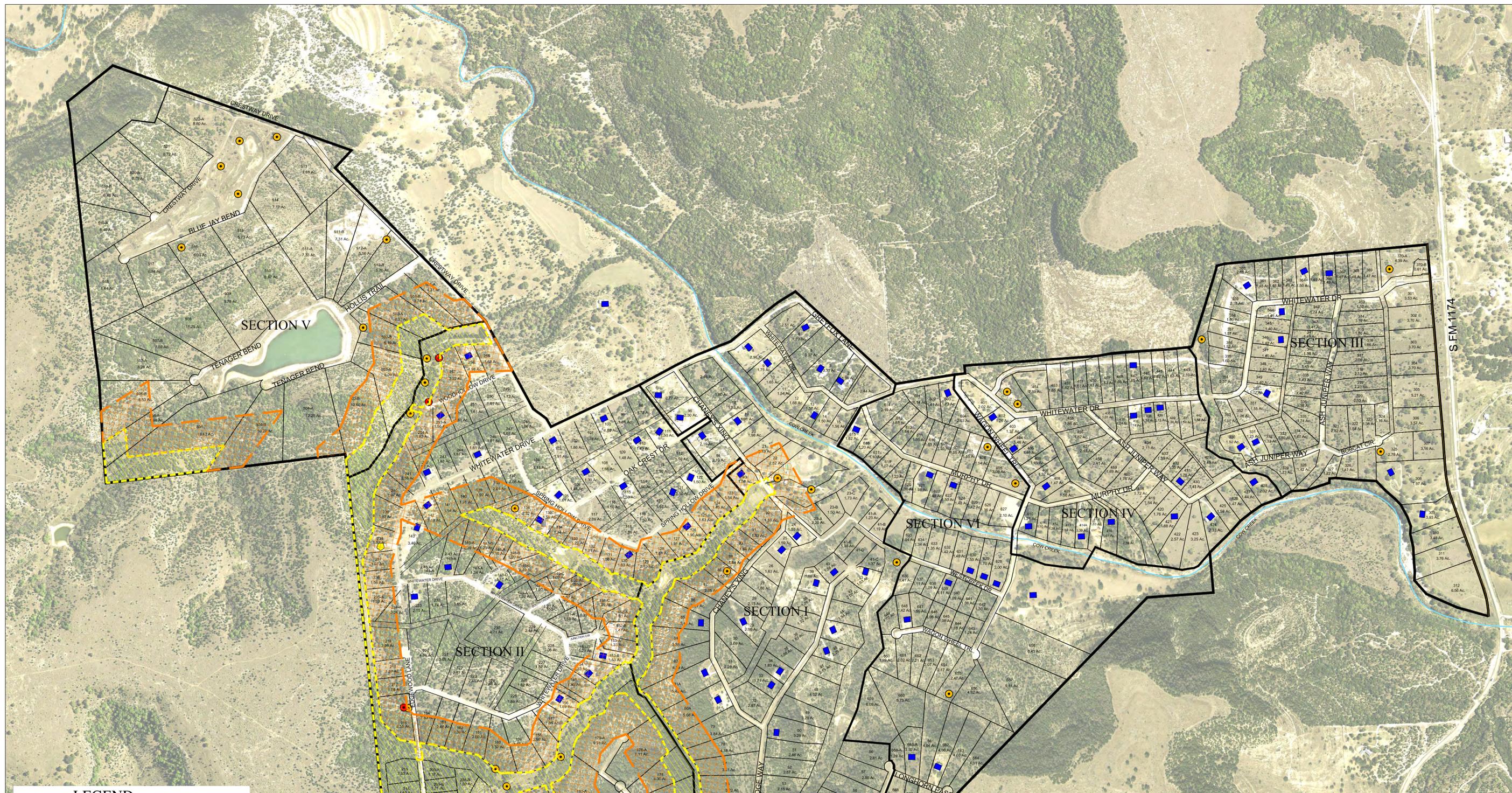
Section V

Whitewater Springs
Burnet County, Texas



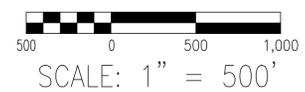
TOPOGRAPHY





LEGEND

-  Existing Home Sites
-  LCRA Water Treatment Facility
-  Proposed Well Locations
-  LCRA Well Locations
-  Golden-cheeked Warbler Mitigation Area per US Fish & Wildlife Service Permit
-  Clearing / Construction Restriction Area



WHITWATER SPRINGS SUBDIVISION
BURNET COUNTY, TEXAS
1,626.21 CONTIGUOUS ACRES

LAND STRATEGIES INC.



PAUL LINEHAN & ASSOCIATES
 1010 LAND CREEK COVE, SUITE 100 AUSTIN, TEXAS 78746
 DEVELOPMENT, DESIGN, AND PLANNING CONSULTANTS,
 LANDSCAPE ARCHITECTS

06/12/2018