



CITY OF WEST LAKE HILLS, TEXAS  
NOTICE OF BOARD OF ADJUSTMENT (BOA) REGULAR MEETING  
Wednesday, April 8, 2020 at 7:00 PM

Notice is hereby given that the Board of Adjustment (BOA) of the City of West Lake Hills, Texas, will hold a Regular Meeting on the 8th day of April 2020 at 7:00 p.m., in the Council Chamber, Municipal Building, 911 Westlake Drive, West Lake Hills, Texas, at which time the following items will be discussed, to-wit:

**REMOTE ACCESS ONLY**

In accordance with the order of the Office of the Governor issued March 16, 2020, the City Council of the City of West Lake Hills will conduct a telephonic meeting in order to advance the public health goal of limiting face-to-face meetings (also called “social distancing”) to slow the spread of the Coronavirus (COVID-19).

The public may participate in this meeting by dialing in to the following toll-free number **1-346-248-7799, Meeting ID 575 746 445, Password: 993803**

If you wish to speak during the meeting, we will need your **name, phone number and the item #** you wish to speak on at least 2 hours prior to the meeting (5:00 p.m. on Wednesday April 8th)

Members of the public who wish to submit their written comments in lieu of speaking shall submit their comments by emailing [SMills@Westlakehills.org](mailto:SMills@Westlakehills.org). **Comments must be received by 5:00 P.M. on April 8th.**

The meeting will be live streamed here: <http://mixlr.com/city-of-west-lake-hills/> and the audio will be available on the City’s website the morning after the meeting.

1. Call to Order

2. Citizen Communications The City Council welcomes public comments at this point on any issue. If the issue is listed on the agenda, the speaker may choose to comment during the Citizens Communication agenda item or when the specific agenda item is taken up by the Council later in the meeting. The Council cannot respond to matters not listed on the agenda until a future meeting. Speakers shall limit their comments to five (5) minutes each.
3. Consent Agenda The following items are anticipated to require little or no individualized discussion due to their nature being clerical, ministerial, mundane or routine. In an effort to enhance the efficiency of City Council Meetings, it is intended that these items will be acted upon by the City Council with a single motion because no public hearing or determination is necessary. However, a City Council Member or Citizen may request separate deliberation for a specific item, in which event those items will be removed from the consent agenda prior to the City Council voting on the consent agenda as a collective, singular item. Citizens requesting items be removed from the consent agenda must submit a written Speaker Card to the City Secretary before the meeting begins. Prior to voting on the consent agenda, the City Council may add additional items that are listed elsewhere on the same agenda.
  - a. Approval of the February 12, 2020 Regular Meeting Minutes
  - b. **1105 Blackacre Trail**: Approval of an Ordinance for an after-the-fact Special Use Permit application to allow an existing guest quarters (Section 34.04.032 of the West Lake Hills Code of Ordinances). Owners/Applicants Mark and Antoinette Clark
4. Land Use **101 Double Fork Road**: Discuss and Consider Action of a variance request for a building encroachment into a front setback in order to construct a second floor addition on top of an existing structure that encroaches into the front setback. (Section 22.03.281 of the West Lake Hills Code of Ordinances). Owners/Applicants Denise & Anthony Burke
  - a. Public Hearing: All persons wishing to speak for or against shall be heard.
5. Land Use **1405 Wildcat Hollow**: Discuss and Consider Action of after-the-fact variance requests for stacked rock walls that 1) encroach into the building setbacks; and 2) include portions that exceed 6 feet in height. (Sections 22.03.281 and 22.03.170 of the West Lake Hills Code of Ordinances). Owner/Applicant Douglas Jaffe, III (Power of Attorney Luis Reyes)
  - a. Public Hearing: All persons wishing to speak for or against shall be heard.
6. Adjournment

Approved by: Linda Anthony, Mayor



### Certificate

I certify that the above Notice of the April 8, 2020 Board of Adjustment Regular Meeting was posted on the bulletin board at the Municipal Building, 911 Westlake Drive, West Lake Hills, Texas on April 3, 2020 at 3:00 pm. and will remain posted continuously until said meeting is convened.

Signed by: Stephanie Mills, City Secretary

*The City of West Lake Hills is committed to compliance with the Americans with Disabilities Act. Reasonable accommodations and equal access to communications will be provided upon request.*

*All items on the agenda are for discussion and/or action. City Council reserves the right to adjourn into executive session at any time during the course of this meeting to discuss any of the matters listed above, as authorized by Texas Government Code Sections 551.071 (Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), and 551.086 (Economic Development).*

CITY OF WEST LAKE HILLS, TEXAS  
MINUTES OF A BOARD OF ADJUSTMENT (BOA) REGULAR MEETING  
Wednesday, February 12, 2020 at 7:00 PM

1. Call to Order

**With a quorum present, Chair Linda Anthony called the meeting to order at 7:00 p.m. Members in attendance were: Linda Anthony, Jim O'Connor, Rhonda McCollough, Brian Plunkett, Beth South, and Darin Walker**

**Present for Staff: Travis Askey, City Administrator, Stephanie Mills, City Secretary, Erin Higginbotham, Assistant City Attorney and Anjali Naini, Director of Building and Development Services**

2. Citizen Communications The City Council welcomes public comments at this point on any issue. If the issue is listed on the agenda, the speaker may choose to comment during the Citizens Communication agenda item or when the specific agenda item is taken up by the Council later in the meeting. The Council cannot respond to matters not listed on the agenda until a future meeting. Speakers shall limit their comments to five (5) minutes each.

**Mayor Anthony opened the meeting for public comments.  
Hearing none, the public comment section was closed**

### 3. Consent Agenda

The following items are anticipated to require little or no individualized discussion due to their nature being clerical, ministerial, mundane or routine. To enhance the efficiency of City Council Meetings, it is intended that these items will be acted upon by the City Council with a single motion because no public hearing or determination is necessary. However, a City Council Member or Citizen may request separate deliberation for a specific item, in which event those items will be removed from the consent agenda prior to the City Council voting on the consent agenda as a collective, singular item. Citizens requesting items be removed from the consent agenda must submit a written Speaker Card to the City Secretary before the meeting begins. Prior to voting on the consent agenda, the City Council may add additional items that are listed elsewhere on the same agenda.

#### a. Approval of the January 22, 2020 Special Meeting Minutes

**Motion for Approval of the Consent Agenda as listed made by  
Member Plunkett with a second by Member O'Connor  
Motion carried unanimously by a vote of 5 ayes to 0 nays**

### 4. Land Use

**801 Cedar Park Drive:** Discuss and Consider Action on variance requests for a building to encroach into a setback; keep existing impervious cover to exceed the maximum allowable impervious cover; and for an existing swimming pool to encroach into the rear setback in order to reconstruct a non-conforming residence destroyed by fire. Owners/Applicants William and Lois Thomson.

- Variance for a building to encroach into a side setback (Sec. 22.03.281 of the West Lake Hills Code)
- Variance to keep existing impervious cover over maximum allowed (Sec. 22.03.281 of the West Lake Hills Code)
- Variance for existing swimming pool to encroach into rear setback (Sec. 22.03.281)

- a. Staff Briefing
- b. Presentation by Applicant
- c. Citizen Communications: All persons wishing to speak on this item shall be heard
- d. Deliberation and Action

**Motion for Approval and to Waive and/or Reimburse the  
Variance Fee made by Member Plunkett with a second by  
Councilmember Walker  
Motion carried unanimously by a vote of 5 ayes to 0 nays**

5. Land Use

**1 Hidden Cove:** Discuss and Consider Action on a variance request for the construction of a new carport that encroaches into the front setback (Sec. 22.03.276 and Sec. 22.03.281 of the West Lake Hills Code). Applicants/Owners Criss Cloudt and Brian Plunkett

- a. Staff Briefing
- b. Presentation by Applicant
- c. Citizen Communications: All persons wishing to speak on this item shall be heard
- d. Deliberation and Action

**Motion for Approval made by Member Walker with a second by Member McCollough**  
**Motion carried unanimously by a vote of 4 ayes to 0 nays, with Member Plunkett Recused**

6. Land Use

**1801 Yaupon Valley Road:** Discuss and Consider Action on variance requests for the construction of a swimming pool, patio, and concrete/stone wall within the rear setback. (Sec. 22.03.276 and Sec. 22.03.281 of the West Lake Hills Code). Owners/Applicants Mike and Luniece Schless (Power of Attorney Blake Moran).

- a. Staff Briefing
- b. Presentation by Applicant
- c. Citizen Communications: All persons wishing to speak on this item shall be heard
- d. Deliberation and Action

**Motion for Approval with Condition that 9 foot dimensions be added to the site plan made by Member O'Connor with a second by Member Walker**  
**Motion carried unanimously by a vote of 5 ayes to 0 nays**

7. Adjournment

**Motion to adjourn the meeting made by Member Walker with a Second by Member O'Connor**  
**Motion carried unanimously by a vote of 5 ayes to 0 nays**

Respectfully submitted,

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LINDA ANTHONY, MAYOR

ATTEST:

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Stephanie Mills, City Secretary

These minutes were approved on \_\_\_\_\_, 2020.

### SPECIAL USE PERMIT FORM

DATE 2/25/20 SUBMISSION DEADLINE DATE FEB 28, 2020

NAME MARK TIMOTHY CLARK & ANTOINETTE M. CLARK PHONE (#) M 512 627 5492 (W)

ADDRESS 105 BLACKACRE TR CITY W. LAKE HILLS ZIP 78746

SPECIAL USE APPLIED FOR GUEST CASITA

SPECIAL USE ADDRESS SAME

NAME OF BUSINESS N/A DURATION OF USE ONGOING

DATE OF PUBLIC HEARING: BOA 4/8/20

HOURS OF OPERATION \_\_\_\_\_

FEES PAID \_\_\_\_\_ RECEIVED BY/DATE \_\_\_\_\_ SIGN PICKED UP \_\_\_\_\_

B.O.A. ACTION \_\_\_\_\_

COMMENTS FOR THE RECORD \_\_\_\_\_

February 26, 2020

Ms. Linda Anthony, Chair  
Board of Adjustment  
City of West Lake Hills  
911 Westlake Drive  
West Lake Hills, Texas 78746

Dear Ms. Anthony,

This letter formally serves to clarify the use and proposed upgrades for the casita/guest quarters located on our property at 1105 Blackacre Trail. We purchased this property on February 28, 2019, and are currently in the process of beginning a remodel of the main residence and casita. We are applying for a Special Use Permit per city mandate on the casita.

The casita is located about thirty (30) feet from the main house and was originally built in approximately 1993. To our knowledge it has always been used for guest sleeping quarters overflow and will continue to be used by us only in this capacity. The "remodel" we are planning for the casita only concerns finished surfaces. They include new cabinets in both the kitchen and bathroom, new flooring and new counter tops, along with some electrical and plumbing fixture updates. Plumbing plans do include adding a second bathroom sink and a stacked washer and dryer, but our water district has determined that these additions will not adversely impact our existing water and wastewater infrastructure. There are no modifications to the casita exterior and no structural changes to the interior.

Should you have any questions, you may reach me at (512) 627-5492 or by email at [REDACTED]

Thank you,



Antoinette M. Clark  
1105 Blackacre Trail  
West Lake Hills, TX 78746

STATE OF TEXAS

COUNTY OF TRAVIS

AMENDMENT TO DECLARATION OF COVENANTS, CONDITIONS AND  
RESTRICTIONS FOR THE ESTATES AT BLACKACRE  
*(Regarding leasing restrictions)*

The Declaration of Covenants Conditions and Restrictions for the Estates at Blackacre ("**Declaration**") was filed of record in Vol. 11626 Page 576 of the Real Property Records of Travis County, Texas.

The requisite number of Owner votes under Texas Property Code Ch. 209 has been obtained to accomplish a Declaration amendment; the Declaration is hereby amended as follows.

Article IV Section 4.04 is hereby ADDED to the Declaration to read as follows:

4.04 Leasing. Owners may lease their Lots subject to all conditions of The Estates at Blackacre Restrictions including rules adopted by the Board regarding leasing and occupancy restrictions. No Lot may be rented for an initial lease term of less than six months.



**THE ESTATES OF BLACKACRE RESIDENTIAL OWNERS ASSOCIATION,  
INC.**

Mark Sweeney  
PRINTED NAME: [Signature]  
TITLE: President Mark Sweeney

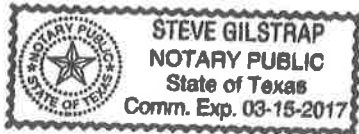
**Acknowledgement**

STATE OF TEXAS §

COUNTY OF TRAVIS §

This instrument was acknowledged before me on the 22 day of  
OCTOBER, 2015, by MARK Sweeney in the  
capacity stated above.

[Signature]  
Notary Public, State of Texas



THE ESTATES OF BLACKACRE RESIDENTIAL OWNERS ASSOCIATION,  
INC.

PRINTED NAME:

TITLE: Secretary

Jim SAUER

Acknowledgement

STATE OF TEXAS

§

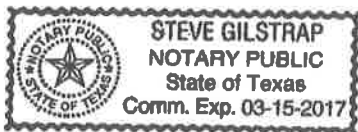
COUNTY OF

TRAVIS

§

This instrument was acknowledged before me on the 22 day of OCTOBER, 2015, by Jim SAUER in the capacity stated above.

Steve Gilstrap  
Notary Public, State of Texas



After recording return to  
Niemann & Heyer LLP  
1122 Colorado Suite 313  
Austin, TX 78701

File Server:CLIENTS:Estates@Blackacre:DeclarationAmendmentLeasing.docx



FILED AND RECORDED  
OFFICIAL PUBLIC RECORDS

Dana Debeauvoir

DANA DEBEAUVOIR, COUNTY CLERK  
TRAVIS COUNTY, TEXAS

October 27 2015 09:26 AM  
Page 12 of 150  
FEE: \$ 34.00 2015171684



## **SPECIAL USE PERMIT (SUP) STAFF REPORT**

**APRIL 8, 2020**

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**Project Name:** 1105 Blackacre Trail – Special Use Permit for a previously constructed guest quarters

**Agenda Item:** Land Use: Discussion/consideration of an Ordinance considering an after-the-fact Special Use Permit application to allow an existing guest quarters (Section 34.04.032 of the West Lake Hills Code of Ordinances). Owners/Applicants Mark and Antoinette Clark.

**Applicant Information:** Mark Timothy Clark and Antoinette M. Clark (owners)

**Hearing Dates:**

April 8, 2020                      Board of Adjustment

**Requested Action:** Special Use Permit to allow a previously constructed guest house (casita).

**Location:** The property is located north of Bee Cave Road, east of Redbud Trail, west of Bluff Park Circle, and south of Yaupon Valley Road.

**Zoning & Site Characteristics:** The property is zoned R – 1 One-Family Residential District. The surrounding neighborhood is also zoned R – 1. The property is approximately 2.113 acres and includes an existing home and guest quarters. The property is heavily treed and structures are not visible from the street.

**Background & Analysis:** The Clarks recently turned in two building permit applications, one for the main house and one for the guest house (casita). The Clarks are planning to temporarily stay in the casita while the remodeling to the main house is being completed. Upon review of the property file, it came to the attention of staff that that a Special Use Permit was never filed with the City for the existing guest house.

The house and guest house were constructed in 1993 according to the records of Travis County Appraisal District. City Zoning regulations in effect at that time (Ordinance No. 155-I, effective April 15, 1990) allowed guest or domestic employee quarters by Special Use Permit upon authorization of the City Council. The City's current Zoning regulations also allows guest quarters by Special Use Permit. Therefore, to ensure legal status of the existing structure, it is necessary for the homeowners to retroactively apply for a Special Use Permit.

**SUP Criteria & Analysis:**

A proposed special use permit must comply with all the following criteria:

(1) The appearance, size, density and operating characteristics of the proposed special use are compatible with the surrounding neighborhood and uses;

- The guest quarters has been in existence for many years and will not be an interference with surrounding properties. It does not impact the characteristics of the area.

(2) The proposed use will not have an adverse effect on the value of surrounding properties or impede their proper development;

- The guest quarters is already in existence and is not adversely impacting surrounding properties.

(3) The proposed use will not create a nuisance factor or otherwise interfere with a neighbor's enjoyment of the neighbor's property or operation of the neighbor's business;

- The guest quarters is not creating a nuisance to the neighbors and is subject to all applicable City codes, policies, and regulations. The subject property does not have any code violations.

(4) The traffic that the proposed use can reasonably be expected to generate on existing streets will not create or add significantly to congestion, a safety hazard, or a parking problem in the area, nor will it disturb the peace and quiet of the neighborhood; and

- There should not be additional traffic generated as the structure is already existing.

(5) The proposed use shall comply with all other applicable ordinances and regulations.

- The property is subject to all applicable City codes, policies, and regulations. Any future permit applications will be reviewed for compliance prior to issuance.

**Traffic/Transportation**

N/A. The structure is already existing and should not impact traffic.

**Lighting**

Outdoor lighting is not part of this application. All new outdoor lighting must comply with the City's outdoor lighting regulations.

**Building Code**

The property and future construction will have to comply with all applicable City codes.

**Subdivision**

This request will not change the subdivision.

**Comprehensive Planning Analysis**

The request is in compliance with the Master Plan based on current and future land use.

**Staff Recommendation:**

Staff recommends approval based on the analysis above.

**Code:**

**ARTICLE 1.01 CODE OF ORDINANCES**

**Sec. 1.01.003 Definitions and rules of construction**

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**Guesthouse.** An accessory seasonal dwelling located on the same lot as the principal building and used occasionally for habitation for guests but not for remuneration. Such accessory dwelling shall not be permitted on lots of less than one acre. The guest quarters shall not exceed 800 square feet in size and shall contain only one bedroom.

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**Sec. 38.03.032 R-1 one-family residential district**

- (a) Purpose. The R-1 district is intended to establish and preserve peaceful, attractive and safe low-density residential neighborhoods of single-family detached dwelling units and to protect the integrity of such areas by prohibiting the intermixture of residential and incompatible nonresidential uses.
- (b) Permitted uses. Permitted uses are as follows:
  - (1) One-family dwelling, limited to no more than one such building per lot occupied by no more than one family.
  - (2) Accessory structures and uses customarily incidental to the uses permitted under this subsection.
- (c) Special uses. Special uses permitted upon authorization of the city council administrator are as follows:
  - (1) Guest or domestic employee quarters.
  - (2) Home occupation.
  - (3) Riding stable.
  - (4) Short-term rental.

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**Sec. 38.04.031 Criteria for establishment of special use categories; uses allowed in specific districts**

- (a) General criteria for establishment of a special use category are as follows:
  - (1) Special and associated expenses for regulatory oversight;
  - (2) Higher probability of chance of nuisance to the surrounding areas;
  - (3) Greater impact on surrounding properties with respect to the following:
    - (A) Parking;
    - (B) Waste products and disposal methods;
    - (C) Noise (peace and quiet of the neighborhood);
    - (D) Light or glare;
    - (E) Smell, fumes, dust and odor;
    - (F) Traffic; and
    - (G) Infectious or contagious diseases;
  - (4) Activities which increase potentially objectionable sensory responses for surrounding areas;
  - (5) Greater adverse impact on appraised valuations of surrounding properties;
  - (6) Higher level of impediment to development of surrounding properties;
  - (7) Increase in traffic congestion and reduction of pedestrian safety to a significant degree;
  - (8) Regulatory control for number and type of animals to prevent menace or disturbing of neighbors;
  - (9) Regulatory control for selective activities in other than permitted zoning districts;

- (10) Regulatory control for activities that have a potential to harm the environment; and  
 (11) Regulatory control for continuance of activity.  
 (b) Specific special uses authorized by zoning district are as follows:

| <u>Special Use</u>                                                          | <u>District Allowed</u>             |
|-----------------------------------------------------------------------------|-------------------------------------|
| Alcoholic beverages sold in grocery stores for off-premises consumption     | B-2, B-3                            |
| Alcoholic beverages sold in restaurants for on- or off-premises consumption | B-2, B-3                            |
| Assembly and testing of electronic components                               | O                                   |
| Bank or savings and loan association                                        | B-2                                 |
| Charter school or private school                                            | O                                   |
| Child day-care facility                                                     | O, GUI, B-1, B-2, B-3               |
| Church                                                                      | O, B-1, B-2, B-3                    |
| Cocktail lounge                                                             | B-3                                 |
| Commercial coach                                                            | All (temporary during construction) |
| Commercial kennel                                                           | B-2, B-3                            |
| Employee dining facility                                                    | O, B-1, B-2, B-3                    |
| Guest or domestic employee quarters                                         | R-1, R-2, R-3                       |
| Home occupation                                                             | R-1, R-2, R-3                       |
| Hospital                                                                    | B-1, B-2, B-3                       |
| Laundry and dry cleaning plant                                              | B-3                                 |
| Massage therapy school                                                      | O, B-1                              |
| Private horse stable                                                        | R-1, R-2                            |
| Publishing business                                                         | B-2, B-3                            |
| Rehabilitation/wellness center                                              | B-1, B-2, B-3                       |
| Research, development or clinical laboratory                                | B-2, B-3                            |
| Restaurant with drive-in/drive-through facilities                           | B-2                                 |
| Retail liquor store                                                         | B-2                                 |
| Riding stable                                                               | R-1, R-2                            |
| Short-term rental                                                           | R-1, R-2, R-3                       |
| Wireless telecommunication facilities                                       | O, B-1, B-2, B-3, GUI               |

**Sec. 38.04.032 Special use permit**

- (a) Required. No special use shall be established, operated or maintained except as authorized by a special use permit issued in accordance with the requirements of this section.

(b) Issuance. A special use permit may be issued only for the special uses specified in this division, and only for the district where it is authorized. Unless for a home-based business, a special use permit may only be issued by the board of adjustment acting after a public hearing. The city administrator may issue special use permits for home-based businesses without public hearings if the applicant: (1) complies with subsection (c) of this section and with sections 38.04.033 and 38.04.034(a); (2) provides written notice in accordance with the applicable provisions of subsection (e); and (3) provided that the city administrator receives no written protests from owners of all real property located within 300 feet in all directions of the applicant's property on which the home-based business is sought, regardless of whether the neighboring property is within the city limits or ETJ.

In considering any application for a special use permit, the board of adjustment shall give due regard to the nature and condition of all adjacent land, uses, and structures. The board of adjustment may disapprove an application for a special use permit, or approve same subject to such requirements and conditions, in addition to the regulations of the district in which the particular use is located, as it may deem necessary for the protection of adjacent properties and the public interest.

(c) Application. An application for a special use permit shall be made in writing in a form prescribed by the city administrator and shall be accompanied by such information as may be requested, including a site plan, if required, in order to properly review the proposed use. Such information may include but is not limited to site and building plans, drawings and elevations, and operational data. All applicants for a special use permit for a nonresidential use in a residential district shall provide the city with a signed letter from a licensed attorney verifying that the proposed use will not be violating deed restrictions.

(d) Report by city administrator or city inspector. Either the city administrator or the city inspector shall visit the site of the proposed special use and the surrounding area and shall prepare findings to be delivered to the board of adjustment.

(e) Notice of public hearing before board of adjustment.

(1) The board shall hold a public hearing on each application for a special use permit.

(2) Written notice of such hearing shall be given to the owners of all real property located within 300 feet in all directions of the property that is the subject of the hearing, regardless of whether the neighboring property is within the city limits or ETJ. Notice shall be given not less than thirty (30) days prior to the date of the hearing.

(3) Such notice shall state the purpose, date, time and place of the hearing and shall contain a brief description of the proposed development, including its nature, scope and location. The notice shall also describe any variances the applicant has requested and shall state the location and times at which the applications and supporting documents are available for public inspection. The time and place of the public hearing to be held before the city council shall also be included if known at the time the notice is given and, if it is not known at such time, a telephone number shall be provided where information on the hearing before the city council will be available at a later date.

(4) Notice in the form of weather resistant signs provided by the city shall be posted by the applicant. The sign shall state the purpose, date, time and place of the hearing before the commission, and shall contain a brief description of the proposed development. Signs placed on the property involved must be within 10 feet of any property line paralleling any established or proposed street, and must be visible from that street. Signs must be posted at least 30 days prior to hearing. All required signs shall remain on the property until final disposition of the matter by the city. The applicant must remove all signs required by this section within 24 hours of final disposition by the city. An affidavit of proof of posting shall be filed by the applicant with the city at or prior to the hearing, accompanied by legible photographs of the sign as-posted.

(5) Notice of the hearing must be published in the city's official newspaper 15 days prior to the hearing before the board.

(Ordinance 347 adopted 11/21/17)

(f) Review and recommendation by board of adjustment.

(1) The board shall review the application for a special use permit to determine whether the proposed special use complies with each of the general criteria in section 38.04.033 and with each of the specific criteria in section 38.04.034 applicable to the proposed use, and shall make a separate finding thereon for each criterion.

(2) The board shall not approve an application unless it finds that the proposed special use as presented or as modified by the commission complies with each of the general and applicable specific criteria.

(3) The board shall make a written finding of its decision in accordance with section 38.02.007.

(4) The board may condition its approval of an application on the applicant's adoption of specified changes, additions, limitations, safeguards or effective time periods designed to ensure compliance with the criteria.

(5) The board shall not grant a special use permit unless it finds that the proposed special use complies with each of the applicable general and specific criteria; otherwise, it shall deny the application.

**Sec. 38.04.033 General criteria applicable to all special uses**

A proposed special use permit must comply with all the following criteria:

(1) The appearance, size, density and operating characteristics of the proposed special use are compatible with the surrounding neighborhood and uses;

(2) The proposed use will not have an adverse effect on the value of surrounding properties or impede their proper development;

(3) The proposed use will not create a nuisance factor or otherwise interfere with a neighbor's enjoyment of the neighbor's property or operation of the neighbor's business;

(4) The traffic that the proposed use can reasonably be expected to generate on existing streets will not create or add significantly to congestion, a safety hazard, or a parking problem in the area, nor will it disturb the peace and quiet of the neighborhood; and

(5) The proposed use shall comply with all other applicable ordinances and regulations.

(Ordinance 334 adopted 10/26/16)

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**Sec. 38.04.034 Criteria applicable to individual special uses**

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(h) Banking or savings and loan establishments. A proposed bank or savings and loan association in a B-2 district or must comply with the following specific criteria and conditions, as well as the general criteria in section 38.04.033:

(1) The parcel must have direct access to Bee Cave Road or the Capital of Texas Highway.

(2) The remodeling of a financial facility in existence prior to May 1, 2005, located within a B-2 district shall be limited to a maximum floor area of the lesser of the existing area or 2,000 square feet, excluding any drive-in facility area.

(3) The building, if located within a B-2 district shall be a minimum of 200 feet from any major thoroughfare is limited to two lanes of drive-in windows.

(4) The site plan must provide adequate anticipated stack space for automobile drive-in needs within the facility complex.

(5) The anticipated traffic load from the banking facility shall not interfere with residential traffic.

(6) The site plan shall provide for adequate landscaping, and the maintenance of landscaped areas shall be the subject of restrictive covenants which are enforceable by the city.

(7) There shall be no more than one curb cut for access to the office complex unless otherwise approved by the city council.

(Ordinance 210 adopted 11/23/10)



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**Sec. 38.04.035 General conditions for all special uses**

(a) Adherence to approved plans and limitations. A special use shall be established, operated and maintained in accordance with the plans, terms, conditions and limitations contained in the permit approved by the BOA.

(b) Duration of permit; renewal. Special use permits shall be granted for a definite period of time, not to exceed two years. Upon the special use permit's expiration, renewals may be granted at the discretion of the city administrator provided no written complaints were received during the use period. If there is a record of complaints or if the city administrator opts not to approve the renewal, the applicant can seek renewal from the BOA. If the BOA declines the renewal, the applicant can reapply for the special use permit. This process entails the applicant receiving approval from: (1) the building design committee; and (2) then the BOA. The applicant shall pay new fees.

(c) Revocation of permit. The BOA, after notice and a public hearing, may revoke any special use permit for one or more of the following reasons:

(1) A substantial violation of any of the plans, terms, conditions and limitations applicable to the special use;

(2) A substantial violation of any applicable ordinance or regulation;

(3) Operation or maintenance of the special use in a manner that is detrimental to the public's health or safety, or so as to constitute a nuisance; or

(4) Discontinuance of the use.

(d) Lapse of permit. A special use permit shall lapse if the use has not been commenced, or, in the case of construction, if construction has not been commenced, within one year of the date the permit was issued.

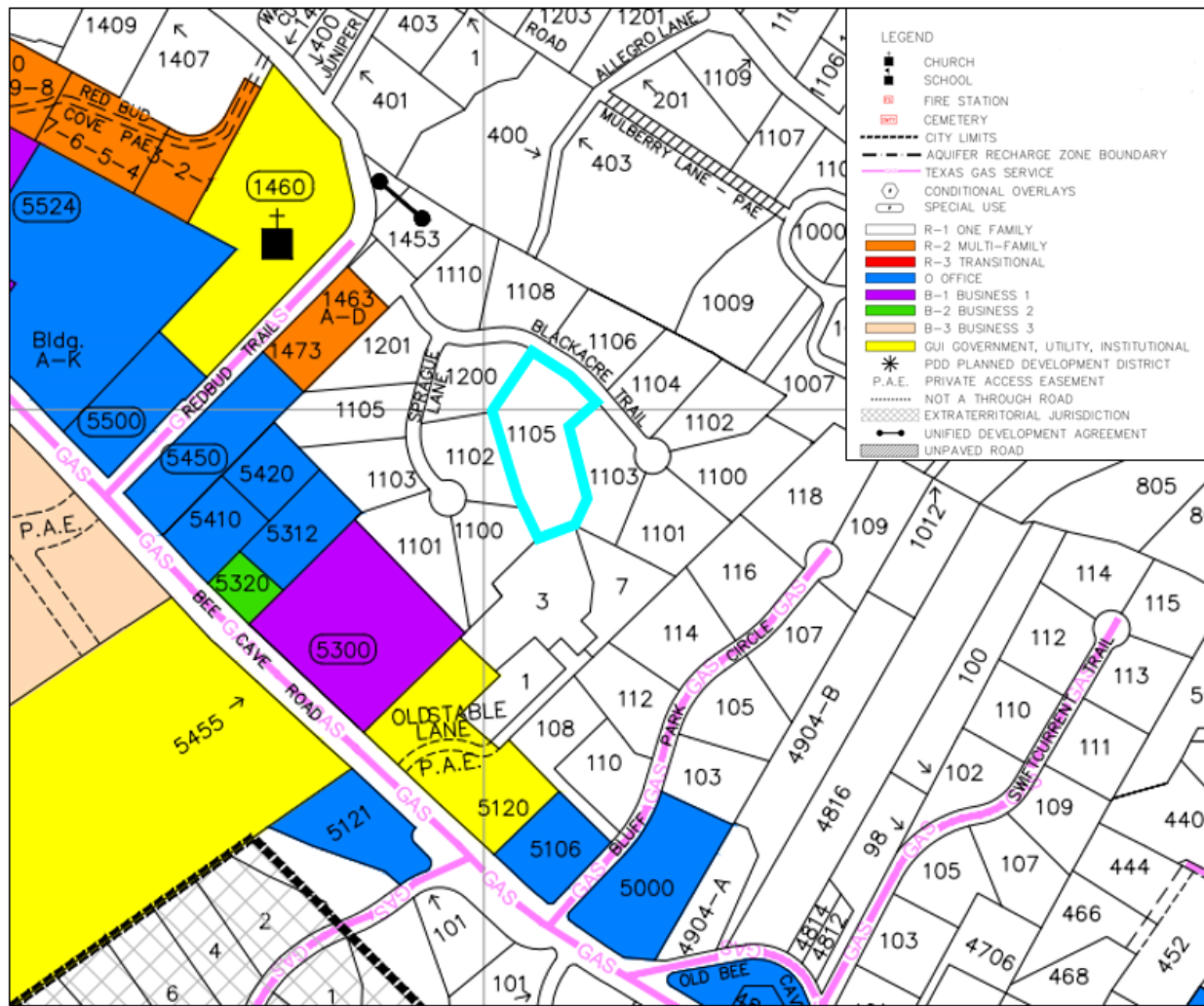
(e) Transfer of permit. A special use permit is not transferable and shall cease upon transfer of the property or business.

(Ordinance 334 adopted 10/26/16)

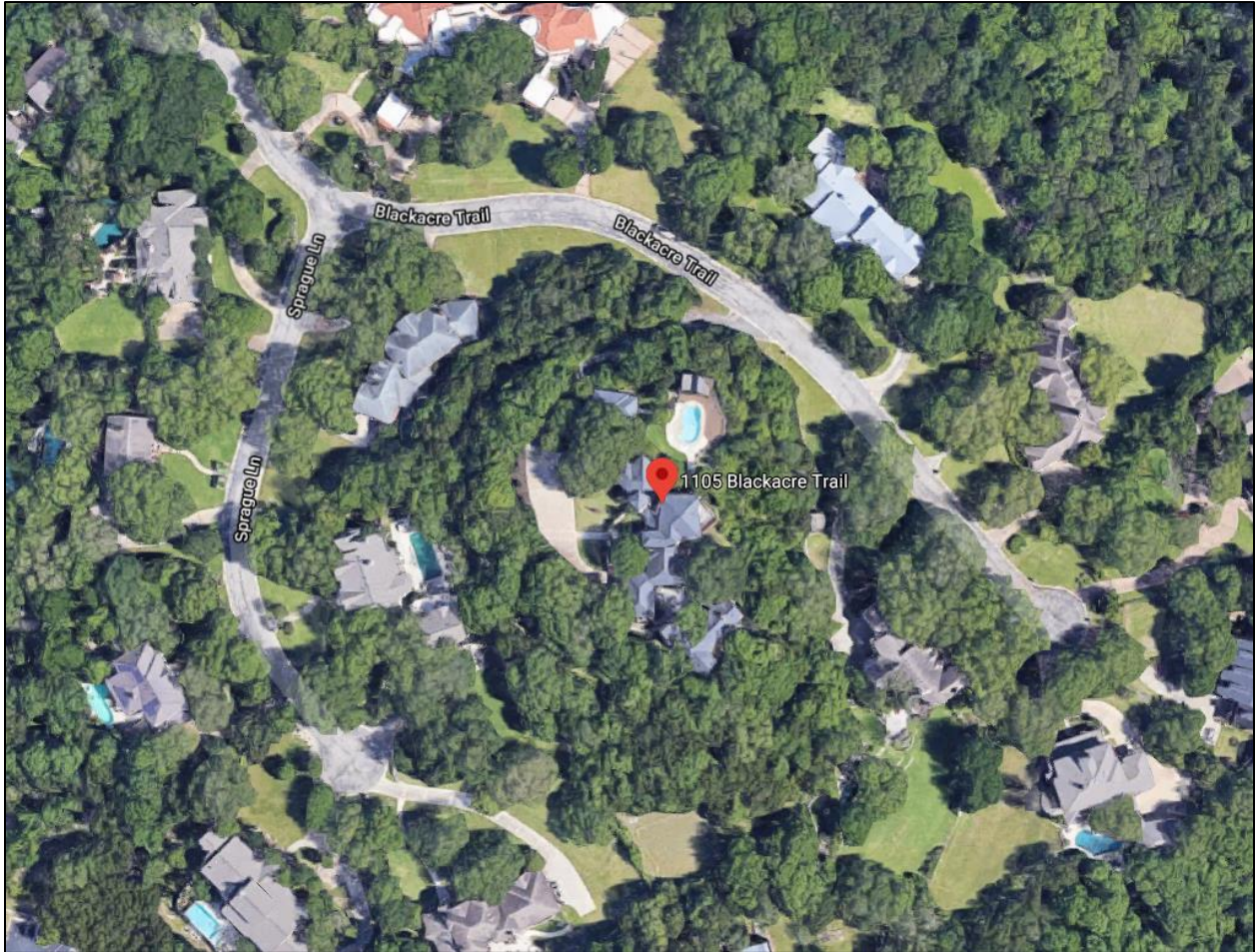
\*\*\*

*(Maps to follow)*

**Zoning:**



Aerial:



SPECIAL USE PERMIT 157-2020-A

A PERMIT SETTING FORTH THE CONDITIONS UNDER WHICH A SPECIAL USE PERMIT SHALL BE PERMITTED AND AUTHORIZING THE CITY ADMINISTRATOR TO NOTE THE CHANGE ON THE OFFICIAL ZONING MAP OF THE CITY.

WHEREAS, Mark and Antoinette Clark, owners of the herein described parcel of land at 1105 Blackacre Trail, has requested a Special Use Permit for a guest quarters; and

WHEREAS, the notice as required by Section 38.04.032 of the West Lake Hills Code of Ordinances has been given to adjacent property owners; and

WHEREAS, Public Hearings have been held by the Board of Adjustment as required by law; and

WHEREAS, there has not been a valid objection in the Public Hearings or a written protest submitted against the proposed Special Use Permit; and

WHEREAS, the Board of Adjustment find that the application for Special Use Permit meets the requirements of Sections 38.03.032 and 38.04.031 of the West Lake Hills Code; and

WHEREAS, the Board of Adjustment at its Public Hearing finds that the Special Use Permit on the herein described parcel is not against the public interest;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ADJUSTMENT OF THE CITY OF WEST LAKE HILLS, TEXAS:

Article 1. The legal description of said parcel of land is as follows:

Lot 9, Resubdivision of the Estates of Blackacre.

Article 2. The permit is granted under the following general terms and conditions:

1. The use shall not require change in the character or exterior appearance of the principal residential unit;
2. The Special Use shall not create a nuisances or otherwise interfere with any neighbor's reasonable enjoyment of the neighbor's property;
3. The Special Use shall not have an adverse effect on the value of surrounding properties nor impede their proper development;
4. No signs are permitted on the parcel except as permitted under the provisions of Chapter 32 of the West Lake Hills Code; and
5. All representations, whether oral or written, made by the owner, or his agent, in support of a Special Use Permit are conditions upon which this permit is granted.

Article 3. The duration of this Special Use Permit shall be for two (2) years from the effective date hereon.

Article 4. This Special Use Permit may be renewed for two (2) year periods at the discretion of the City Administrator provided no written complaints have been received during the use period. When complaints have been registered, the applicant can seek renewal approval from the Board of Adjustment.

Article 5. This Special Use Permit for a guest quarters is granted to Mark and Antoinette Clark, property owner, allowing a guest quarters at 1105 Blackacre Trail.

Article 6. This Special Use Permit is not transferable to another person or another parcel of land.

Article 7. The Board of Adjustment after notice and Public Hearing, may revoke this Special Use Permit for one or more of the following reasons:

1. A violation of any of the representations, plans, terms, general or special conditions, and limitations applicable to this Special Use Permit;
2. A violation of any applicable ordinance or regulation;
3. A change in the nature of the use without prior approval of the City; or
4. Operation or maintenance of the Special Use Permit in a manner that is detrimental to the public health or safety, or so as to constitute a nuisance.

Article 8. The application form entitled "Special Use Permit Form" along with any supporting correspondence and documents, and marked as Exhibit "A" attached hereto are incorporated herein by reference for all pertinent purposes.

Article 9. The City Administrator is hereby authorized and shall promptly note the change on the Official Zoning Map of the City of West Lake Hills, Texas. The Zoning Map shall indicate that there is a Special Use Permit for 1105 Blackacre Trail.

Article 10. This Special Use Permit shall become effective on the 8<sup>th</sup> day of April, 2020.

PASSED AND APPROVED this 8<sup>th</sup> day of April, 2020.

---

CHAIRWOMAN

LINDA ANTHONY,  
BOARD OF ADJUSTMENT  
CITY OF WEST LAKE HILLS,  
TEXAS

ATTEST:

---

Stephanie Mills, City Secretary

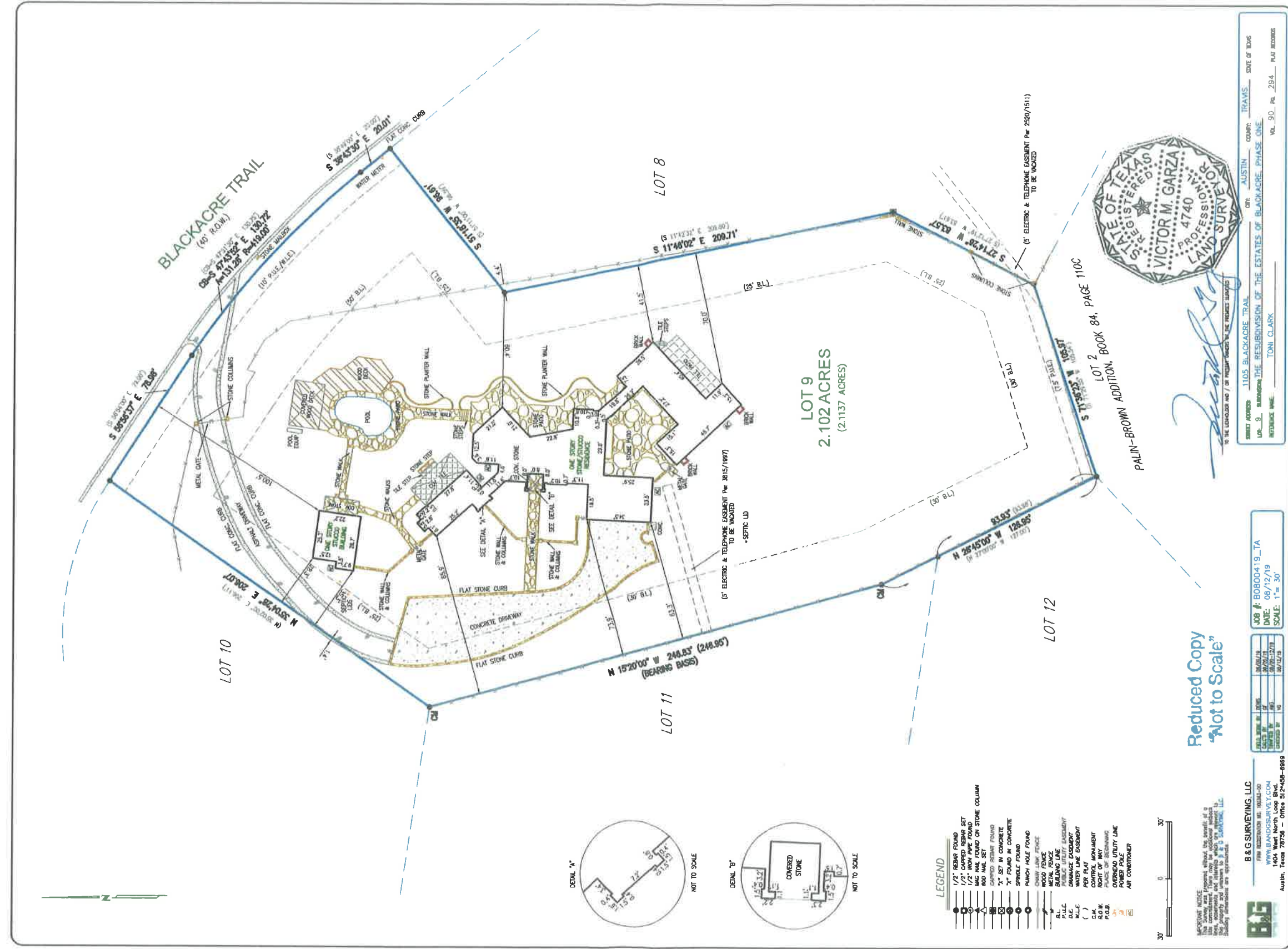
I/We acknowledge receipt of this SUP and agree to abide by its terms and conditions.

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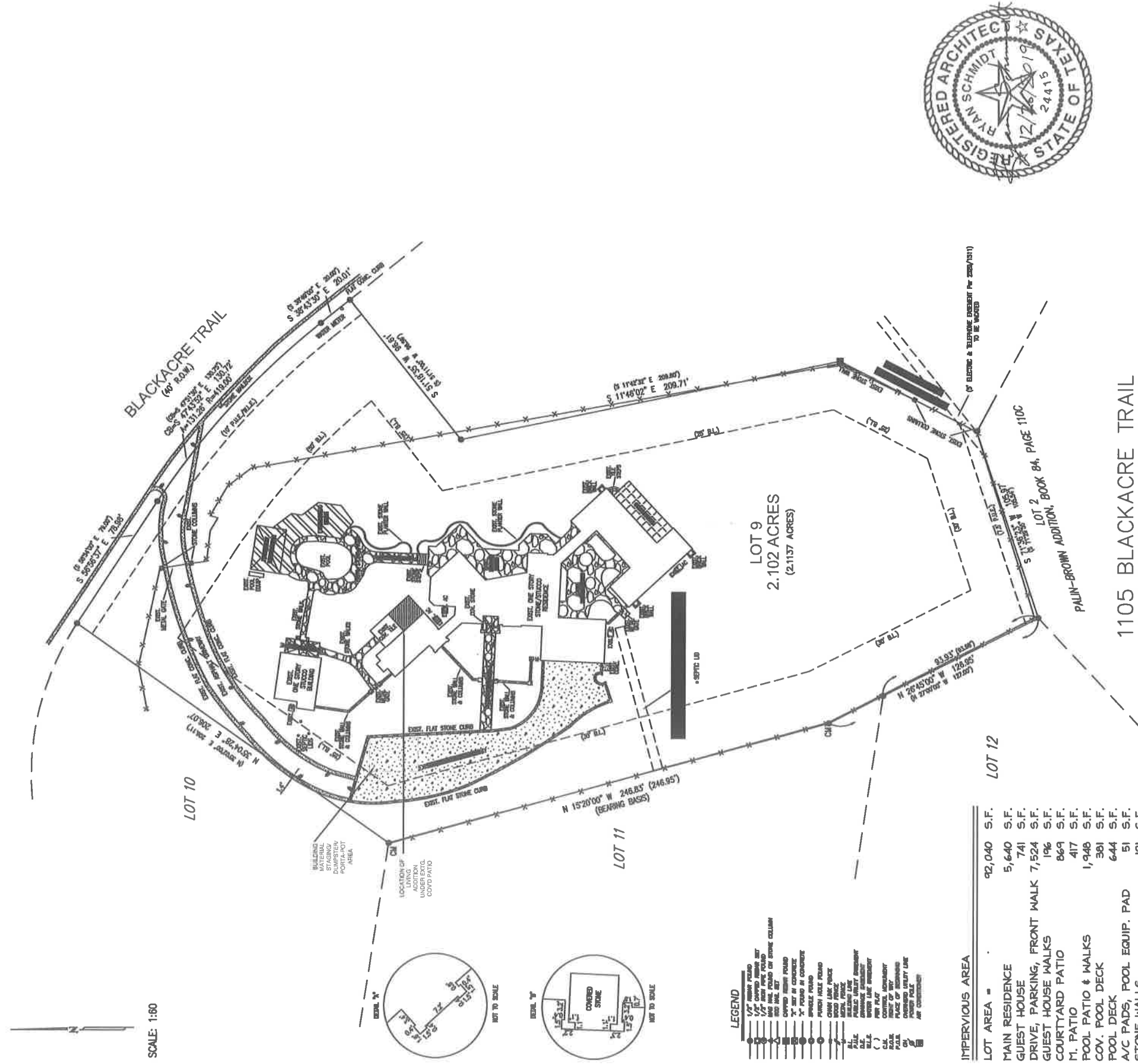
Mark and Antoinette Clark







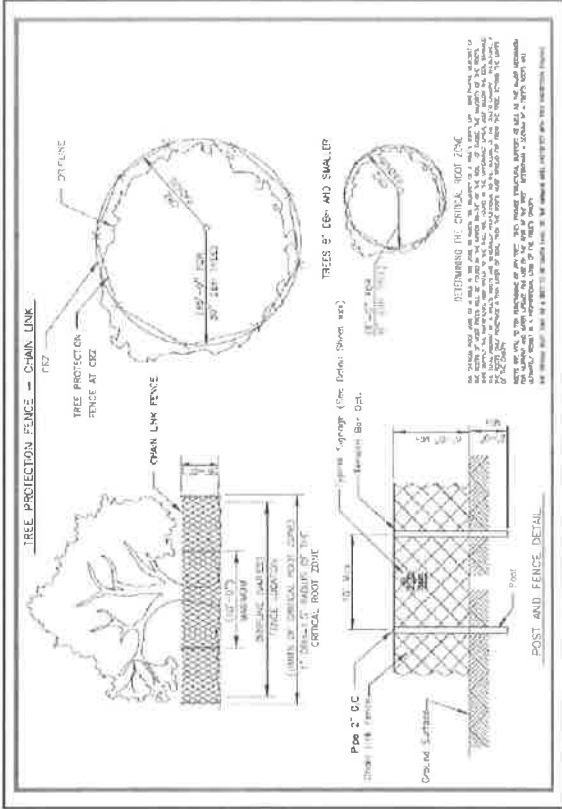
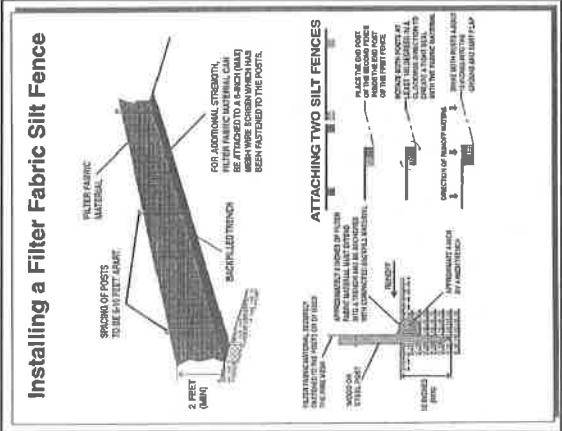




| INTERPIVIOUS AREA          |               |                     |
|----------------------------|---------------|---------------------|
| LOT AREA =                 |               | S.F.                |
| MAIN RESIDENCE             |               | 5,640 S.F.          |
| GUEST HOUSE                |               | 741 S.F.            |
| DRIVE, PARKING, FRONT WALK |               | 7,524 S.F.          |
| GUEST HOUSE WALKS          |               | 196 S.F.            |
| COURTYARD PATIO            |               | 869 S.F.            |
| M. PATIO                   |               | 417 S.F.            |
| POOL PATIO & WALKS         |               | 1,948 S.F.          |
| COV. POOL DECK             |               | 381 S.F.            |
| POOL DECK                  |               | 644 S.F.            |
| A/C PAD'S, POOL EQUIP. PAD |               | 51 S.F.             |
| STONE WALLS                |               | 121 S.F.            |
| SQUARE FOOTAGE % =         | 18,532 S.F. = | 20.1% (25% ALLOWED) |

NOTES TO CONTRACTOR  
REGARDING SITE DEVELOPMENT

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND INSPECTING (ON A REGULAR BASIS) ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES INCLUDING THE SITE FENCES, ETC. DURING CONSTRUCTION/DEMOLITION AND INCLUDING THE REMOVAL AND PROPER DISPOSAL OF ANY ACCUMULATED SILT AND DEBRIS.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL THE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (SILT FENCE AND TREE PROTECTION, ETC. HAVE BEEN INSTALLED.)
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE STREETS FREE OF MUD, DIRT, DEBRIS AND MATERIAL AND SHALL CLEAN/SWEEP THE STREETS ON A REGULAR BASIS OR AT THE DIRECTION OF THE CITY AT NO ADDITIONAL COST TO THE CITY OR OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MITIGATING, WITH TEMPORARY BEST MANAGEMENT PRACTICES, INCREASED STORM WATER PEAK FLOWS DURING CONSTRUCTION TO PREVENT HARM TO NEIGHBORING PROPERTIES
5. PROVIDE TREE PROTECTION AND SILT FENCE AS REQUIRED AND PER DETAIL.



> On Mar 1, 2020, at 9:14 AM, Jim Sauer <[REDACTED]> wrote:  
Linda,

> not sure where to send this so if you could forward on to the right folks for me on behalf of the Blackacre HOA I would appreciate it. Toni and Tim Clark at 1105 Blackacre have a special use permit application that is heard on 4/8 by the Board of Adjustment.

>

> On behalf of the Estates of Blackacre HOA; the HOA is in full support of the Clark's plan to remodel their existing Casita. Please be aware that the Estates of Blackacre HOA in 2015 banned STR's (Short Term Rentals) and the Clarks are aware of this and have told the HOA they only intend to use their casita for friends and family visitors. The Clark's have been wonderful neighbors and are a great addition to the Blackacre HOA and neighborhood.

>

> I hope the Board of adjustment approves the Clark's plans. Attached is our HOA amendment on STR's

>

> Jim Sauer, President

> Tom Mooney, Secretary

> Sam Ferguson, Treasurer

## Order Confirmation

**Ad Order Number**

0000562248

**Customer**

WEST LAKE HILLS, CITY OF

**Payor Customer**

WEST LAKE HILLS, CITY OF

**PO Number****Sales Rep.**

STH.Justin.Garcia

**Customer Account**

30404

**Payor Account**

30404

**Ordered By**

Anjali

**Order Taker**

STH.Justin.Garcia

**Customer Address**911 WESTLAKE DR  
AUSTIN TX 787464509 USA**Payor Address**911 WESTLAKE DR  
AUSTIN TX 787464509 USA**Customer Fax****Order Source****Customer Phone**

5123273628

**Payor Phone**

5123273628

**Customer EMail****Special Pricing****Invoice Text****Ad Order Notes****Net Amount**

\$190.32

**Tax Amount**

\$0.00

**Total Amount**

\$190.32

**Payment Amount**

\$0.00

**Amount Due**

\$190.32

**Ad Number**

0000562248-01

**Ad Type**

Legal

**Production Method**

AdBooker

**Production Notes****External Ad Number****Ad Attributes****Ad Released**

No

**Pick Up****Ad Size**

1 X 39 li

**Color**

| <u>Run Date</u>            | <u>Product</u>      | <u>Placement</u> | <u>Sched Cst</u> | <u>Disc/Prem</u> | <u>Color</u> | <u>Pickup</u> | <u>Tax</u> | <u>Subtotal</u> |
|----------------------------|---------------------|------------------|------------------|------------------|--------------|---------------|------------|-----------------|
| 03/26/2020                 | S-Westlake Picyuane | Legals           | \$95.16          | \$0.00           | \$0.00       | \$0.00        | \$0.00     | \$95.16         |
| 03/26/2020                 | S-Lake Travis View  | Legals           | \$95.16          | \$0.00           | \$0.00       | \$0.00        | \$0.00     | \$95.16         |
| 03/26/2020 -<br>03/26/2020 | S-Web               | Legals           | \$0.00           | \$0.00           | \$0.00       | \$0.00        | \$0.00     | \$0.00          |

**Ad Content**

**CITY OF WEST LAKE HILLS  
PUBLIC NOTICE – SPECIAL USE PERMITS**

The City of West Lake Hills will hold public hearings on April 8, 2020, at 7:00 P.M. before the Board of Adjustment/City Council in the Municipal Building, 911 Westlake Drive, West Lake Hills, Texas, 78746 giving all interested persons the right to appear and be heard regarding the following items:

1. A request for a Special Use Permit to retroactively permit a guest quarters located at 1105 Blackacre Trail, West Lake Hills, TX 78746. The property is zoned R – 1 (One – Family Residential).

2. A request for a Special Use Permit to allow the sale of alcoholic beverages sold in a restaurant for on-or-of-premises consumption to be located at 701 S. Capital of Texas Highway, Suite G-700, West Lake Hills, TX 78746. The property is zoned B – 3 (Business 3).

The applications may be inspected at West Lake Hills City Hall, 911 Westlake Drive, West Lake Hills, Texas between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. If you have questions or comments, please contact Building & Development Services at 512-327-3628 or by email at [planner@westlakehills.org](mailto:planner@westlakehills.org).

3/26/2020

0000562248-01

# **NOTICE TO NEIGHBORS OF SPECIAL USE REQUEST**

**DATE OF NOTICE: March 5, 2020**

Greetings. You are hereby notified that **Mark and Antoinette Clark**, the recorded owners of a property located at **1105 Blackacre Trail** in the City of West Lake Hills, Texas have filed an Application with the City of West Lake Hills, Texas requesting a Special Use Permit for a casita according to the following Sections of the City's Code of Ordinances:

- **Section 38.04.032 – Allowing a Special Use Permit for a Guest Quarters.**

The request is so that the property owners may: **Retroactively apply for a previously constructed guest quarters (casita).**

The Application may be inspected at West Lake Hills City Hall, 911 Westlake Drive, West Lake Hills, Texas between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. This application is scheduled to be considered at a public hearing held by the Board of Adjustment on **April 8, 2020** at **7:00** p.m. at West Lake Hills City Hall, located at 911 Westlake Drive, West Lake Hills, Texas. There shall include an opportunity for all interested persons to be heard. Please call City Hall at 512-327-3628 or email [planner@westlakehills.org](mailto:planner@westlakehills.org) if you have any questions.

---

Anjali Naini, Director of Building and Development Services

## APPLICATION COVER SHEET

Property Address: 101 Double Fork Road West Lake Hills, TX 78746

Applicant Name: Denise and Anthony Burke

Designated Agent (if any, Power of Attorney Required): 914

Applicant Phone Number: 914-703-2699 Email Address: [REDACTED]

Date Application was Submitted: 1/6/2020

### Variance(s) Requested:

We are submitting plans for an extension to our current home and the area in which to build is limited due to flood zone, so we need to go up (vs. out) and the corner of the addition is above the main house which is grandfathered in, so we didn't know when we did the plans, it is part of an encroachment due to updated laws for property over .5 acreage.

*Applicant completes above section; City Staff completes the section below:*

Variance File Number: \_\_\_\_\_ [A sequential identifier based on application date and noted in a Variance Application Log maintained by staff. Examples: 20110903A, 20110903B, 20111021A, etc.]

Application Fees Due: \$ \_\_\_\_\_ ☐ Fees Received on \_\_\_\_\_ by \_\_\_\_\_

### DRAFT APPLICATION PACKET MATERIALS

Draft Application Packet Received on \_\_\_\_\_ by \_\_\_\_\_

☐ Letter to ZAPCO Chairperson

☐ Variance Approval Criteria Answers

☐ Site Plan Coversheet

☐ Site Plan Drawings

☐ Elevation Views and Floor Plans (new structures only)

☐ Septic Assessment (new structures only)

☐ Additional Support Materials (if any): \_\_\_\_\_

☐ Power of Attorney (if any) – Designated Representative: \_\_\_\_\_

Staff Analysis completed on \_\_\_\_\_ by \_\_\_\_\_

Staff Analysis sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_

### FINAL APPLICATION PACKET

Final Application Packet Reviewed and Approved on \_\_\_\_\_ by \_\_\_\_\_

Notice to Proceed Letter sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_

• Notification Letter must be postmarked by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

• Sign must be posted by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

15 Copies of Final Packet received on \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

### ZAPCO

Scheduled for ZAPCO Hearing on: \_\_\_\_\_

ZAPCO Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_

ZAPCO Recommendation: \_\_\_\_\_

Conditions/Comments (if any): \_\_\_\_\_

Modified application and materials (if any) received on \_\_\_\_\_ by \_\_\_\_\_

### BOA/CITY COUNCIL

Scheduled for BOA/Council Hearing on: \_\_\_\_\_

BOA/Council Action: \_\_\_\_\_

Conditions/Comments (if any): \_\_\_\_\_

BOA/Council Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_

### FOLLOW-UP

Follow-up dates (vegetative screening installed, survival verification, etc.): \_\_\_\_\_

• Notifications added to Incode on \_\_\_\_\_ by \_\_\_\_\_

Postponement History (if any): \_\_\_\_\_

Notes: \_\_\_\_\_

## LETTER TO ZAPCO CHAIRPERSON

DATE: January 6, 2020

Chairman Robert Meisel  
West Lake Hills Zoning and Planning Commission  
911 Westlake Drive  
West Lake Hills, Texas 78746

Dear Mr. Chairman:

*[Please briefly provide an overview of your variance request, the need for variance, your efforts to minimize the requested variance, alternatives you considered and your reasons for deciding on the proposed course of action. Please limit this letter to one page in length.]*

Sincerely,

We, Anthony and Denise Burke, are homeowners of 101 Double Fork Road in West Lake Hills. We began renting this home in April 2017 and purchased the home soon after in February 2018. We fell in love with the neighborhood, the old world charm of the home, and the surrounding nature of the creek and nearby streets.

Due to the fact that we need more space for our growing family, we decided to build and add square footage rather than relocate.

As such, due to flood zone constraints and challenging sloped terrain, we are required to build up rather than out, which requires a variance for the current setback laws.

We are hoping that since it is only the corner of the addition, coupled with the fact that the existent home is grandfathered in and we are only .06 of acreage beyond the encroachment setback, we will be granted the opportunity to build on the existing architectural plans set forth herein.

Thank you for your consideration.

Sincerely,

Denise and Anthony Burke

## ANSWERS TO VARIANCE APPROVAL CRITERIA QUESTIONS

West Lake Hills City Code requires applicants to answer each of the following questions. The ZAPCO Commissioners, Board of Adjustment and City Council Members consider your answers to these questions when evaluating your application. *(Feel free to respond to these questions on a separate page or document.)*

- (1) Describe in detail any special conditions you believe will result in unnecessary hardship to you if the terms of this ordinance are strictly or literally enforced.

If the city determines that our variance request is denied, we will not be able to increase our house square footage to accommodate our growing family (nor our extending family when our elderly parents come to visit from out of state).

As such, we need more space and this plan addition request was the best solution to fit our needs as our lot terrain is difficult to add square footage on.

- (2) Why do you think the natural terrain and existing flora will not be unreasonably disrupted or destroyed in the variance you are requesting is granted?

Our architect took exceptional care to create very little new ground disturbance. New addition area disturbed is

only 81 sq ft. and is over the most level part of our sloped yard.

- (3) What other reasonable alternatives have you considered? Why won't these other options alleviate the difficulty or hardship that you think exists?

We and our architect reviewed other addition alternatives, but would have disturbed more of our scarce level back

yard. This new planned addition was the optimal solution in avoiding lot and septic disturbance.

- (4) Why do you believe the variance you are requesting is the minimum required to alleviate the difficulty or hardship you think exists?

Our addition is built directly over the existing garage. The garage is angled to the home in such a way that the front

corner goes over the front setback plane. We designed our 2nd floor plan to cover the original garage corner and roof edge.

Our 2nd floor roof extends over the wall 2'-6" like the original home design.

- (5) Why do you believe your variance does not violate the intent of the Zoning Ordinance or the goals of the City's Comprehensive Plan?

Our lot is .56 acres. The West Lake Hill's code separates the front yard setbacks from 25' for less than .5 acres to

50' for over .5 acres. Our lot is only .06 acres over the limit for a 25' set back. We are at an extreme disadvantage

due to the excessive 50' setback and the fact that we have a flood plane very close to the back of our existing home.

- (6) Why do you believe your variance will not adversely affect neighboring properties or interfere with the enjoyment of these properties by their owners?

Our property is on a 2 house short street. there are no houses across the street to obstruct. Our property has a steep

slope down hill from Double Fork Road. so therefore, the new 2nd floor height has little effect on any lost visuals.

Property Address: 101 Double Fork Road West lake Hills, TX 78746





## SETBACK ENCOACHMENT VARIANCE STAFF REPORT

APRIL 8, 2020

**Project Name:** 101 Double Fork Setback Encroachment Variance Request

**Requested Action:** Construct a second floor addition on top of an existing structure that encroaches into the front setback.

**Agenda Item:** Land Use: **101 Double Fork Road:** Discussion/recommendation of a variance request for a building encroachment into a front setback in order to construct a second floor addition on top of an existing structure that encroaches into the front setback. (Section 22.03.281 of the West Lake Hills Code of Ordinances). Owners/Applicants Denise & Anthony Burke.

**Applicant Information:** Denise and Anthony Burke

### Hearing Dates:

|                   |                                                |
|-------------------|------------------------------------------------|
| February 19, 2020 | ZAPCO                                          |
| March 11, 2020    | Board of Adjustment – <i>meeting cancelled</i> |
| April 8, 2020     | Board of Adjustment                            |

**Location:** The subject property is located south of Laurel Valley Road; north of Yaupon Valley Road; and west of Westlake Drive.

### Zoning & Site Characteristics:

The subject property and surrounding neighborhood are zoned R-1 – One-Family Residential. The property is approximately 0.56 acre. There is currently an existing house on the property.

### Background & Analysis:

The homeowners, Denise and Anthony Burke, recently submitted a building permit to construct an addition to their existing home to meet the needs of their growing family. Due to site constraints, including terrain and location of the existing building, the addition will be built upwards on top of the existing house rather than expanding the footprint horizontally.

Part of the existing home encroaches the front setback, and a corner of the proposed second floor addition will be encroaching into the front setback by approximately 5ft 6in. Although the second floor addition does not change the footprint of the home and is located directly on top of the existing structure, a variance is required because it increases the amount of structure encroaching into the setback.

### Variance Criteria Review:

When applying for a variance, the applicant has established by competent evidence that:

1. The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.  
The application states – “If the city determines that our variance request is denied, we will not be able to increase our house square footage to accommodate our growing family (nor our extended family when our elderly parents come to visit from out of state). As such, we need more space and this plan addition request was the best solution to fit our needs as our lot terrain is difficult to add square footage on.”
2. There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.  
The application states – “Our architect took exceptional care to create very little ground disturbance. New addition area disturbed is only 81 sq ft. and is over the most level part of our sloped yard.”
3. There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.  
The application states – “We and our architect reviewed other addition alternatives, but would have disturbed more of our scarce level back yard. This new planned addition was the optimal solution in avoiding lot and septic disturbance.”
4. The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.  
The application states – “Our addition is built directly over the existing garage. The garage is angled to the home in such a way that the front corner goes over the front setback plane. We designed our 2<sup>nd</sup> floor plan to cover the original garage and roof edge.”
5. The variance does not violate the intent of the Zoning Ordinance or goals of the Comprehensive Plan.  
The application states – “Our lot is 0.56 acres. The West Lake Hills’ code separates the front yard setbacks from 25’ for less than 0.5 acres to 50’ for over 0.5 acres. Our lot is only 0.06 acres over the limit for a 25’ setback. We are at an extreme disadvantage due to the excessive 50’ setback and the fact that we have a flood plain very close to the back of our existing home.” *[Note: the front yard setback for lots under 0.5 acre is 30’, not 25’ as stated by the applicants]*
6. The variance will not adversely affect neighboring properties or interfere with the enjoyment of these properties by their owners.  
The application states – “Our property is on a 2 house short street. There are no houses across the street to obstruct. Our property has a steep slope downhill from

Double Fork Road. So therefore, the new 2<sup>nd</sup> floor height has little effect on any lot visuals.”

### **Traffic/Transportation**

There may be an impact on traffic in that area during construction process.

### **Lighting**

Outdoor lighting is not proposed with this variance request. Any outdoor lighting will need to comply with the City’s Code.

### **Building Code**

The property and future construction will have to comply with all applicable City codes.

### **Subdivision**

This request will not change the subdivision.

### **Comprehensive Planning Analysis**

The existing and future land use comply with the Master Plan.

### **Zoning & Planning Commission Recommendation:**

During the February 19, 2020 ZAPCO meeting, the Commissioners unanimously recommended approval by a vote of 4 – 0 with a condition that the roof eave for new second story addition cannot extend beyond the existing eave (Commissioner Bill Harwell absent).

### **Staff Recommendation**

Staff recommends approval of the requested variance.

-----

### **Code Analysis:**

#### **Sec. 22.03.275 Building setback distances**

(a) (1) No principal building shall have any front, side or rear setback distance less than that shown on the schedule of regulations as being required in the district in which the building is located, except that the minimum setback distance from Bee Cave Road shall be 50 feet regardless of which direction the building is facing. The setback distance from the Capital of Texas Highway shall be a minimum of 75 feet.

(2) Unroofed steps and ramps shall not be considered as part of the principal building when measuring the setback distance of such building.

(3) Buildings, including overhangs and eaves, shall not encroach into setbacks.

(Ordinance 211, sec. 6, adopted 1/26/11)

(b) Yards are the open areas between building setback lines and lot lines. Structures shall not be permitted in yards except as otherwise provided herein.

(1) Front yards. Front yards extend the full width of the lot. Their depth is measured from the edge of the right-of-way line of the street to the minimum front setback line.

(2) Rear yards. Rear yards extend the full width of the lot. Their depth is measured from the rear lot line to the minimum rear setback line.

(3) Side yards. Side yards extend from the front yard to the rear yard. Their depth is measured from the side lot line to the nearest minimum side setback line.

(c) In the case of lots abutting on more than one street, the full width of the front yard shall be provided from each street.

(Ordinance 152, att. A, adopted 4/29/09)

\*\*\*

#### **Sec. 22.03.276 Setbacks for accessory structures**

The minimum setback distances for accessory structures, other than unroofed steps, ramps, fences, walks, driveways, driveway gates, landscapes, and mailboxes, shall be the same as the setback distances applicable to a principal building under the appropriate category in section 22.03.281. Accessory structures, including overhangs and eaves, shall not encroach into setbacks.

\*\*\*

#### **Sec. 22.03.281 Schedule of regulations**

(a) Where the slope gradient exceeds 25 percent nonresidential development is not permitted.

(b) Dimensional regulations for listed zoning districts:

| Dimensional Minimums of Lots |     |     |     |     |     |     |     |     |      |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Dimension/Zoning             | R-1 | R-2 | R-3 | O   | GUI | B-1 | B-2 | B-3 | MU-1 |
| Acreage (acres) (A)          | 1   | 1   | 2   | 1.5 | 2   | 1.5 | 2   | 20  | 30   |
| Depth (feet)                 | 150 | 150 | 400 | 200 | 200 | 200 | 200 | 500 | (C)  |
| Width (feet) (B)             | 150 | 150 | 400 | 150 | 150 | 150 | 150 | 500 | (C)  |

(1996 Code, sec. 14-295)

| Minimum Building Setback Distance in Feet From Front Lot Line |                  |                  |     |    |     |     |     |         |      |
|---------------------------------------------------------------|------------------|------------------|-----|----|-----|-----|-----|---------|------|
| Lot Size/Zoning                                               | R-1              | R-2              | R-3 | O  | GUI | B-1 | B-2 | B-3     | MU-1 |
| Greater than or equal to .5 acre                              | 50               | 50               | 50  | 50 | 50  | 50  | 50  | (IV)(a) | (C)  |
| Less than .5 acres                                            | 30               | 30               | N/A | 30 | 30  | 30  | 30  | N/A     | N/A  |
| Minimum Building Setback Distance in Feet From Rear Lot Line  |                  |                  |     |    |     |     |     |         |      |
| Lot Size/Zoning                                               | R-1              | R-2              | R-3 | O  | GUI | B-1 | B-2 | B-3     | MU-1 |
| Greater than or equal to .5 acre                              | 30               | 30               | 50  | 40 | 40  | 40  | 40  | (IV)(c) | (C)  |
| Less than .5 acres, greater than or equal to .375 acres       | 25               | 25               | N/A | 30 | 30  | 30  | 30  | N/A     | N/A  |
| Less than .375 acres—zero                                     | 15 (F, E)/<br>20 | 15 (F, E)/<br>20 | N/A | 30 | 30  | 30  | 30  | N/A     | N/A  |

| Minimum Building Setback Distance in Feet From Side Lot Lines |                  |                  |     |      |      |      |      |         |      |
|---------------------------------------------------------------|------------------|------------------|-----|------|------|------|------|---------|------|
| Lot Size/Zoning                                               | R-1              | R-2              | R-3 | O    | GUI  | B-1  | B-2  | B-3     | MU-1 |
| Greater than or equal to .5 acre                              | 25               | 25               | 50  | (I)  | (I)  | (I)  | (I)  | (IV)(c) | (C)  |
| Less than .5 acres, greater than or equal to .375 acres       | 20               | 20               | N/A | (II) | (II) | (II) | (II) | N/A     | N/A  |
| Less than .375 acres—zero                                     | 15 (F, E)/<br>20 | 15 (F, E)/<br>20 | N/A | (II) | (II) | (II) | (II) | N/A     | N/A  |

| Maximum Impervious Cover in Percent of Lot Area       |      |      |     |      |       |       |       |     |      |
|-------------------------------------------------------|------|------|-----|------|-------|-------|-------|-----|------|
| Lot Size/Zoning                                       | R-1  | R-2  | R-3 | O    | GUI   | B-1   | B-2   | B-3 | MU-1 |
| Greater than or equal to .5 acre                      | 25%  | 25%  | 25% | (IX) | (III) | (III) | (III) | (V) | (C)  |
| Less than .5 acres, greater than or equal to .2 acres | *, † | *, † | 25% | (IX) | (III) | (III) | (III) | (V) | (C)  |

\* The following formula applies:

$P = (\text{Size of acre expressed as a whole number and decimal}) \times (.5) - (.5)$

Example:

$P = (.25 \text{ acres}) (.5) - .5$

$P = (.125) - .5 = -.375\%$

$P = 37.5\%$  allowable impervious cover for a .25 acre lot

† In order to receive and increase in allowable impervious cover over 25%, the property must be connected to the city's wastewater service.

(A) Land donated/dedicated to and accepted by the city shall be credited to the area of the lot/tract from which the donated land originated.

(B) For residential lots on culs-de-sac, the minimum lot width at the front street property line shall be 33 feet measured along the chord of the arc.

(C) See section 38.03.040 et seq.

(D) Residential 30 feet; nonresidential 37 feet.

(E) No portion of the structure in an extended setback shall be taller than 16' above natural grade.

(F) If the proposed building is a one-story structure, the lesser setback distance applies. If any portion of the building is a two-story structure, the greater setback distance applies.

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### **Sec. 22.03.514 Criteria required for granting variance**

No variance shall be granted under this chapter unless the following criteria are fulfilled:

(1) Findings. The applicant has established by competent evidence that:

(A) The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.

(B) There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.

(C) There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.

(D) The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.

(2) ZAPCO. The recommendation of zoning and planning commission shall include an analysis of whether:

(A) The variance may violate the intent of this chapter or the goals of the city's comprehensive plan; and

(B) The variance may have an adverse effect on neighborhood properties, or interfere with the respective owners' enjoyment thereof; and

(C) When considering variance requests for nonresidential projects in the Commercial Overlay District, whether the variance, when considered as part of the proposed project (as a whole), furthers achievement of the land planning principles set forth in the city's master plan, attachment B, as codified in article 28.02 of this code.

(3) Conditions. The city council can impose, and the zoning and planning commission can recommend imposition of, reasonable conditions upon granting a variance if the conditions are related to the subject of the variance. When considering variance requests for nonresidential projects in the Commercial Overlay District are necessary to achieve one or more of the land planning principles set forth in the city's master plan, attachment B, as codified in article 28.02 of this code.

(Ordinance 137, att. A, adopted 9/15/08)

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#### **Sec. 38.04.061 Nonconforming uses of land and structures**

Any use of land or structures lawfully existing on the effective date of the ordinance from which this chapter is derived, or the effective date of any amendment to this chapter, that is not permitted in the district in which the use is located may be continued, subject to the following conditions:

(1) No nonconforming use of land shall be extended to occupy a greater area of land than was occupied on April 15, 1990, or on the effective date of the ordinance from which this chapter is derived or the effective date of an amendment of this chapter.

(2) No nonconforming use of land shall be moved in whole or in part to any portion of the lot or parcel other than that occupied by such use at the effective date of the ordinance from which this chapter is derived or the effective date of an amendment of this chapter.

(3) When a nonconforming use of land is discontinued for a period of more than 90 consecutive days, it shall be deemed to be abandoned and subsequent use of such land shall conform to the regulations specified by this chapter for the district in which the land is located.

(4) No existing structure devoted to a use not permitted by this chapter in the district in which it is located shall be enlarged, extended, constructed, reconstructed, moved or structurally altered except in changing the use of the structure to a use permitted in the district in which it is located.

(5) Any nonconforming use may be extended throughout any parts of a building which were manifestly arranged or designed for such use at the time of adoption or amendment of this chapter, but no such use shall be extended to occupy any land outside such building.

(6) Any structure, or structure and land in combination, in or on which a nonconforming use is superseded by a permitted use shall thereafter conform to the regulations for the district, and the nonconforming use may not thereafter be resumed.

(7) When a nonconforming use of a structure, or structure and premises in combination, is discontinued for three consecutive months, except for repairs covered by an approved building

permit, not exceeding six months, it shall be deemed to be abandoned, and the structure, or structure and premises in combination, shall not thereafter be used except in conformity with the regulations of the district in which it is located.

(8) Where nonconforming use status applies to a structure and premises in combination, removal or destruction of the structure shall eliminate the nonconforming status of the land. Destruction for the purpose of this subsection is defined as damage to an extent of more than 50 percent of the replacement cost at the time of destruction.

(9) The city council, after notice and hearing, may require that a nonconforming use be screened from view of the street or surrounding property, or may require the elimination of any nuisance factor caused by a nonconforming use.

(10) The following nonconforming uses of land shall be entirely discontinued in all districts within one year from April 15, 1990, or the effective date of the ordinance from which this chapter is derived or the effective date of an amendment of this chapter, or from the date of annexation of land containing such uses:

(A) Wrecking, junk, scrap or salvage yards.

(B) Automotive and other sales lots, and outdoor storage yards for lumber, building materials and contractor's equipment.

(C) Extraction or removal of stone, sand, gravel, caliche, minerals, earth, topsoil or other natural material for commercial purposes.

(D) Shooting ranges.

(11) The following nonconforming uses of structures, or of structures and land in combination, shall be entirely discontinued within eight years after their inception, or within five years after becoming nonconforming under this chapter, or an amendment to this chapter, whichever is later:

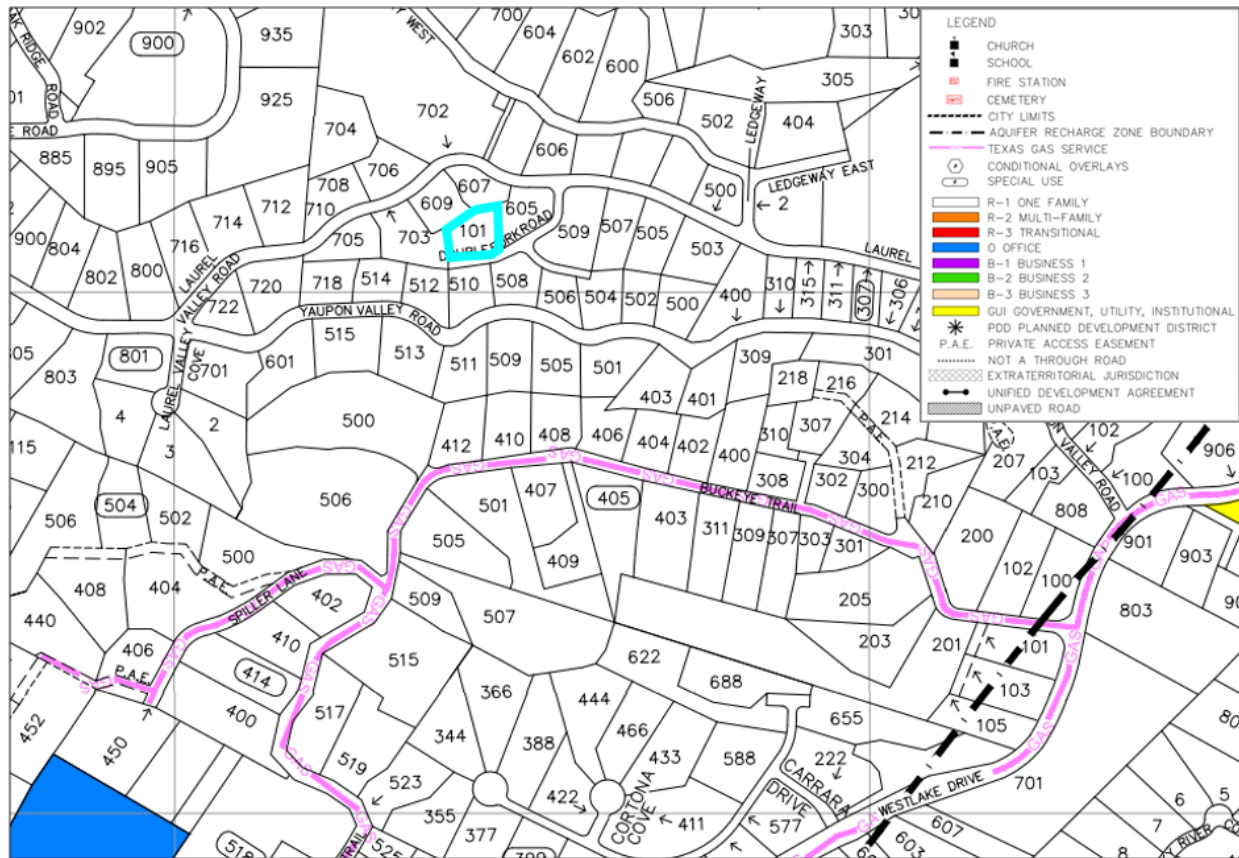
(A) All commercial uses in R districts; and

(B) All industrial uses in any district.

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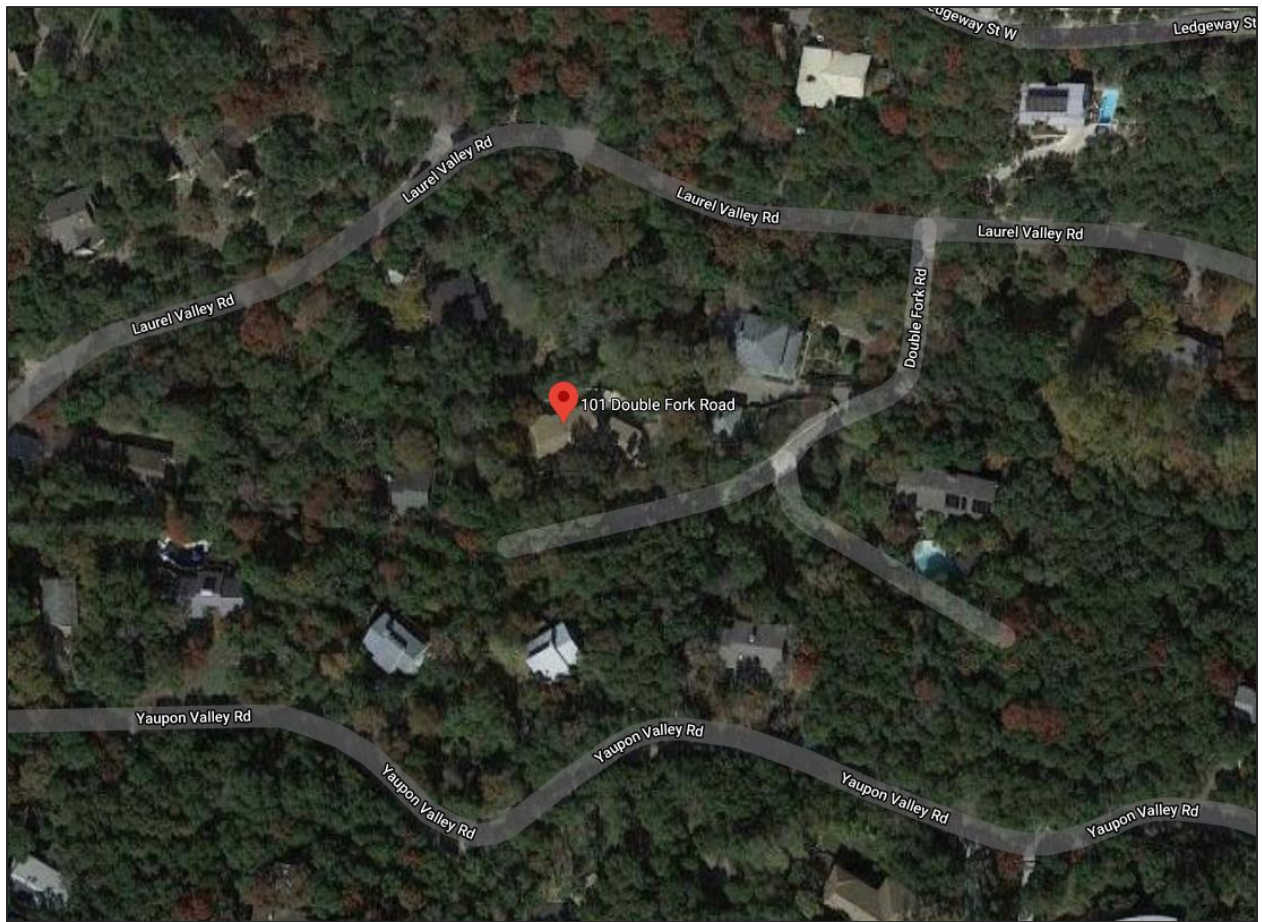
*(Maps to follow)*

## Zoning:





Aerial:







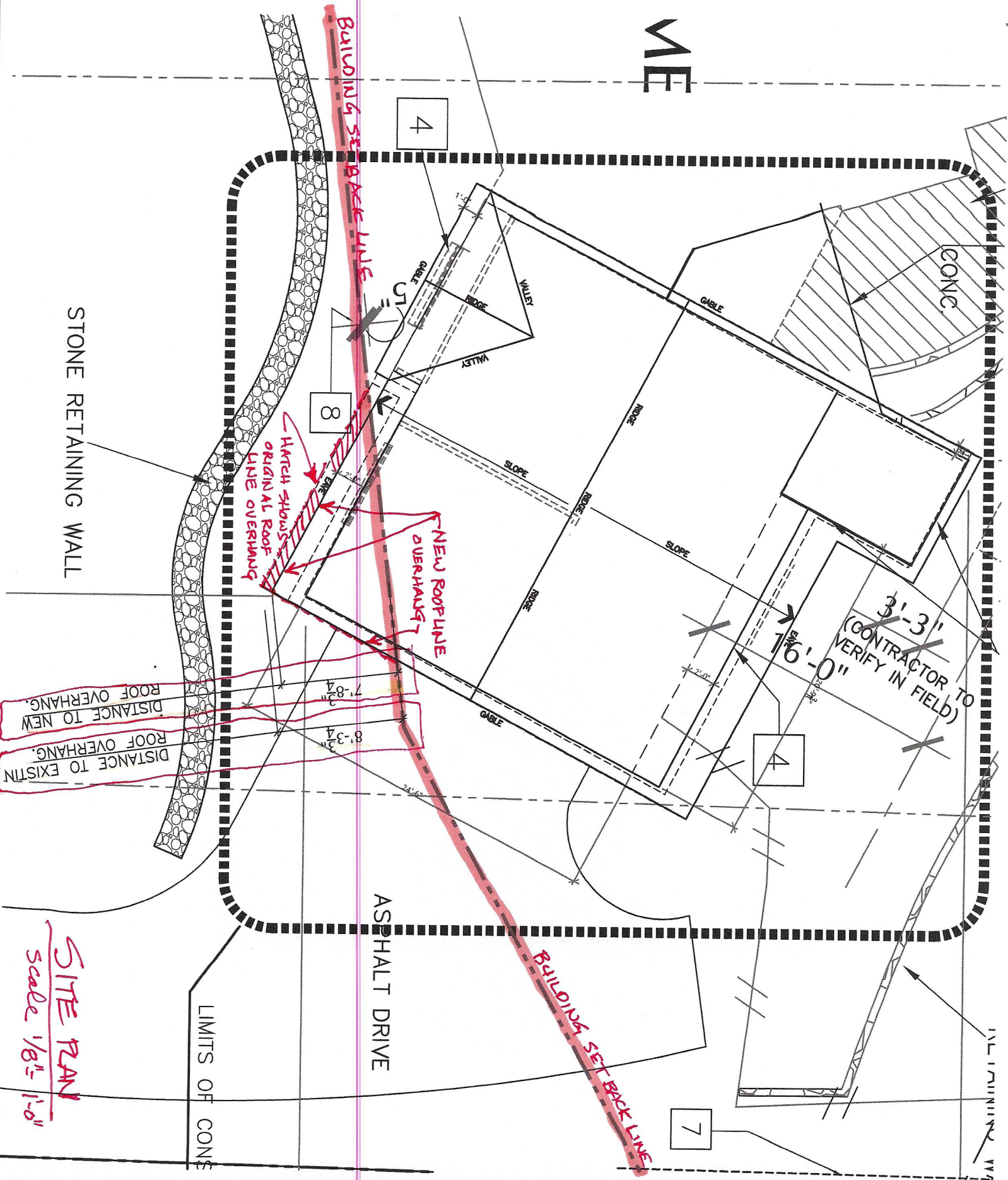








ME



SITE PLAN  
Scale 1/8" = 1'-0"

EDGE OF EXISTING FRONT WALL.

45'-0 $\frac{7}{8}$ "

-0"

EXISTING ROOF EAVE DISTANCE FROM FRONT GARAGE WALL

ORIGINAL EXISTING WALL AT GARAGE

SITE SECTION AT GARAGE DOOR SIDE  
SCALE 1/8" = 1'-0"



2720 BEE CAVE RD., SUITE 121  
Austin, Texas 78746  
Tel.: (512)-497-4629

# New House Addition For

**PRELIMINARY**  
**FOR**  
**PERMITTING,**  
**REGULATORY**  
**APPROVAL**  
**ONLY**

|   |             |         |
|---|-------------|---------|
| - | TDLR ISSUE  | 0000000 |
| 1 | Reg.# ISSUE | 0000000 |

|        |          |
|--------|----------|
| DRAWN: | CHECKED: |
| R.G.   | S.S.     |

SCALE:

---

OB NO.:

---

SHEET

CO.1

1. NEW CONSTRUCTION AT THE GROSS HATCHED AREA OF CONCRETE PATIO SHOWN. TYP.
2. SEE NEW FOUNDATION PLAN FOR THE AREA. TYP.
3. REINFORCED CONCRETE FOOTING AND 12" DIA. CONCRETE UP TO THE STONE RETAINING WALL IN STEP AREA, AND THE STONE WALL.
4. NEW 2ND FLOOR OVERHANG, 2'-0" FROM LOWER EXISTING EXTERIOR WALL.
5. 1250 TON COMPARTMENT SEPTIC TANK, INSTALLED IN 2003, ABSORPTION 546 SQUARE FEET. LOCATION NEEDS TO BE VERIFIED IN THE FIELD BEFORE WORK COMMENCES. TYP.
6. SEPTIC TANK CLEAN OUT LOCATION, APPROXIMATE. PLEASE FERRY IN FIELD
7. EROSION CONTROL, WITH SILT FENCING PER LOCAL ENVIRONMENTAL CODE RECOMMENDATIONS
8. NEW SECOND FLOOR ROOF IS 5' INSIDE THE 50' FRONT BUILDING SETBACK

[illegible]

|          |                                      |
|----------|--------------------------------------|
| 1 OF 10  | - S1.1 STRUCTURAL DESIGN INFORMATION |
| 2 OF 10  | - S1.2 STRUCTURAL DESIGN INFORMATION |
| 3 OF 10  | - S2.1 FOUNDATION PLAN               |
| 4 OF 10  | - S2.2 SECOND FLOOR FRAMING PLAN     |
| 5 OF 10  | - S2.3 ROOF FRAMING PLAN             |
| 6 OF 10  | - S3.1 FOUNDATION DETAILS            |
| 7 OF 10  | - S6.1 SHEER WALL DETAILS            |
| 8 OF 10  | - S6.2 FRAMING DETAILS               |
| 9 OF 10  | - S6.3 FRAMING DETAILS               |
| 10 OF 10 | - S6.4 FRAMING DETAILS               |

|          |                                      |
|----------|--------------------------------------|
| 1 OF 10  | - S1.1 STRUCTURAL DESIGN INFORMATION |
| 2 OF 10  | - S1.2 STRUCTURAL DESIGN INFORMATION |
| 3 OF 10  | - S2.1 FOUNDATION PLAN               |
| 4 OF 10  | - S2.2 SECOND FLOOR FRAMING PLAN     |
| 5 OF 10  | - S2.3 ROOF FRAMING PLAN             |
| 6 OF 10  | - S3.1 FOUNDATION DETAILS            |
| 7 OF 10  | - S6.1 SHEER WALL DETAILS            |
| 8 OF 10  | - S6.2 FRAMING DETAILS               |
| 9 OF 10  | - S6.3 FRAMING DETAILS               |
| 10 OF 10 | - S6.4 FRAMING DETAILS               |

|                                  | EXISTING: | NEW:  | EXEMPTION: | TOTAL: |
|----------------------------------|-----------|-------|------------|--------|
| 1. Single-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 2. Single-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 3. Two-family detached           | 1,000     | 1,000 | 1,000      | 3,000  |
| 4. Two-family attached           | 1,000     | 1,000 | 1,000      | 3,000  |
| 5. Three-family detached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 6. Three-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 7. Four-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 8. Four-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 9. Five-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 10. Five-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 11. Six-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 12. Six-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 13. Seven-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 14. Seven-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 15. Eight-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 16. Eight-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 17. Nine-family detached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 18. Nine-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 19. Ten-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 20. Ten-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 21. Eleven-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 22. Eleven-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 23. Twelve-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 24. Twelve-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 25. Thirteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 26. Thirteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 27. Fourteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 28. Fourteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 29. Fifteen-family detached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 30. Fifteen-family attached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 31. Sixteen-family detached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 32. Sixteen-family attached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 33. Seventeen-family detached    | 1,000     | 1,000 | 1,000      | 3,000  |
| 34. Seventeen-family attached    | 1,000     | 1,000 | 1,000      | 3,000  |
| 35. Eighteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 36. Eighteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 37. Nineteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 38. Nineteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 39. Twenty-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 40. Twenty-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 41. Twenty-one-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 42. Twenty-one-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 43. Twenty-two-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 44. Twenty-two-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 45. Twenty-three-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 46. Twenty-three-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 47. Twenty-four-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 48. Twenty-four-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 49. Twenty-five-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 50. Twenty-five-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 51. Twenty-six-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 52. Twenty-six-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 53. Twenty-seven-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 54. Twenty-seven-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 55. Twenty-eight-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 56. Twenty-eight-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 57. Twenty-nine-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 58. Twenty-nine-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 59. Thirty-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 60. Thirty-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 61. Thirty-one-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 62. Thirty-one-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 63. Thirty-two-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 64. Thirty-two-family attached   | 1,000     | 1,000 |            |        |

|                                  | EXISTING: | NEW:  | EXEMPTION: | TOTAL: |
|----------------------------------|-----------|-------|------------|--------|
| 1. Single-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 2. Single-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 3. Two-family detached           | 1,000     | 1,000 | 1,000      | 3,000  |
| 4. Two-family attached           | 1,000     | 1,000 | 1,000      | 3,000  |
| 5. Three-family detached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 6. Three-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 7. Four-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 8. Four-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 9. Five-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 10. Five-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 11. Six-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 12. Six-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 13. Seven-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 14. Seven-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 15. Eight-family detached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 16. Eight-family attached        | 1,000     | 1,000 | 1,000      | 3,000  |
| 17. Nine-family detached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 18. Nine-family attached         | 1,000     | 1,000 | 1,000      | 3,000  |
| 19. Ten-family detached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 20. Ten-family attached          | 1,000     | 1,000 | 1,000      | 3,000  |
| 21. Eleven-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 22. Eleven-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 23. Twelve-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 24. Twelve-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 25. Thirteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 26. Thirteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 27. Fourteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 28. Fourteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 29. Fifteen-family detached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 30. Fifteen-family attached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 31. Sixteen-family detached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 32. Sixteen-family attached      | 1,000     | 1,000 | 1,000      | 3,000  |
| 33. Seventeen-family detached    | 1,000     | 1,000 | 1,000      | 3,000  |
| 34. Seventeen-family attached    | 1,000     | 1,000 | 1,000      | 3,000  |
| 35. Eighteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 36. Eighteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 37. Nineteen-family detached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 38. Nineteen-family attached     | 1,000     | 1,000 | 1,000      | 3,000  |
| 39. Twenty-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 40. Twenty-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 41. Twenty-one-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 42. Twenty-one-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 43. Twenty-two-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 44. Twenty-two-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 45. Twenty-three-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 46. Twenty-three-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 47. Twenty-four-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 48. Twenty-four-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 49. Twenty-five-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 50. Twenty-five-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 51. Twenty-six-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 52. Twenty-six-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 53. Twenty-seven-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 54. Twenty-seven-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 55. Twenty-eight-family detached | 1,000     | 1,000 | 1,000      | 3,000  |
| 56. Twenty-eight-family attached | 1,000     | 1,000 | 1,000      | 3,000  |
| 57. Twenty-nine-family detached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 58. Twenty-nine-family attached  | 1,000     | 1,000 | 1,000      | 3,000  |
| 59. Thirty-family detached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 60. Thirty-family attached       | 1,000     | 1,000 | 1,000      | 3,000  |
| 61. Thirty-one-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 62. Thirty-one-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 63. Thirty-two-family detached   | 1,000     | 1,000 | 1,000      | 3,000  |
| 64. Thirty-two-family attached   | 1,000     | 1,000 | 1,000      | 3,000  |

SEE DIMENSIONS SHOWN FOR FOUNDATION FINING NOTES AND SPECS, ALL DIMENSIONS SHOWN ARE FROM EDGE OF WOOD STUD, TO CENTERLINE OF STUD, UNLESS NOTED OTHERWISE. ALL DIMENSIONS ARE TO CENTERLINE, UNLESS NOTED OTHERWISE. DIMENSIONS OF STUDS, JOISTS, AND FINISHES WILL BE OUTSIDE OF THESE DIMENSIONS, TYPICAL.

CONTRACTOR IS TO USE ALL STANDARD CONSTRUCTION PRACTICES DURING THE BUILDING OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS OR BETWEEN THE FIELD MEASUREMENTS AND THE PLANS, NOTIFY THE ARCHITECT OWNER BEFORE PROCEEDING WITH THE WORK.

IF ANY UNUSUAL SITE CHARACTERISTICS APPEAR, CONTACTOR TO WHAT IS SHOWN IN THESE PLANS, PLEASE CONSULT THE ARCHITECT OR A STRUCTURAL ENGINEER. ARCHITECTS PLAN, PLEASE TO PROTECT THAT ARE NEAR TO OUR NEW CONSTRUCTION.

 DENOTES AREA WHERE EXISTING AND NEW CONSTRUCTION OCCURS FOR HOME REMODEL AND ADDITION  
 DENOTES NEW CONSTRUCTION FOR HOME ADDITION  
 DENOTES EXISTING FLATWORK DEMO AT PATIO. SEE DEMO PLAN

|                                    | EXISTING: | NEW: | TOTAL: |
|------------------------------------|-----------|------|--------|
| 1. <b>RESEARCH AND DEVELOPMENT</b> | 100       | 100  | 200    |
| 2. <b>MANUFACTURING</b>            | 100       | 100  | 200    |
| 3. <b>SALES AND MARKETING</b>      | 100       | 100  | 200    |
| 4. <b>ADMINISTRATIVE</b>           | 100       | 100  | 200    |
| 5. <b>FINANCIAL</b>                | 100       | 100  | 200    |
| 6. <b>LEGAL</b>                    | 100       | 100  | 200    |
| 7. <b>GENERAL</b>                  | 100       | 100  | 200    |
| 8. <b>OTHER</b>                    | 100       | 100  | 200    |
| 9. <b>TOTAL</b>                    | 900       | 900  | 1800   |

|                                    | EXISTING: | NEW: | TOTAL: |
|------------------------------------|-----------|------|--------|
| 1. <b>RESEARCH AND DEVELOPMENT</b> | 100       | 100  | 200    |
| 2. <b>MANUFACTURING</b>            | 100       | 100  | 200    |
| 3. <b>SALES AND MARKETING</b>      | 100       | 100  | 200    |
| 4. <b>ADMINISTRATIVE</b>           | 100       | 100  | 200    |
| 5. <b>FINANCIAL</b>                | 100       | 100  | 200    |
| 6. <b>LEGAL</b>                    | 100       | 100  | 200    |
| 7. <b>GENERAL</b>                  | 100       | 100  | 200    |
| 8. <b>OTHER</b>                    | 100       | 100  | 200    |
| 9. <b>TOTAL</b>                    | 900       | 900  | 1800   |

TREE ORDINANCE PERMIT:  
 - NO PROTECTED TREES AREA IN THE "NEW CONSTRUCTION AREA"  
 SPRINKLER REQUIREMENTS:  
 - NO SPRINKLER SYSTEM IS REQUIRED FOR THIS PROJECT.

1. FULL SIZE DRAWINGS ARE 24" X 36" SIZES AND ARE DRAWN AT THE SCALE SHOWN.

2. HALF-SIZED DRAWINGS ARE 11" X 17" SIZES AND ARE DRAWN AT ONE HALF THE SCALE SHOWN.



| NO.      | REVISION |
|----------|----------|
| 04-04-20 |          |
|          |          |
|          |          |



SOWARD ARCHITECTS, PLLC

2720 BEE CAVE RD., SUITE 121  
Austin, Texas 78746  
Tel.: (512)-497-4629

New House Addition  
For  
Anthony and Denise Burke  
101 Double Fork Rd.  
West Lake Hills, Texas 78746

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| DRAWN: CHECKED: |  |
| R.G. S.S.       |  |
| DATE: 02-24-20  |  |
| SCALE:          |  |
| JOB NO.:        |  |
| SHEET           |  |

PRELIMINARY  
FOR  
PERMITTING,  
REGULATORY  
APPROVAL  
ONLY

A2.2

KEYED NOTES

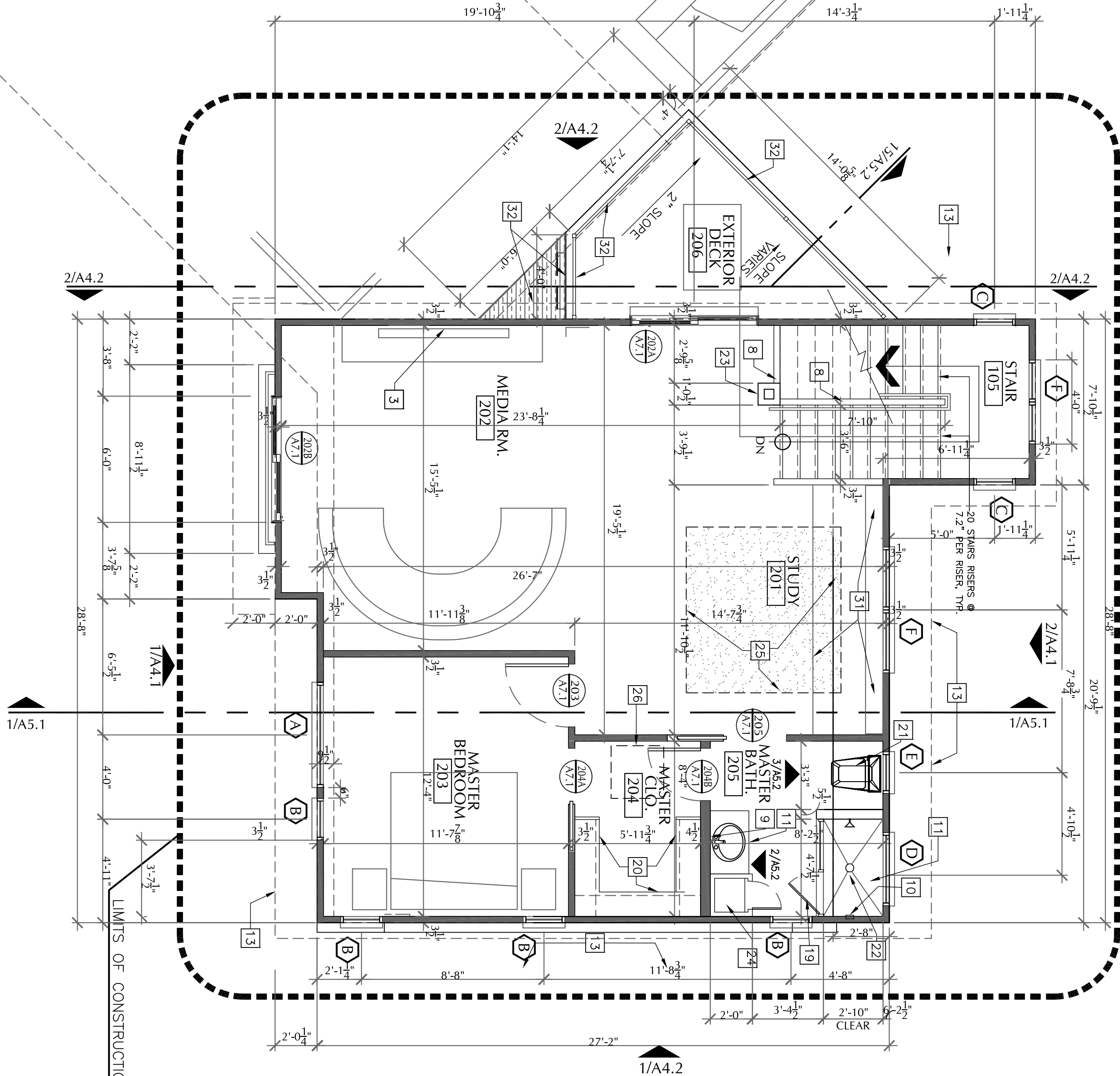
- 1 NEW HOSE BIBB LOCATION, SEE DEMO PLAN, TYP..
- 2 NEW TALLER 2" X 4" X 10'-0"HT. WOOD STUDS AT 12" O.C., TYP  
AT GARAGE EXTERIOR WALLS ONLY, TYP..
- 3 BLOCK STUDS HORIZONTALLY THIS AREA FOR UPPER AND LOWER  
CABINET BRACING.
- 4 NEW TANKLESS ELECTRIC WATER HEATER LOCATION.
- 5 GARAGE DOOR TO BE REINSTALLED, 7' HIGH X 18 WIDE.  
BY GARAGE DOOR DEALER
- 6 NEW CABINERY FOR PANTRY, SEE INTERIOR ELEVATIONS
- 7 NEW PANTRY CABINETS, SEE INTERIOR ELEVATIONS. SEE SHEET 45.2  
(OR A1-F.1), TYPICAL
- 8 HALF WALL AT STAIR @ 44" HT. FROM STAIR NOSING  
(OR A1-F.1), TYPICAL
- 9 MIRROR
- 10 SOAP DISH
- 11 SHOWER WITH TILE - TILE SELECTED BY OWNER
- 12 3 CM QUARTZ COUNTERTOP WITH 4" BACKSPLASH, TYP.  
INTEGRAL SINK
- 13 ROOF OVERHANG ABOVE
- 14 -----
- 15 1 1/2" DIA. WOOD RAIL AT STAIRS WITH METAL PICKETS
- 16 6 EQUAL SPACED SHELVES, 12" DEEP, PAINT
- 17 NEW WOOD RAIL WITH METAL BALUSTERS TYPICAL @ FIRST  
FLOOR ONLY
- 18 -----
- 19 TEMPERED GLASS SHOWER DOOR, TYP.
- 20 12" DEEP SHELF WITH 1 METAL CLOTHES ROD, TYPICAL
- 21 TOILET
- 22 SLOPE TILE FLOOR TO THE DRAIN, TYP.
- 23 2" X 4" BUILT UP STUD COLUMN AT THE HEAD OF THE STAIR
- 24 LINEN CABINET, SEE INTERIOR ELEVATION.
- 25 POP-UP CEILING AREA, SEE REFLECTED CEILING PLAN, TYP.
- 26 2'-6"x2'-6" ACCESS PANEL
- 27 NEW FLOOR SPACE ACCESS PANEL 2'-6"x2'-6"
- 28 LOW PROFILE BRUSHED ALUMINUM THRESHOLD, TYPICAL
- 29 SHORT WALL BELOW STAIRS TO HAVE R-15 INSULATION  
-----
- 30 -----
- 31 BUILT-IN WOOD BENCH 3 EQUAL SIZE COMPARTMENT ON THE  
SEAT, WITH PIANO HINGES, TYP. SEAT TO HAVE CUSTOM MADE  
CUSHIONS MADE TO FIT. CUSHIONS ARE BY OWNER
- 32 42" HIGH METAL GUARDRAIL TO CODE - SEE DETAIL XXX
- 33 NEW ROOF

LEGEND

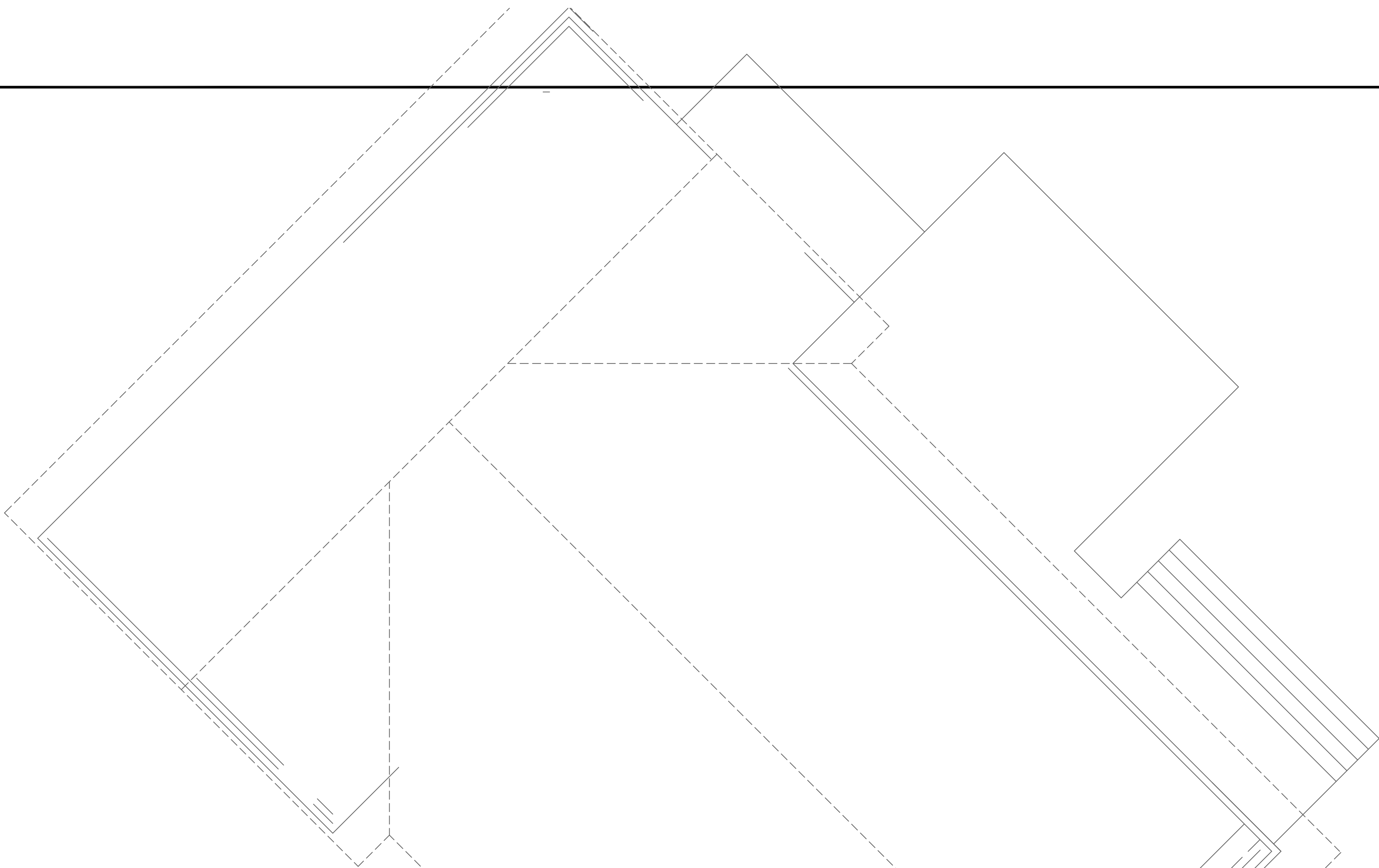
- GROSS HATCH DENOTES NEW 5, 1/4" THICK CONCRETE CAP  
OVER EXISTING CONCRETE IN THIS AREA, TYP..
- SOLID FILL LINE IN WALLS DEPICTS NEW 2" X 4" AT 16" O.C.  
WALL ADDITION, TYP
- LIMITS OF CONSTRUCTION.
- GROSS HATCH DENOTES NEW ROOF AT ADJACENT DECK  
AREA. CONSTRUCTION TO FLASH AT NEW RAKE AND NEW  
ROOF TO SIDEWALL, TYP.

GENERAL NOTES

1. SEE STRUCTURAL PLANS FOR FRAMING NOTES AND SPECS.
2. ALL DIMENSIONS SHOWN ARE FROM EDGE OF WOOD STUD.
3. WHERE COLUMNS AND FIXTURES ARE SHOWN DIMENSIONS ARE  
TO CENTERLINE. ALL VENEERS AND FINISHES WILL BE OUTSIDE  
OF THESE DIMENSIONS, TYPICAL.
4. ALL ANGLED WALLS TO BE 45 DEGREES UNLESS OTHERWISE NOTED
5. CHALK-LINE ALL COLUMN GRID LINES ON CONCRETE SLAB BOTH  
WAYS FOR WALL FRAMING LAYOUT. MARK FOR DURABILITY  
THROUGHOUT FRAMING CONSTRUCTION STAGE.
6. BRACE INTERIOR STUDS HORIZONTALLY WITH 2" X 6" STUDS @  
ALL NEW WALL HUNG BATH FIXTURE LOCATIONS AND UPPER CAB'S.
7. ALL SHEETROCK ON INSIDE OF GARAGE WALL SHALL BE 5/8"  
TYPE "X" FIRE RATED, TYP.
8. NEW DUCT MINI SPLIT SYSTEM TO SUPPLY AIR FOR NEW FIRST  
FLOOR ADDITION, ROOM 103 AND 105
9. XXX



2nd FLOOR  
FLOOR PLAN  
SCALE: 1/4" = 1'-0"



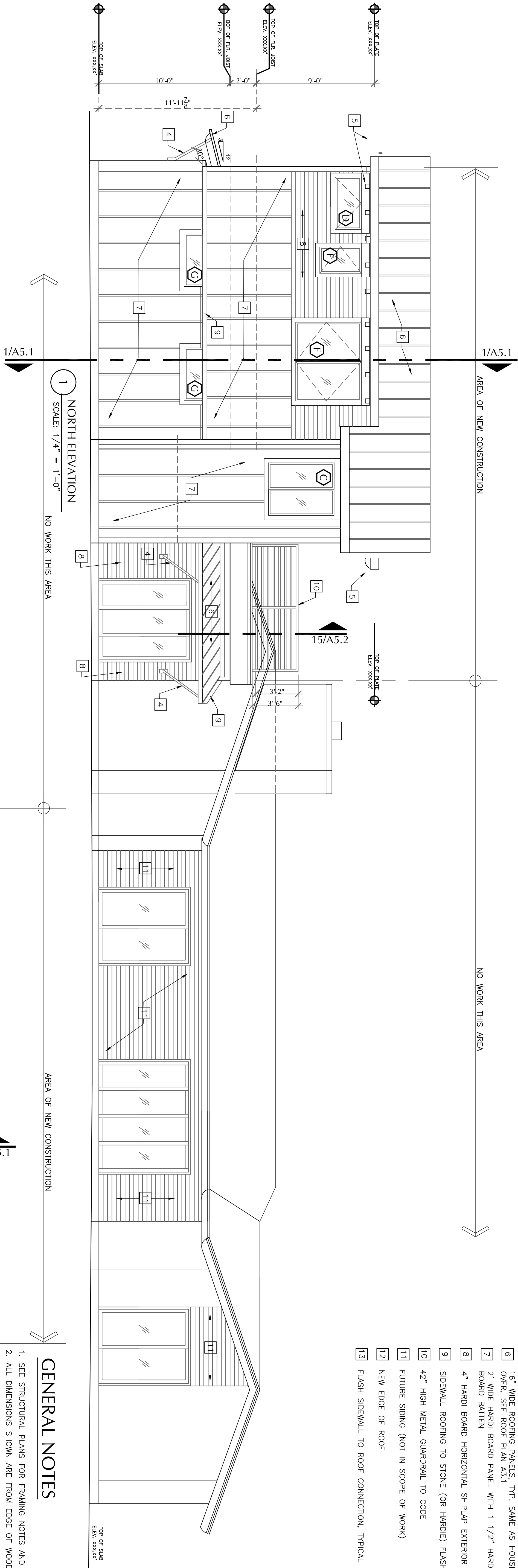


KEYED NOTES

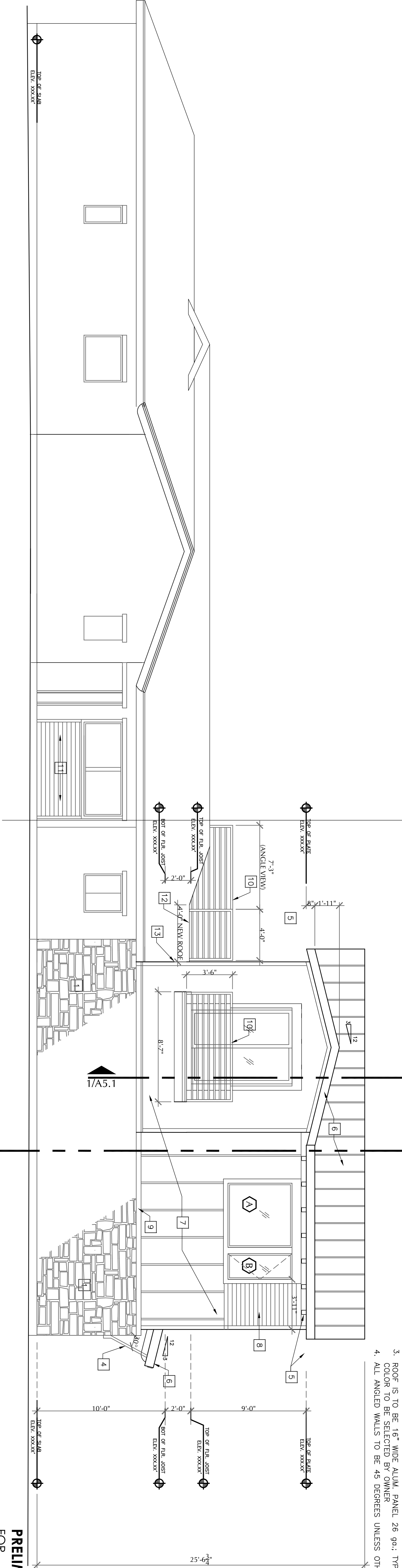
- [1] EXISTING STONE VENEER TO REMAIN, TYP..  
[2] BOARD AND BATTEN HARDIE PANEL SIDING WITH 2" WIDE O.C. BATTEN SPACING, TYP..  
[3] 1" X 6" STAINED, SMOOTH CENDAR, HORIZONTAL SIDING FOR ACCENT SIDING.  
[4] BRACKET 2" SQUARE ALUM. TUBE @ 30" FROM WALL 3 1/2" X 3/8" DIA. X 4 L LUG BOLTS @ TOP & BOTTOM  
[5] FAKE RAFTER TAILS TO MATCH SIZE AND SPECIES OF EXISTING, TYP.  
[6] 16" WIDE ROOFING PANELS, TYP. SAME AS HOUSE ROOF OVER, SEE ROOF PLAN A3.1  
[7] 2" WIDE HARDI BOARD PANEL WITH 1 1/2" HARDI BOARD BATTEN  
[8] 4" HARDI BOARD HORIZONTAL SHIPLAP EXTERIOR BOARD  
[9] SIDEWALL ROOFING TO STONE (OR HARDIE) FLASHING, TYP..  
[10] 42" HIGH METAL GUARDRAIL TO CODE  
[11] FUTURE SIDING (NOT IN SCOPE OF WORK)  
[12] NEW EDGE OF ROOF  
[13] FLASH SIDEWALL TO ROOF CONNECTION, TYPICAL

GENERAL NOTES

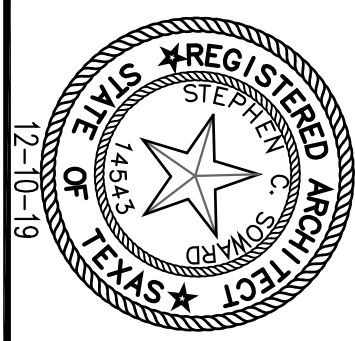
1. SEE STRUCTURAL PLANS FOR FRAMING NOTES AND SPECS.  
2. ALL DIMENSIONS SHOWN ARE FROM EDGE OF WOOD STUD. WHERE COLUMNS AND FIXTURES ARE SHOWN DIMENSIONS ARE TO CENTERLINE. ALL VENEERS AND FINISHES WILL BE OUTSIDE OF THESE DIMENSIONS, TYPICAL.  
3. ROOF IS TO BE 16" WIDE ALUM. PANEL 26 ga.; TYP. COLOR TO BE SELECTED BY OWNER  
4. ALL ANGLED WALLS TO BE 45 DEGREES UNLESS OTHERWISE NOTED



1 SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



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FOR  
PERMITTING,  
REGULATORY  
APPROVAL  
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Tel.: (512)-497-4629

New House Addition  
For  
Anthony and Denise Burke  
101 Double Fork Rd.  
West Lake Hills, Texas 78746

|   |            |        |
|---|------------|--------|
| 1 | TDAR ISSUE | 000000 |
| 1 | Log# ISSUE | 000000 |

DRAWN: CHECKED:  
R.G. S.S.

DATE: 02-24-20

SCALE:

JOB NO.:

SHEET

A4.1



KEYED NOTES

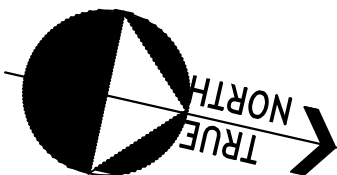
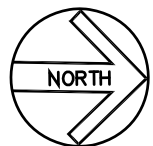
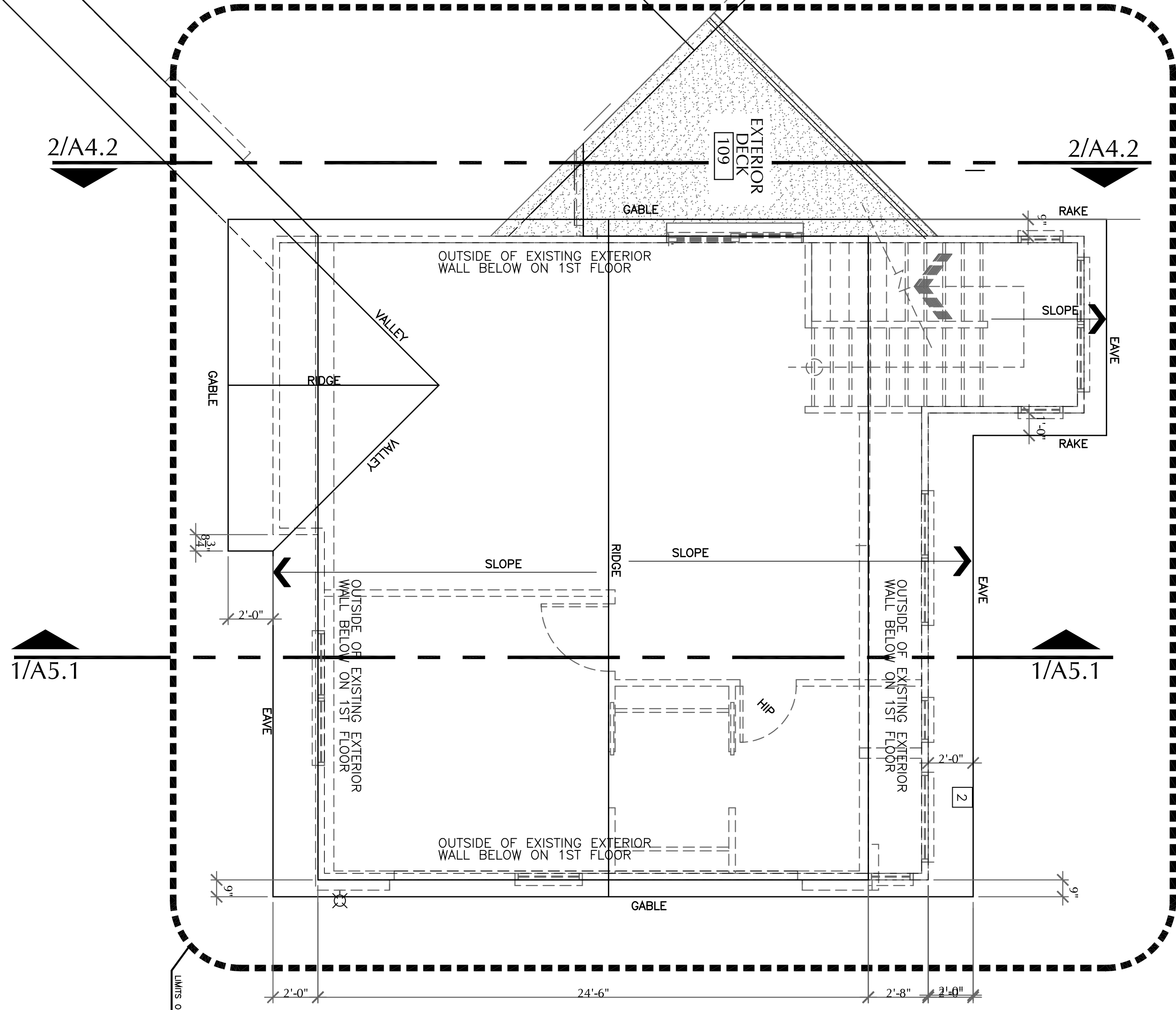
- 1 STANDING SEAM METAL ROOF, WITH 1'-4" WIDE PANELS, TYP..  
2 2'-0" DEEP EAVE OVERHANG, TYP..  
3 X

LEGEND

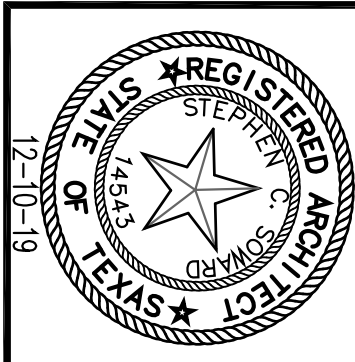
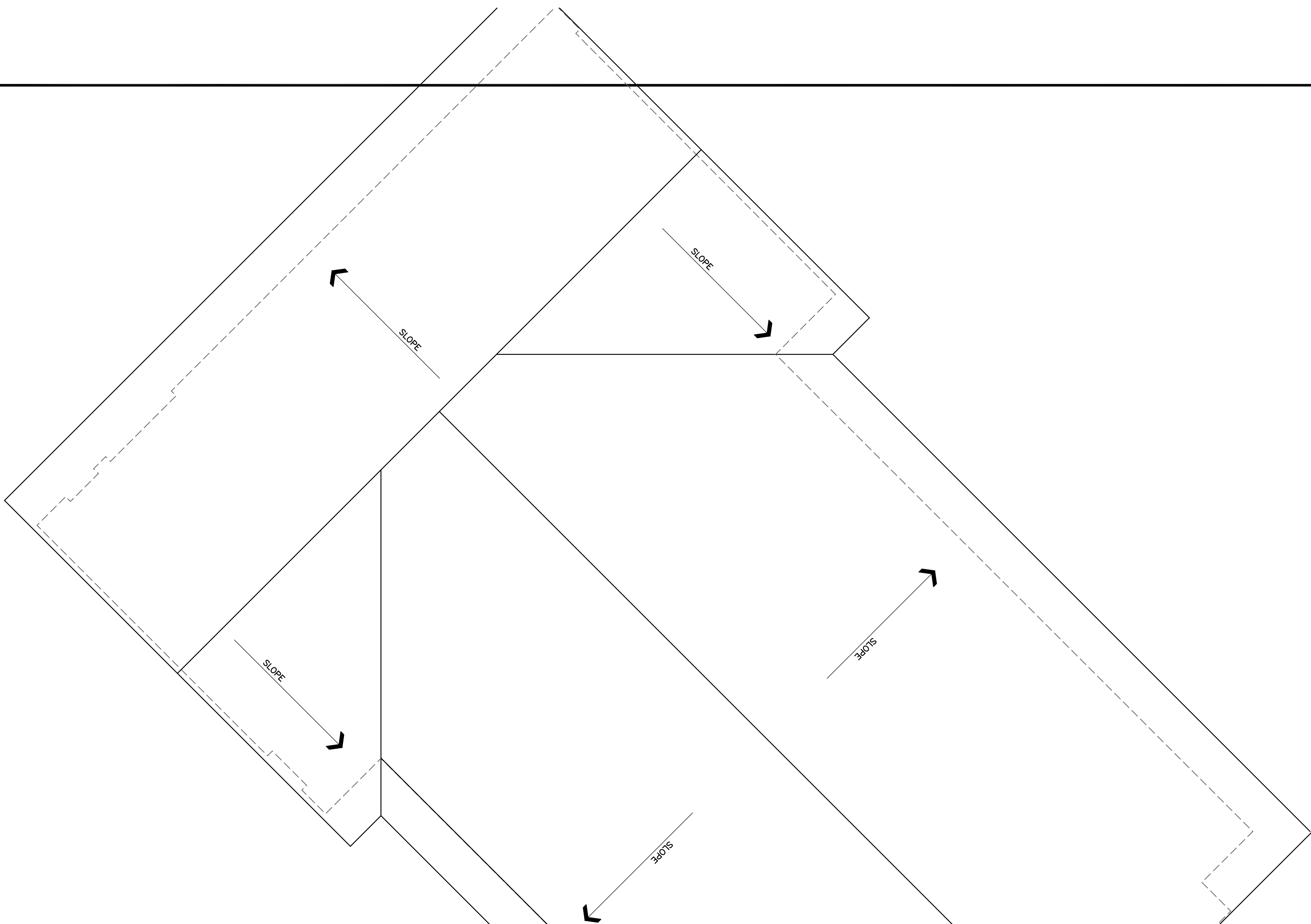
- CROSS-HATCH DENOTES DEMOLITION TO BE DONE IN THIS AREA, TYP..  
SOLID FILL LINE IN WALLS DEPICT DEMOLITION OF THAT WALL AREA, DEFINED TYP..  
LIMITS OF CONSTRUCTION.

GENERAL NOTES

1. SEE STRUCTURAL PLANS FOR FRAMING NOTES AND SPECS.  
2. ALL DIMENSIONS SHOWN ARE FROM EDGE OF WOOD STUD.  
WHERE COLUMNS AND FIXTURES ARE SHOWN DIMENSIONS ARE TO CENTERLINE. ALL VENERES AND FINISHES WILL BE OUTSIDE OF THESE DIMENSIONS, TYPICAL.  
3.  
4. ALL ANGLED WALLS TO BE 45 DEGREES UNLESS OTHERWISE NOTED  
5. CHALK-LINE ALL COLUMN GRID LINES ON CONCRETE SLAB BOTH WAYS FOR WALL FRAMING LAYOUT. MARK FOR DURABILITY THROUGHOUT FRAMING CONSTRUCTION STAGE.  
6. BRACE INTERIOR STUDS HORIZONTALLY WITH 2" x 6" STUDS @ ALL NEW WALL HUNG BATH FIXTURE LOCATIONS AND UPPER CAB'S.  
7. XXX  
8. X FINISH AT PORCHES AND PATIOS, TO BE BROOM FINISH



1 ROOF PLAN  
SCALE: 1/4" = 1'-0"



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| 1 | Reg.# ISSUE | 000000 |

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REGULATORY  
APPROVAL  
ONLY

A3.1

# **NOTICE TO NEIGHBORS OF VARIANCE REQUEST**

**DATE OF NOTICE: January 17, 2020**

Greetings. You are hereby notified that **Denise and Anthony Burke**, the recorded owners of a property located at **101 Double Fork Road** in the City of West Lake Hills, Texas have filed an Application with the City of West Lake Hills, Texas requesting a variance according to the following Section of the City's Code of Ordinances:

- **Section 22.03.281 – Encroachment into a front setback.**

The request is so that the property owners may: **Construct a second floor addition on top of an existing structure that encroaches into the front setback.**

The Application may be inspected at West Lake Hills City Hall, 911 Westlake Drive, West Lake Hills, Texas between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. This application is scheduled to be considered at a public hearing held by the Zoning and Planning Commission on **February 19, 2020** at **6:30** p.m. and the City Council/Board of Adjustment on **March 11, 2020** at **7:00** p.m. at West Lake Hills City Hall, located at 911 Westlake Drive, West Lake Hills, Texas. There shall include an opportunity for all interested persons to be heard. Please call City Hall at 512-327-3628 or email [planner@westlakehills.org](mailto:planner@westlakehills.org) if you have any questions.

---

Mark Littrell, Zoning & Planning Secretary

CITY OF WEST LAKE HILLS, TEXAS  
MINUTES OF A ZONING & PLANNING COMMISSION (ZAPCO) REGULAR MEETING  
Wednesday, February 19, 2020 at 6:30 PM

PRESENT: ZAPCO Chairman Robert Meisel, Vice-Chair James Pledger, Commissioners Laurie Maccini, Bill Vandersteel, and James Vaughan.

ABSENT: Commissioner Bill Harwell

1. Call to Order. Chairman Robert Meisel.

**Chairman Meisel calls the meeting to Order at 6:30 p.m.**

2. Consent Agenda The following items are considered to be self-explanatory by the Commission and will be enacted with one motion. There will be no separate discussion of these item/s unless a Commission Member or citizen so requests.

- a. Approval of the January 15, 2020 Meeting Minutes.

**Commissioner Vaughan moves to approve the minutes. Commissioner Maccini seconds.**

3. Land Use 101 Double Fork Road: Discussion/recommendation of a variance request for a building encroachment into a front setback in order to construct a second floor addition on top of an existing structure that encroaches into the front setback. (Section 22.03.281 of the West Lake Hills Code of Ordinances). Owners/Applicants Denise & Anthony Burke.

- a. Staff Briefing

**City Planner Anjali Naini reads her Staff Report in detail. Staff Recommendation: Approval.**

- b. Presentation by applicant

**Denise Burke is the property owner and is present. We can't build out because of the flood zone. We can only build over the garage because of the slope. This is our only option to stay here.**

- c. Public Hearing: All persons wishing to speak for or against shall be heard.

**Colleen Galvan lives at 504 Yaupon Valley Road. Some of the lots are non-conforming. They could probably move it back a little bit. I don't think it's the best look. I'm against them pushing further into the front setback.**

**Ghislaine DeRegge lives at 510 Yaupon Valley. My lot faces Double Fork Road. I'm**

concerned it would affect our view. What are the limitations or expectations?

**City Planner Naini:** Height is measured from natural ground grade and 30' is the maximum.

**Chairman Meisel closes the Public Hearing and reconvenes the meeting.**

- d. Deliberation and Action

**Chairman Meisel:** The measurement is from the ground.

**Commissioner Vandersteel:** The house was built in 1974?

**Colleen:** The setbacks have been the same for the past 25 years.

**Chairman Meisel moves to recommend approval with the condition that the new roof eave cannot extend past the existing roof eave. Vice-Chairman Pledger seconds. Approved unanimously by a vote of 4 – 0.**

- 4. Adjournment. Chairman Robert Meisel.

**Chairman Meisel moves to adjourn the meeting at 6:55 p.m.**





## **RETAINING WALL VARIANCES STAFF REPORT**

---

**APRIL 8, 2020**

**Project Name:** 1405 Wildcat Hollow – After-the-fact variances for stacked rock retaining walls (setback encroachment and height)

**Agenda Item: Land Use: 1405 Wildcat Hollow:** Discussion/consideration of after-the-fact variance requests for stacked rock walls that 1) encroach into the building setbacks; and 2) include portions that exceed 6 feet in height. (Sections 22.03.281 and 22.03.170 of the West Lake Hills Code of Ordinances). Owner/Applicant Douglas Jaffe, III (Power of Attorney Luis Reyes)

**Applicant Information:** Douglas Jaffe, III; Power of Attorney Luis Reyes

**Hearing Dates:**

April 8, 2020 Board of Adjustment/City Council

**Location:**

This site is located west of Westlake Drive and east of Nob Hill Circle.

**Zoning & Site Characteristics:**

The tract is zoned R-1 – One-Family Residential. The surrounding area is also zoned R-1. The property includes a single-family residence. The size of the property is approximately 1.8 acres. The sides (north and south) of the property are subject to a 25-foot setback, and the rear (east) of the property is subject to a 30-foot setback.

**Background & Analysis**

The applicant, Mr. Jaffe, submitted a variance application for the location of existing stacked-stone retaining walls in multiple locations on the property that encroach into the side and rear setbacks of the property. The applicant later submitted a second application as to those same existing retaining walls to the extent that they exceed six feet in height. The letters included in the applications dated December 13, 2019 and revised letter dated January 8, 2020, explained that the requested location variance was as to the retaining wall on and along the eastern property line (encroaching into the entire 30-foot rear setback) bordering 1508 Westlake Drive; however, per the site plans provided with the application, other portions of the walls at issue encroach several feet into the 25-foot side setbacks as well. Both applications were combined in the staff analysis and will be referred to in the staff analysis as “the application.”

The letters further state as background that when Mr. Jaffe “...purchased the property in 2018, the City was attempting to replace trees removed by the prior owner. Many of the trees removed by the prior owner were near the property line at issue.” Furthermore, the letters



explain that the stacked walls are needed because the "...entire property slopes down at a very steep grade, and trees cannot be planted into the side of a hill...To help level the earth where the trees are planted, the stacked rock wall is important." The applicant is therefore submitting the variance request in order to "...complete the restoration of the natural foliage on my property."

**Variance Criteria Analysis:**

Per Section 22.03.514 of the Code of Ordinances - No variance shall be granted under this chapter unless the following criteria are fulfilled:

**(1) Findings.** The applicant has established by competent evidence that:

(A) The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.

The application states – "The thrust and premise of the variance regards my continued efforts to conform with a tree remediation plan approved by the City. The City wants me to plant trees to replace trees removed by the prior owner and the City approved a landscaping and tree planting plan to that end. If a variance is not granted, I will be unable to plant trees in the area of my property near the east property line, and I will be unable to repopulate that area with trees. I see the hardship as three-fold as not just to me, but also to the City and its expressed desire for me to rehabilitate the property with trees, and also on my neighbors as 1508 Westlake Dr. as they will not benefit from the recovered trees."

**Staff Analysis** – The explanation provided above in the application assumes a premise without providing any supporting documentation that one cannot plant trees or other foliage on a sloping grade, and does not address why the stated hardship cannot be overcome with retaining walls (or other alternatives) that comply with the City Code in regard to not locating retaining walls in the property's setbacks, and without exceeding the maximum allowed six feet in wall height.

(B) There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.

The application states – "The unreasonable disruption of the natural terrain and existing flora was caused by the prior owner through the removal of trees before I purchased the property. My mission here is to undo that harm. Unfortunately, to plant more trees and foliage, the natural terrain must be disrupted and leveled to some extent, necessitating the existence of the wall. However, I view this disruption as reasonable given the goal and collective benefits to me, the City, and my neighbors."

**Staff Analysis** – The natural terrain disruption has already occurred and was performed without a permit. It is therefore not possible to consider this requirement in the manner contemplated by the ordinance. As a result, staff did not consider this requirement in its analysis of the application.

(C) There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.

The application states – “The alternative that exists is to have no way to secure the land and not have the terrain upon which I can plant trees and shrubs. This option ensures that I will not be able to plant trees and other foliage along or near the east property line. This means that trees that used to exist near this property line will not be restored and that privacy afforded me and my neighbor by that foliage will not exist.”

**Staff Analysis** – The explanation provided above in the application assumes a premise without providing any supporting documentation that one cannot plant trees or other foliage on a sloping grade. Further, the application does not state that, nor explain why, the stated hardship cannot be overcome with reasonable alternatives such as making a small cut into the natural slope sufficient to accommodate a tree root-ball (or other plantings), or with alternative retaining walls that meet City Code requirements in terms of maximum wall height and not locating the walls in the property’s setbacks.

(D) The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.

The application states – “There are multiple ways to secure and level the earth so that trees can be planted, including the use of concrete or steel retaining walls. To me, the more natural option of a stacked rock wall is the minimum option. It is not only employing natural materials, but more esthetically pleasing. Also, this stacked rock wall will only be visible to me and my neighbors at 1508 Westlake Drive. It cannot be seen from the road or otherwise be visible generally. Thus, it will have a minimum effect on just two pieces of property.”

**Staff Analysis** – The explanation provided above in the application assumes a premise without providing any supporting documentation that one cannot plant trees or other foliage on a sloping grade. Further, the application does not state that, nor explain why, the existing height (of more than 6 feet) of the retaining walls is no greater, or the walls’ encroachment into the setbacks no deeper, than that necessary to overcome the stated hardship.

**(2) ZAPCO.** The recommendation of the zoning and planning commission shall consider an analysis of whether:

(A) The variance may violate the intent of this chapter of the goals of the city’s comprehensive plan

The application states – “The “the highest priorities” in the City’s Comprehensive Plan are “given to the protection and preservation of native trees, shrubs, wild flowers and wildlife throughout the city on both public and private land, and to respecting and protecting individuals’ privacy in all building projects and use of land.” This variance request is fully aligned with both – preserving (and restoring) foliage and protecting privacy.”

Furthermore, the application states – “...the plans for my property exceed any expectations regarding native trees, shrubs, and foliage. If permitted to complete this vision, I foresee my property as a model for this goal.”

**Staff Analysis** – Per the Comprehensive Plan, areas located in Area 1 (Residential) shall have careful site planning to avoid unnecessary clearing or disturbing of the land and to protect native trees and the thin soil mantle in the area. The applicant disturbed the land by constructing retaining walls without obtaining permits.

(B) The variance may have an adverse effect on neighborhood properties, or interfere with the respective owners' enjoyment thereof.

The application states – “The only neighboring property at issue regarding this variance is 1508 Westlake Drive. As explained above, I see the stacked rock wall as having a positive effect on my neighbors' property if I am able to restore trees and shrubs and create an enhanced privacy dynamic for each of our respective properties.”

#### **Traffic/Transportation**

No traffic impact is anticipated since the walls in question have already been constructed.

#### **Lighting**

Outdoor lighting must comply with provisions in the outdoor lighting ordinance. No new outdoor lighting is proposed at this time.

#### **Building Code**

The property and future construction will have to comply with all applicable City codes.

#### **Subdivision**

This request will not change the subdivision.

#### **Comprehensive Planning Analysis**

The applicant has altered the natural landscape through site clearance and excavation and installation of the retaining wall without obtaining permits. Per the Comprehensive Plan, areas located in Area 1 (Residential) shall have careful site planning to avoid unnecessary clearing or disturbing of the land and to protect native trees and the thin soil mantle in the area.

#### **Staff Recommendation:**

Staff recommends denial of both requested variances based on the analysis provided in this staff report.

#### **Applicable City Code:**

##### **Sec. 22.03.170 Site disturbance (excavation, grading or filling)**

- (a) Excavating, grading or filling shall minimize the negative impacts of development on natural slopes and interfere as little as possible with the natural landscape by minimizing the alteration of the natural terrain.
- (b) The minimum site disturbance standards for earth cuts and fills are included in the drainage and erosion control design manual.
- (c) Finished open cuts of an excavation shall not exceed the 1.5H:1V ratio in undisturbed earth, 2H:1V ratio in earth fill.
- (d) Excavation shall not interfere with public or private utility systems and shall not create or aggravate any condition detrimental to the public health and safety.

- (e) Excavation and removal of excavated material, and filling shall be permitted without a permit provided such operation is clearly incidental to improvement of the property, consists of less than six cubic yards of material and the area is graded and covered by revegetation or other suitable means to prevent erosion.
- (f) No excavation, grading or filling shall be permitted in setbacks except for up to 18 inches in height or depth.
- (g) Any wall shall not exceed six (6) feet in height above natural grade.
- (h) Walls shall either incorporate the use of native materials or be earth-tone colors to match native soils.
- (i) All walls of three (3) feet or more shall require shrubbery and/or vines of healthy stock and of a minimum of two (2) feet in height immediately after planting in front of the retaining wall. All shrubbery and/or vines shall be planted and maintained so as to form a continuous, unbroken, solid, visual screen which will grow to the same height or more of the retaining wall.

\*\*\*

#### **Sec. 22.03.276 Setbacks for accessory structures**

The minimum setback distances for accessory structures, other than unroofed steps, ramps, fences, walks, driveways, driveway gates, playscapes, and mailboxes, shall be the same as the setback distances applicable to a principal building under the appropriate category in section 22.03.281. Accessory structures, including overhangs and eaves, shall not encroach into setbacks. (Ordinance 242 adopted 4/11/12)

\*\*\*

#### **Sec. 22.03.281 Schedule of regulations**

- (a) Where the slope gradient exceeds 25 percent nonresidential development is not permitted.
- (b) Dimensional regulations for listed zoning districts:

| <b>Dimensional Minimums of Lots</b> |            |            |            |          |            |            |            |            |             |
|-------------------------------------|------------|------------|------------|----------|------------|------------|------------|------------|-------------|
| <b>Dimension/Zoning</b>             | <b>R-1</b> | <b>R-2</b> | <b>R-3</b> | <b>O</b> | <b>GUI</b> | <b>B-1</b> | <b>B-2</b> | <b>B-3</b> | <b>MU-1</b> |
| Acreage (acres) (A)                 | 1          | 1          | 2          | 1.5      | 2          | 1.5        | 2          | 20         | 30          |
| Depth (feet)                        | 150        | 150        | 400        | 200      | 200        | 200        | 200        | 500        | (C)         |
| Width (feet) (B)                    | 150        | 150        | 400        | 150      | 150        | 150        | 150        | 500        | (C)         |

**(1996 Code, sec. 14-295)**

| <b>Minimum Building Setback Distance in Feet From Front Lot Line</b> |            |            |            |          |            |            |            |            |             |
|----------------------------------------------------------------------|------------|------------|------------|----------|------------|------------|------------|------------|-------------|
| <b>Lot Size/Zoning</b>                                               | <b>R-1</b> | <b>R-2</b> | <b>R-3</b> | <b>O</b> | <b>GUI</b> | <b>B-1</b> | <b>B-2</b> | <b>B-3</b> | <b>MU-1</b> |
| Greater than or equal to .5 acre                                     | 50         | 50         | 50         | 50       | 50         | 50         | 50         | (IV)(a)    | (C)         |
| Less than .5 acres                                                   | 30         | 30         | N/A        | 30       | 30         | 30         | 30         | N/A        | N/A         |

| <b>Minimum Building Setback Distance in Feet From Rear Lot Line</b> |            |            |            |          |            |            |            |            |             |
|---------------------------------------------------------------------|------------|------------|------------|----------|------------|------------|------------|------------|-------------|
| <b>Lot Size/Zoning</b>                                              | <b>R-1</b> | <b>R-2</b> | <b>R-3</b> | <b>O</b> | <b>GUI</b> | <b>B-1</b> | <b>B-2</b> | <b>B-3</b> | <b>MU-1</b> |
| Greater than or equal to .5 acre                                    | 30         | 30         | 50         | 40       | 40         | 40         | 40         | (IV)(c)    | (C)         |
| Less than .5 acres, greater than or equal to .375 acres             | 25         | 25         | N/A        | 30       | 30         | 30         | 30         | N/A        | N/A         |

|                                                                      |                  |                  |     |      |      |      |      |         |      |
|----------------------------------------------------------------------|------------------|------------------|-----|------|------|------|------|---------|------|
| Less than .375 acres—zero                                            | 15 (F, E)/<br>20 | 15 (F, E)/<br>20 | N/A | 30   | 30   | 30   | 30   | N/A     | N/A  |
| <b>Minimum Building Setback Distance in Feet From Side Lot Lines</b> |                  |                  |     |      |      |      |      |         |      |
| Lot Size/Zoning                                                      | R-1              | R-2              | R-3 | O    | GUI  | B-1  | B-2  | B-3     | MU-1 |
| Greater than or equal to<br>.5 acre                                  | 25               | 25               | 50  | (I)  | (I)  | (I)  | (I)  | (IV)(c) | (C)  |
| Less than .5 acres,<br>greater than or equal to<br>.375 acres        | 20               | 20               | N/A | (II) | (II) | (II) | (II) | N/A     | N/A  |
| Less than .375 acres—zero                                            | 15 (F, E)/<br>20 | 15 (F, E)/<br>20 | N/A | (II) | (II) | (II) | (II) | N/A     | N/A  |

|                                                          |      |      |     |      |       |       |       |     |      |
|----------------------------------------------------------|------|------|-----|------|-------|-------|-------|-----|------|
| <b>Maximum Impervious Cover in Percent of Lot Area</b>   |      |      |     |      |       |       |       |     |      |
| Lot Size/Zoning                                          | R-1  | R-2  | R-3 | O    | GUI   | B-1   | B-2   | B-3 | MU-1 |
| Greater than or equal to<br>.5 acre                      | 25%  | 25%  | 25% | (IX) | (III) | (III) | (III) | (V) | (C)  |
| Less than .5 acres, greater<br>than or equal to .2 acres | *, † | *, † | 25% | (IX) | (III) | (III) | (III) | (V) | (C)  |

\* The following formula applies:

$P = (\text{size of acre expressed as a whole number and decimal}) \times (.5) - (.5)$

Example:

$P = (.25 \text{ acres}) (.5) - .5$

$P = (.125) - .5 = -0.375\%$

$P = 37.5\%$  allowable impervious cover for a .25 acre lot

† In order to receive and increase in allowable impervious cover over 25%, the property must be connected to the city's wastewater service.

(Ordinance 260 adopted 10/24/12)

\*\*\*

#### **Sec. 38.05.032 Conditions required for granting variance**

No variance shall be granted unless the following conditions are fulfilled:

(1) The applicant has established by competent evidence that:

(A) The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.

(B) There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.

(C) There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.

(D) The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.

(2) The recommendation of zoning and planning commission shall include an analysis of whether:

(A) The variance may violate the intent of this chapter or the goals of the city's comprehensive plan.

[(B) Reserved.]

[(C) Reserved.]

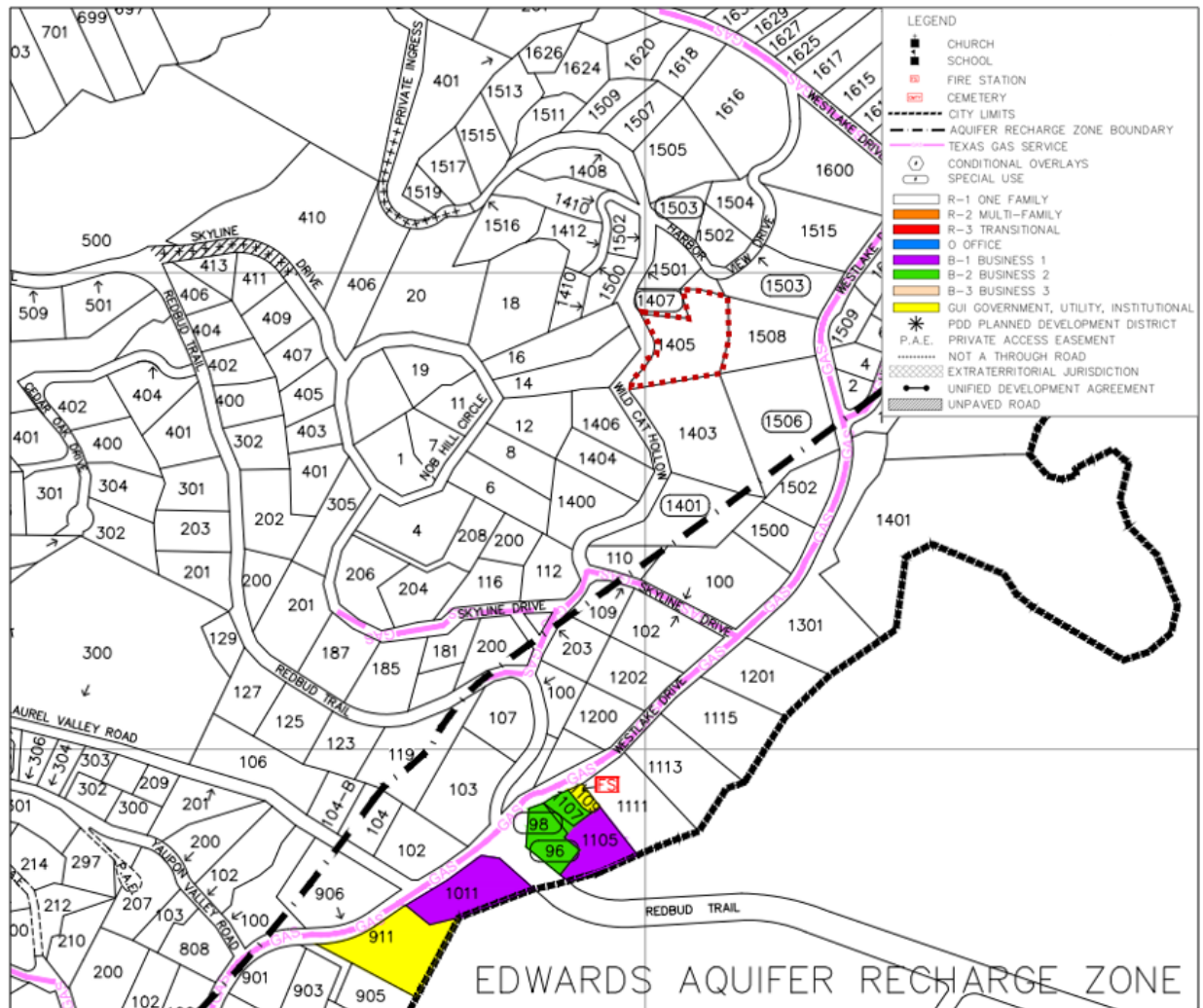
(D) The variance may have an adverse effect on neighborhood properties, or interfere with the respective owners' enjoyment thereof.

(1996 Code, sec. 94-192)

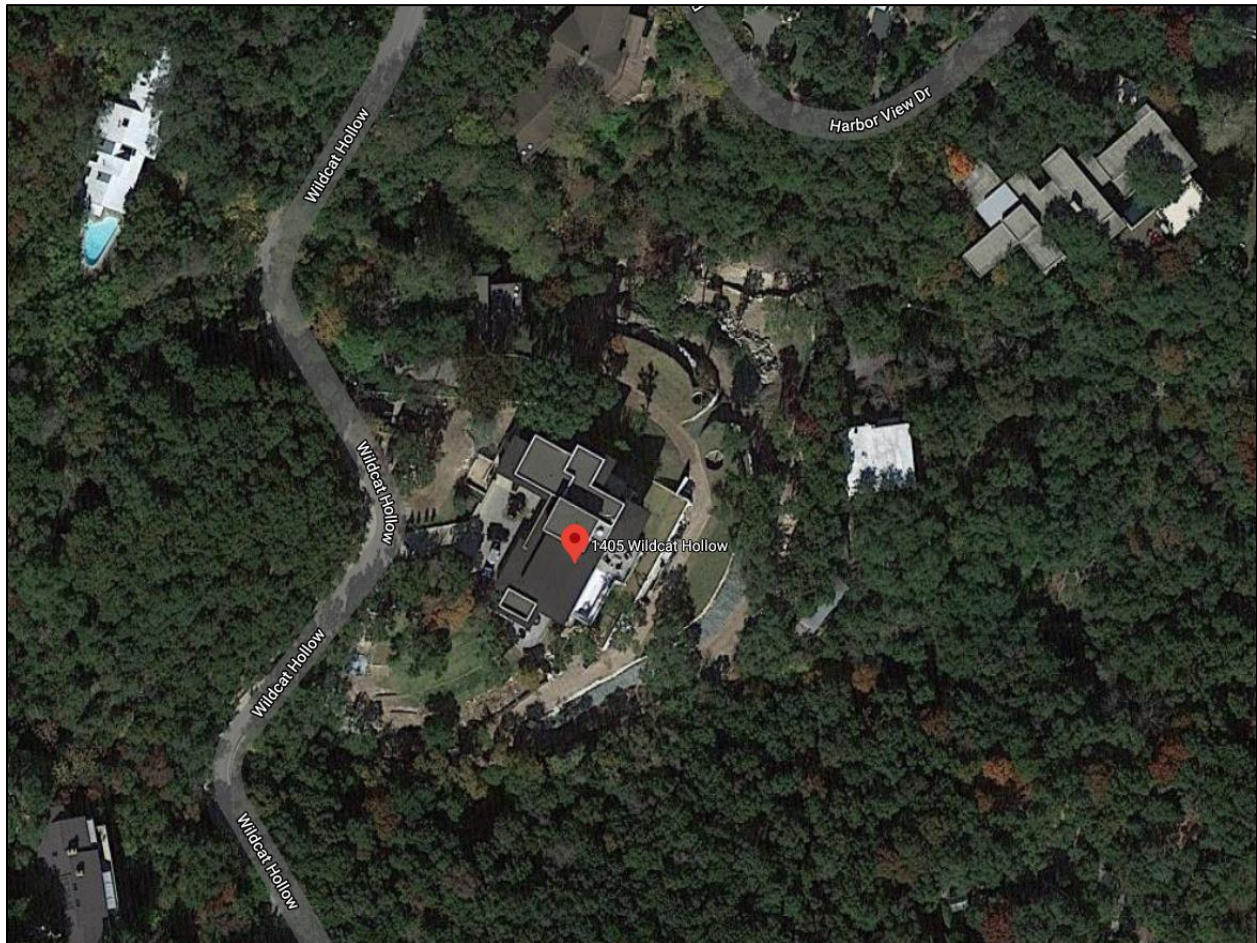
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## Maps

### Zoning:

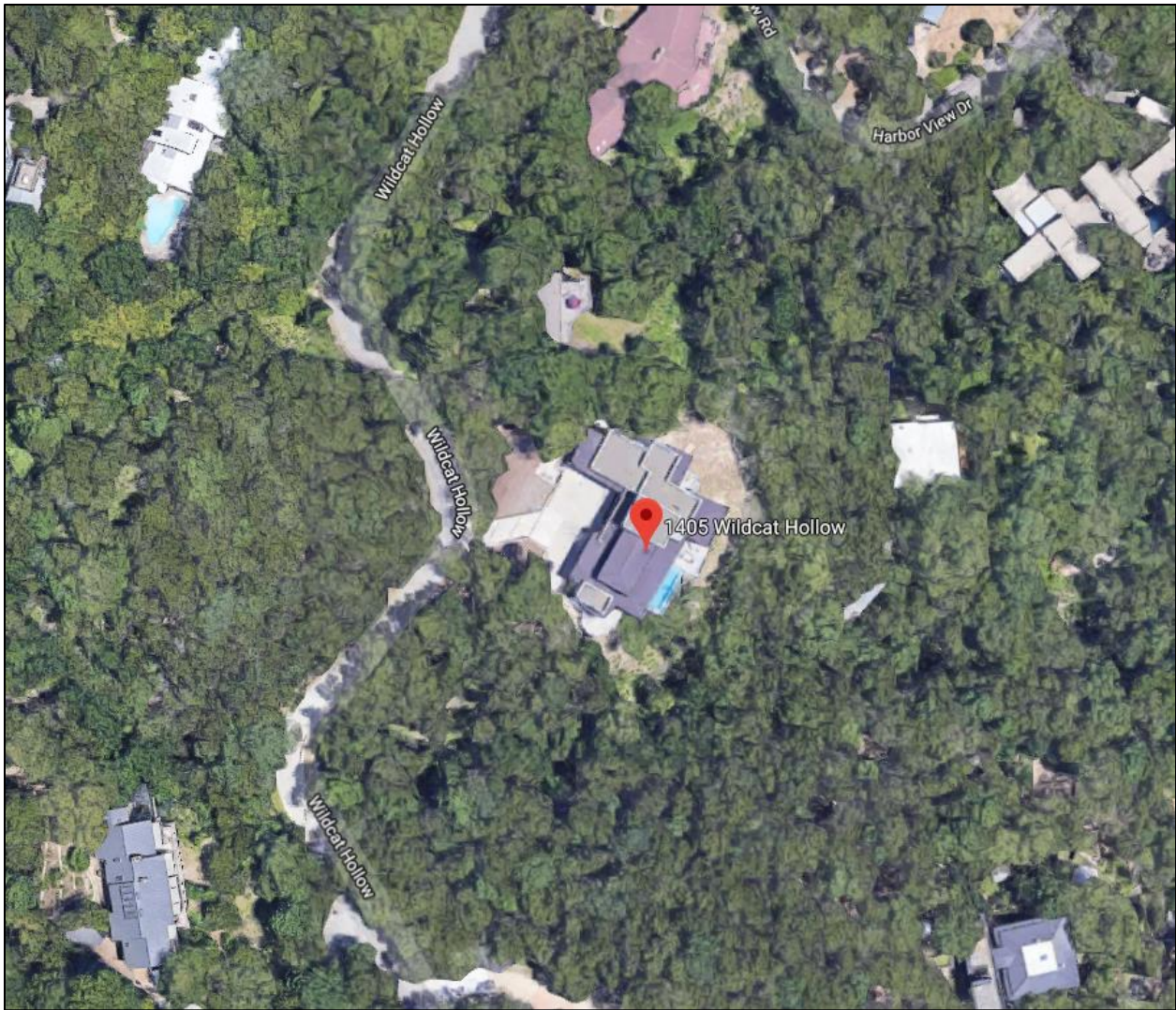


**Aerials:**



*Image obtained from Google Maps 3/30/2020*





*Image obtained from Google Maps utilized in a prior staff report in Spring 2019*

APPLICATION COVER SHEET

Property Address: 1405 Wildcat Hollow  
Applicant Name: Doug Jaffe  
Designated Agent (if any, Power of Attorney Required): Louis Reyes  
Applicant Phone Number: 210-445-8538 Email Address: [REDACTED]  
Date Application was Submitted: 12-13-19  
Variance(s) Requested: Retaining wall w/i setback

Applicant completes above section; City Staff completes the section below:

Variance File Number: \_\_\_\_\_ [A sequential identifier based on application date and noted in a Variance Application Log maintained by staff. Examples: 20110903A, 20110903B, 20111021A, etc.]

Application Fees Due: \$ \_\_\_\_\_ ☐ Fees Received on \_\_\_\_\_ by \_\_\_\_\_

**DRAFT APPLICATION PACKET MATERIALS**

Draft Application Packet Received on \_\_\_\_\_ by \_\_\_\_\_  
☐ Letter to ZAPCO Chairperson ☐ Variance Approval Criteria Answers  
☐ Site Plan Coversheet ☐ Site Plan Drawings  
☐ Elevation Views and Floor Plans (new structures only)  
☐ Septic Assessment (new structures only)  
☐ Additional Support Materials (if any): \_\_\_\_\_  
☐ Power of Attorney (if any) – Designated Representative: \_\_\_\_\_  
Staff Analysis completed on \_\_\_\_\_ by \_\_\_\_\_  
Staff Analysis sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_

**FINAL APPLICATION PACKET**

Final Application Packet Reviewed and Approved on \_\_\_\_\_ by \_\_\_\_\_  
Notice to Proceed Letter sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_  
• Notification Letter must be postmarked by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_  
• Sign must be posted by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_  
14 Copies of Final Packet received on \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

**ZAPCO**

Scheduled for ZAPCO Hearing on: \_\_\_\_\_  
ZAPCO Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_  
ZAPCO Recommendation: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
Modified application and materials (if any) received on \_\_\_\_\_ by \_\_\_\_\_

**BOA/CITY COUNCIL**

Scheduled for BOA/Council Hearing on: \_\_\_\_\_  
COA/Council Action: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
BOA/Council Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_

**FOLLOW-UP**

Follow-up dates (vegetative screening installed, survival verification, etc.): \_\_\_\_\_  
• Notifications added to InCode on \_\_\_\_\_ by \_\_\_\_\_  
Postponement History (if any): \_\_\_\_\_  
Notes: \_\_\_\_\_



December 13, 2019

Robert Meisel, Chair  
Westlake Hills Zoning and Planning Commission  
911 Westlake Drive  
Westlake Hills, Texas 78746

Re: Variance Request – Stacked Rock Wall within Setback  
1405 Wildcat Hollow, West Lake Hills, Texas

Dear Mr. Meisel,

I am requesting a variance for a stacked rock wall within the setback along the east property line at 1405 Wildcat Hollow. The neighboring property along this property line is 1508 Westlake Dr.

**Background**

When I purchased the property in 2017, the City was attempting to replace trees removed by the prior owner. Many of the trees removed by the prior owner were near the property line at issue.

**Stacked Rock Wall – Why It Is Needed?**

My entire property slopes down at a very steep grade, and trees cannot be planted into the side of a hill. Rather, trees must be planted upright and plumb in all directions. To help level the earth where the trees are planted, the stacked rock wall is important. Also, once the trees and natural shrubbery are put into place, a natural barrier (sound and sight) will exist between my property and my neighbor at 1508 Westlake Drive, maximizing our respective peace and privacy. Additionally, rocks help reduce runoff and erosion that would flow onto my neighbor's property.

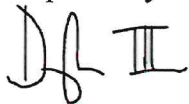
**Concerns**

The City and others have raised concerns regarding both (a) the structural stability of the wall, and (b) its drainage capabilities. First, to verify the structural stability and drainage system, Structures Engineering will test and enhance the wall. No later than January 6, 2020, engineering schematics and plans will be provided. The City also has permission to inspect the wall to its full satisfaction. Between the efforts of both Structures Engineering and the City, measures can be taken to ensure that there are no concerns with the wall.

**Conclusion**

I remain motivated to honor the City's preexisting request to restore trees. To do that along the property line with my neighbor, the stacked rock wall is needed. I respectfully request that the variance be approved so that I can complete the restoration of the natural foliage on my property.

Respectfully submitted,



M. Douglas Jaffe, III  
1405 Wildcat Hollow  
210.445.8533  
[REDACTED]

## ANSWERS TO VARIANCE APPROVAL CRITERIA QUESTIONS

West Lake Hills City Code requires applicants to answer each of the following questions. The ZAPCO Commissioners, Board of Adjustment and City Council Members consider your answers to these questions when evaluating your application. *(Feel free to respond to these questions on a separate page or document.)*

(1) Describe in detail any special conditions you believe will result in unnecessary hardship to you if the terms of this ordinance are strictly or literally enforced.

The thrust and premise of the variance regards my continued efforts to conform with a tree remediation plan approved by the City. The City wants me to plant trees to replace trees removed by the prior owner and the City approved a landscaping and tree planting plan to that end. If a variance is not granted, I will be unable to plant trees in the area of my property near the east property line, and I will be unable to repopulate that area with trees. I see the hardship as three-fold as not just to me, but also to the City and its expressed desire for me to rehabilitate the property with trees, and also on my neighbors as 1508 Westlake Dr. as they will not benefit from the recovered trees.

(2) Why do you think the natural terrain and existing flora will not be unreasonably disrupted or destroyed in the variance you are requesting is granted?

The unreasonable disruption of the natural terrain and existing flora was caused by the prior owner through the removal of trees before I purchased the property. My mission here is to undo that harm. Unfortunately, to plant more trees and foliage, the natural terrain must be disrupted and leveled to some extent, necessitating the existence of the wall. However, I view this disruption as reasonable given the goal and collective benefits to me, the City, and my neighbors.

(3) What other reasonable alternatives have you considered? Why won't these other options alleviate the difficulty or hardship that you think exists?

The alternative that exists is to have no way to secure the land and not have terrain upon which I can plant trees and shrubs. This option ensures that I will not be able to plant trees and other foliage along or near the east property line. This means that trees that used to exist near this property line will not be restored and that privacy afforded me and my neighbor by that foliage will not exist.

(4) Why do you believe the variance you are requesting is the minimum required to alleviate the difficulty or hardship you think exists?

There are multiple ways to secure and level the earth so that trees can be planted, including the use of concrete or steel retaining walls. To me, the more natural option of a stacked rock wall is the minimum option. It is not only employing natural materials, but more esthetically pleasing. Also, this stacked rock wall will only be visible to me and my neighbors at 1508 Westlake Drive. It cannot be seen from the road or otherwise be visible generally. Thus, it will have a minimum effect on just two pieces of property.

(5) Why do you believe your variance does not violate the intent of the Zoning Ordinance or the goals of the City's Comprehensive Plan?

The "the highest priorities" in the City's Comprehensive Plan are "given to the protection and preservation of native trees, shrubs, wild flowers and wildlife throughout the city on both public and private land, and to respecting and protecting individuals' privacy in all building projects and use of land." This variance request is fully aligned with both—preserving (and restoring) foliage and protecting privacy.

As can be seen in the attached plans by Studio Balcones, the plans for my property exceed any expectations regarding native trees, shrubs, and foliage. If permitted to complete this vision, I foresee my property as a model for this goal. As far as privacy is concerned, the rock wall at issue will be permit a natural, tree and shrub-based privacy barrier to exist between me and my neighbors at 1508 Westlake Drive.

(6) Why do you believe your variance will not adversely affect neighboring properties or interfere with the enjoyment of these properties by their owners?

The only neighboring property at issue regarding this variance is 1508 Westlake Drive. As explained above, I see the stacked rock wall as having a positive effect on my neighbors' property if I am able to restore trees and shrubs and create an enhanced privacy dynamic for each of our respective properties.

Property Address: 1405 Wildcat Hollow

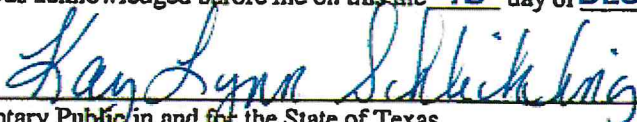


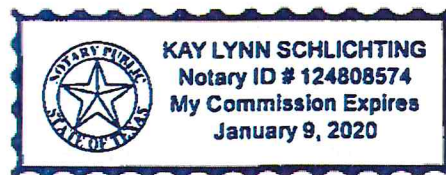
SPECIAL POWER OF ATTORNEY

KNOW ALL PERSONS BY THIS DOCUMENT that I DOUGLAS JAFFE, III,  
being the owner(s) of the property identified below, have made, constituted and appointed  
LOUIS REYES to be my duly authorized representative in connection with  
a variance application dated \_\_\_\_\_ and relating to my property at  
1405 WILDCAT HOLLOW, to be heard by the Zoning and Planning  
Commission and BOA/City Council of the City of West Lake Hills, Texas. All representations,  
whether oral or written, made by the representative in support of the request have the full force  
and effect of the applicant's approval. I do by this document constitute the above named  
representative as my true and lawful attorney-in-fact to act in my name, place and stead, to do  
and perform any act in connection with such application which I myself might perform or do if I  
was personally present.

  
\_\_\_\_\_  
Property Owner/Applicant's Signature  
1405 WILDCAT HOLLOW, AUSTIN, TX 78746  
\_\_\_\_\_  
Street Address City, State, Zip Code  
210.445.8533  
\_\_\_\_\_  
Phone Number

The instrument was acknowledged before me on this the 13 day of DECEMBER, 2019.

  
\_\_\_\_\_  
Notary Public in and for the State of Texas



# City of West Lake Hills

Dave Claunch, Mayor

911 Westlake Drive  
West Lake Hills, Texas 78746-4509

Robert J. Wood, City Administrator

CITY COUNCIL MEMBERS:

Stan Graham, Mayor Pro Tem

Jean Goehring

Taylor Holcomb

David Moore

Spencer Stevens



City Hall: (512) 327-3628

Fax: (512) 327-1863

[www.westlakehills.org](http://www.westlakehills.org)

[cityhall@westlakehills.org](mailto:cityhall@westlakehills.org)

Police Department: (512) 327-1195

Fax: (512) 329-5517

November 5, 2012

Peter Chang  
700 Ledge Way West  
West Lake Hills, TX 78746

Re: 1405 Wildcat Hollow Dr.

Dear Mr. Chang:

The design plans for the private wastewater system at the above referenced location are satisfactory as of the date shown above. This letter serves as formal authorization to proceed with construction of the proposed system. **A permit card must be posted near the street on the construction site. The permit card may be obtained by the installer from the City of Westlake Hills, 911 Westlake Dr.** Notification of compliance with TCEQ regulations regarding installation of the electrical components of the OSSF shall be provided to the City of West Lake Hills by a licensed electrician.

Erosion and sedimentation controls shall be installed and maintained until grass cover is established to prevent erosion and must be signed and sealed by an engineer. **A site evaluation and tree count must be performed prior to any construction.** Also, you must provide the city an as-built showing the location of equipment.

A letter of certification is required once the installation is completed. You must state the installation meets all state and local rules and regulations and was installed according to the specifications in your design plans. Include the GPD that the system can be expected to treat. Original signature and seal is required.

**An onsite pre-construction meeting with the property owner, installer and The City of West Lake Hills City Inspector/Designated Representative is required BEFORE construction is to begin on any wastewater system.**

Sincerely,

Christy Shull, B.S.

City Inspector

Certified Arborist

TCEQ Designated Representative

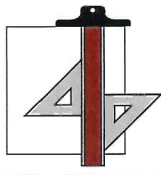
CFM - Certified Floodplain Manager

City of West Lake Hills

Phone (512) 610-6836

Fax (512) 327-1863





# ON-SITE SEWAGE FACILITIES (OSSF)

---

*November 5, 2012*

Location: 1405 WILD CAT HOLW  
LOT 1 K & J SUBD  
City of West Lake Hills, Texas 78746

Authority: City of West Lake Hills  
911 Westlake Drive  
West Lake Hills, Texas 78746  
Phone 512-327-3628  
Fax 512-327-1863

Owner: David Osborne  
1405 Wild Cat Hollow  
West Lake Hills, Texas 78746

Builder: Mike Battaglia  
Phone: 512-423-8478

Installer: TCEQ Installer II Required

OSSF Engineer: Chang's Structural/Civil Engineering, PLLC  
Peter J. Chang PE  
TCEQ Site-Evaluator #OS0009382  
TCEQ Installer II # OS0005419  
Texas Professional Engineer # 61434  
P.O. Box 160584-0584  
Austin, Texas 78746  
Phone: 512-784-4836  
Fax: 512-328-4223  
Email: [Texaschang@yahoo.com](mailto:Texaschang@yahoo.com)



Chang's Structural/Civil Engineering, PLLC (#2298)



## Chang's Structural / Civil Engineering, PLLC

P.O. BOX 160584 Austin, Texas 78716 (512) 784-4836

### On-Site Sewerage Facility Soil Evaluation Report Information

Date Soil Survey: 9/24/2012  
Site Location: 1405 Wild Cat Hollow Subdivision: LOT 1 K & J SUBD  
County: Travis County Proposed Trench Depth: LPD 12"-18"  
Name of Site Evaluator: Peter J. Chang Registration Number: TCEQ # OS9382

\*At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area. Locations of soil boring or dug pits must be shown on the site drawing.

\*For subsurface disposal. Soil evaluations must be performed to a depth of at least two feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.

\*Describe each soil horizon and identify any restrictive features on the form. Indicate depths where features appear.

| Soil Profile Hole #1 (43" deep) |            |                |                            |                                |            |                     |                             |
|---------------------------------|------------|----------------|----------------------------|--------------------------------|------------|---------------------|-----------------------------|
| Depth (inch)                    | Soil Class | Soil Texture   | Gravel Analysis            | Drainage (Mottles/Water Table) | Topography | Restrictive Horizon | Observations                |
| 12                              | Class III  | Sand Clay Loam | Gravel < 30%, size > 2.0mm | None                           | < 15%      | None                | Top Soil                    |
| 24                              | Class III  | Sandy Clay     | Gravel < 30%, size > 2.0mm | None                           |            | None                | No evidence of ground water |
| 36                              |            |                |                            |                                |            |                     |                             |
| 48                              |            |                |                            |                                |            |                     |                             |
| 60                              |            |                |                            |                                |            |                     |                             |
| 72                              |            |                |                            |                                |            |                     |                             |

| Soil Profile Hole #2 (44" deep) |            |                |                               |                                      |                 |                        |                                |
|---------------------------------|------------|----------------|-------------------------------|--------------------------------------|-----------------|------------------------|--------------------------------|
| Depth<br>(inch)                 | Soil Class | Soil Texture   | Gravel Analysis               | Drainage<br>(Mottles/Water<br>Table) | Topo-<br>graphy | Restrictive<br>Horizon | Observations                   |
| 12                              | Class III  | Sand Clay Loam | Gravel < 30%,<br>size > 2.0mm | None                                 | < 15%           | None                   | Top Soil                       |
| 24                              | Class III  | Sandy Clay     | Gravel < 30%,<br>size > 2.0mm | None                                 |                 | None                   |                                |
| 36                              |            |                |                               |                                      |                 |                        |                                |
| 48                              |            |                |                               |                                      |                 |                        |                                |
| 60                              |            |                |                               |                                      |                 |                        | No evidence of<br>ground water |

Presence of 100 year flood zone

YES\_\_\_ NO\_\_X\_

Presence of adjacent ponds, streams, water impoundment

YES\_\_\_ NO\_\_X\_

Existing or proposed water well in nearby area

YES\_\_\_ NO\_\_X\_

Organized sewage service available to lot or tract

YES\_\_\_ NO\_\_X\_

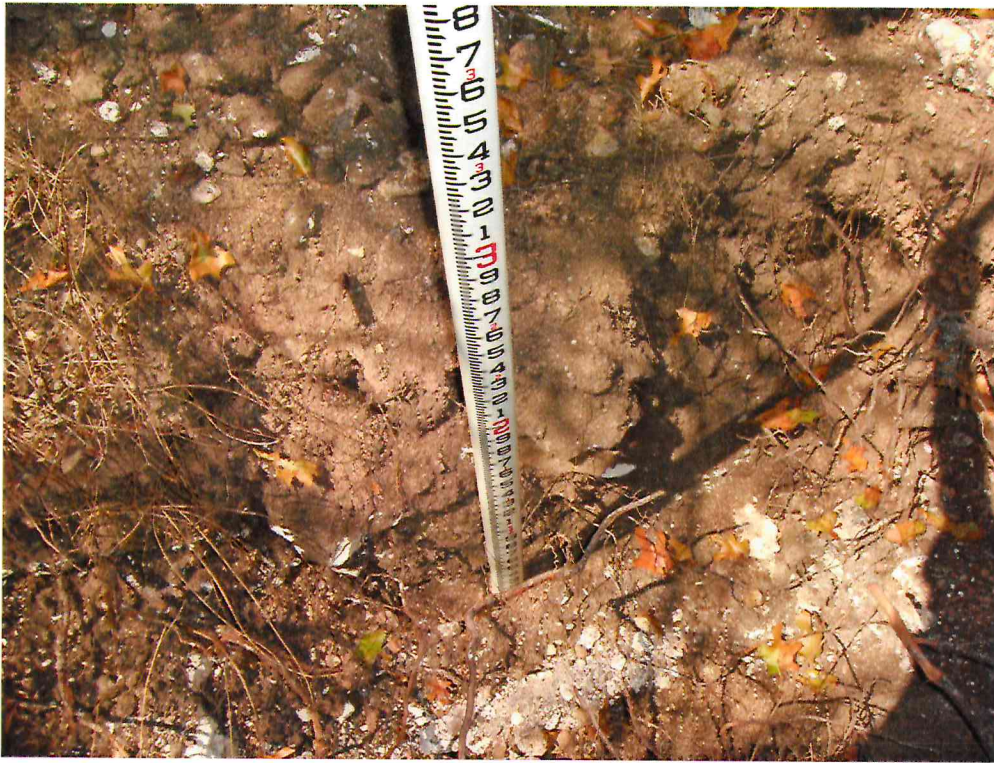
\*The property described hereon is within 100 year flood plain\*\* according to  
N.F.I.P. Map No. 48453C0445H 9/26/2008 ZONE "X"

**I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.**

\_\_\_\_\_  
Signature of Site Evaluator

9/24/2012  
\_\_\_\_\_  
Date



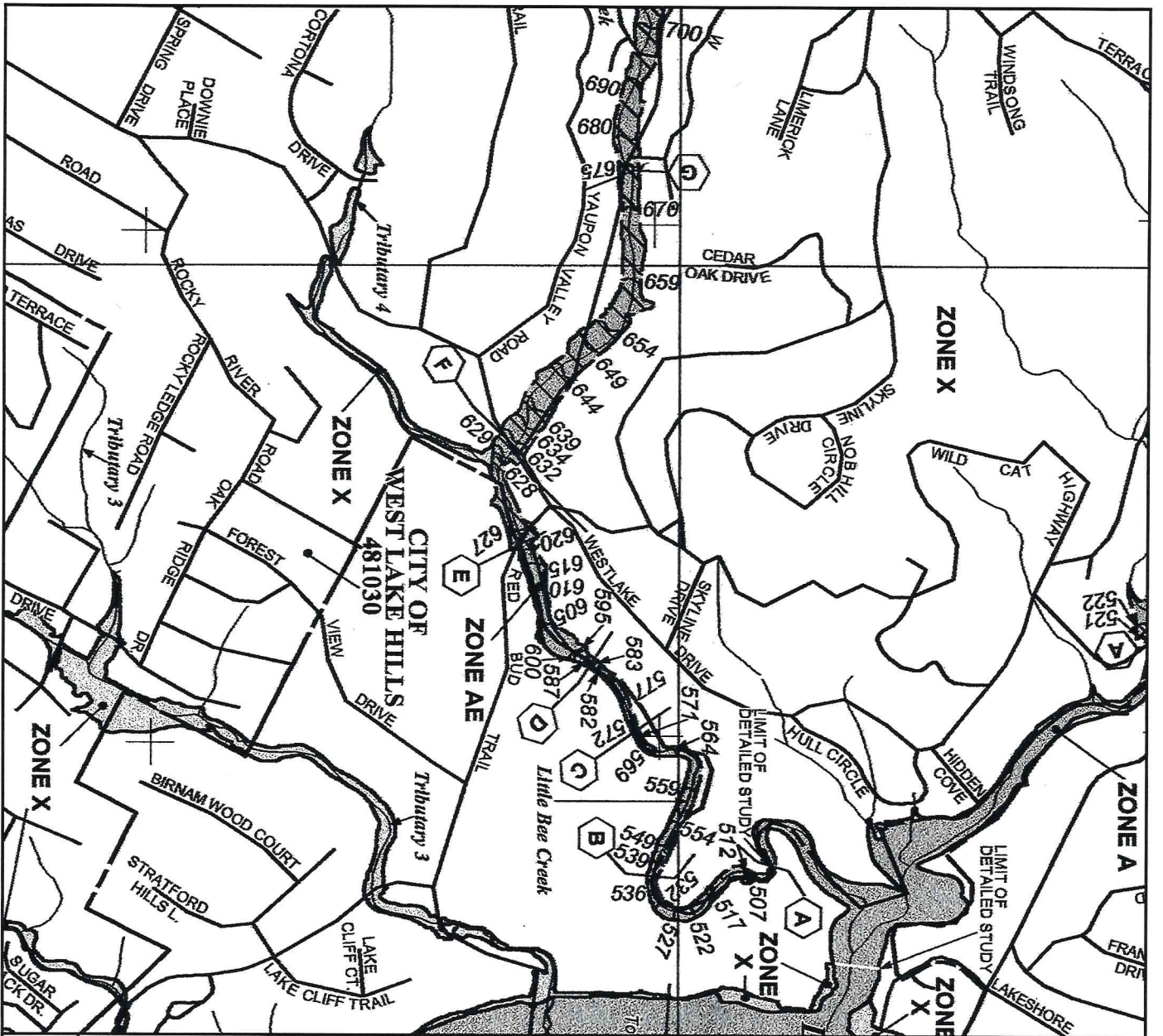


Soil Profile Hole #1



Soil Profile Hole #2





This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

# NATIONAL FLOOD INSURANCE PROGRAM

## FIRM

### FLOOD INSURANCE RATE MAP

#### TRAVIS COUNTY, TEXAS

#### AND INCORPORATED AREAS

**PANEL 445 OF 730**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)  
CONTAINS:

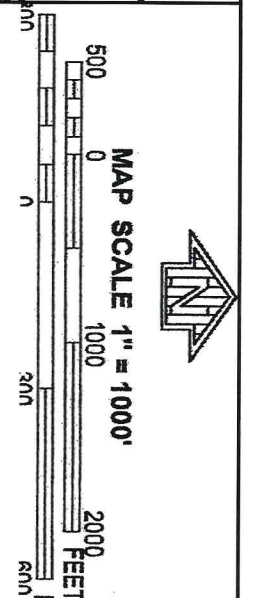
| COMMUNITY                | NUMBER | PANEL | SUFFIX |
|--------------------------|--------|-------|--------|
| TRAVIS COUNTY            | 481026 | 0445  | H      |
| AUSTIN, CITY OF          | 480324 | 0445  | H      |
| ROLLINGWOOD, CITY OF     | 481029 | 0445  | H      |
| WEST LAKE HILLS, CITY OF | 481030 | 0445  | H      |

**PANEL 0445H**

**MAP NUMBER**  
48453C0445H  
**MAP REVISED**  
SEPTEMBER 26, 2008

**Federal Emergency Management Agency**

**NOTICE TO USER:** The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**Design Notes:**

The purpose for this new OSSF system is to replace the existing OSSF for a completed re-build resident house. The total final heated area is 8,117 ft<sup>2</sup> (5 bedrooms). This house is located on a 1.83 acre subdivided lot.

**Soil Profile data:**

The site evaluation was performed on September, 2012. This site evaluation is base on the TCEQ OSSF Rules 2/4/1997 and TEEX OSSF Site Evaluator Course. The soil is very uniform in this area, two soil profile holes were excavated and no evidence of Groundwater was observed. A soil type Class III was identified in this lot. The detailed site evaluation report is attached.

**Field Bed Size:**

Use TCEQ RULES TABLE III: With Water Saving Devices required for all facility  
Heated area calculation:

Main house = 8,117 ft<sup>2</sup>

8,117 ft<sup>2</sup> - 5,500 ft<sup>2</sup> = 2,617 ft<sup>2</sup>

Bedroom equivalent: **Seven (7)**

Daily waste flow designed for this site ***Q=540 GPD***

Long Term Application (Ra) for Class III soil is 0.2 gallons per absorptive area (ft<sup>2</sup>) per day.

Required drain-field size:  $A = Q/Ra = 540/0.2 = 2,700 \text{ ft}^2$

TCEQ Rules allowed three (3) ft<sup>2</sup> absorption areas for each L.F. of LPD pipe (12" gravel)

$2,700 \text{ ft}^2 / 3 \text{ ft}^2 = 900 \text{ L.F. pipe needed}$

This NEW system provide total of 900 L.F. LPD pipe in four equal fields (225 L.F./each).

**Septic Tank & Pump Tank ( USE INFILTRATOR TW-SERIES TANK)\* \*\***

TNRCC RULES TABLE II

For Q greater than or equal to 501 gal/day but less than or equal to 1,000 gal/day:

$V = 2.5Q = 1,350 \text{ Gallons}$

This system provided:

One 1,500 gallons septic tank (Two compartments)

One 900 gallons pump tank (single compartment)

\* Precast concrete tanks must have a report, prepared by a manufacturer's professional engineer certified that the tank meets all requirements of ASTM standard C 1227.

Chapter 285, 32(b)(1)(E)(i) effective 9/11/08.

\*\* TCEQ Certified Polyurethane Septic/Pump Tank may be used if concrete tank is not possible due to the access limitation.



Minimum dosing rate

Supply line uses 71 feet of 2" SCH40 PVC pipe

$V_{\text{supply}} = 71/100 \times 16.2 = 11.5 \text{ gal}$

Lateral line use 225 feet of 1" d SCH40 PVC pipe

$V_{\text{lateral}} = 225/100 \times 4.1 = 9.23 \text{ gal}$

$V_{\text{dosing}} = V_{\text{supply}} + 5(V_{\text{lateral}}) = 11.5 \text{ gal} + 5 \times 9.23 \text{ gal} = 57.65 \text{ gals}$

Use 70 **gals** per dosing (approx 3 cycles per day)

Set the floats as follow:

Set pump-on float at 13 inch, pump-off float at 10 inch and alarm on at 17 inch. Provide 650 gals reserve above alarm-on level > 540 GPD

$V_{\text{storage}} = 11.5 \text{ gal} + 9.23 \text{ gal} = 20.73 \text{ gal}$

$540 \text{ gal (daily flow)} / 4 = 135 \text{ gal} > 20.73 \text{ gal}$

**Check Valve is not necessary but siphon hole is required**

Pump Sizing

Filed A (control field)

Supply line loss =  $2.166 \text{ ft} \times 71/100 = 1.54 \text{ feet}$

20% fitting loss = 0.31 feet

Krain® head loss (#6404) = 7.0 feet

Bed Pressure Head = 2.0 feet

Pump elevation = 4.0 feet

Elevation difference = -5.0 feet

Total head = 9.85 feet

Pump rate needed: 33 gpm at 12 feet head

Use BARNES SE411 0.4HP 120V Effluent Pump.

This pump can pump 40gpm over 17 feet head.

\*\*\*See next three pages for hole spacing

## **ON-SITE SEWERAGE FACILITIES**

### **Low Pressure Pipe Waste Treatment System**

#### ***GENERAL NOTES:***

1. This private sewage facility must be installed by a TCEQ registered Installer II.
2. It is the Installer's responsibility to verify that a Permit to construct has been issued, and to post the permit on-site before any work is begun.
3. The construction of this private sewage facility shall conform to all requirements of the current effective version of 30 TAC, Chapter 285, TCEQ, ON-SITE SEWAGE FACILITIES "RULES" (Effective 06/13/01, revised 09/11/08).
4. All potable water lines must be at least 10 feet from this on-site sewage system. An Irrigation or sprinkler system must be at least 10 feet away from the drainage field.
5. The Installer is responsible for having this low-pressure pipe system inspected and approved by the CITY of WEST LAKE HILLS (512-327- 3628). The Engineer may be required to certify that the system has been installed in substantial compliance with the approved plans. Therefore, the Installer is required notifying the Engineer Peter Chang PE at 512-784-4830 for the each of the following stages of construction ( 24 hours advance notes required).
  - A. After the trenches are excavated, but prior to placing any gravel in the trenches. PVC pipe should be drilled to specifications at this time for inspection.
  - B. After pipe and gravel are installed. Tanks and pump must be set for this inspection.
  - C. Upon completion.

***TANK NOTES:***

1. All septic tanks and the pump chamber must be set level on a minimum of a 4-inch sand pad. Any over-excavation of the tank holes must be filled with sand to prevent settling.
2. Concrete tanks must be covered with no less than 6 inches of selected clean material such as sandy loams or any other fine material approved by the Engineer.
3. A 12-inch minimum diameter or square port must be provided over each inlet and outlet for inspection, cleaning and maintenance. For tanks buried more than 12 inches, manhole risers are required. The risers can be reinforced concrete pipe or rigid ribbed PVC with covers. A marker for each manhole should also be provided.
4. All tank risers, inlets and outlets shall be thoroughly sealed to prevent the escape of gasses and the access of surface water or insects to the tanks.
5. All tanks shall be tested by filling with water for 24 hours prior to inspection the leaks and structural integrity.
6. The Engineer must be notified if substitutions for pre-casted concrete tanks are desired. A cast-in place concrete tank design is available upon the request.

***FIELD NOTES:***

1. The Installer is responsible for staking and verification of grades prior to excavation. Notify the Engineer immediately for any difficulty to install the system according to the design plans. As with all LPD systems, the site must be protected from traffic. It is very important that the soil be worked only when dry. Working damp or wet soil can cause compaction and sealing, leading to failure of the system.
2. Bottom of all lateral line excavations is level within 1 inch over every 25 feet, or 3 inches over the entire excavation, whichever is less. Where this is not possible, use clay dams or poured concrete dams at least 6 inches thick and 16 inches high and key into the bottom and sidewalls of the trenches to keep the trench level as specified. Concrete dams may be no closer to each other than 20 feet and trench bottom level may not vary more than plus or minus 3 inches. The center-to-center spacing between all lateral trenches is 4 feet unless it is shown otherwise on the site plan.
3. The typical trench depths shall be from 12-18 inches as shown in the plan detail.
4. The manifold trench that crosses the lateral trenches shall be at least 2 inch above the gravel layer and minimum 4 inch beneath the finished grade surface.

5. The trench wall shall not be smeared or slickered, raked or dried if necessary to construct the net trenches. If ground water is encountered, report to the Engineer for instruction.
6. All PVC pipe joints shall be "welded" or "glued" in accordance with the manufacture recommendation procedures.
7. The uppermost lateral line turn-up in each field shall serve as a head monitor to set the specified pressure head. In this project the pressure head shall be set at two (2) feet. DO NOT OVER-PRESSURIZE the system.
8. Drill the 5/32" diameter holes for the lateral pipe as specified in the hole spacing detail. The first hole shall be 2 feet from the end of the manifold and 2 feet from the end of lateral line if not specified in the plan. All holes shall be in a straight line on one side of pipe, and face directly down into the gravel. Clean out entire pipes and holes before install to prevent clogged holes or pipes. Set Pipe directly on gravel level and cover with filter fabric.
9. Only a good quality sandy loam shall be used for mound/back-fill material. Either the Engineer or the Licensing Authority may reject loam with a high proportion of clay. A sample of the backfill material must be present on site at the time of the pipe and gravel inspection unless a previous waiver has been established with the Engineer and Licensing Authority. The installer shall be responsible for quality control of all subsequent loads of sandy loam placed on the drain-fields. Sandy loam shall be defined as shown in Table VIII of the Construction Standards for On-site Sewerage Facilities, TNRCC (TECQ).
10. An average loam layer will be between 8 to 10 inches. Fill is moved to the system using a front-end loader, being careful to avoid driving on the plowed area. The first load of fill is pushed into place using a very small crawler tractor with a blade or a roto-tiller with a blade. The fill is then tilled into the first few inches of natural soil to create a gradual boundary between the two. Failure to do this could ruin the system by forming a barrier to water movement at the soil-fill interface. Subsequent loads of fill are placed on the system and tilled, until the desired height is reached. The site should be shaped to shed ,
11. A water diversion from the drain-field area is essential for the system to operate without failure.
12. The fields and berm shall be seeded, hydro mulched or sodded with appropriate perennial grasses. Good vegetative grass cover is essential for effective system operation. Seeding with both winter and summer grass varieties will enhance yearlong efficient system operation. Grasses will be kept mowed for optimum system efficiency.
13. Later lines should be shifted if necessary in order to maximize the distance from trees and



to avoid damage to the root systems. However, installation of this system must remain reasonably within the tolerances specified for optimal system performance, incurred during installation and operation of this system.

14. Any excavation, or plan for excavation contrary to this design must be brought to the attention of the Engineer prior to any construction. OVER-EXCAVATION could cause this system, as shown by this design, to be in violation of the requirement of the TCEQ and the local Licensing Authority.
15. No automatic lawn sprinkler system will be installed over any portion of the proposed drain fields. All potable water lines must be at least 10 feet from this on-site sewage system. An Irrigation or sprinkler system must be at least 10 feet away from the drainage field.

## **CHAPTER 285 Changes: 9/1/2012**

### **SUBCHAPTER D: PLANNING, CONSTRUCTION, AND INSTALLATION STANDARDS FOR OSSFS**

#### **§285.38**

§285.38. Prevention of Unauthorized Access to On-Site Sewage Facilities (OSSFs).

(a) Applicability.

(1) The construction criteria under this subsection applies to:

(A) pretreatment (trash) tanks referenced in §285.32(b)(1)(G) of this title (relating to Criteria for Sewage Treatment Systems);

(B) proprietary treatment units referenced in §285.32(c) of this title;

(C) non-standard treatment units referenced in §285.32(d) of this title;

(D) pump tanks referenced in §285.34(b) of this title (relating to Other Requirements);

(E) holding tanks referenced in §285.34(e) of this title; and

(F) septic tanks referenced in §285.32(b)(1) of this title.

(2) The construction criteria found in this subsection is in addition to the construction criteria in §285.32 of this title.

(b) All tanks must have inspection or cleanout ports located on the tank top over all inlet and outlet devices. Each inspection or cleanout port must be offset to allow for pumping of the tank. The ports may be configured in any manner as long as the smallest dimension of the opening is at least 12 inches, and is large enough to provide for maintenance and equipment removal.



(c) With the exception of septic tanks, all inspection and cleanout ports shall have risers over the port openings which extend to the ground surface. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

(d) All septic tanks buried more than 12 inches below the ground shall have risers over the port openings. The risers shall extend from the tank surface to no more than six inches below the ground. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.

(e) Risers.

(1) The risers shall have inside diameters which are equal to or larger than the inspection or cleanout ports.

(2) Risers must be permanently fastened to the tank lid or cast into the tank. The connection between the riser and the tank lid must be watertight.

(3) Risers must be fitted with removable watertight caps and protected against unauthorized intrusions. Acceptable protective measures include:

(A) a padlock;

(B) a cover that can be removed with specialized tools;

(C) a cover having a minimum net weight of 29.5 kilograms (65 pounds) set into a recess of the tank lid; or

(D) any other means approved by the executive director.

(4) Risers and riser caps exposed to sunlight must have ultraviolet light protection.

(5) Risers must be able to withstand the pressures created by the surrounding soil.

(f) Installation of a riser to any component of a new OSSF is considered construction under this chapter and must be performed by a licensed installer.

(g) Installation of risers for OSSF components installed on or prior September 1, 2012, are considered an emergency repair as described in §285.35 of this title (relating to Emergency Repairs) and may be performed by either a licensed Installer, licensed maintenance provider, or registered maintenance technician.

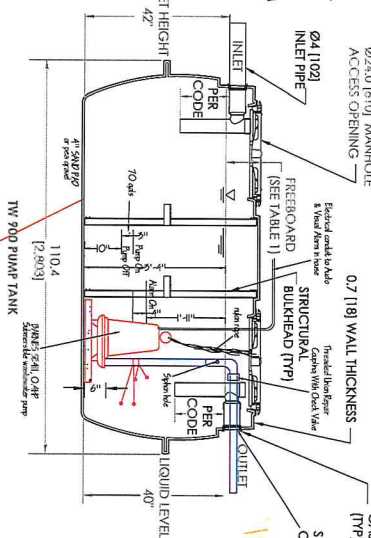
(h) Any person who accesses any secured lid(s) or cover(s) on an OSSF shall secure the lid(s) or cover(s) when access is complete.

(i) All inspection reports sent to Authorized Agents, Regional Offices, and homeowners must

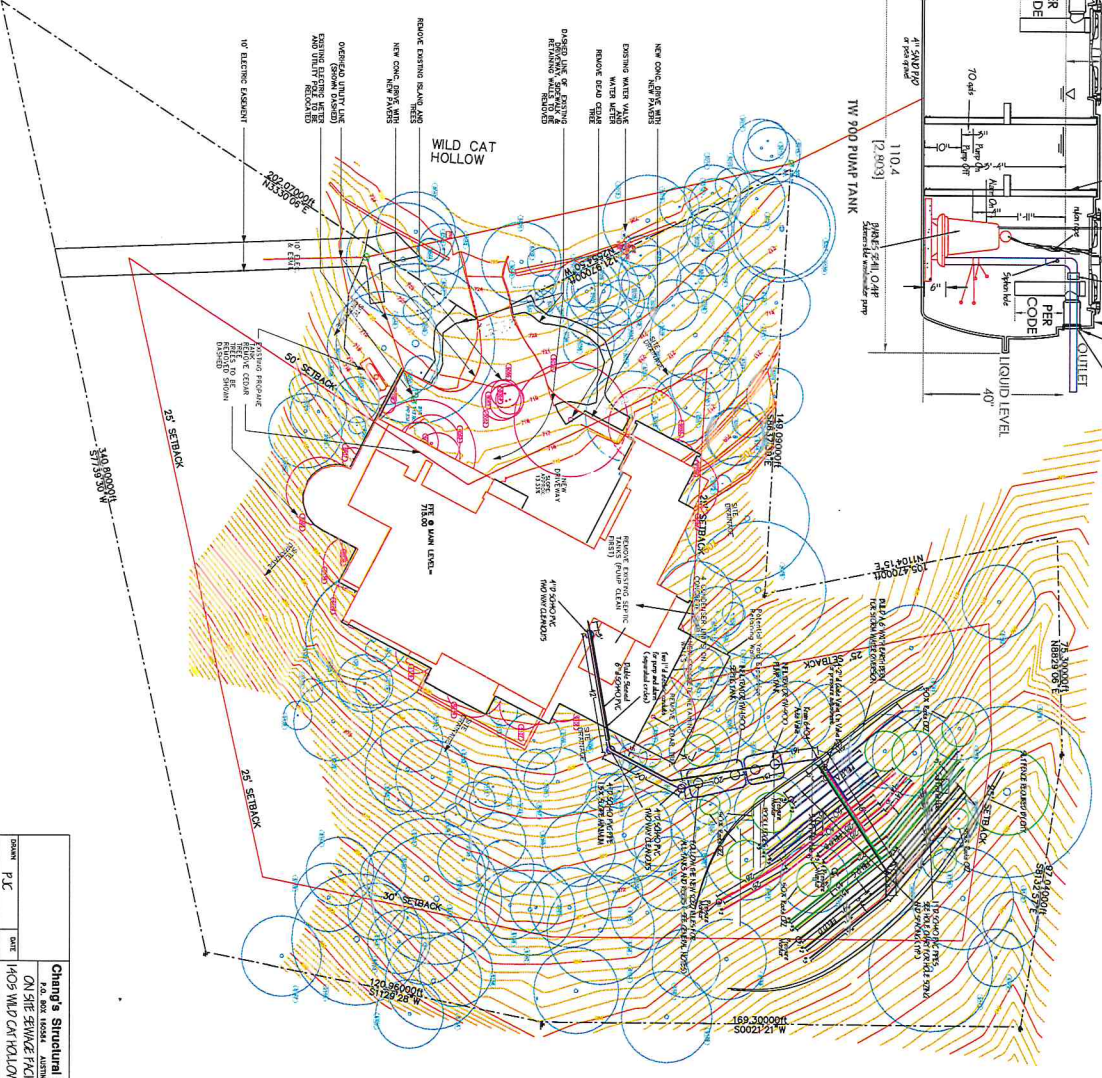
document that the access to the OSSF inspection and cleanout ports was secured after the maintenance or inspection activities were completed or that the OSSF system owner refused to pay for repairs that were needed to secure the OSSF inspection and cleanout ports.

***Builder and Owner Site Specific Notes:***

1. The INSTALLER shall supply the OWNER with the OPERATION and MAINTENANCE MANUAL for this disposal system and the OWNER shall be responsible for following the instruction of the OPERATION and MAINTENANCE MANUAL.
2. The INSTALLER shall thoroughly review these plans and schedule a preconstruction meeting with the OWNER, so that all issues related to the installation of the proposed system can be agreed upon mutually.
3. The OWNER shall be responsible for drainage protection of the house and the driveway. No low spots are allowable adjacent to or against the on-site sewerage disposal fields or the septic tank or pump chamber.
4. The OWNER shall immediately remedy any settling by applying fresh foam or topsoil to prevent a pounding condition.
5. The OWNER provides the survey and the site plans. If inaccuracy in the site plan or the survey requires a revision of the plans, then time delays for plan preparation, re-submission, re-approval and additional costs will be borne by the OWNER.
6. The INSTALLER and the OWNER shall be aware that no traffic is allowable on either the septic tanks and pump chamber or the disposal fields.
7. The INSTALLER and OWNER shall insure that there are no raw faces or grading cuts within 25 feet of drain fields.



| Trench # | Trench Length (ft) | Design Flow Rate (gpm) | Start Head (ft) | Change in Elev. (ft) | Friction Loss (ft) | Summation of Head (ft) | Flow rate (gpm) | # of Holes | Actual Flow (gpm) | Bypass Flow (gpm) | Hole Spacing (in) | Trench Spacing = 3 Feet |
|----------|--------------------|------------------------|-----------------|----------------------|--------------------|------------------------|-----------------|------------|-------------------|-------------------|-------------------|-------------------------|
|          |                    |                        |                 |                      |                    |                        |                 |            |                   |                   |                   |                         |
| 1        | 61                 | 0.65                   | 0               | 0                    | 0                  | 0                      | 2               | 0.07       | 21                | 8.546             | 23.45             | 34.2                    |
| 2        | 82                 | 11.66                  | 2               | 1                    | 0.035              | 2.965                  | 0.965           | 24         | 11.689            | 11.500            | 40.7              | 3                       |
| 3        | 82                 | 11.66                  | 3               | 1                    | 0.010              | 3.855                  | 0.572           | 20         | 11.45             | 0.00              | 49.3              | 0.14                    |
| Total    | 225                |                        |                 |                      |                    |                        |                 |            | 31.69             |                   |                   |                         |

[illegible]

| REVISIONS |     |             |      |
|-----------|-----|-------------|------|
| ZONE      | REV | DESCRIPTION | DATE |



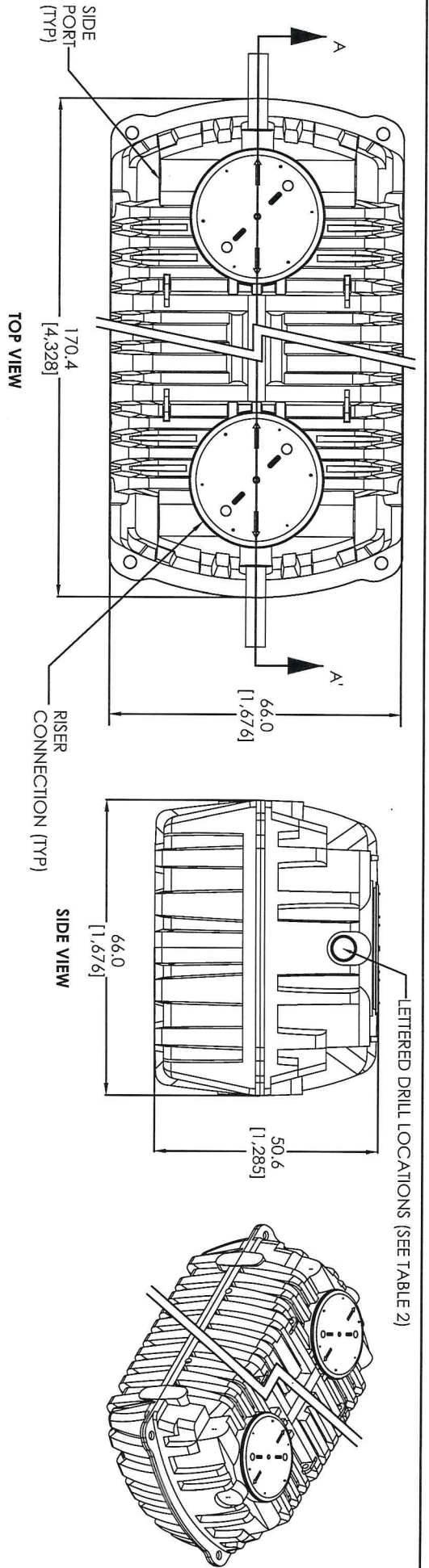


TABLE 1. - SPECIFICATIONS

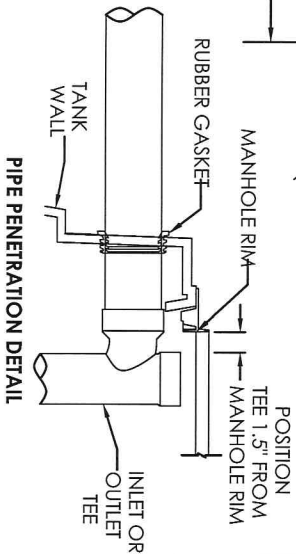
| PARAMETER      | UNITS         | LIQUID LEVEL        | LIQUID LEVEL        |
|----------------|---------------|---------------------|---------------------|
|                | U.S. [Metric] | 39.75 IN [1,010 mm] | 140.0 IN [1,016 mm] |
| TOTAL VOLUME   | gal [L]       | 1,762 [6,669]       | 1,762 [6,669]       |
| WORKING VOLUME | gal [L]       | 1,523 [5,765]       | 1,532 [5,798]       |
| TANK LENGTH    | in [mm]       | 170.4 [4,328]       | 170.4 [4,328]       |
| TANK WIDTH     | in [mm]       | 66.0 [1,676]        | 66.0 [1,676]        |
| TANK HEIGHT    | in [mm]       | 50.6 [1,285]        | 50.6 [1,285]        |
| FREEBOARD      | in [mm]       | 10.1 [256]          | 9.8 [249]           |

TABLE 2. - INVERTS AND LIQUID LEVEL

| INVERT DROP IN [mm] | INLET DRILL LOCATION | OUTLET DRILL LOCATION | INLET INVERT HEIGHT IN [mm] | OUTLET INVERT HEIGHT AND LIQUID LEVEL IN [mm] |
|---------------------|----------------------|-----------------------|-----------------------------|-----------------------------------------------|
| 2.0 [51]            | A                    | D                     | 42.0 [1,067]                | 40.0 [1,016]                                  |
| 2.25 [57]           | A                    | C                     | 42.0 [1,067]                | 39.75 [1,010]                                 |
| 3.0 [76]            | B                    | C                     | 42.75 [1,086]               | 39.75 [1,010]                                 |

GENERAL NOTES

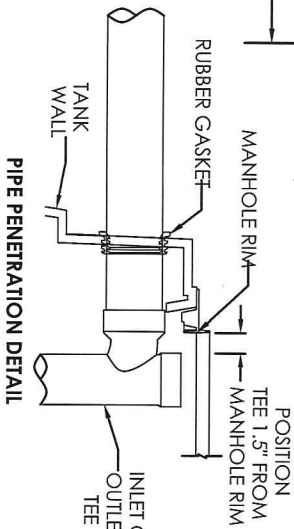
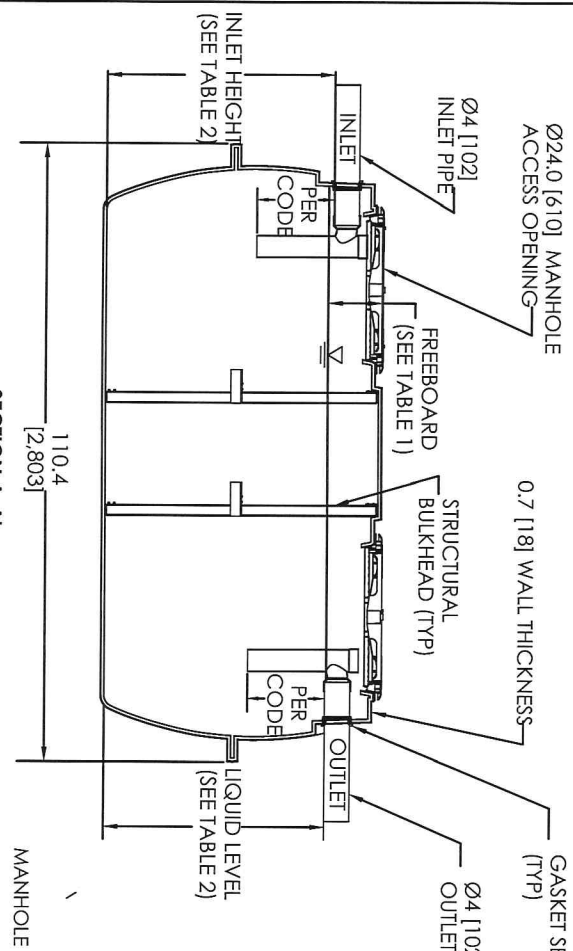
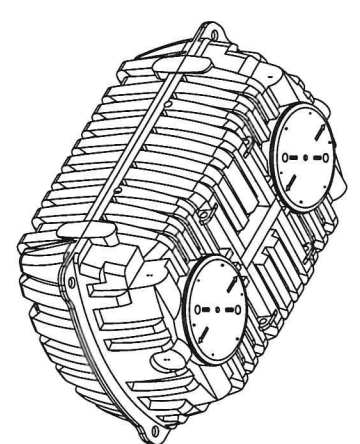
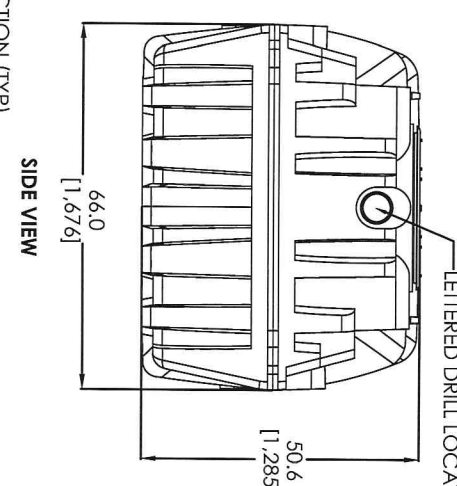
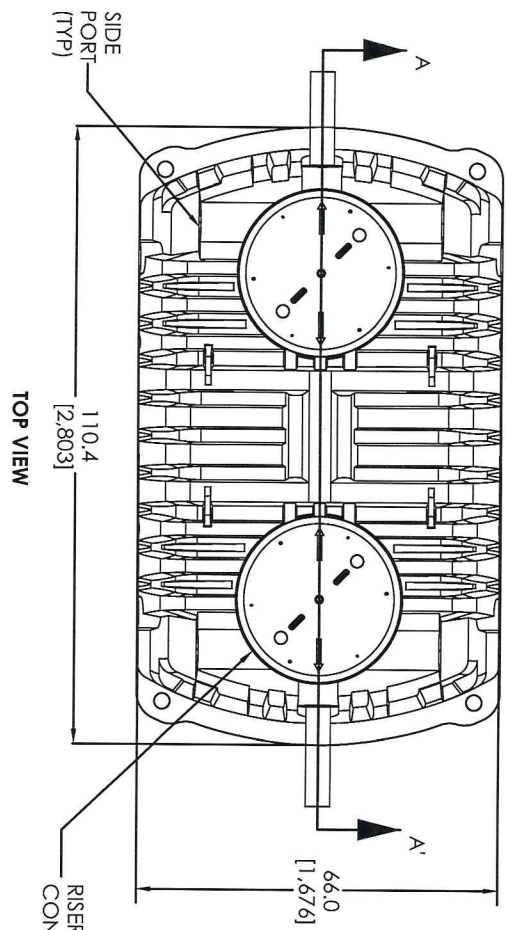
1. Tank markings include: manufacturer name, liquid capacity, manufacture date, maximum burial depth, model number, inlet, and outlet and state-specific approval number.
2. Maximum burial depth is 48 in [1,219 mm].
3. Dimensions on drawing shown in inches [millimeters].
4. Exterior of manhole cover includes the following warning: "DANGER DO NOT ENTER: POISON GASES" written in English, French and Spanish.
5. Working volume, liquid level and freeboard vary based on elevation of outlet, which varies by code.
6. This is a generic tank configuration. State, provincial or county regulations may require a different setup or features.
7. Invert drop can be 2.0 in [51 mm], 2.25 in [57 mm] or 3.0 in [76 mm] depending on applicable regulations.
8. Third bulkhead at tank center is not shown.



INFILTRATOR SYSTEMS INC.  
6 Business Park Rd. Old Saybrook, CT 06475  
(800) 221-4436

TW-1500 SINGLE COMPARTMENT  
SEPTIC TANK CONFIGURATION

Drawn by: R.D. DWG NO.: 1 Date: 11-07-08  
Scale: Not to Scale Checked by: EPK Sheet: 1 of 1



- GENERAL NOTES**
1. Tank markings include: manufacturer name, liquid capacity, manufacture date, maximum burial depth, model number, inlet, and outlet and state-specific approval number.
  2. Maximum burial depth is 48 in [1,219 mm].
  3. Dimensions on drawing shown in inches [millimeters].
  4. Exterior of manhole cover includes the following warning: "DANGER DO NOT ENTER: POISON GASES" written in English, French and Spanish.
  5. Working volume, liquid level and freeboard vary based on elevation of outlet, which varies by code.
  6. This is a generic tank configuration. State, provincial or county regulations may require a different setup or features.
  7. Invert drop can be 2.0 in [51 mm], 2.25 in [57 mm] or 3.0 in [76 mm] depending on applicable regulations.

TABLE 1 - SPECIFICATIONS

| PARAMETER      | UNITS         | LIQUID LEVEL        | LIQUID LEVEL       |
|----------------|---------------|---------------------|--------------------|
|                | U.S. [Metric] | 39.75 IN [1,010 mm] | 40.0 IN [1,016 mm] |
| TOTAL VOLUME   | gal [L]       | 1,055 [3,994]       | 1,055 [3,994]      |
| WORKING VOLUME | gal [L]       | 915 [3,465]         | 920 [3,484]        |
| TANK LENGTH    | in [mm]       | 110.4 [2,803]       | 110.4 [2,803]      |
| TANK WIDTH     | in [mm]       | 66.0 [1,676]        | 66.0 [1,676]       |
| TANK HEIGHT    | in [mm]       | 50.6 [1,285]        | 50.6 [1,285]       |
| FREEBOARD      | in [mm]       | 10.1 [256]          | 9.8 [249]          |

TABLE 2 - INVERTS AND LIQUID LEVEL

| INVERT DROP | INLET DRILL LOCATION | OUTLET DRILL LOCATION | INLET INVERT HEIGHT | OUTLET INVERT HEIGHT |
|-------------|----------------------|-----------------------|---------------------|----------------------|
| IN [mm]     |                      |                       | IN [mm]             | IN [mm]              |
| 2.0 [51]    | A                    | D                     | 42.0 [1,067]        | 40.0 [1,016]         |
| 2.25 [57]   | A                    | C                     | 42.0 [1,067]        | 39.75 [1,010]        |
| 3.0 [76]    | B                    | C                     | 42.75 [1,086]       | 39.75 [1,010]        |

INFILTRATOR SYSTEMS INC.  
6 Business Park Rd., Old Saybrook, CT 06475  
(800) 221-4436

TW-900 SINGLE COMPARTMENT  
SEPTIC TANK CONFIGURATION

Drawn by: R.D. DWG NO. 1 Date: 11-07-08  
Scale: Not to Scale Checked by: EPK Sheet: 1 of 1



# TW™-Series Septic Tanks

## General Installation Instructions



### Before You Begin

Infiltrator Systems' TW-Series Septic Tanks must be installed according to state and/or local regulations, which supercede the manufacturer's installation instructions. If unsure of the installation requirements for a particular site, contact the local health department or permitting authority.

Inspect the tank for damage before installation. While illustrations depict the TW-900 model tank, these instructions also apply to the TW-300, TW-500, TW-1050, TW-1250, and TW-1500.

#### Materials and Equipment Needed

- |                                                     |                                                                        |
|-----------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> TW-Series Tank             | <input type="checkbox"/> Excavator                                     |
| <input type="checkbox"/> Manhole lids (included)    | <input type="checkbox"/> Shovel                                        |
| <input type="checkbox"/> 6 bolts per lid (included) | <input type="checkbox"/> Level                                         |
| <input type="checkbox"/> Rubber gaskets (included)  | <input type="checkbox"/> 5" (127 mm) or 5½" (133 mm) diameter hole saw |
| <input type="checkbox"/> Inlet/outlet tees*         | <input type="checkbox"/> Utility knife                                 |
| <input type="checkbox"/> Tape measure               | <input type="checkbox"/> PVC pipe glue with primer                     |
| <input type="checkbox"/> Pipe, risers, etc.         | <input type="checkbox"/> Socket wrench                                 |
| <input type="checkbox"/> Socket wrench              | <i>*may be included</i>                                                |

### Installation Site Selection

1. Avoid installation of the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The maximum vehicle load is a 4,500-pound (20kN) axle load at a soil cover depth of 6 to 48" inches (152 to 1,219 mm).

\*18-inch max. burial depth in Florida; 36-inch max. burial depth in North Carolina, Massachusetts, and Oregon.

### Excavating and Preparing the Site

1. The excavation width and length should be 12 to 36 inches (304 to 914 mm) larger than the tank on each side.
2. Excavate to account for 51 inch (1,295 mm) height of tank, 4 inches (101 mm) of bedding (if required), and backfill thickness (permissible cover depth is 0.5 to 4 feet (152 to 1,219 mm) of soil).
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soil with large, protruding, or sharp stones or other similar objects that may damage tank are not suitable.
4. The tank may be bed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (101 mm) layer of pea stone, sand, gravel, or other similar material having particles less than 3 inches (76 mm) in diameter.
5. Create a uniform, level bedding surface to ensure that the bottom of tank is uniformly supported at the base of the excavation. Verify that the base of excavation is flat.

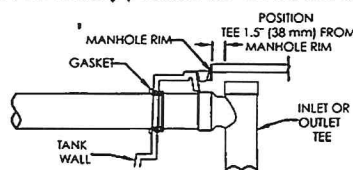


### Installing the Tank

1. If the tank inlet and outlet penetrations are not drilled, drill holes (see Inlet and Outlet Hole Locations section). The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5½-inch (133 mm) hole saw. If using an alternative gasket (not supplied with the TW-series tank) sized for Schedule 40 pipe only (having a larger inside diameter), use a 5-inch (127 mm) hole saw.
2. Install the rubber gaskets at the inlet and outlet.
3. Slide the inlet and outlet pipes\* through the gaskets.

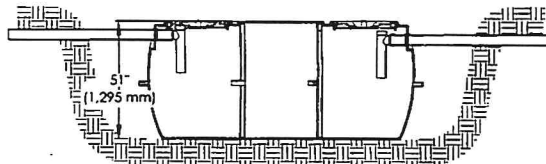
\*For North Carolina, the inlet pipe shall be a straight pipe with no tee.

4. Horizontally position the tee as shown in the detail below.



\*For Illinois, 6-inch (152 mm) drop required for inlet tee.

5. Using lifting lugs, lower tank into excavation with tees in place.
6. Install lid, inlet and outlet piping, and risers (see Installing the Riser section) as necessary.



### Backfilling the Tank

Note: The Infiltrator TW-Series Tanks do not require filling with water prior to backfill placement.

1. Backfill with suitable native soil. If native soil is unsuitable, replace unsuitable fraction with suitable soil.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.
  - a) For a tank installation depth of 0.5 to 2.0 feet (152 to 610 mm), suitable soil textures include:
    - i. Sand
    - ii. Loamy sand
    - iii. Sandy loam
    - iv. Loam
    - v. Sandy clay loam
    - vi. Sandy clay
    - vii. The following, assuming that the sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487) is greater than 30%: silt loam, clay loam, and clay
    - viii. The following, assuming that the sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487) is less than 30% and the soil is shown to be dilatant (refer to Step 5 below for simple dilatancy test to be conducted in the field): silt loam, silt, clay loam, silt clay loam, silty clay, and clay
  - b) For a tank installation depth that is greater than 2.0 feet and up to 4.0 feet (610 to 1219 mm), suitable soil textures include:
    - i. Sand
    - ii. Loamy sand
    - iii. Sandy loam
    - iv. Loam
    - v. Sandy clay loam
    - vi. Sandy clay
    - vii. Silt loam, clay loam, and clay having at least a 30% sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487).

b) For a tank installation depth that is greater than 2.0 feet and up to 4.0 feet (610 to 1219 mm), suitable soil textures include:

- i. Sand
- ii. Loamy sand
- iii. Sandy loam
- iv. Loam
- v. Sandy clay loam
- vi. Sandy clay
- vii. Silt loam, clay loam, and clay having at least a 30% sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487).

3. Backfill should not have stones greater than 3 inches in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs.

4. Standard field soil classification methods shall be used to determine the soil textural class.

5. Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3, and as described below.



a) Mold a 1/2-inch-diameter (13 mm) soil test specimen in the palm of the hand. The test specimen shall be representative of the prospective tank backfill soil.

b) Mold the test specimen, adding water if necessary, until it has a soft, but not sticky consistency.

c) Smooth the soil ball in the palm of one hand with a spatula or similar instrument.

d) Shake the soil sample by striking the hand vigorously against the other hand approximately 5 times. Do not strike hand in a manner that results in an injury.

e) Immediately following shaking, gently squeeze the soil in the palm of the hand.

f) Repeat shaking test if necessary to evaluate soil.

g) Note whether water appears on the surface of the soil specimen during shaking and squeezing.

i. If water appears on and disappears from the surface of the soil specimen, the soil is dilatant, and is suitable.

ii. If no visible change or only a slight visible change in the soil specimen occurs due to shaking or squeezing, the soil is not dilatant, and is unsuitable.

6. Do not backfill top of tank before sidewalls are completely backfilled.

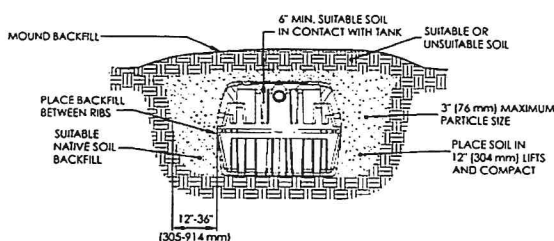
7. Place backfill around the four sidewalls in a progressive, alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (304 mm) tolerance.

8. Continue to place backfill along the sidewalls in 12-inch (304 mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.

9. Compact backfill material either by hand tamping or mechanical compaction (includes backhoe bucket). Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.

10. Complete backfilling and grade the area.

11. A minimum 6-inch-thick layer of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.



## Installing Under Shallow Groundwater Conditions

If the seasonal high groundwater table has the potential to rise 18 inches (457 mm) or more above the tank bottom, anti-buoyancy measures are warranted, as follows:

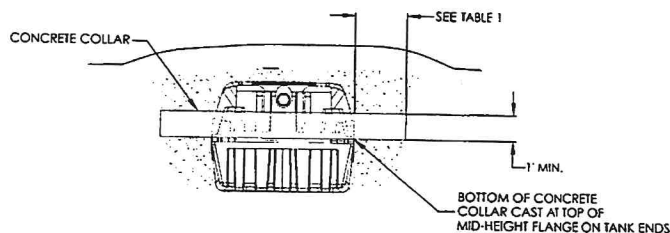
### Option 1 - Concrete Collar

A ballast may be constructed using cast-in-place concrete (minimum 3,000 psi at 28 days and 6% air entrainment). Concrete shall be cast in contact with the exterior surface of the tank to allow interlock with sidewall ribs and mid-height flange at tank ends. Minimum collar dimensions are provided in the chart and figure below. The collar minimum height and width are 1 foot (0.3 m).

**TABLE 1 - CONCRETE COLLAR MINIMUM DIMENSIONS**

| Dimension        | TW-900     | TW-1050    | TW-1250    | TW-1500    |
|------------------|------------|------------|------------|------------|
| Length in ft (m) | 13.0 (3.9) | 15.0 (4.6) | 17.0 (5.2) | 20.0 (6.1) |
| Width in ft (m)  | 9.5 (2.9)  | 9.5 (2.9)  | 10.0 (3.0) | 10.0 (3.0) |

Note: TW-300 and TW-500 do not allow the use of a concrete collar.



### Option 2 - Other Measures

Buoyancy controls may include, but are not limited to, deadman anchors, (e.g., concrete blocks, parking bumpers, soil-filled pipe), soil anchors, and geosynthetics. Connections between the restraint system and tank shall be sized to withstand the expected upward buoyant force. Straps connecting the buoyancy control system to the tank shall be a minimum of 3 inches wide and manufactured using nylon or polyester. For the TW-900 through TW-1500, straps shall be placed across the tank in corrugations coincident with the structural bulkheads. For the TW-300 and TW-500, straps shall be connected to the lifting lugs. Table 2 provides the minimum restraining force required based on burial depth for a factor of safety against uplift of 1.1, soil unit weight of 110 pounds/cubic foot, and groundwater located at top of tank.

**TABLE 2 - MINIMUM RESTRAINING FORCE IN POUNDS (kg)**

| Model   | Depth of Soil Cover in Feet (meters) |                   |                  |                  |              |
|---------|--------------------------------------|-------------------|------------------|------------------|--------------|
|         | 0.5 (0.1)                            | 1 (0.3)           | 2 (0.6)          | 3 (0.9)          | 4 (1.2)      |
| TW-300  | 2,560<br>(1,170)                     | 2,290<br>(1,040)  | 1,730<br>(790)   | 1,180<br>(540)   | 630<br>(290) |
| TW-500  | 4,060<br>(1,850)                     | 3,590<br>(1,630)  | 2,640<br>(1,200) | 1,690<br>(770)   | 730<br>(340) |
| TW-900  | 8,340<br>(3,790)                     | 7,180<br>(3,260)  | 4,860<br>(2,210) | 2,540<br>(1,160) | 210<br>(100) |
| TW-1050 | 9,580<br>(4,360)                     | 8,260<br>(3,760)  | 5,620<br>(2,560) | 2,980<br>(1,360) | 340<br>(160) |
| TW-1250 | 11,420<br>(5,190)                    | 9,850<br>(4,480)  | 6,730<br>(3,060) | 3,600<br>(1,640) | 470<br>(220) |
| TW-1500 | 13,880<br>(6,310)                    | 12,000<br>(5,460) | 8,240<br>(3,750) | 4,480<br>(2,040) | 720<br>(330) |

## Installing the Riser

1. Compatible risers include 24-inch (600 mm) diameter products from EZset by Infiltrator, Polylok®, Inc., Tuf-Tite® Corporation, 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib PVC pipe.

2. Oregon watertightness testing to include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

Note: Guidance for riser connection is available upon request.

## Installing Pumps and Related Equipment

Pumps shall be supported on a stable, level 16 x 16 inch (406 x 406 mm) platform positioned on the bottom of the tank. Precast concrete block is acceptable pump support material. One 16 x 16 inch block or two 8 x 16 inch (203 mm x 406 mm) side-by-side blocks may be used. The support block(s) shall be placed below an access opening and level upon the ribs on the tank bottom. If two blocks are used, they shall be oriented perpendicular to the ribs on the tank bottom for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.



## General Specifications

- Failure to comply with installation instructions may void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with local requirements.
- Tanks are only designed for installation underground.
- Operating water temperature shall be less than 140° F (60° C).
- Tanks are not fire resistant. Store away from ignition sources.
- Tanks are not suitable for potable water storage applications. Tanks are recommended for use as septic, rainwater/stormwater storage, and pump tanks.

| Height <sup>1</sup> (in) | TABLE 3: TOTAL LIQUID VOLUME IN TANK AT INDICATED HEIGHT |       |        |       |        |       |         |       |         |       |         |       |
|--------------------------|----------------------------------------------------------|-------|--------|-------|--------|-------|---------|-------|---------|-------|---------|-------|
|                          | TW-300                                                   |       | TW-500 |       | TW-900 |       | TW-1050 |       | TW-1250 |       | TW-1500 |       |
|                          | Gal                                                      | L     | Gal    | L     | Gal    | L     | Gal     | L     | Gal     | L     | Gal     | L     |
| 0                        | 0                                                        | 0     | 0      | 0     | 0      | 0     | 0       | 0     | 0       | 0     | 0       | 0     |
| 1                        | 1                                                        | 2     | 2      | 8     | 10     | 37    | 11      | 43    | 14      | 53    | 17      | 64    |
| 2                        | 2                                                        | 9     | 5      | 19    | 22     | 82    | 25      | 95    | 30      | 115   | 37      | 140   |
| 3                        | 5                                                        | 19    | 8      | 30    | 41     | 156   | 48      | 181   | 58      | 218   | 71      | 267   |
| 4                        | 9                                                        | 34    | 13     | 49    | 62     | 236   | 72      | 273   | 87      | 330   | 107     | 404   |
| 5                        | 15                                                       | 57    | 20     | 76    | 84     | 317   | 97      | 368   | 117     | 444   | 143     | 543   |
| 6                        | 21                                                       | 79    | 28     | 106   | 106    | 400   | 122     | 463   | 148     | 558   | 180     | 683   |
| 7                        | 28                                                       | 106   | 37     | 140   | 128    | 483   | 148     | 560   | 178     | 674   | 218     | 825   |
| 8                        | 36                                                       | 136   | 48     | 182   | 150    | 567   | 174     | 657   | 209     | 791   | 256     | 968   |
| 9                        | 43                                                       | 163   | 59     | 223   | 172    | 653   | 200     | 756   | 240     | 910   | 294     | 1,112 |
| 10                       | 50                                                       | 189   | 71     | 269   | 195    | 739   | 226     | 855   | 272     | 1,029 | 332     | 1,257 |
| 11                       | 57                                                       | 216   | 83     | 314   | 218    | 826   | 252     | 956   | 304     | 1,149 | 371     | 1,404 |
| 12                       | 65                                                       | 246   | 95     | 360   | 242    | 915   | 279     | 1,057 | 336     | 1,270 | 410     | 1,551 |
| 13                       | 72                                                       | 273   | 105    | 397   | 265    | 1,004 | 306     | 1,160 | 368     | 1,393 | 449     | 1,700 |
| 14                       | 80                                                       | 303   | 118    | 447   | 289    | 1,093 | 334     | 1,263 | 400     | 1,516 | 489     | 1,849 |
| 15                       | 87                                                       | 329   | 130    | 492   | 313    | 1,184 | 361     | 1,367 | 433     | 1,640 | 528     | 2,000 |
| 16                       | 95                                                       | 360   | 142    | 537   | 337    | 1,276 | 389     | 1,472 | 466     | 1,765 | 569     | 2,152 |
| 17                       | 102                                                      | 386   | 154    | 583   | 361    | 1,368 | 417     | 1,578 | 500     | 1,892 | 609     | 2,305 |
| 18                       | 110                                                      | 416   | 166    | 628   | 386    | 1,461 | 445     | 1,685 | 533     | 2,019 | 650     | 2,459 |
| 19                       | 118                                                      | 447   | 179    | 678   | 411    | 1,555 | 474     | 1,792 | 567     | 2,146 | 690     | 2,614 |
| 20                       | 126                                                      | 477   | 191    | 723   | 436    | 1,650 | 502     | 1,901 | 601     | 2,275 | 732     | 2,769 |
| 21                       | 134                                                      | 507   | 204    | 772   | 462    | 1,747 | 532     | 2,012 | 636     | 2,407 | 774     | 2,928 |
| 22                       | 141                                                      | 534   | 216    | 818   | 488    | 1,847 | 562     | 2,126 | 671     | 2,541 | 816     | 3,091 |
| 23                       | 149                                                      | 564   | 228    | 863   | 515    | 1,948 | 592     | 2,241 | 708     | 2,678 | 860     | 3,256 |
| 24                       | 156                                                      | 590   | 241    | 912   | 542    | 2,053 | 624     | 2,361 | 745     | 2,819 | 905     | 3,425 |
| 25                       | 164                                                      | 621   | 253    | 958   | 569    | 2,154 | 654     | 2,475 | 781     | 2,955 | 948     | 3,589 |
| 26                       | 171                                                      | 647   | 265    | 1,003 | 595    | 2,251 | 683     | 2,587 | 815     | 3,086 | 990     | 3,747 |
| 27                       | 178                                                      | 674   | 277    | 1,048 | 620    | 2,346 | 712     | 2,695 | 849     | 3,215 | 1,031   | 3,903 |
| 28                       | 186                                                      | 704   | 289    | 1,094 | 644    | 2,439 | 740     | 2,802 | 883     | 3,342 | 1,072   | 4,057 |
| 29                       | 193                                                      | 731   | 300    | 1,136 | 669    | 2,533 | 769     | 2,909 | 916     | 3,469 | 1,112   | 4,210 |
| 30                       | 200                                                      | 757   | 312    | 1,181 | 693    | 2,625 | 796     | 3,015 | 950     | 3,594 | 1,152   | 4,362 |
| 31                       | 208                                                      | 787   | 324    | 1,226 | 718    | 2,717 | 824     | 3,120 | 982     | 3,719 | 1,192   | 4,514 |
| 32                       | 215                                                      | 814   | 336    | 1,272 | 741    | 2,807 | 852     | 3,223 | 1,015   | 3,842 | 1,232   | 4,663 |
| 33                       | 222                                                      | 840   | 347    | 1,313 | 765    | 2,895 | 878     | 3,325 | 1,047   | 3,964 | 1,271   | 4,810 |
| 34                       | 230                                                      | 871   | 359    | 1,359 | 788    | 2,983 | 905     | 3,426 | 1,079   | 4,084 | 1,309   | 4,956 |
| 35                       | 236                                                      | 893   | 370    | 1,400 | 811    | 3,070 | 931     | 3,526 | 1,110   | 4,203 | 1,347   | 5,101 |
| 36                       | 243                                                      | 920   | 382    | 1,446 | 834    | 3,155 | 957     | 3,624 | 1,141   | 4,320 | 1,385   | 5,243 |
| 37                       | 251                                                      | 950   | 393    | 1,488 | 856    | 3,240 | 983     | 3,721 | 1,172   | 4,436 | 1,422   | 5,384 |
| 38                       | 258                                                      | 977   | 404    | 1,529 | 877    | 3,320 | 1,008   | 3,814 | 1,201   | 4,548 | 1,458   | 5,521 |
| 39                       | 264                                                      | 999   | 416    | 1,575 | 898    | 3,398 | 1,031   | 3,904 | 1,230   | 4,657 | 1,494   | 5,654 |
| 40                       | 271                                                      | 1,026 | 427    | 1,616 | 920    | 3,484 | 1,057   | 4,003 | 1,261   | 4,772 | 1,532   | 5,798 |
| 41                       | 278                                                      | 1,052 | 438    | 1,658 | 938    | 3,549 | 1,078   | 4,080 | 1,286   | 4,869 | 1,562   | 5,915 |
| 42                       | 285                                                      | 1,079 | 449    | 1,699 | 957    | 3,623 | 1,100   | 4,166 | 1,314   | 4,972 | 1,596   | 6,042 |
| 43                       | 292                                                      | 1,105 | 460    | 1,741 | 976    | 3,695 | 1,123   | 4,249 | 1,340   | 5,074 | 1,629   | 6,167 |
| 44                       | 299                                                      | 1,132 | 471    | 1,783 | 994    | 3,765 | 1,144   | 4,331 | 1,366   | 5,172 | 1,661   | 6,288 |
| 45                       | 304                                                      | 1,151 | 481    | 1,821 | 1,011  | 3,829 | 1,164   | 4,406 | 1,390   | 5,263 | 1,690   | 6,399 |
| 46                       | 310                                                      | 1,173 | 490    | 1,855 | 1,025  | 3,878 | 1,179   | 4,465 | 1,410   | 5,337 | 1,715   | 6,492 |
| 47                       | 313                                                      | 1,185 | 498    | 1,885 | 1,036  | 3,923 | 1,193   | 4,517 | 1,427   | 5,402 | 1,737   | 6,574 |
| 48                       | 313                                                      | 1,185 | 502    | 1,900 | 1,045  | 3,954 | 1,203   | 4,553 | 1,439   | 5,446 | 1,750   | 6,626 |
| 49                       | 313                                                      | 1,185 | 504    | 1,908 | 1,055  | 3,994 | 1,212   | 4,588 | 1,448   | 5,481 | 1,762   | 6,669 |

Notes: 1. Height measured from inside surface at bottom of corrugation in tank. 2. Gal = gallons. 3. L = liters.



## Inlet and Outlet Hole Locations

Drill height markings are provided on the Infiltrator TW-900, TW-1050, TW-1250, and TW-1500 to serve as a guide for inlet and outlet hole locations. Markings "A" (lower) and "B" (upper) are located at the inlet end. *Note: holes may be drilled at the end or side inlet and outlet locations.* Markings "C" (lower), "D" (middle), and "E" (upper) (TW-900 only) are located at the outlet end. The circular centering symbol next to the marking letter indicates the centerpoint location for the hole saw. The pilot drill bit on the hole saw should be positioned on the centering symbol to properly align the hole saw.

The drill height markings below are provided to set the inlet and outlet invert heights based on state and/or local regulations. The chart below provides the proper inlet and outlet drill points. Note that state, provincial and local regulatory requirements take precedence over the information provided in the table below.

| State or Province                                                                                       | Inlet Drill Location | Outlet Drill Location | Invert Drop (in) [mm] | Inlet Invert Height <sup>2</sup> (in) [mm] | Outlet Invert Height <sup>2</sup> and Liquid Level (in) [mm] |
|---------------------------------------------------------------------------------------------------------|----------------------|-----------------------|-----------------------|--------------------------------------------|--------------------------------------------------------------|
| DE, FL, IA, MA, ON                                                                                      | A                    | D                     | 2 [51]                | 42 [1,067]                                 | 40 [1,016]                                                   |
| AR, CA, CO, CT, ID, IN <sup>1</sup> , KS, KY <sup>1</sup> , MO, MT, ND, PA, SD, TX, VT, WV <sup>1</sup> | B                    | C                     | 3 [76]                | 42.75 [1,086]                              | 39.75 [1,010]                                                |
| All Others                                                                                              | A                    | C                     | 2.25 [57]             | 42 [1,067]                                 | 39.75 [1,010]                                                |

### Notes:

1. Florida, Indiana, Kentucky, Oregon, and West Virginia tanks are factory drilled.
2. Invert heights are measured from the interior surface at the bottom of the tank.

### INFILTRATOR SYSTEMS, INC. ("Infiltrator") INFILTRATOR® TW™-SEPTIC TANK LIMITED WARRANTY

#### FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator TW™ Septic Tank. A Septic Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Septic Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

#### CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Septic Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Septic Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal septic tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Septic Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Septic Tank.



Distributed By:

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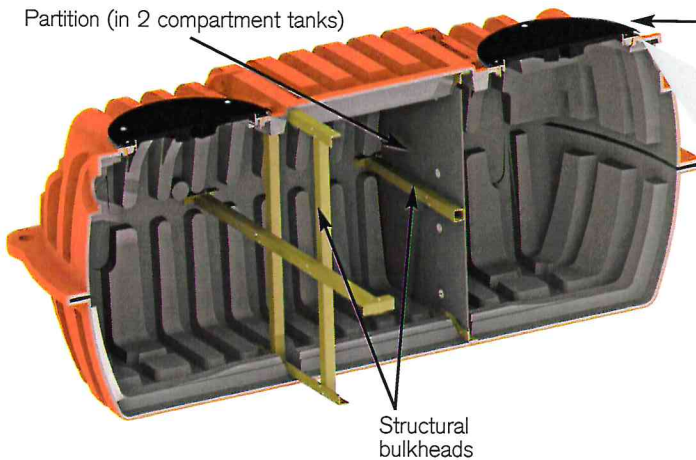
## TW-SERIES SEPTIC TANKS



Infiltrator Systems TW-Series Septic Tanks provide superior strength for long-term, water-tight performance. Innovative features not found in any other septic tank include: thick, triple wall design manufactured with proprietary state-of-the-art rotomolding technology; permanent, factory-installed structural bulkheads; and reinforced access ports. No special installation, backfill or water filling procedures are required. The TW-Series Septic Tanks come in five different sizes.

Partition (in 2 compartment tanks)

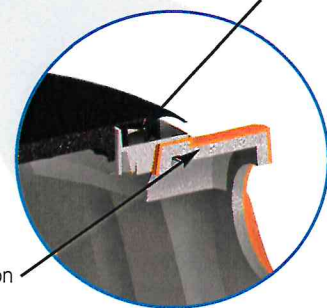
Reinforced lid



Structural bulkheads

### LID CUTAWAY CROSS SECTION VIEW

Reinforced structural access port ring



Triple wall construction

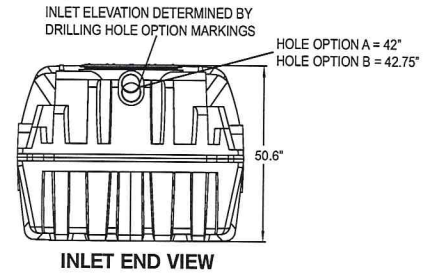
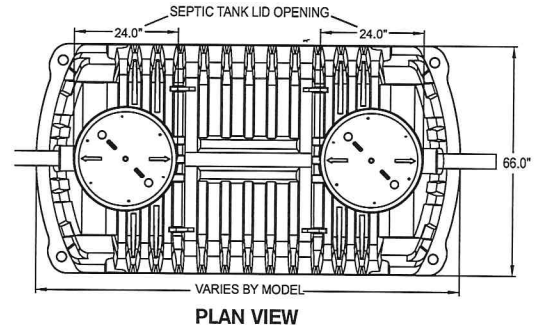
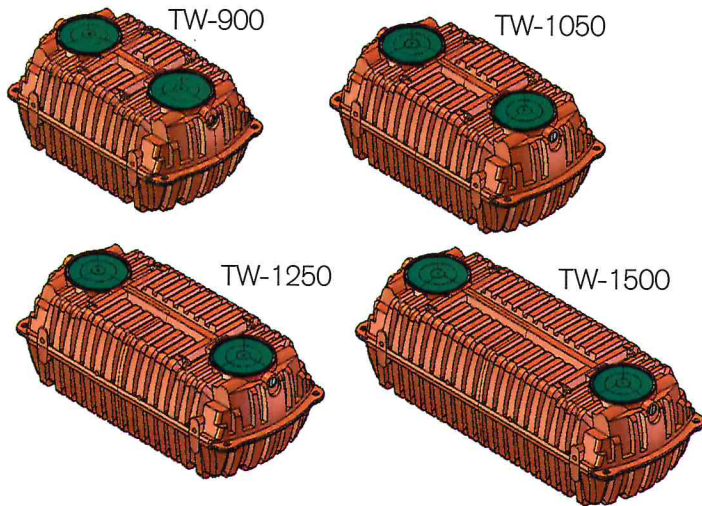
### TANK CUTAWAY CROSS SECTION VIEW

### TW-Series Septic Tanks Offer These Unique Benefits:

- Triple wall design provides a thick composite wall structure that acts like a structural I-beam
- Factory installed bulkheads offer superior structural stability under heavy loads
- Reinforced access ports do not distort upon backfilling or during pump-outs
- Can be installed without water filling, special soil bedding or backfilling procedures
- Can be pumped dry during pump-outs (no need to refill with water)
- Resistant to flotation in high water table conditions
- Can be installed with 6 to 48 inches of soil cover (regulatory codes may establish maximum burial depth, ie. FL at 18" and NC at 36.")
- Available as single or dual compartment tanks
- Suitable for use as septic tanks and pump tanks
- Flat bottoms allow for easy storage and installation

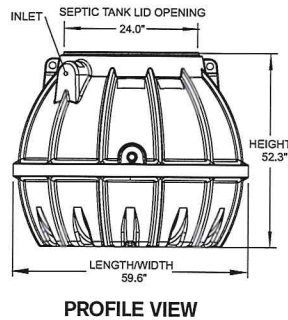


## TW-Series Septic Tanks (not to scale)



## TW-375 Pump Tank (not to scale)

Note: Pump tank total capacity is 417 gal (1577 L)



**Table 1: TW-Series Septic Tank Nominal Specifications**

| Tank Model | Total Volume         | Length               | Width               | Height              |
|------------|----------------------|----------------------|---------------------|---------------------|
| TW-900     | 1,055 gal. [3,994 L] | 110.4 in. [2,804 mm] | 66.0 in. [1,676 mm] | 50.6 in. [1,285 mm] |
| TW-1050    | 1,212 gal. [4,588 L] | 123.7 in. [3,142 mm] | 66.0 in. [1,676 mm] | 50.6 in. [1,285 mm] |
| TW-1250    | 1,448 gal. [5,481 L] | 143.7 in. [3,650 mm] | 66.0 in. [1,676 mm] | 50.6 in. [1,285 mm] |
| TW-1500    | 1,762 gal. [6,669 L] | 170.4 in. [4,328 mm] | 66.0 in. [1,676 mm] | 50.6 in. [1,285 mm] |

**Table 2: Working Volume Based Upon 39.75 inch Liquid Level**

\*Working Volume, Liquid Level and Freeboard vary based on elevation of outlet which varies by code.

| Tank Model | Working Volume*      | Liquid Level*        | Freeboard*        |
|------------|----------------------|----------------------|-------------------|
| TW-900     | 915 gal. [3,465 L]   | 39.75 in. [1,010 mm] | 10.1 in. [256 mm] |
| TW-1050    | 1,052 gal. [3,981 L] | 39.75 in. [1,010 mm] | 10.1 in. [256 mm] |
| TW-1250    | 1,254 gal. [4,745 L] | 39.75 in. [1,010 mm] | 10.1 in. [256 mm] |
| TW-1500    | 1,523 gal. [5,765 L] | 39.75 in. [1,010 mm] | 10.1 in. [256 mm] |

**Table 3: Working Volume Based Upon 40 inch Liquid Level (Florida Specification)**

| Tank Model | Working Volume*      | Liquid Level*     | Freeboard*       |
|------------|----------------------|-------------------|------------------|
| TW-900     | 920 gal. [3,484 L]   | 40 in. [1,016 mm] | 9.8 in. [249 mm] |
| TW-1050    | 1,057 gal. [4,003 L] | 40 in. [1,016 mm] | 9.8 in. [249 mm] |
| TW-1250    | 1,261 gal. [4,772 L] | 40 in. [1,016 mm] | 9.8 in. [249 mm] |
| TW-1500    | 1,532 gal. [5,798 L] | 40 in. [1,016 mm] | 9.8 in. [249 mm] |

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For technical assistance, installation instructions or customer service, call Infiltrator Systems at 1-800-221-4436.

TW011108ISI-8



# TW™-Series Septic Tanks

## General Installation Instructions



### Before You Begin

Infiltrator Systems' TW-Series Septic Tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a particular site, contact the local health department or permitting authority.

Inspect the tank for damage before installation. While illustrations depict the TW-900™ model tank, these instructions also apply to the TW-375™, TW-1050™, TW-1250™, and TW-1500™.

#### Materials and Equipment Needed

|                                                     |                                                                           |
|-----------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> TW-Series Tank             | <input type="checkbox"/> Excavator                                        |
| <input type="checkbox"/> Manhole lids (included)    | <input type="checkbox"/> Shovel                                           |
| <input type="checkbox"/> 6 bolts per lid (included) | <input type="checkbox"/> Level                                            |
| <input type="checkbox"/> Rubber gaskets (included)  | <input type="checkbox"/> 5" (127 mm) or 5 1/4" (133 mm) diameter hole saw |
| <input type="checkbox"/> Inlet/outlet tees*         | <input type="checkbox"/> Utility knife                                    |
| <input type="checkbox"/> Tape measure               | <input type="checkbox"/> Pipe glue                                        |
| <input type="checkbox"/> Pipe, risers, etc.         |                                                                           |
| <input type="checkbox"/> Socket wrench              | *may be included                                                          |

### Installation Site Selection

1. Avoid installation of the tank in vehicular traffic areas. The tank is designed for non-traffic applications.

2. The maximum vehicle load is a 4,500-pound axle load at a soil cover depth of 6 to 48\* inches (152 to 1,219 mm).

\*18-inch max. burial depth in Florida; 36-inch max. burial depth in North Carolina, Massachusetts, and Oregon.

### Excavating and Preparing the Site

1. The excavation width and length should be 12 to 36 inches (304 to 914 mm) larger than the tank on each side.

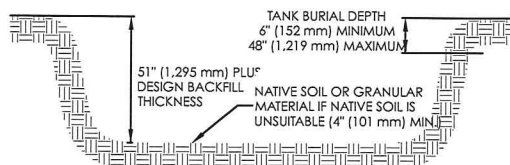
2. Excavate to account for 51 inch (1,295 mm) height of tank, 4 inches (101 mm) of bedding (if required), and backfill thickness (permissible cover depth is 0.5 to 4 feet (152 to 1,219 mm) of soil).

3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Clay soil and large, protruding, or sharp stones or other similar objects that may damage tank are not suitable.

4. The tank may be bed either in suitable native soil or a minimum 4-inch (101 mm) layer of pea stone, sand, gravel, or other similar granular material having particles less than 3 inches in diameter.

5. For clay soil, see "Installing in Clay Soil" section.

6. Create a uniform, level bedding surface to ensure that the bottom of tank is uniformly supported at the base of the excavation.



### Installing the Tank

1. If the tank inlet and outlet penetrations are not drilled, drill holes (see Inlet and Outlet Hole Locations section) using the following saw sizes:

- SDR 35 pipe - 5-inch (127 mm) hole saw
- Schedule 40 pipe - 5 1/4-inch (133 mm) hole saw

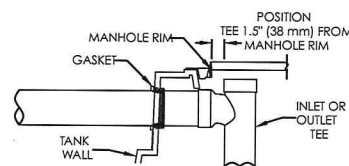
2. Install the rubber gaskets at the inlet and outlet.

3. Slide the tees\* through the gaskets.

\*For North Carolina, the inlet pipe shall be a straight pipe with no tee.

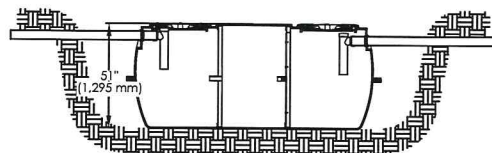
\*For Illinois, 6-inch (152 mm) drop required for inlet tee.

4. Horizontally position the tee as shown in the detail below.



5. Using lifting lugs, lower tank into excavation with tees in place.

6. Install lid, inlet and outlet piping, and risers (see Installing the Riser section) as necessary.



### Backfilling

Note: The Infiltrator TW-Series Tanks do not require filling with water prior to backfill placement.

1. Backfill with suitable native soil. Suitable soil shall be free-flowing and should not have stones greater than 3 inches (76 mm) in diameter or clods that do not break apart during placement and compaction. Backfill must be capable of filling the spaces between tank ribs. If soil is unsuitable, see "Installing in Clay Soil" section.

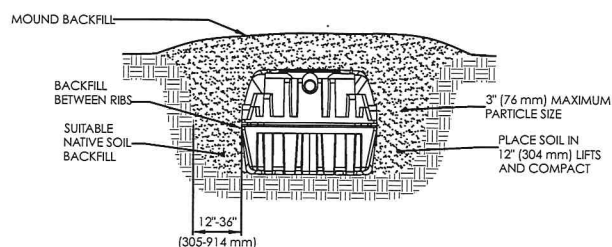
2. Do not backfill top of tank before sidewalls are completely backfilled.

3. Place backfill around the four sidewalls in a progressive, alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (304 mm) tolerance.

4. Continue to place backfill along the sidewalls in 12-inch (304 mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.

5. Compact backfill material either by hand tamping or mechanical compaction (includes backhoe bucket). Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.

6. Complete backfilling and grade the area.





## Supplemental Installation Procedures

### Installing Under Shallow Groundwater Conditions

If the seasonal high groundwater table has the potential to rise 18 inches (457 mm) or more above the tank bottom, anti-buoyancy measures are warranted. Possible anti-buoyancy measures include:

#### 1. Option 1 - Physically Secure Tank

- Secure the tank with a commercially available or field-constructed anchoring system.
- The anchoring system may consist of a strap system in conjunction with anchors, a ballast connected to the tank, or other suitable means.
- For a strap system, the product used must not have the potential to cut into the polyethylene tank wall. Protective padding may be required for steel cable strap systems. Nylon, polyester, and polypropylene straps are acceptable.
- A ballast shall be constructed using reinforced, cast-in-place concrete. Cast ballast around the tank to provide sufficient downward force to prevent displacement under anticipated groundwater conditions.

#### 2. Option 2 - Long-Term Groundwater Control

- If site conditions are amenable to construction of a groundwater control system and regulatory separation distances can be achieved, groundwater control can be used. Possible solutions include:
  - Underdrain* – Bed and backfill the tank with clean pea gravel or equivalent pervious material. Install piping in the bedding to convey collected groundwater by gravity flow to a downgradient location away from the tank and drainfield.
  - Interceptor trench* - Construct an interceptor trench upgradient of tank to continuously maintain a groundwater table no higher than 18 inches (457 mm) above the bottom of tank. Install piping within the trench to convey collected groundwater to a downgradient location away from tank and drainfield.
- Groundwater control is not applicable if prohibited by regulation or law, or tank location is subject to flooding.

#### 3. Short-Term Groundwater Control

- During tank installation, construction of a temporary dewatering well may be necessary to maintain dry conditions.
- Expand a portion of the excavation horizontally and vertically to create an area for groundwater flow and collection.
- Pump collected groundwater out of the dewatering well to maintain dry conditions within the excavation.

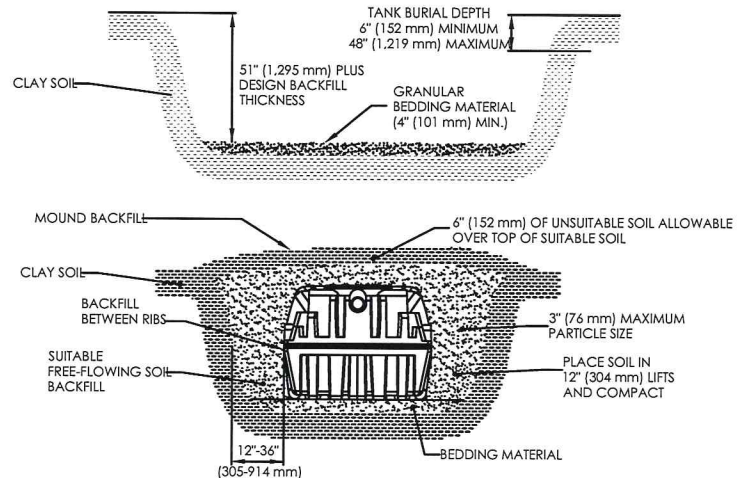
4. Contact Infiltrator Systems' Technical Services Department for assistance at 800-221-4436.

### Installing in Clay Soil

- Do not bed or backfill the tank using clay soil. Use suitable soil that is free-flowing and does not have stones greater than 3 inches (76 mm) in diameter or clods that do not break apart during placement and compaction. Backfill must be capable of filling the spaces between tank ribs.
- Prepare bedding as instructed under "Excavating and Preparing the Site."

3. Place and compact suitable backfill as instructed under "Backfilling."

4. A minimum cover of 6 inches (152 mm) of suitable soil must be placed over the top of the tank. Unsuitable soil may be placed above the 6 inches of suitable soil to finish grade elevation (see illustration).



### Installing the Riser

- Compatible risers include 24-inch (600 mm) diameter products from Polylok®, Inc., Tuf-Tite® Corporation, and EZ SET, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib PVC pipe.
- Oregon watertightness testing to include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

*Note: Installation instructions for a watertight connection of the riser to the TW-series tank are available upon request.*

### Installing Miscellaneous Appurtenances and Equipment

Installation of other products with TW-series tanks, such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with product manufacturer's instructions and compliant with applicable state or local rules and regulations. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via manhole openings.

### General Specifications

- Failure to comply with installation instructions may void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with local requirements.
- Tanks are only designed for installation underground.
- Operating water temperature shall be less than 140° F (60° C).
- Tanks are not fire resistant. Store away from ignition sources.
- Tanks are not suitable for potable water storage applications.
- Tanks are recommended for use as septic, rainwater/stormwater storage, and pump tanks only.



**Table 1: TW-Series Polyethylene Tank Nominal Volume Chart**

| Height <sup>1</sup><br>(in) | Total Liquid Volume in Tank at Indicated Height |        |         |        |         |        |         |        |         |        |
|-----------------------------|-------------------------------------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|
|                             | TW-375                                          |        | TW-900  |        | TW-1050 |        | TW-1250 |        | TW-1500 |        |
|                             | Gallons                                         | Liters | Gallons | Liters | Gallons | Liters | Gallons | Liters | Gallons | Liters |
| 0                           | 0                                               | 0      | 0       | 0      | 0       | 0      | 0       | 0      | 0       | 0      |
| 1                           | 3                                               | 12     | 10      | 37     | 11      | 43     | 14      | 53     | 17      | 64     |
| 2                           | 8                                               | 31     | 22      | 82     | 25      | 95     | 30      | 115    | 37      | 140    |
| 3                           | 15                                              | 57     | 41      | 156    | 48      | 181    | 58      | 218    | 71      | 267    |
| 4                           | 23                                              | 85     | 62      | 236    | 72      | 273    | 87      | 330    | 107     | 404    |
| 5                           | 30                                              | 115    | 84      | 317    | 97      | 368    | 117     | 444    | 143     | 543    |
| 6                           | 39                                              | 147    | 106     | 400    | 122     | 463    | 148     | 558    | 180     | 683    |
| 7                           | 47                                              | 180    | 128     | 483    | 148     | 560    | 178     | 674    | 218     | 825    |
| 8                           | 56                                              | 214    | 150     | 567    | 174     | 657    | 209     | 791    | 256     | 968    |
| 9                           | 66                                              | 249    | 172     | 653    | 200     | 756    | 240     | 910    | 294     | 1,112  |
| 10                          | 75                                              | 285    | 195     | 739    | 226     | 855    | 272     | 1,029  | 332     | 1,257  |
| 11                          | 85                                              | 321    | 218     | 826    | 252     | 956    | 304     | 1,149  | 371     | 1,404  |
| 12                          | 95                                              | 358    | 242     | 915    | 279     | 1,057  | 336     | 1,270  | 410     | 1,551  |
| 13                          | 105                                             | 396    | 265     | 1,004  | 306     | 1,160  | 368     | 1,393  | 449     | 1,700  |
| 14                          | 115                                             | 434    | 289     | 1,093  | 334     | 1,263  | 400     | 1,516  | 489     | 1,849  |
| 15                          | 125                                             | 473    | 313     | 1,184  | 361     | 1,367  | 433     | 1,640  | 528     | 2,000  |
| 16                          | 135                                             | 512    | 337     | 1,276  | 389     | 1,472  | 466     | 1,765  | 569     | 2,152  |
| 17                          | 146                                             | 552    | 361     | 1,368  | 417     | 1,578  | 500     | 1,892  | 609     | 2,305  |
| 18                          | 157                                             | 595    | 386     | 1,461  | 445     | 1,685  | 533     | 2,019  | 650     | 2,459  |
| 19                          | 169                                             | 639    | 411     | 1,555  | 474     | 1,792  | 567     | 2,146  | 690     | 2,614  |
| 20                          | 180                                             | 682    | 436     | 1,650  | 502     | 1,901  | 601     | 2,275  | 732     | 2,769  |
| 21                          | 192                                             | 726    | 462     | 1,747  | 532     | 2,012  | 636     | 2,407  | 774     | 2,928  |
| 22                          | 203                                             | 770    | 488     | 1,847  | 562     | 2,126  | 671     | 2,541  | 816     | 3,091  |
| 23                          | 215                                             | 814    | 515     | 1,948  | 592     | 2,241  | 708     | 2,678  | 860     | 3,256  |
| 24                          | 226                                             | 855    | 542     | 2,053  | 624     | 2,361  | 745     | 2,819  | 905     | 3,425  |
| 25                          | 236                                             | 894    | 569     | 2,154  | 654     | 2,475  | 781     | 2,955  | 948     | 3,589  |
| 26                          | 246                                             | 932    | 595     | 2,251  | 683     | 2,587  | 815     | 3,086  | 990     | 3,747  |
| 27                          | 256                                             | 971    | 620     | 2,346  | 712     | 2,695  | 849     | 3,215  | 1,031   | 3,903  |
| 28                          | 267                                             | 1,009  | 644     | 2,439  | 740     | 2,802  | 883     | 3,342  | 1,072   | 4,057  |
| 29                          | 276                                             | 1,046  | 669     | 2,533  | 769     | 2,909  | 916     | 3,469  | 1,112   | 4,210  |
| 30                          | 286                                             | 1,083  | 693     | 2,625  | 796     | 3,015  | 950     | 3,594  | 1,152   | 4,362  |
| 31                          | 296                                             | 1,119  | 718     | 2,717  | 824     | 3,120  | 982     | 3,719  | 1,192   | 4,514  |
| 32                          | 305                                             | 1,154  | 741     | 2,807  | 852     | 3,223  | 1,015   | 3,842  | 1,232   | 4,663  |
| 33                          | 314                                             | 1,189  | 765     | 2,895  | 878     | 3,325  | 1,047   | 3,964  | 1,271   | 4,810  |
| 34                          | 323                                             | 1,222  | 788     | 2,983  | 905     | 3,426  | 1,079   | 4,084  | 1,309   | 4,956  |
| 35                          | 332                                             | 1,255  | 811     | 3,070  | 931     | 3,526  | 1,110   | 4,203  | 1,347   | 5,101  |
| 36                          | 340                                             | 1,286  | 834     | 3,155  | 957     | 3,624  | 1,141   | 4,320  | 1,385   | 5,243  |
| 37                          | 348                                             | 1,317  | 856     | 3,240  | 983     | 3,721  | 1,172   | 4,436  | 1,422   | 5,384  |
| 38                          | 356                                             | 1,346  | 877     | 3,320  | 1,008   | 3,814  | 1,201   | 4,548  | 1,458   | 5,521  |
| 39                          | 363                                             | 1,373  | 898     | 3,398  | 1,031   | 3,904  | 1,230   | 4,657  | 1,494   | 5,654  |
| 40                          | 370                                             | 1,400  | 920     | 3,484  | 1,057   | 3,003  | 1,261   | 4,772  | 1,532   | 5,798  |
| 41                          | 376                                             | 1,425  | 938     | 3,549  | 1,078   | 4,080  | 1,286   | 4,869  | 1,562   | 5,915  |
| 42                          | 383                                             | 1,449  | 957     | 3,623  | 1,100   | 4,166  | 1,314   | 4,972  | 1,596   | 6,042  |
| 43                          | 389                                             | 1,471  | 976     | 3,695  | 1,123   | 4,249  | 1,340   | 5,074  | 1,629   | 6,167  |
| 44                          | 394                                             | 1,492  | 994     | 3,765  | 1,144   | 4,331  | 1,366   | 5,172  | 1,661   | 6,288  |
| 45                          | 399                                             | 1,511  | 1,011   | 3,829  | 1,164   | 4,406  | 1,390   | 5,263  | 1,690   | 6,399  |
| 46                          | 404                                             | 1,530  | 1,025   | 3,878  | 1,179   | 4,465  | 1,410   | 5,337  | 1,715   | 6,492  |
| 47                          | 409                                             | 1,547  | 1,036   | 3,923  | 1,193   | 4,517  | 1,427   | 5,402  | 1,737   | 6,574  |
| 48                          | 413                                             | 1,565  | 1,045   | 3,954  | 1,203   | 4,553  | 1,439   | 5,446  | 1,750   | 6,626  |
| 49                          | 417                                             | 1,577  | 1,055   | 3,994  | 1,212   | 4,588  | 1,448   | 5,481  | 1,762   | 6,669  |

*Note: Height measured from inside surface at bottom of corrugation in tank.*



## Inlet and Outlet Hole Locations

Drill height markings are provided on the Infiltrator TW-900, TW-1050, TW-1250, and TW-1500 to serve as a guide for inlet and outlet hole locations. Markings "A" (lower) and "B" (upper) are located at the inlet end. *Note: holes may be drilled at the end or side inlet and outlet locations.* Markings "C" (lower), "D" (middle), and "E" (upper) (TW-900 only) are located at the outlet end. The centering symbol (resembling a dimple) next to the letter indicates the centerpoint location for the hole saw. The pilot drill bit on the hole saw should be positioned on the centering symbol to properly align the hole saw.

The drill height markings below are provided to set the inlet and outlet invert heights based on state and/or local regulations. The chart below provides the proper inlet and outlet drill points. Note that state, provincial and local regulatory requirements take precedence over the information provided in the table below.

| State or Province                                                                                       | Inlet Drill Location | Outlet Drill Location | Invert Drop (in) [mm] | Inlet Invert Height <sup>2</sup> (in) [mm] | Outlet Invert Height <sup>2</sup> and Liquid Level (in) [mm] |
|---------------------------------------------------------------------------------------------------------|----------------------|-----------------------|-----------------------|--------------------------------------------|--------------------------------------------------------------|
| DE, FL <sup>1</sup> , IA, MA, ON                                                                        | A                    | D                     | 2 [51]                | 42 [1,067]                                 | 40 [1,016]                                                   |
| AR <sup>2</sup> , CA, CO, CT, ID, IN <sup>1</sup> , KS, KY, MO, MT, ND, PA, SD, TX, VT, WV <sup>1</sup> | B                    | C                     | 3 [76]                | 42.75 [1,086]                              | 39.75 [1,010]                                                |
| All Others                                                                                              | A                    | C                     | 2.25 [57]             | 42 [1,067]                                 | 39.75 [1,010]                                                |

### Notes:

1. Florida, Indiana, Oregon, and West Virginia tanks are factory drilled.
2. Arkansas tanks must be drilled by the distributor.
3. Invert heights are measured from the interior surface at the bottom of the tank.

## INFILTRATOR SYSTEMS, INC. ("Infiltrator") INFILTRATOR® TW™-SEPTIC TANK LIMITED WARRANTY

### FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator TW™ Septic Tank. A Septic Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Septic Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

### CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Septic Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Septic Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal septic tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Septic Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Septic Tank.



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TW021208SI-12

# TW™-Series Septic Tanks Riser Connection Guidance Document



## Before You Begin

This document provides recommended procedures for the connection of commercially available riser products to Infiltrator® Systems' (Infiltrator's) TW-Series septic and pump tanks. These guidelines are applicable to Infiltrator's TW-375™, TW-900™, TW-1050™, TW-1250™, and TW-1500™ model tanks.

The intent of this document is to provide procedures for making the connection between the riser and tank. Once this connection has been made, the riser supplier's standard installation instructions should be used to complete the assembly.

Risers must be installed according to state and/or local regulations, which supersede the guidelines in this document. If unsure of the requirements for a particular site, contact the local health department or permitting authority.

## Parts and Supplies

The parts and supplies necessary for installation of a riser system on an Infiltrator TW tank must be purchased separately from the tank. All parts and supplies are commercially available. Contact Infiltrator or the riser manufacturer for assistance obtaining parts and supplies.

## General Guidelines

1. Complete riser assembly installation, including installation of adapter ring, riser(s), and lid prior to backfilling tank.

*Note: Risers are to be connected to Infiltrator's factory-installed access port reinforcing ring (reinforcing ring). All TW-Series tanks are assembled at the factory with reinforcing rings and lids at the inlet and outlet access port locations.*

2. Ensure that all connection surfaces are clean and dry.

3. Butyl rope sealant shall meet ASTM C990-91 requirements.

4. Butyl rope sealant dimensions vary between manufacturers. Butyl rope sealant sizing identified herein represents a minimum recommendation. The installer must use discretion in determining the size and amount of butyl rope sealant needed to craft and maintain a watertight seal.

5. Keep butyl rope sealant at a temperature that maintains its workability. Keep it free from dirt and debris that may compromise a watertight seal.

6. When applying butyl rope sealant to a part, ensure continuous application to avoid gaps that cause leaks. Apply an adequate quantity to ensure a sealed connection.

7. Physically press the butyl rope sealant onto the part to ensure that it stays properly positioned during assembly.

8. Ensure that all screws supplied with riser products are installed for connection of adapter rings, risers, and lids.

9. Do not over tighten screws. This may damage the plastic parts being connected, causing the screw connection to fail. This may also strip the screw head.

*Note: Use only stainless steel screws*

## Compatible Products

The TW-Series Septic Tanks are compatible with 24-inch (600-mm) diameter riser products from the following manufacturers:

- Polylok®, Inc.
- Tuf-Tite® Corporation
- E-Z SET Company

The following 24-inch (600-mm) diameter pipe products are also compatible with the TW-septic and pump tanks:

- IPEX Ultra-Rib™ polyvinyl chloride pipe
- Corrugated high density polyethylene (HDPE) pipe

## Polylok™, Inc. Riser

1. Install riser assembly prior to backfilling tank.

2. Apply 1/2 -inch (19 mm) butyl rope sealant in the channel on the bottom surface of the Polylok adapter ring.

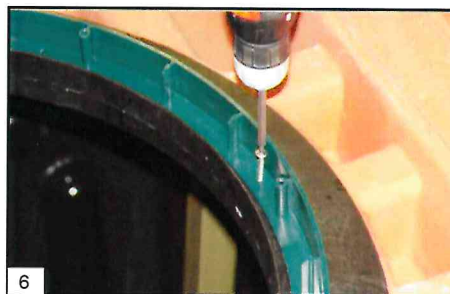


3. Center the Polylok adapter ring over the Infiltrator reinforcing ring.

4. Verify that the butyl rope sealant has remained properly aligned on the Polylok adapter ring.

5. Fasten the Polylok adapter ring to the Infiltrator reinforcing ring with the eight factory-supplied screws.

6. Tighten screws in a "star" pattern, tightening screws on opposite sides of the Polylok adapter ring. Repeat the star pattern at least twice, without over tightening screws. Compress the butyl rope sealant to the tank evenly during fastening.



7. Connect the Polylok riser to the Polylok adapter ring and install lid according to Polylok's instructions.

*Note: Do not use the Infiltrator tank lid, as it does not provide a watertight seal with Polylok riser.*

8. Backfill tank in accordance with Infiltrator's TW-Series septic tank installation instructions.



## Tuf-Tite® Corporation Riser

1. Install riser assembly prior to backfilling tank.
2. Apply 1- to 2-inches (25- to 50-mm) of butyl rope sealant on the bottom surface of the Tuf-Tite adapter ring, aligning the butyl rope sealant with the factory-drilled screw holes on the adapter ring.



3. Center the Tuf-Tite adapter ring over the Infiltrator reinforcing ring.
4. Verify that the butyl rope sealant has remained properly aligned on the Tuf-Tite adapter ring.
5. Fasten the Tuf-Tite adapter ring to the Infiltrator reinforcing ring with the eight factory-supplied screws.
6. Tighten screws in a "star" pattern, tightening screws on opposite sides of the Tuf-Tite adapter ring. Repeat the star pattern at least twice, without over tightening screws. Compress the butyl rope sealant to the tank evenly during fastening.



7. Connect the Tuf-Tite riser to the Tuf-Tite adapter ring and install lid according to Tuf-Tite's instructions.

*Note: Do not use the Infiltrator tank lid, as it does not provide a watertight seal with Tuf-Tite riser.*

8. Backfill tank in accordance with Infiltrator's TW-Series septic tank installation instructions.

## E-Z SET Company Riser

1. Install riser assembly prior to backfilling tank.
2. Apply 1-inch x 3/4-inch (25 mm x 19 mm) butyl rope sealant in alignment with the factory-drilled screw holes on the bottom surface of the E-Z SET riser. The butyl rope sealant thickness must be adequate to fill the gap beneath the E-Z SET riser.



3. Center the E-Z SET riser over the Infiltrator reinforcing ring.
4. Verify that the butyl rope sealant remained properly aligned on the E-Z SET riser.
5. Fasten the E-Z SET riser to the Infiltrator reinforcing ring with the ten factory-supplied screws.



6. Tighten screws in a "star" pattern, tightening screws on opposite sides of the E-Z SET riser. Repeat the star pattern at least twice, without over tightening screws. Compress the butyl rope sealant to the tank evenly during fastening.

7. Connect additional E-Z SET riser sections or lid according to E-Z SET's instructions.

*Note: Do not use the Infiltrator tank lid, as it does not provide a watertight seal with EZ-SET riser.*

8. Backfill tank in accordance with Infiltrator's TW-Series septic tank installation instructions.

## 24-inch (600-mm) HDPE Pipe

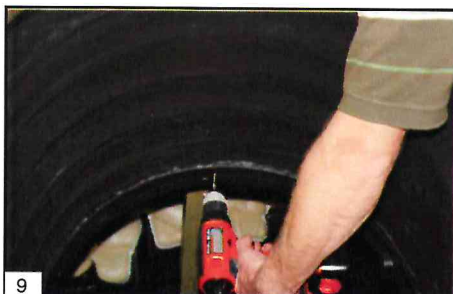
1. Install riser assembly prior to backfilling tank.
2. At one end, apply 3/8-inch x 3/8-inch (9.5 mm) butyl rope sealant around the circumference of the HDPE pipe. Center the butyl rope sealant on the bearing surface of the HDPE pipe.



3. Center the HDPE pipe over the Infiltrator reinforcing ring.
4. Press the HDPE pipe onto the Infiltrator reinforcing ring to create an even butyl seal between the pipe and reinforcing ring.
5. Place 3/8-inch x 3/8-inch (9.5 mm) butyl rope sealant in the space between the pipe and Infiltrator reinforcing ring. Work the butyl rope sealant into the bottom of the gap between pipe and reinforcing ring.



6. Repeat Step 5 to create a second layer of butyl rope sealant. Use additional butyl rope sealant if necessary to seal the space between HDPE pipe and Infiltrator reinforcing ring.
7. Drill eight evenly spaced 3/32-inch (2.5-mm) pilot holes from the inside surface of the Infiltrator reinforcing ring into the HDPE pipe.
8. Using the pilot holes, fasten the HDPE pipe to the Infiltrator reinforcing ring using eight #10 x 1 inch (4.9 mm x 25 mm) stainless steel screws.
9. Tighten screws in a "star" pattern, tightening screws on opposite sides of the Infiltrator reinforcing ring. Repeat the star pattern at least twice, without over tightening screws. Connect the HDPE pipe to the tank evenly during fastening.



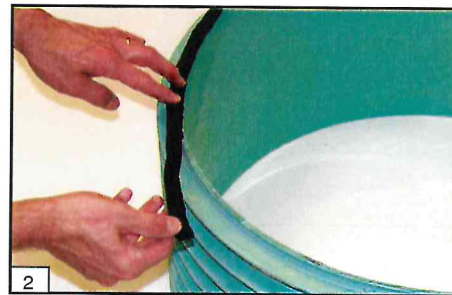
10. Use the Polylok 24-inch (600 mm x 9.5 mm) Heavy Duty Cover, RotoSolutions 24-inch (600 mm) septic lid, or equivalent product as a lid for the HDPE pipe. Follow lid manufacturer's instructions to complete riser installation.

*Note: Do not use the Infiltrator tank lid, as it does not provide a watertight seal with HDPE pipe.*

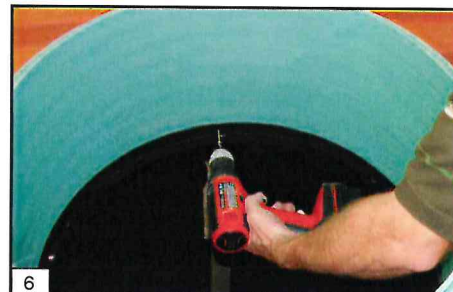
11. Backfill tank in accordance with Infiltrator's TW-Series tank installation instructions.

## 24-inch (600-mm) IPEX Ultra-Rib™ PVC Pipe

1. Install riser assembly prior to backfilling tank.
2. At one end, apply 3/4-inch (19-mm x 9-mm) butyl rope sealant around the circumference of the IPEX pipe. Center the butyl rope sealant on the bearing surface of the IPEX pipe.



3. Center the IPEX pipe over the Infiltrator reinforcing ring.
4. Press the IPEX pipe onto the Infiltrator reinforcing ring to create an even butyl seal between the pipe and reinforcing ring.
5. Drill eight evenly spaced 3/32-inch (2.5-mm) pilot holes from the inside surface of the Infiltrator reinforcing ring into the IPEX pipe.
6. Using the pilot holes, fasten the IPEX pipe to the Infiltrator reinforcing ring using eight #10 x 1 inch (4.9 mm x 25 mm) stainless steel screws.



7. Tighten screws in a "star" pattern, tightening screws on opposite sides of the Infiltrator reinforcing ring. Repeat the star pattern at least twice, without over tightening screws. Connect the IPEX pipe to the tank evenly during fastening.
  8. Use the Polylok 24-inch (600 mm) Heavy Duty Cover or equivalent product as a lid. Follow lid manufacturer's instructions to complete riser installation.
- Note: Do not use the Infiltrator tank lid, as it does not provide a watertight seal with IPEX pipe.*
9. Backfill tank in accordance with Infiltrator's TW-Series septic tank installation instructions.





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Old Saybrook, CT 06475  
860-577-7000 • FAX 860-577-7001  
**1-800-221-4436**  
**[www.infiltratorsystems.com](http://www.infiltratorsystems.com)**

## ABBREVIATIONS

- |              |                                                   |
|--------------|---------------------------------------------------|
| O.P.R.T.C.T. | OFFICIAL PUBLIC<br>RECORDS TRAVIS<br>COUNTY TEXAS |
| R.P.R.T.C.T. | REAL PROPERTY<br>RECORDS TRAVIS<br>COUNTY TEXAS   |
| P.R.T.C.T.   | PLAT RECORDS<br>TRAVIS COUNTY<br>TEXAS            |
| IRF          | IRON ROD FOUND                                    |
| IRS          | IRON ROD SET                                      |
| IPF          | IRON PIPE FOUND                                   |
| BL           | BUILDING SETBACK                                  |
| B.S.L.       | BUILDING SETBACK LINE                             |
| (L1)         | ENTRY LEVEL                                       |
| (L2)         | LOWER LEVEL                                       |
| TCAD#        | TRAVIS COUNTY<br>APPRAISAL NUMBER                 |
| TBM          | TEMPORARY BENCHMARK                               |



0 20 40  
HORIZONTAL SCALE IN FEET  
SCALE 1" = 20'

### HORIZONTAL DATUM

TEXAS COORDINATE SYSTEM OF 1983, (CENTRAL ZONE-4203)  
NAD 83, (CORS) U.S. SURVEY FEET  
GEOID MODEL 12A (CONUS)

### TREE NOTE

3. DETERMINATION AS TO WHETHER A TREE IS ALIVE OR DEAD IS NOT WITHIN THE FIELD OF EXPERTISE OF THE UNDERSIGNED SURVEYOR. LOCATION, DIMENSION AND TREE TYPE IS PART OF A STANDARD TREE SURVEY. TREES IDENTIFIED ON THIS TREE LIST AS DEAD ARE ONLY A FIELD OBSERVATION OF THE GENERAL APPEARANCE OF THE TREE AND ARE NOT A STATEMENT OF FACT AS TO THE ACTUAL HEALTH AND CONDITION OF THE TREE.

4. TREE SIZE WAS DETERMINED AS PER THE CITY OF WEST LAKE CODE ("SEC. 22.03.304(b)(1);(C) ALL TREE SURVEYS MUST BE CONDUCTED BY A STATE-REGISTERED SURVEYOR OR ENGINEER PRIOR TO A PERMIT BEING ISSUED AND MUST INCLUDE ALL TREES WITH TRUNK DIAMETERS OF 3 INCHES OR GREATER AT 12 INCHES ABOVE THE GROUND."

5. ONLY 3" AND LARGER TREES WERE SHOWN.

6. TREE LOCATIONS AND SIZES WERE COLLECTED ON THE DATE OF PREVIOUS TREE SURVEY (DECEMBER 18, 2018), AND WERE NOT VERIFIED ON THIS UPDATE.

### VERTICAL DATUM

BASIS OF VERTICAL DATUM FOR THIS SURVEY IS CONTROL POINT LS#1 ("MAG NAIL SET IN ASPHALT") ESTABLISHED USING REDUNDANT RTK METHODOLOGY UTILIZING LEICA SMARTNET NORTH AMERICAN NETWORK BASED ON RTCM-REFERENCE STATION 2292, GEOID MODEL 12A (CONUS), (DATUM NAVD 88). DIFFERENTIAL LEVELING FROM CONTROL POINT LS#1 WAS DONE TO ESTABLISH ELEVATION FOR CONTROL POINTS.

SEE BELOW FOR DETAILS OF LS#1.

## LANDMARK SURVEYING CONTROL POINT (MAP COORDINATES)

| PT. NO. | NORTHING        | EASTING        | ELEVATION | DESCRIPTION  |
|---------|-----------------|----------------|-----------|--------------|
| LS#1    | 10,081,020.6580 | 3,097,117.0110 | 728.8890  | MAG NAIL SET |
| LS#2    | 10,081,130.6990 | 3,097,033.9580 | 725.7900  | MAG NAIL SET |
| LS#3    | 10,080,917.5808 | 3,097,063.6441 | 726.3755  | MAG NAIL SET |

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| TREE LIST                                                                                                                  |                             | TREE LIST (continued) |                       | TREE LIST (continued) |                            | TREE LIST (continued) |                              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|------------------------------|
| APPROXIMATE TREE CRITICAL ROOT ZONE<br>TREE DIAMETER & TAG NUMBER<br>EXAMPLE: 8"R-8" CRITICAL ROOT ZONE<br>MS = MULTI-STEM |                             |                       |                       |                       |                            |                       |                              |
| TREE TAG NO.                                                                                                               | DESCRIPTION                 | TREE TAG NO.          | DESCRIPTION           | TREE TAG NO.          | DESCRIPTION                | TREE TAG NO.          | DESCRIPTION                  |
| 1101                                                                                                                       | 9" LIVE OAK                 | 1146                  | 13" LIGUSTRUM         | 1195                  | 24" LIVE OAK (MS12-10-8-5) | 1714                  | 8" CEDAR                     |
| 1102                                                                                                                       | 12" LIVE OAK                | 1147                  | 8" HACKBERRY          | 1198                  | 13" CEDAR (MS10-6)         | 1715                  | 8" CEDAR                     |
| 1103                                                                                                                       | 11" LIVE OAK                | 1148                  | 9" CEDAR              | 1197                  | 11" CEDAR                  | 1716                  | 16" LIGUSTRUM                |
| 1104                                                                                                                       | 11" CEDAR                   | 1149                  | 16" CEDAR (MS11-10)   | 1198                  | 8" CEDAR                   | 1717                  | 7" LIGUSTRUM                 |
| 1105                                                                                                                       | 9" HACKBERRY                | 1150                  | 9" CEDAR (MS7-4)      | 1199                  | 7" CEDAR (MS5-4)           | 1718                  | 6" BUCKEYE (MS4-4)           |
| 1106                                                                                                                       | 9" LIVE OAK (MS6-6)         | 1151                  | 10" CEDAR             | 1243                  | 15" LIVE OAK               | 1719                  | 4" BUCKEYE                   |
| 1107                                                                                                                       | 8" CEDAR                    | 1152                  | 11" CEDAR             | 1244                  | 12" LIVE OAK               | 1720                  | 9" TEXAS PERSIMMON (MS5-4-3) |
| 1108                                                                                                                       | 10" CEDAR                   | 1153                  | 7" CHINABERRY         | 1245                  | 13" LIVE OAK (MS10-8)      | 1721                  | 4" CEDAR                     |
| 1109                                                                                                                       | 12" CEDAR                   | 1154                  | 6" CHINABERRY         | 1246                  | 23" LIVE OAK (MS17-12)     | 1722                  | 9" CEDAR                     |
| 1110                                                                                                                       | 17" LIVE OAK                | 1155                  | 6" CEDAR              | 1247                  | 13" LIVE OAK               | 1723                  | 5" CEDAR                     |
| 1111                                                                                                                       | 11" LIVE OAK                | 1156                  | 13" LIGUSTRUM         | 1248                  | 11" CEDAR                  | 1724                  | 6" CEDAR                     |
| 1112                                                                                                                       | 15" LIVE OAK (MS11-8)       | 1157                  | 10" LIVE OAK          | 1249                  | 4" CEDAR                   | 1725                  | 6" UNKNOWN (MS4-3)           |
| 1113                                                                                                                       | 14" HACKBERRY               | 1158                  | 10" RED OAK           | 1250                  | 3" CEDAR ELM               | 1726                  | 11" CEDAR (MS7-7)            |
| 1114                                                                                                                       | 12" HACKBERRY               | 1159                  | 5" LIGUSTRUM          | 1251                  | 6" CEDAR                   | 1727                  | 8" CEDAR                     |
| 1115                                                                                                                       | 14" CEDAR ELM               | 1160                  | 11" LIGUSTRUM (MS8-6) | 1252                  | 3" CEDAR                   | 1728                  | 4" LIGUSTRUM (MS3-2)         |
| 1116                                                                                                                       | 19" LIVE OAK (MS14-9)       | 1161                  | 10" LIGUSTRUM         | 1253                  | 14" CEDAR (MS11-6)         | 1729                  | 10" CEDAR                    |
| 1117                                                                                                                       | 8" CEDAR                    | 1162                  | 13" CEDAR (MS9-8)     | 1254                  | 6" CEDAR                   | 1730                  | 7" CEDAR                     |
| 1118                                                                                                                       | 8" LIGUSTRUM                | 1163                  | 14" CEDAR (MS10-7)    | 1255                  | 5" CEDAR                   | 1731                  | 9" CEDAR (MS7-4)             |
| 1119                                                                                                                       | 13" CEDAR                   | 1164                  | 18" LIVE OAK          | 1256                  | 5" HACKBERRY               | 1732                  | 4" LIGUSTRUM                 |
| 1120                                                                                                                       | 19" LIVE OAK                | 1165                  | 6" CEDAR              | 1257                  | 8" CEDAR                   | 1733                  | 13" LIVE OAK                 |
| 1121                                                                                                                       | 30" CEDAR (MS20-10-10)      | 1166                  | 7" CEDAR              | 1258                  | 4" CEDAR                   | 1734                  | 8" LIVE OAK                  |
| 1122                                                                                                                       | 13" BUR OAK (MS10-6)        | 1167                  | 12" CEDAR (MS7-5-4)   | 1259                  | 7" CEDAR ELM (MS5-3)       | 1735                  | 8" CEDAR                     |
| 1123                                                                                                                       | 14" BUR OAK (MS9-9)         | 1168                  | 11" CEDAR             | 1260                  | 9" UNKNOWN (MS7-4)         | 1736                  | 4" CEDAR                     |
| 1124                                                                                                                       | 8" HACKBERRY                | 1169                  | 11" CEDAR             | 1261                  | 4" CEDAR                   | 1737                  | 5" CEDAR                     |
| 1125                                                                                                                       | 9" CEDAR                    | 1170                  | 7" CEDAR              | 1262                  | 13" CEDAR                  | 1738                  | 4" HACKBERRY                 |
| 1126                                                                                                                       | 13" CEDAR (MS10-5)          | 1171                  | 4" CEDAR              | 1263                  | 5" CEDAR ELM               | 1739                  | 11" LIVE OAK                 |
| 1127                                                                                                                       | 17" CEDAR                   | 1172                  | 13" CEDAR             | 1264                  | 5" CEDAR                   | 1740                  | 5" CEDAR                     |
| 1128                                                                                                                       | 17" LIVE OAK                | 1173                  | 15" CEDAR (MS12-5)    | 1265                  | 4" CEDAR                   | 1741                  | 7" CEDAR                     |
| 1129                                                                                                                       | 18" LIVE OAK (MS13-9)       | 1174                  | 6" CEDAR              | 1266                  | 9" UNKNOWN (MS4-4-3-3)     | 1742                  | 6" CEDAR                     |
| 1130                                                                                                                       | 9" LIGUSTRUM (MS6-6)        | 1175                  | 8" CEDAR              | 1267                  | 12" CEDAR                  | 1743                  | 8" CEDAR                     |
| 1131                                                                                                                       | 11" CEDAR                   | 1176                  | 9" REDOAK (MS7-4)     | 1268                  | 9" CEDAR ELM (MS6-6)       | 1744                  | 8" CEDAR                     |
| 1132                                                                                                                       | 9" LIVE OAK                 | 1177                  | 8" CEDAR (MS6-4)      | 1269                  | 6" HACKBERRY               | 1745                  | 14" CEDAR                    |
| 1133                                                                                                                       | 26" RED OAK (MS12-11-10-10) | 1178                  | 5" RED OAK            | 1270                  | 5" HACKBERRY               | 1746                  | 5" LIGUSTRUM                 |
| 1134                                                                                                                       | 23" LIVE OAK                | 1179                  | 6" RED OAK            | 1271                  | 6" HACKBERRY (MS4-3)       | 1747                  | 12" CEDAR                    |
| 1135                                                                                                                       | 26" LIVE OAK                | 1180                  | 15" CEDAR (MS10-7-3)  | 1272                  | 4" HACKBERRY               | 1748                  | 11" CEDAR                    |
| 1136                                                                                                                       | 8" RED OAK                  | 1181                  | 4" CEDAR              | 1273                  | 4" UNKNOWN                 | 1749                  | 5" ASH                       |
| 1137                                                                                                                       | 11" RED OAK (MS8-6)         | 1182                  | 4" CEDAR              | 1274                  | 4" ASH                     | 1750                  | 7" CEDAR                     |
| 1138                                                                                                                       | 9" CEDAR                    | 1183                  | 4" CEDAR              | 1702                  | 7" CEDAR ELM               | 1751                  | 12" LIGUSTRUM (MS10-3)       |
| 1139                                                                                                                       | 7" HACKBERRY (MS5-3)        | 1184                  | 4" CEDAR              | 1703                  | 11" LIVE OAK               | 1752                  | 8" CEDAR                     |
| 1140                                                                                                                       | 10" CEDAR                   | 1185                  | 6" CEDAR              | 1704                  | 18" LIVE OAK               | 1753                  | 4" HACKBERRY                 |
| 1141                                                                                                                       | 14" CEDAR (MS9-6-4)         | 1186                  | 10" CEDAR             | 1705                  | 24" LIVE OAK (MS17-13)     | 1754                  | 9" CEDAR                     |
| 1142                                                                                                                       | 10" CEDAR (MS7-6)           | 1187                  | 17" CEDAR (MS11-7-5)  | 1706                  | 11" CEDAR                  | 1755                  | 9" RED OAK                   |
| 1143                                                                                                                       | 4" ASH                      | 1188                  | 11" CEDAR             | 1707                  | 6" HACKBERRY               | 1756                  | 9" CEDAR                     |
| 1144                                                                                                                       | 5" CEDAR                    | 1189                  | 14" CEDAR (MS10-8)    | 1708                  | 3" LIGUSTRUM               | 1757                  | 7" CEDAR                     |
| 1145                                                                                                                       | 6" UNKNOWN (MS4-4) (DEAD)   | 1190                  | 3" CEDAR              | 1709                  | 5" LIGUSTRUM               | 1758                  | 10" LIVE OAK (MS7-5)         |
|                                                                                                                            |                             | 1191                  | 7" CEDAR              | 1710                  | 5" CEDAR ELM               | 1759                  | 9" RED OAK                   |
|                                                                                                                            |                             | 1192                  | 9" LIVE OAK           | 1711                  | 4" CHINABERRY              | 1760                  | 8" RED OAK                   |
|                                                                                                                            |                             | 1193                  | 16" CEDAR (MS12-8)    | 1712                  | 5" CHINABERRY              |                       |                              |
|                                                                                                                            |                             | 1194                  | 9" LIVE OAK           | 1713                  | 6" LIGUSTRUM               |                       |                              |

## FLOOD PLAIN NOTE

THE PROPERTY DESCRIBED HEREON IS CONTAINED WITHIN ZONE "X".  
FROM FIRM MAP NUMBER 48453C0445J, DATED JANUARY 6, 2016, AS  
PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY,  
THE PURPOSE OF WHICH IS FOR FLOOD INSURANCE ONLY.

NOTES:

1 PER CLIENT'S REQUEST, THE PURPOSE OF THIS SURVEY IS TO UPDATE  
TOPOGRAPHIC SURVEY ONLY.  
2 LANDMARK SURVEYING, LP DID NOT VERIFY MATTERS RELATING TO  
BOUNDARY, TREES, UTILITIES AND CERTAIN AS-BUILT IMPROVEMENTS  
SHOWN ON THIS SURVEY. SEE STANDARD LAND, AS-BUILT, AND TREE  
SURVEY DATED DECEMBER 19, 2016, BY LANDMARK SURVEYING, LP.  
3 EXISTING CONDITIONS, ELEVATIONS AND GRADES SHOWN HEREIN REPRESENT  
EXISTING CONDITIONS AS OF FIELD WORK, JULY 26, 2019.  
4 ON-GOING LANDSCAPE CONSTRUCTION OF VARIOUS LOCATIONS MIGHT  
ADVERSELY IMPACT THE ACCURACY OF TOPOGRAPHY AND/OR  
IMPROVEMENTS SHOWN ON THIS SURVEY.

AS SURVEYED BY  
LANDMARK SURVEYING, LP  
TEXAS FIRM REGISTRATION NO. 100727-00

JUAN M. CANALES, JR.  
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 4453  
DATE: DECEMBER 19, 2018  
UPDATED: AUGUST 7, 2019 - METAL RETAINING WALLS  
AND REGRADED AREAS ONLY

Client: DOUGLAS JAFFE, III  
 Date: AUGUST 7, 2019  
 Office: M FERGUSON/M SOADUE LEOS/J BAINS  
 Conv: R. GARZA/ K. DUNNE/SCHLEMMER  
 F.B.: 1824 CIL 24, 25, 26-30, 1824 CIL 31-33  
 F.B.: DOUGLAS JAFFE, III, MARGARET K. DRAWINGS/GRID STAFF/1465 WILD CAT HOLLOW\_GRID TOPO UPDATE(07.2019).DWG  
 Job No: 1344-01-02-03-04-05

REVIEWED BY  
JMC 8.9.2019  
Initials Date



TRACT 4 - 0.18 ACRES OUT OF THE  
WILKINSON SPARKS SURVEY No. 4  
1501 WILD CAT HOLLOW LLC  
DOC#2014084055 O.P.R.T.C.  
1501 WILD CAT HOLLOW  
TCAD#0117130311

LOT 1  
GIBBINS-REED SUBDIVISION  
VOLUME 99, PAGE 39 P.R.T.C.T.  
MARK L LACY AND SCOTT E BARRETT  
DOC#2013111868 O.P.R.T.C.T.  
1511 HARBOR VIEW ROAD  
TCAD#0117130308

TITLE COMMITMENT NOTE:

A TITLE COMMITMENT WAS NOT AVAILABLE AT THE TIME OF THIS SURVEY; THEREFORE, EASEMENTS MAY EXIST WHICH ARE NOT SHOWN HEREON.

NOTE:  
THIS DRAWING IS BASED ON MEASURED DISTANCES IN  
THE FIELD NOT ON GRID DISTANCES.  
\*UTILITY AND IMPROVEMENT NOTE:  
ONLY SURFACE EVIDENCE OF UTILITIES AND  
IMPROVEMENTS ARE SHOWN ON THIS  
SURVEY.

0.35 ACRES OUT OF THE  
WILKINSON SPARKS SURVEY No.4  
R. SCOTT GILL, TRUSTEE OF THE R. SCOTT GILL TRUST  
DATED OCTOBER 30, 2002 AND  
WILLIAM J. STEGEMAN, TRUSTEE OF THE WILLIAM J. STEGEMAN  
TRUST DATED MARCH 6, 2002  
AS TENANTS IN COMMON  
DOC#2013056711 O.P.R.T.C.T.  
1407 WILD CAT HOLLOW  
TCAD#0117130305

[illegible]

1 ACRE OUT OF THE  
WILKINSON SPARKS SURVEY No.4  
ARNOLD D. & BILLIE J. KELLY  
DESCRIBED IN VOLUME 13224, PAGE 231 R.P.R.T.C.T.  
1508 WESTLAKE DRIVE

LOT 1 - THE DRAKER SUBDIVISION  
DOC#201200069 O.P.R.T.C.T.  
JOSEPH ANTHONY DRAKER, Jr,  
DESCRIBED IN DOC#2007063362 O.P.R.T.C.T.  
1506 WESTLAKE DRIVE  
TCAD#0117110804

S77°36'09"W 340.78'  
(S80°08'06"W 340.80')  
S80°21'18"W 310.51'-LOT 1-B

LOT 1-B  
BELA VISTA TWO SUBDIVISION  
DOC#201200068 O.P.R.T.C.T.  
DRAKER HOLDINGS LLC  
WILD CAT HOLLOW  
TCAD# 0117130317

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**Landmark**  
SURVEYING, INC.

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PH: (512)328-7411 FAX: (512)328-7413  
TEXAS FIRM REGISTRATION NO. 100727-00  
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5149 10" CEDAR  
5150 8" LIVE OAK  
5151 21" CEDAR 15-8-5  
5152 23" LIVE OAK 11-10-8-5  
5153 10" CEDAR 7-3-3  
5154 13" CEDAR 8-6-3-3-2  
5155 16" CEDAR 10-6-3-3  
5156 12" CEDAR 6-5-4-3  
5157 12" CEDAR  
5158 9" LIVE OAK  
5159 12" LIVE OAK 9-6  
5160 18" CEDAR 12-8  
5161 8" LIVE OAK  
5162 14" CEDAR 10-7  
5163 13" CEDAR 10-4-6  
5164 18" CEDAR 11-5-9  
5165 10" CEDAR  
5166 13" CEDAR 10-6  
5167 12" CEDAR  
5168 15" CEDAR 10-7-3  
5169 14" CEDAR  
5170 12" CEDAR  
5171 22" LIVE OAK 17-9  
5172 10" LIGUSTRUM  
5173 10" BURR OAK  
5174 18" CEDAR 14-8  
5175 8" CHINABERRY 7-2  
5176 32" CEDAR 18-14-14  
5177 7" HACKBERRY  
5178 11" LIGUSTRUM  
5179 15" CEDAR 9-8-5  
5180 13" CEDAR 10-5  
5181 15" LIGUSTRUM  
5182 13" LIGUSTRUM  
5183 12" CEDAR  
5184 12" BURR OAK  
5185 12" CEDAR  
5186 13" BURR OAK 7-8-5  
5187 14" CEDAR  
5188 13" CEDAR 8-7

**VICINITY MAP**

SCALE: 1" = 2000'

The map shows the site location in relation to West Lake Hills, Thousand Oaks, and the University of Texas at Dallas. Major roads like I-35, I-40, and I-75 are shown. Landmarks include the University of Texas at Dallas and the Dallas-Fort Worth International Airport. A scale bar indicates 1 inch equals 2000 feet.

# LEGEND

|              |                                                  |
|--------------|--------------------------------------------------|
|              | PROPERTY LINE                                    |
|              | EXISTING PROPERTY LINES                          |
|              | EXISTING EASEMENTS                               |
|              | CONTOUR LINE                                     |
|              | CALCULATED POINT                                 |
|              | 1/2" IRON ROD FOUND                              |
|              | 3/4" IRON PIPE FOUND                             |
|              | 80d NAIL FOUND                                   |
|              | SURVEY CONTROL POINT                             |
|              | SEPTIC TANK UD                                   |
|              | EDGE OF ASPHALT                                  |
|              | AIR CONDITIONER UNIT                             |
|              | ELECTRIC JUNCTION BOX                            |
|              | ELECTRIC METER                                   |
|              | MAILBOX                                          |
|              | WATER VALVE                                      |
|              | WATER METER                                      |
|              | DRAIN GRATE                                      |
|              | UTILITY POLE                                     |
|              | OVERHEAD UTILITY                                 |
|              | CONCRETE                                         |
|              | BUILDING                                         |
| D.O. #       | DOCUMENT NUMBER                                  |
| S.L.         | BUILDING LINE                                    |
| FF ELEV      | FINISHED FLOOR ELEVATION                         |
| VOL.         | VOLUME                                           |
| PQ.          | PAGE                                             |
| R.O.W.       | RIGHT-OF-WAY                                     |
| P.R.T.C.T.   | PLAT RECORDS,<br>TRAVIS COUNTY, TEXAS            |
| R.P.R.T.C.T. | PLAT RECORDS,<br>TRAVIS COUNTY, TEXAS            |
| O.P.R.T.C.T. | OFFICIAL PUBLIC RECORDS,<br>TRAVIS COUNTY, TEXAS |
| D.R.T.C.T.   | DEED RECORDS,<br>TRAVIS COUNTY, TEXAS            |
| (---)        | RECORD INFORMATION PER<br>PLAT VOL. 91, PG. 385  |
| [...]        | RECORD INFORMATION PER<br>DOC. # 2008179556      |
| (---)        | RECORD INFORMATION PER<br>DOC. # 2005150447      |
| [...]        | RECORD INFORMATION PER<br>PLAT DOC. # 2005001017 |
| [...]        | RECORD INFORMATION PER<br>VOL. 2364, PG. 347     |

WILKINSON SPARKS  
SURVEY,  
ABSTRACT NO. 23

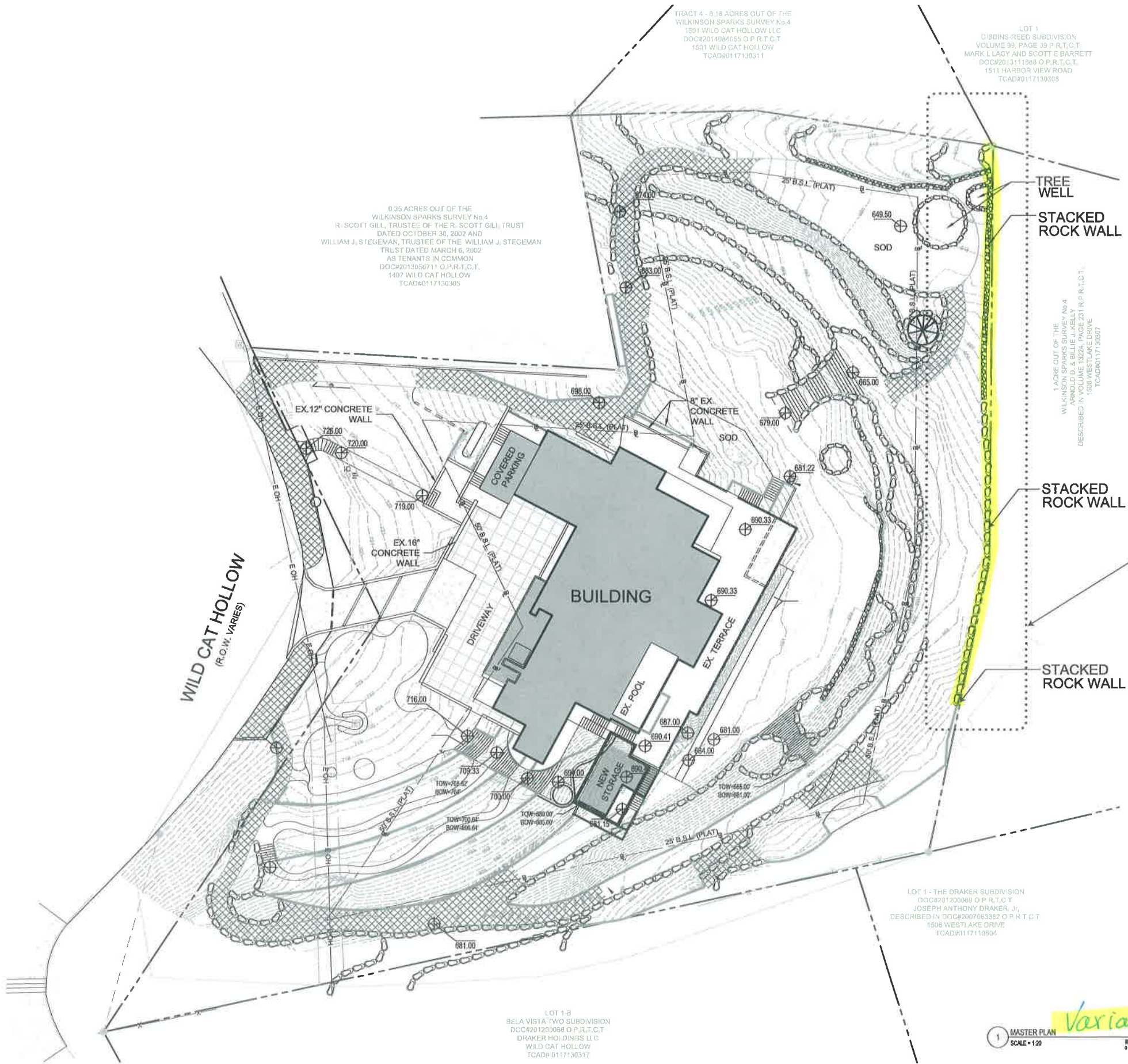
JASON WARD, R.P.L.S.  
TEXAS REGISTRATION NO. 5811

10/08/12  
DATE

STATE OF TEXAS  
JASON WARD  
2011  
LAND SURVEYOR

**4WARD**  
Land Surveying  
A Limited Liability Company  
PO Box 90876, Austin Texas 78700  
www.4wardla.com (512) 554-3371





- LEGEND
- STEEL STEPS
  - GEOWEB SLOPE STABILIZER
  - STEEL LANDSCAPE EDGE
  - 42" STEEL RAILING
  - STEEL RETAINING WALL (STRUCTURE AND HEIGHT VARIES)
  - PROPERTY LINE
  - LIMESTONE BOULDER WALL (STRUCTURE AND HEIGHT VARIES)
  - EXISTING CONCRETE WALL

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ISSUED SETS:

| Description | Date issued |
|-------------|-------------|
| MASTER PLAN | 11.12.19    |
|             |             |
|             |             |
|             |             |
|             |             |
|             |             |
|             |             |

Project No. 1912

VARIANCE FOR  
STACKED ROCK  
WALL IN EASEMENT  
12.13.2019

1 MASTER PLAN SCALE = 1/20

Variance SOW plan

0 5 10 20 40



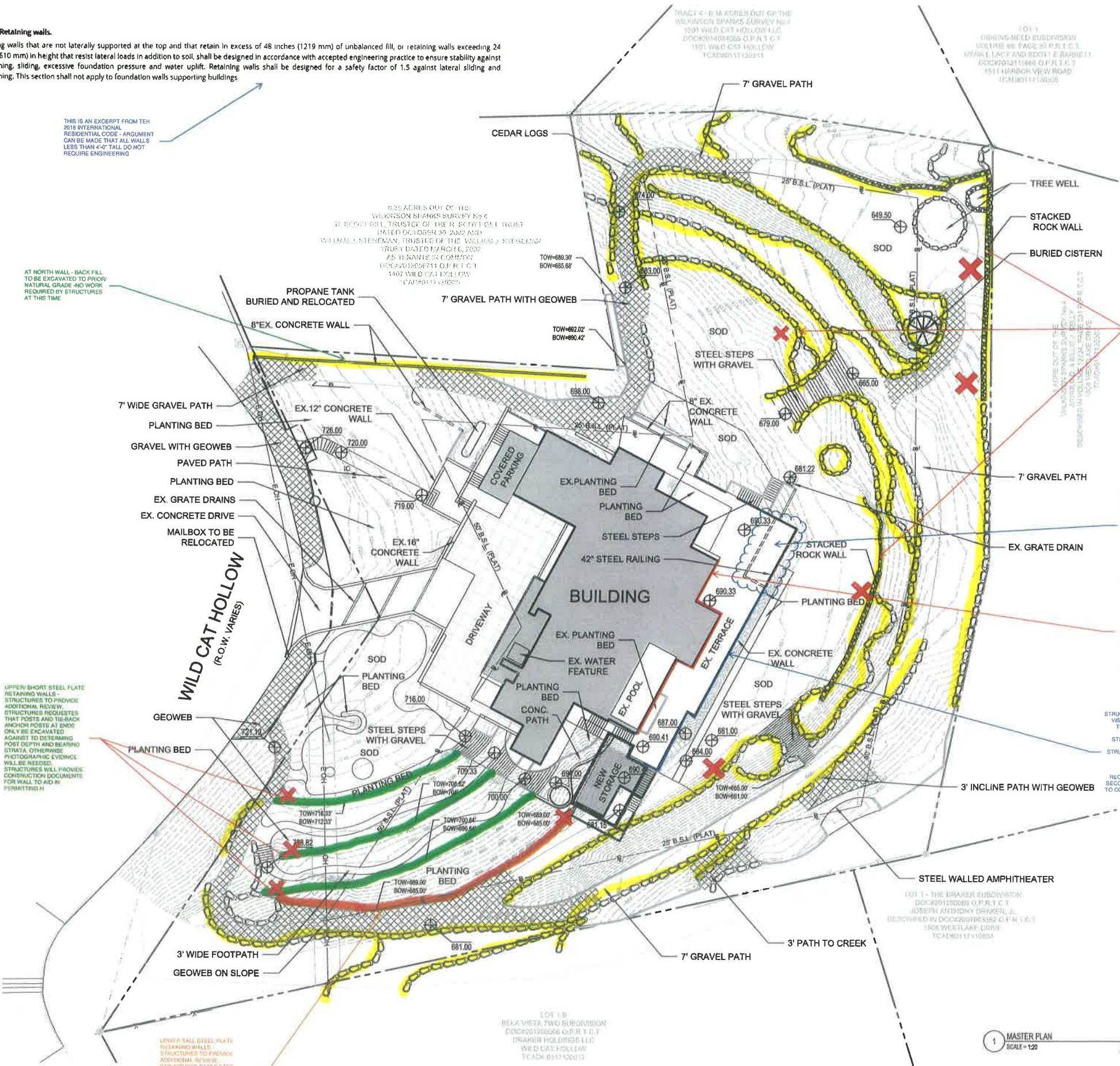
**R404.4 Retaining walls.**  
Retaining walls that are not laterally supported at the top and that retain in excess of 48 inches (1219 mm) of unbalanced fill, or retaining walls exceeding 24 inches (610 mm) in height that resist lateral loads in addition to soil, shall be designed in accordance with accepted engineering practice to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning. This section shall not apply to foundation walls supporting buildings.

THIS IS AN EXCERPT FROM THE 2018 INTERNATIONAL RESIDENTIAL CODE - ARGUMENT CAN BE MADE THAT ALL WALLS LESS THAN 4'-0" TALL DO NOT REQUIRE ENGINEERING

AT NORTH WALL - BACK FILL TO BE EXCAVATED TO PRIOR NATURAL GRADE - NO WORK REQUIRED BY STRUCTURES AT THIS TIME

UPPER/SHORT STEEL PLATE RETAINING WALLS - STRUCTURES WILL PROVIDE ADDITIONAL REVIEW. STRUCTURES REQUESTS THAT POSTS AND TIE-BACK ANCHOR POSTS AT ENDS ONLY BE EXCAVATED AGAINST TO DETERMINE POST DEPTH AND BEARING STRATA. OTHERWISE PHOTOGRAPHIC EVIDENCE WILL BE NEEDED. STRUCTURES WILL PROVIDE CONSTRUCTION DOCUMENTS FOR WALL TO AID IN PERMITTING.

LOWER TALL STEEL PLATE RETAINING WALLS - STRUCTURES TO PROVIDE ADDITIONAL REVIEW. STRUCTURES REQUESTS THAT POSTS AND TIE-BACK ANCHOR POSTS AT ENDS ONLY BE EXCAVATED AGAINST TO DETERMINE POST DEPTH AND BEARING STRATA. OTHERWISE PHOTOGRAPHIC EVIDENCE WILL BE NEEDED. STRUCTURES WILL PROVIDE CONSTRUCTION DOCUMENTS FOR WALL.



LEGEND

- STEEL STEPS
- GEOWEB SLOPE STABILIZER
- STEEL LANDSCAPE EDGE
- 42" STEEL RAILING
- STEEL RETAINING WALL (STRUCTURE AND HEIGHT VARIES)
- PROPERTY LINE
- LIMESTONE BOULDER WALL (STRUCTURE AND HEIGHT VARIES)
- GRAVEL TRAIL
- EXISTING CONCRETE WALL

FOR ALL STONE RUBBLE WALLS RETAINING MORE THAN 4'-0" OF UNBALANCED FILL - EXCAVATIONS BEHIND WALL ARE REQUIRED. PROPOSED LOCATIONS MARKED WITH "X".

AT UNDERGROUND ROOMS - STRUCTURES WILL PERFORM VISUAL AND NON-DESTRUCTIVE REVIEW TO RENDER AND OPINION OF STRUCTURAL ADEQUACY. STRUCTURES WILL PROVIDE STRUCTURAL DOCUMENTS TO ASSIST WITH PERMITTING. ASSESSMENT OF ELECTRICAL AND PLUMBING IS BEYOND STRUCTURAL SCOPE.

AT SUBTERRANEAN ROOMS - STRUCTURES WILL PERFORM VISUAL OBSERVATIONS/ NON-DESTRUCTIVE TESTING AND REVIEW OF PHOTOS TO RENDER STRUCTURAL OPINION OF ADEQUACY OF STRUCTURAL SYSTEM AND HELP DETERMINE IF PLUMBING AND ELECTRICAL WERE PART OF ORIGINAL CONSTRUCTION. STRUCTURES WILL PROVIDE STRUCTURAL DOCUMENTS TO ASSIST WITH PERMITTING.

AT UPPER EAST WALL - STRUCTURES WILL PERFORM VISUAL NON-DESTRUCTIVE TESTING AND REVIEW OF PHOTOS TO ESTABLISH STRUCTURAL REVIEW AND ASSESSMENT OF WALL. STRUCTURES WILL PROVIDE CONSTRUCTION DOCUMENTS OF THE EXISTING WALL AND RECOMMENDATIONS FOR A SECONDARY WALL IN FRONT TO CONTAIN EXPOSED SOILS UNDER FOOTINGS.



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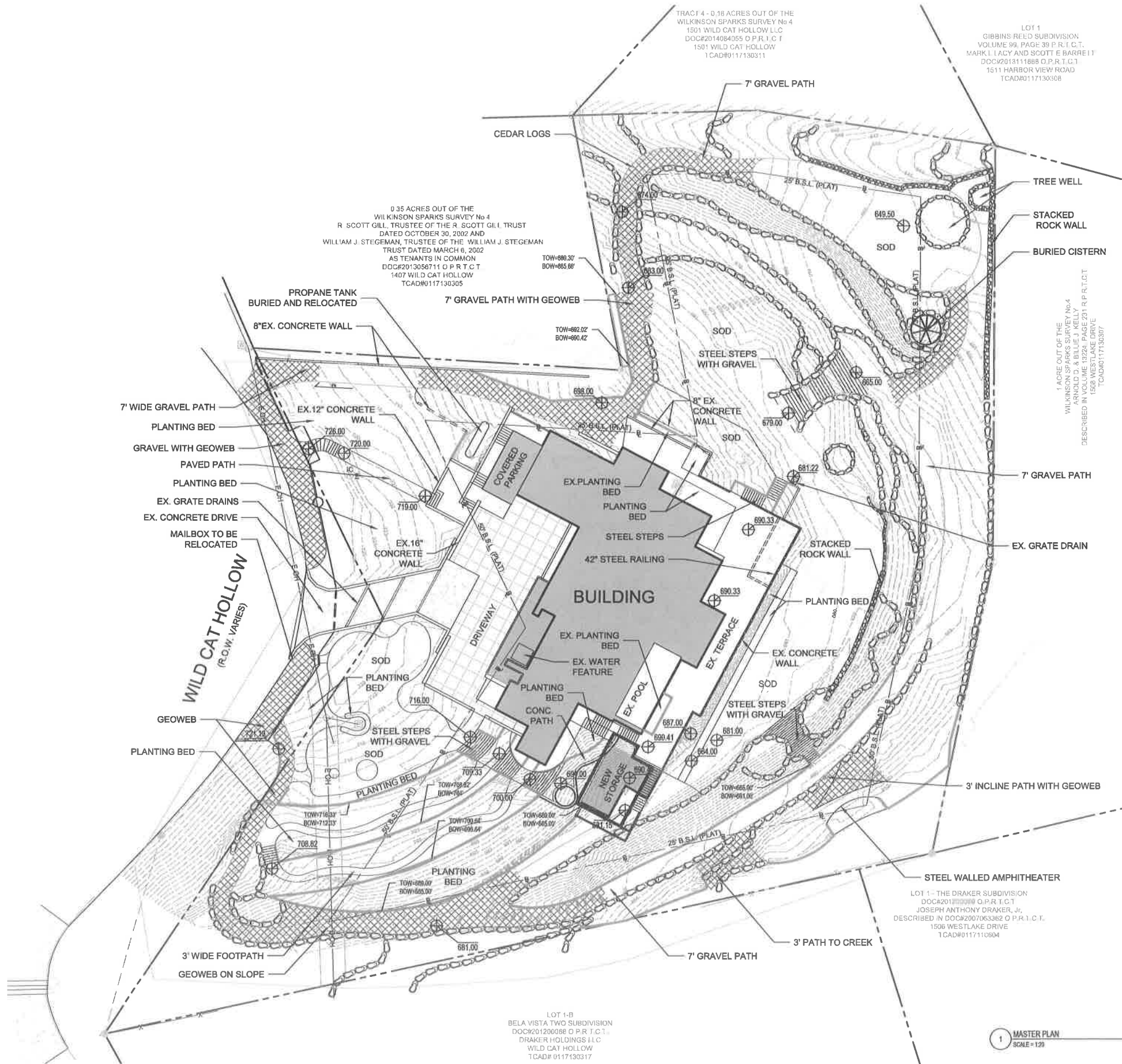
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| ISSUED SETS: |             |  |
| Description  | Date Issued |  |
| MASTER PLAN  | 11.12.19    |  |

Project No. 1912

MASTER PLAN

L-100





- LEGEND
- STEEL STEPS
  - GEOWEB SLOPE STABILIZER
  - STEEL LANDSCAPE EDGE
  - 42" STEEL RAILING
  - STEEL RETAINING WALL (STRUCTURE AND HEIGHT VARIES)
  - PROPERTY LINE
  - LIMESTONE BOULDER WALL (STRUCTURE AND HEIGHT VARIES)
  - GRAVEL TRAIL
  - EXISTING CONCRETE WALL

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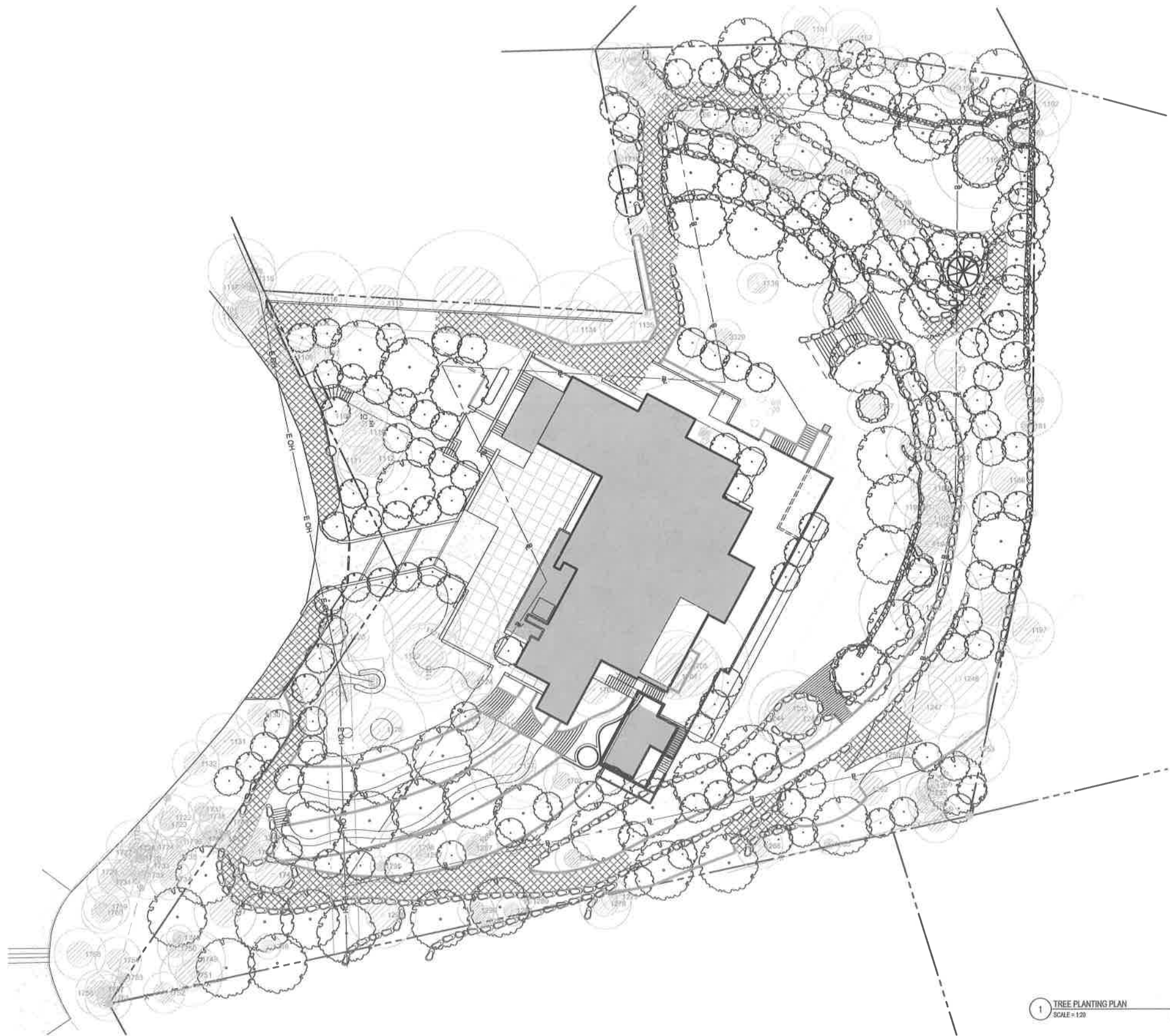
ISSUED SETS:

| Description | Date Issued |
|-------------|-------------|
| MASTER PLAN | 11.12.19    |

Project No. 1912

MASTER PLAN

L-100



LEGEND

- EXISTING TREE
- 3 - 5" CAL PROPOSED SHADE TREE
- 3" CAL PROPOSED UNDERSTORY TREE

NOTE:  
200 X 3" UNDERSTORY & SHADE TREES  
APPROX. TOTAL = 600"  
MITIGATION INCHES PROPOSED

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|-------------|-------------|
| MASTER PLAN | 11.12.19    |

Project No. 1912

TREE PLANTING  
PLAN  
L-200

**SOIL TREATMENT SPECIFICATIONS:**

REF. COMPACTED SOIL 24" DOWN TO LOOSEN FOR  
CONSTRUCTION. MIX SALVAGED TOPSOIL WITH

SOME SHRINKAGE OF THE MEDIA IS TO BE EXPECTED AFTER INSTALLATION, IN THE RANGE OF 5-15%. AS A GENERAL RECOMMENDATION, ABOUT 20 INCHES OF MEDIA SHOULD BE INSTALLED TO ACHIEVE THE REQUIRED DEPTH OF 10 INCHES.

\*\*\*\*\*

SEEDING SPECIFICATIONS:

DISK OR ROTOTILL SOIL 8" DEEP TO  
AND 50% GRANITE SAND INTO THE T

AREAS LEFT IN EXISTING STATE - NON DISTURBED  
APPLY SEED WITH A 5/8 IN. DOWEL SPACER 5.0 LB. (TYPICAL) WITH CRACK-PAKER FEATURE AT 25 POUNDS PER ACRE

#### IRRIGATION

WATER ONCE OR TWICE A WEEK UNTIL GRASSES ARE ESTABLISHED.

## NATIVE TREE BLIND TO INDIAN WOODS

**WOODLAND FEEDING:**  
 ON BAITING AFTER THE COL. TEMPERATURE GETS ABOVE 55 DEGREES UNIL ALLOW SEVERAL WEEKS TO GERMINATE BEFORE YOU

NEED CONTROL

Journal of Management Inquiry 22(1) 3-14  
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DOI: 10.1177/1056492613505101

ANY PLANT MATERIAL THAT MUST BE

## 1. LANDSCAPE CONTRACTOR SHALL

- [illegible]

| Name |                 | Address      |             | City |       | State |  | Zip |  |
|------|-----------------|--------------|-------------|------|-------|-------|--|-----|--|
| 1    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 2    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 3    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 4    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 5    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 6    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 7    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 8    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 9    | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |
| 10   | Mr. J. L. Smith | 123 Main St. | Springfield | Ill. | 62761 |       |  |     |  |

# 16.01

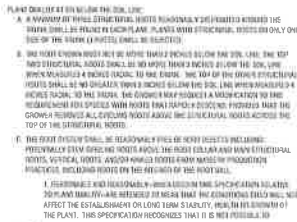
## planting notes

planting

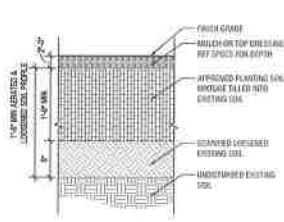
**Tea Trek**  
 A C E N T A  
 150 GOODALE AVE  
 AUSTIN, TEXAS 78701  
 (512) 512-9999

**osborne residence**  
 1405 Wildcat Hollow  
 West Lake Hills, Texas 78746



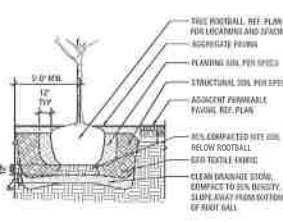
[illegible]

- [illegible]



1. STRUCTURAL SOIL SHALL EXCEED 12" DIAMETER MINIMUM UNDER EACH TRUCK TRACK
2. EXPOSED COMPACTED STRUCTURAL SOIL TO SUPPORT TREE HUBBLES
3. SLOPE MINIMUM 2% TO DRAINAGE PIPE
4. CONNECT DRAINAGE PIPES TO CULVERT DRAIN
5. HOLE CROWN OF TREE 2 INCHES ABOVE FINISH GRADE, EXTEND 12" INCH LAYER OF ASSURTEC PAVING TO ROOT BALL
6. TREE TRUNK STAMPS AND PLANTING IDENTIFY EACH ADDITIONAL NOTE
7. EXIST MAJOR ROOTS AWAY FROM ROOT BALL, APPLY HORIZONTAL POLYURETH TO EXPOSED ROOTS, CUT ANY ENGLISH HAWK OR CRUELING ROOTS, PACK PLANTING BACKFILL, ANCHORS ROOTS.

- 
- Diagram illustrating the cross-section of a tree pit with various layers and components labeled:
- TRUE FOOTBALL: REF. PLAN FOR LOCATIONS AND SPACING
  - AGGRESSIVE PAVING
  - PLANNING AND PERMITS
  - STRUCTURAL SOIL FOR PERMITS
  - AGGRESSIVE PERMEABLE PAVING, REF. PLAN
  - SOIL COMPACTED NET SOIL BELOW FOOTBALL
  - SOIL TEXTURE INDEX
  - CLEAN WASHED STONE, COMPACT TO SOIL DENSITY, SLOPE AWAY FROM BOTTOM OF TREE PIT

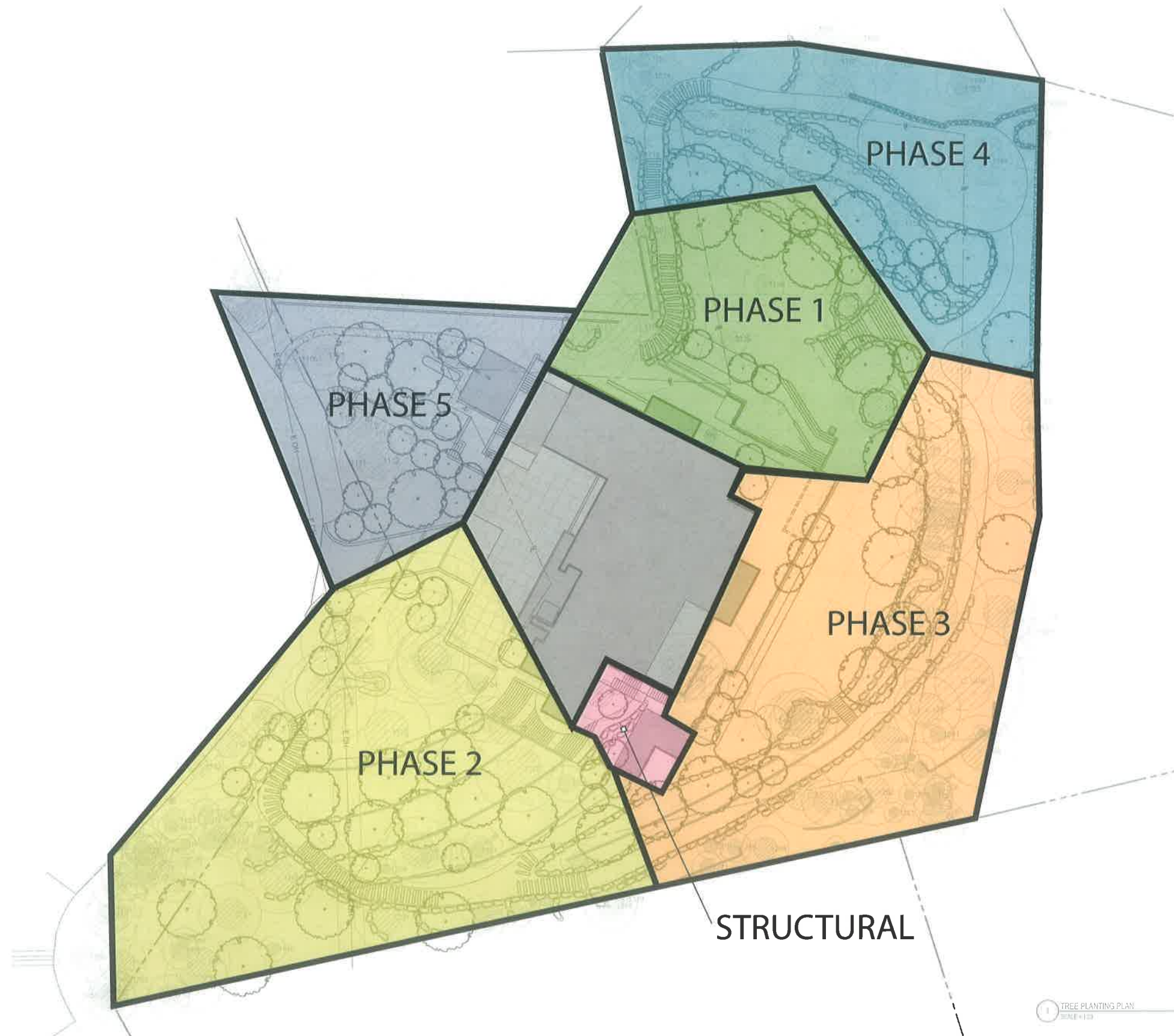


**planting details**

[illegible]

# L6.0

**Tea Erik**  
 • • • • •  
 1405 WILSON HOLLOW  
 WEST LAKE HILL, 30265 75746  
 TEL 513 413 3799



LEGEND

-  EXISTING TREE
-  5" CAL PROPOSED SHADE TREE
-  3" CAL PROPOSED UNDERSTORY TREE

NOTE:  
 34 X 5" = 170' SHADE TREES  
 60 X 3" = 180' UNDERSTORY TREES  
 TOTAL = 350'

1 TREE PLANTING PLAN  
 SCALE = 1" = 20'

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DESIGNED BY STUDIO BALCONES LANDSCAPE ARCHITECTURE & URBAN DESIGN

PROJECT SETS

DESIGNED BY DATE ISSUED  
 ARCHITECTURAL PERMIT 07.03.19

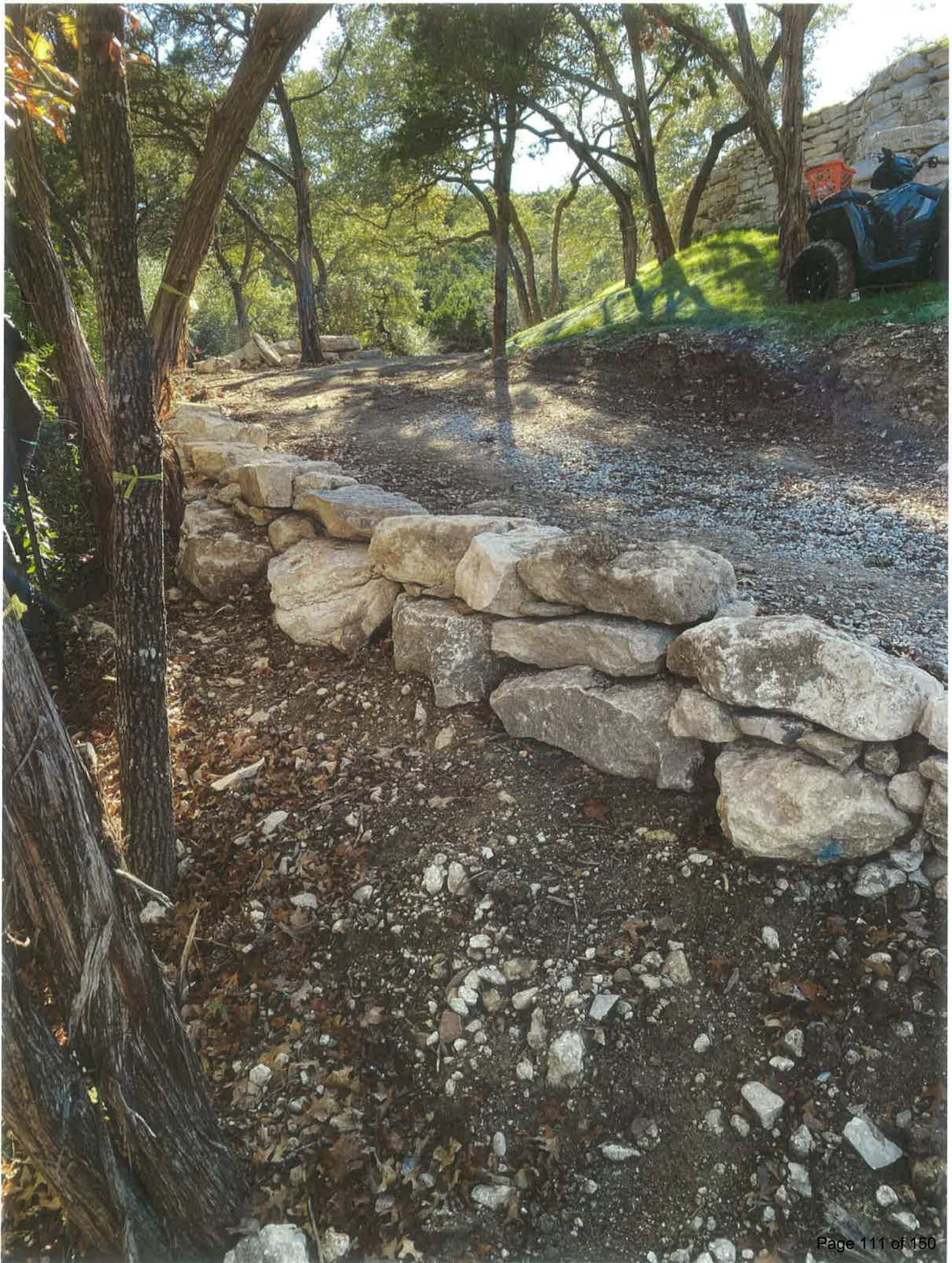
Project No. 1912

TREE PLANTING  
 PLAN  
 L-200









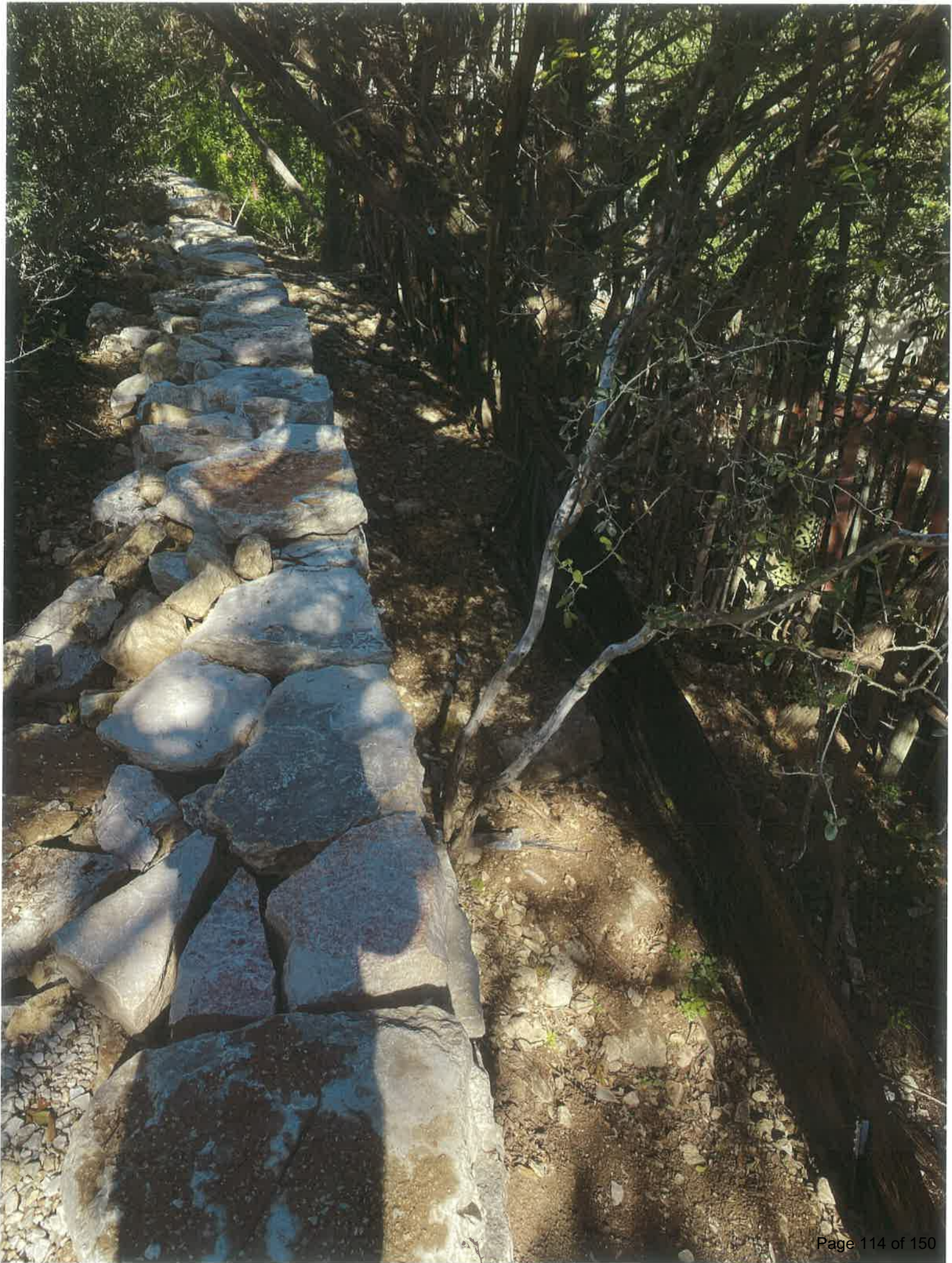






























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GENERAL

- Building Code: International Residential Code Structural Engineering Design Provisions, 2015 Edition.
- The design gravity loads are as follows:

Superimposed Dead Loads (included, but not limited to):

Mechanical and Ceiling: 10 psf  
Roof Assemblies: 10 psf  
Finishes: As required

Live Loads (in accordance with 2015 IRC):

Roof: 40 psf  
Floor: 40 psf  
Decks: 40 psf  
Guardrails and Handrails: 200lb Point Load or 50 plf
- The structure has been designed to withstand the wind pressures specified in ASCE 7-10, using a 3 second gust basic wind speed of 115 miles per hour at a standard height of 33 feet above the ground in exposure B.
- The general contractor is responsible for fitting new work with existing construction. Information on existing buildings shown in the drawings was based upon the information supplied to Structures. This information is not as-built data and the actual as-built construction may differ from that represented in the drawings. Contractors shall verify all information. Variations from the dimensions indicated on the contract documents shall be brought to the attention of the architect and/or Structures.
- These drawings do not, nor are intended to, locate property lines, building set backs, nor height limitations. It is the contractor's responsibility to locate the building and construct it to, and within, applicable code restrictions. Further, it is the contractor's responsibility to address site drainage appropriate to the site and in consideration to adjoining properties.
- Methods, procedures, and sequences of construction are the responsibility of the contractor and must satisfy the minimum requirements of the 2015 International Residential Building Code. The contractor shall take all necessary precautions to maintain and insure the integrity of the structure at all stages of construction.
- The general contractor and sub-contractors shall determine the scope of the structural work from the contract documents taken as a whole. The structural drawings shall not be considered separately for purposes of bidding the structural work. Due consideration shall be given to other structural work or work related to the structure, including necessary coordination described or implied by the architectural and mechanical drawings.
- Scales noted on the drawings are for general reference only. No dimensional information shall be obtained by direct scaling of the drawing.
- The general contractor is responsible for coordination of all resulting revisions to the structural system or other trades as a result of acceptance of contractor proposed alternatives or substitutions.
- Structural members have been located and designed to accommodate the mechanical equipment openings specified by the mechanical consultant. Any submissions resulting in revisions to the structure shall be the responsibility of the contractor to coordinate with Structures.
- Principal openings in the structure are indicated on the contract documents, refer to the architectural, mechanical, electrical, and plumbing drawings for sleeves, curbs, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 12 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings in structural members shall be submitted to Structures for review.

FOUNDATION BUILDING PAD

- Due to the absence of a site specific subsurface analysis and report from a registered Geotechnical Engineer, the foundation design is based on assumptions and/or site observations of the existing site conditions. These assumptions may not be verifiable without the expending of additional fees. Foundation conditions noted during construction that differ than those shown in the structural drawings shall be noted to the Structural Engineer before further construction is to proceed.
- Walls retaining backfill have been designed for the following lateral earth pressures:

- Wall Supported Top & Bottom 55 psf  
- Cantilevered Retaining Wall 32 psf
- Within the foundation outline and remove all fat clay and/or unstable, completely weathered limestone strata, all organics (I.E., roots, trees, grass, and other humus), any building foundations or rubble, and any other deleterious materials to a minimum depth of 12".
- The floor subgrade shall be properly compacted and proofrolled and shall be free of standing water, mud and frozen soil.
- Contractor shall certify the compaction of the select material to at least 95% of the maximum dry density as determined using SDHPT Test Method TEX-113-E conducted with a laboratory compactive effort of 6.63 ft lbs/cu. in. Hold water contents to within + 2% of the optimum, and maintain compacted lift thickness to 6" or less.

CONCRETE

- Concrete in the following areas shall have the following characteristics:

| Usage                        | 28-day<br>Strength (f'c) | Slump (in.) <sup>A</sup> | Max w/<br>cm Ratio | Air content <sup>B,C</sup> |
|------------------------------|--------------------------|--------------------------|--------------------|----------------------------|
| Grade Beams:                 | 4000 psi                 | 3-5                      | 0.45               | 0%                         |
| Slabs on Grade:              | 4000 psi                 | 2-4                      | 0.45               | 0%                         |
| Spread Footings:             | 4000 psi                 | 3-5                      | 0.45               | —                          |
| Walls:                       | 4000 psi                 | 3-5                      | 0.45               | 0%                         |
| Elevated Slabs<br>and Beams: | 4000 psi                 | 3-5                      | 0.45               | 0%                         |

- Slump shall be measured before adding water reducing admixture or plasticizing mixture.
- All concrete mix designs shall be reviewed and approved by the testing agency prior to sending to the engineer of record for approval.
- Use the following cementitious materials, of the same type, brand and source throughout the Project:

Portland Cement: ASTM C 150, Type I/II
- Fly ash may be used as a pozzolan to replace a portion of the portland cement in a concrete mix, subject to the approval of the structural engineer. Fly ash, when used, shall conform to ASTM C618, Type C or F. Concrete mixes using fly ash shall be proportioned to account for the properties of the specific fly ash used and to account for the specific properties of the fly ash concrete thus resulting. The ratio of the amount of the fly ash to the total amount of fly ash and cement in the mix shall not exceed 40 percent.
- Use the following normal-weight aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source conforming to the following:

Maximum Coarse-Aggregate Size: typically ¾" nominal diameter  
Fine Aggregate: free of materials with deleterious reactivity to alkali in cement
- Lightweight aggregate shall conform to ASTM C 330.
- Water shall conform to ASTM C 94/C 94M and be potable.
- Admixtures if used shall be subject to the approval of the structural engineer.
- Mixing, transporting, and placing of concrete shall conform to ACI 301 and ASTM C 94.
- Conformance to ACI 305.1 "Specification for Hot Weather Concreting" is required when air temperature is above 90 deg F.
- Conformance to ACI 306 "Cold Weather Concreting" is required when a period for more than three (3) consecutive days, the average daily air temperature is below 40 deg F and the air temperature is not greater than 50 deg F for more than one-half of any 24 hour period.
- The fire protection rating for this project is based upon the use of normal weight aggregate concrete made with carbonate aggregates. Carbonate aggregates consist mainly of calcium or magnesium carbonate, e.g., limestone or dolomite, and contain 40 percent or less quartz, chert and flint.
- General contractor shall notify the architect and Structures 48 hours prior to placement of concrete in the foundation.
- During construction, the contractor shall provide temporary shoring of walls which are ultimately supported top and bottom. Such shoring shall not be removed until the supporting elements are in place, the concrete in the walls and supporting elements has attained the specified 28 day compressive strength (f'c) and compaction of the backfill against the wall has been completed.
- A gravity drainage system is required to prevent the build-up of hydrostatic pressure behind the walls.
- Detailing of concrete reinforcement bars and accessories shall conform to the recommendations of ACI 315 "Details and Detailing of Concrete Reinforcement" and ACI SP-66 "Detailing Manual". Placing of reinforcing bars shall conform to the recommendations of ACI 315R "Manual of Engineering" and placing drawings for reinforced concrete structures" and CRSI "Manual of Standard Practice".
- No conduit or piping larger than 1" I.D. shall be run in structural concrete members unless shown on structural drawings.
- All pipe sleeves in concrete members shall be schedule 40 pipe unless shown otherwise on the structural drawings. Location of the sleeves shall be as approved by the Structural Engineer. Provide 3 additional stirrups each side of each sleeve in beams and space as directed by the Engineer.
- Reinforced steel shall be deformed new billet steel bars in accordance with A.S.T.M. Specification A615 Grade 60.
- All stirrups shall be Grade 60 with standard 90 degree hooks.
- Provide 2-#5 x 4'-0" "L" shaped bars top and bottom at all corners and "T" intersections of beams.
- All hooks and bends in reinforcing bars shall conform to ACI Standards unless shown otherwise.
- Reinforcement designated as "continuous" may be spliced using Type "B" splices. Reinforcement bar splice lengths in beams which are located at the centerline of supports for bottom bars and at mid-span for top bars may be 36 bar diameters, unless noted otherwise. Provide standard ACI hooks for top and bottom bars at discontinuous ends of all grade beams.
- Vertical joints may occur at center of spans at locations reviewed by Structures.
- Horizontal construction joints in concrete pours shall be permitted only where indicated on the drawings. All construction joints shall be made in the center of spans - see drawings for typical detail. The location of the construction joints shall be as approved by the Architect and the Structural Engineer. Additional reinforcing at construction joints shall be as specified by the Engineer without additional cost to the owner.

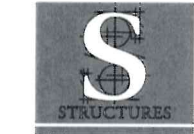
- Construction joints between piers and pier caps, footings and walls or columns, or walls, columns, beams, and the floor system they support shall be prepared by roughening the contact surface to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
- Reinforcement bars shall not be tack welded, welded, heated, or cut unless indicated on the contract documents or reviewed by the structural engineer.
- Welding of reinforcement bars, when accepted by the structural engineer, shall conform to the American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.
- Minimum concrete cover protection for reinforcement bars shall be as follows: (see ACI 318 Section 20.6 for conditions not noted)

Concrete exposed to weather 2 inches  
#5 bars and smaller 2 inches  
All other bars 3 inches  
Concrete cast against earth 3 inches

Grade beams: 2 inches  
Top 2 inches  
Board formed sides 3 inches  
Earth formed sides 3 inches  
Bottom 3 inches

Slabs on grade: 2 inches  
Single layer or top layer 3 inches  
Bottom layer cast against soil 2 inches  
Bottom layer not cast against soil 2 inches

Columns 1 - 1/2 inches  
Pilasters & plinths 2 inches  
Slabs on metal forms 3/4 inches (top)  
Walls below grade (backfilled side) 2 inches  
Walls below grade (no backfill) 2 inches
- Horizontal wall steel shall be continuous with 90 degree bends and 12" returns along each wall at corners.
- Concrete pours shall not exceed 5000 square feet or 100 linear feet on any side.
- Include an allowance for 1/2 ton of reinforcing steel (any size) to be used as directed in the field for special conditions not covered by note or drawing (labor for erecting same to be included). Upon completion of the project, owner shall be rebated for any unused portion of allowance materials.



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NEW RETAINING WALLS AND  
SUBTERRANEAN ROOMS  
1405 WILDCAT HOLLOW  
AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
|-------|-------------|----------|
| A     | PERMIT SET  | 12.19.19 |
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STRUCTURAL NOTES

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|-------------|-----|----------|---------|
| DRAWN BY:   | LIG | CONTACT: | DA      |
| CHECKED BY: | DA  | JOB #:   | R19.489 |

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WHEN PRINTED ON 11X17  
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BE ½ THE SIZE OF NOTED SCALES.



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CONCRETE ON STEEL DECK

- Floor slab system shall be normal weight concrete 3 inches thick on non-composite steel deck (2 inches concrete + 1 inch deck). Non-composite steel deck shall be 26 gage minimum cold-formed steel conforming to ASTM A653, Structural Quality, Grade 33, G60 coating. Non-composite steel deck shall be 1.0 type "C". Reinforce slab with 6x6-w1.4 x w1.4 welded wire fabric located ¾" below top of slab.
- Welded wire fabric shall conform to ASTM A185. Fabric shall be supplied in flat sheets. Fabric shall be lapped two mesh at splices.
- Properties and allowable stresses of steel floor decks shall be based on the AISI "specification for the design of cold-formed steel structural members". Steel floor deck shall be placed to have a three span configuration where possible and at least a two span configuration unless noted otherwise. General contractor shall coordinate with deck supplier to determine deck gage required for single span conditions.
- Weld deck to supporting steel and adjoining deck sheets using minimum of 5/8 inch puddle welds in accordance with the American Welding Society standard D1.3. The deck shall be attached to perimeter and interior supporting steel. Deck sheet flutes shall be aligned and deck ends shall be butted over supports.
- If no other sidelap fastener criteria is provided, steel deck units with spans greater than 5 feet shall have side laps fastened at midspan or 36 inch intervals minimum whichever distance is smaller and sidelap fasteners shall be welds, screws, or crimps (button punching).
- Closure strips shall be used at discontinuous ends only.
- Steel deck shall be free from oil, dirt, and any other deleterious materials that would tend to reduce the bond between the concrete and the steel deck.
- Provide sufficient chairs, bolster bars, etc. to maintain the welded wire fabric and reinforcement bars at the depth specified.
- Slump tests shall be made prior to the addition of plasticizers. concrete for the preparation of test cylinders shall be taken from the hose end for concrete placed by pump.
- Place concrete in a manner so as to prevent segregation of the mix. Delay floating and troweling operations until the concrete has lost surface water sheen or all free water. Do not sprinkle free cement on the slab surface. Finishing of slab surfaces shall comply with the recommendations of ACI 302.1 and 304.
- Provide curing of deck immediately after finishing. Refer to the specifications for requirements. Protect the concrete surface between finishing operations on hot, dry, or windy days or any time plastic shrinkage cracks could develop by using wet burlap, plastic membranes, or fogging. Protect concrete deck at all times from rain, hail, or other injurious effects.

STRUCTURAL STEEL

- Contractor shall fabricate and erect steel in accordance with OSHA's safety requirements, including 29 CFR Part 1926 Safety Standards for Steel Erection.
- All wide flange structural steel shall conform to ASTM Specification A992, including beams and columns.
- Steel pipe shall conform to ASTM Specification A53, type E or S, Grade B.
- Other steel shapes such as plates, angles, & channels shall conform to ASTM Specification A36.
- Tubing (HSS sections) shall conform to ASTM Specification A500, Grade B for rectangular & square sections. Round sections (HSS sections) shall conform to ASTM Specification A500, Grade B.
- Connection bolts for structural steel members shall be high strength bolts which meet or exceed the requirements of ASTM A325, Type N, X, or SC Class A. Bolts shall be designed as bearing type bolts, except as noted. Bolts shall be installed in accordance with the "snug tight" condition as outlined in the "Specification for Structural Joints Using ASTM A325 or A490 bolts". Bolts shall have a hardened washer placed under the element to be tightened. Connections with oversized round holes and connections with holes slotted in the direction of load shall be designed as "slip critical" with SC Class A bolts. See documents for connections specified as slip critical. Bolts for slip-critical connections shall be tightened by the use of the turn-of-the-nut method or the use of load-indicating type bolts, or load-indicating washers, installed in accordance with the manufacturer's recommendations.
- Structural steel details and connections shall conform to the standard of the A.I.S.C.. Field connections shall be equivalent to standard framed connections using minimum ¾" A325 bolts with type ASTM A563 nuts and washers in accordance with Section 6 of the A.I.S.C. unless otherwise shown. Connections shall be bolted or welded - see details.
- Typical connection details along with a pre-designed Standard Wide Flange Beam Shear Connection detail are shown in the Typical Steel Detail sheets. All connections which are not covered by the typical details must be designed by the detailer. Signed and sealed design calculations must be submitted by a registered engineer for such connection conditions.
- Provide web connections for steel beams at columns unless otherwise noted.
- Grout for base plates shall be non-shrink and non-metallic conforming to ASTM C827, and shall have a specified compressive strength at 28 days of 5000 psi. Pre-grouting of base plates will not be permitted.
- The wet setting of base plates shall not be allowed.
- Splicing of structural steel members is prohibited without prior approval of the Engineer as to location and type of splice to be made. Any member having splice not shown and detailed on shop drawings will be rejected.
- Welding shall conform to the American Welding Society (AWS) Standard D1.1. Electrodes for shop and field welds shall conform to AWS A5.1 or AWS A5.5, Class E70XX, low hydrogen.
- Tube columns as noted on drawings shall be slotted to receive connection plates.
- Include an allowance for 1 ton of erected structural steel to be used as directed in the field for special conditions not covered by note or drawing (labor for erecting same to be included). Upon completion of the project, Owner shall be rebated for any unused portion of allowance materials.
- Anchor bolts (Anchor rods) shall conform to ASTM A307 or F1554 Grade 36, unless noted otherwise.
- Erection of the structural frame shall not proceed more than four levels above a level containing a completed concrete slab.
- Penetrations shall not be cut in structural steel members unless so indicated in the drawings or as reviewed by the engineer.
- Headed concrete anchors (H.C.A.) shall be Nelson or KSM deformed bar anchors (or acceptable equal), and shall conform to ASTM A108, Grades C-1010 through C-1020. Anchors shall be automatically end welded with suitable stud welding equipment. Welding shall be in accordance with the recommendations of the Nelson Stud Welding Company or the KSM Welding Systems Company.
- Beams shall be cambered upward where shown on the contract documents. Where no upward camber is indicated, any mill camber shall be detailed upward in the beams.

POST-INSTALLED ANCHORS

- Post-installed anchors shall only be used where specified on the drawings.
- Contractor shall obtain approval from Engineer of Record prior to using post-installed anchors for missing or misplaced cast-in-place anchors.
- Care shall be given to avoid conflicts with existing rebar. Holes shall be drilled and cleaned per the manufacturer's instructions. Anchors shall be installed per the manufacturer's installation instructions at not less than minimum edge distances and/or spacings indicated in the manufacturer's literature.
- Unless specified otherwise, anchors shall be embedded in the appropriate substrate with a minimum embedment of 8 times the nominal anchor diameter or the embedment required to support the intended load.
- Contractor to notify engineer prior to installation for anchor product approval chosen from list below.
- Substitution requests, for products other than those specified, shall be submitted to the Engineer with calculations that are prepared & sealed by a registered Professional Engineer showing that the substituted product will achieve an equivalent capacity using the appropriate design procedure required by the Building Code.
- Contact Simpson Strong-Tie at (800) 999-5099 or HILTI at (800) 879-6000 X7980 for product related questions and availability.
- Acceptable products for installation in concrete are as follows:
  - Expansion anchors shall be:
    - Simpson Strong-Tie "Strong-Bolt" per ICC ESR-1771
    - Simpson Strong-Tie "Strong-Bolt 2" per ICC ESR-3037
    - HILTI "Kwik Bolt TZ" per ICC ESR-1917
  - Screw anchors shall be:
    - Simpson Strong-Tie "Titen HD" per ICC ESR-2713
    - HILTI "Kwik HUS-EZ" per ICC ESR-3027
  - Adhesive anchors shall be:
    - Simpson Strong-Tie "SET-XP Epoxy-Tie Adhesive" per ICC ESR-2508
    - HILTI "RE500-SD Epoxy Adhesive" per ICC ESR-2322
    - HILTI "HIT-HY200 Adhesive" per ICC ESR-3187
  - Powder Actuated Fasteners shall be:
    - Simpson Stong-Tie "Powder-Driven Fasteners" per ICC ESR-2138
    - HILTI "X-U Powder-Driven Fasteners" per ICC ESR-2269
- Acceptable products for installation in grout filled concrete block are as follows:
  - Expansion anchors shall be:
    - Simpson Strong-Tie "Wedge-All" per ICC ESR-1396
    - HILTI "Kwik Bolt 3" per ICC ESR-1385
  - Screw anchors shall be:
    - Simpson Strong-Tie "Titen HD" per ICC ESR-1056
  - Adhesive anchors shall be:
    - HILTI "HIT-HY 70 Adhesive Anchoring System" per ICC ESR-2682
- Acceptable products for installation in the soffit of concrete over profile metal deck are as follows:
  - Expansion anchors shall be:
    - Simpson Strong-Tie "Strong-Bolt" per ICC ESR-1771
    - HILTI "Kwik Bolt TZ" per ICC ESR-1917
    - Simpson Strong-Tie "Strong-Bolt 2" per ICC ESR-3037
  - Screw anchors shall be:
    - Simpson Strong-Tie "Titen HD" per ICC ESR-2713

COORDINATION

- Only certain of the required sleeve openings in structural framing component members, and only certain of the required framed openings in and/or through structural assembly are indicated on the structural series drawings. However, all sleeves, inserts and openings, including frames and/or sleeves, therefore, shall be provided for passage, provision and/or incorporation of the work of the contract, including but not limited to Mechanical, Electrical, and Plumbing work. The providing for sleeves or framed openings shall include the verification of sizes, alignment, dimension, position, locations, elevations, and grades as required to serve the intended purpose. Openings not indicated on the structural series drawings, but required as above, shall have been approved by the engineer.
- Refer to Architectural, Mechanical, Electrical, and Plumbing series drawings for floor elevations, slopes, drains, and location of depressed and elevated floor areas.
- Structural series drawings shall be compared with drawings of other series; differences shall be referred to the Architect for instruction.
- Compatibility of accommodation and provision for building equipment supported on or from structural components shall be verified as to size, dimension, clearances, accessibility, weights, and reaction with the equipment for which the accommodation has been designed prior to submission of shop drawings and submittal data for each equipment and for structural components; differences shall be referred to the Architect for review and approval and notation.
- The structural system of this building is designed to perform as a completed unit. Prior to completion of the structure, structural components may be unstable and it is the responsibility of the contractor, or the client in the absence of a general contractor, to provide temporary shoring and/or bracing as required for the stability of the incomplete structure and for the safety of all on-site personnel.



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1405 WILDCAT HOLLOW  
AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
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| A     | PERMIT SET  | 12.19.19 |



STRUCTURAL NOTES

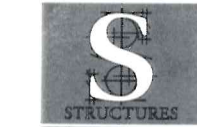
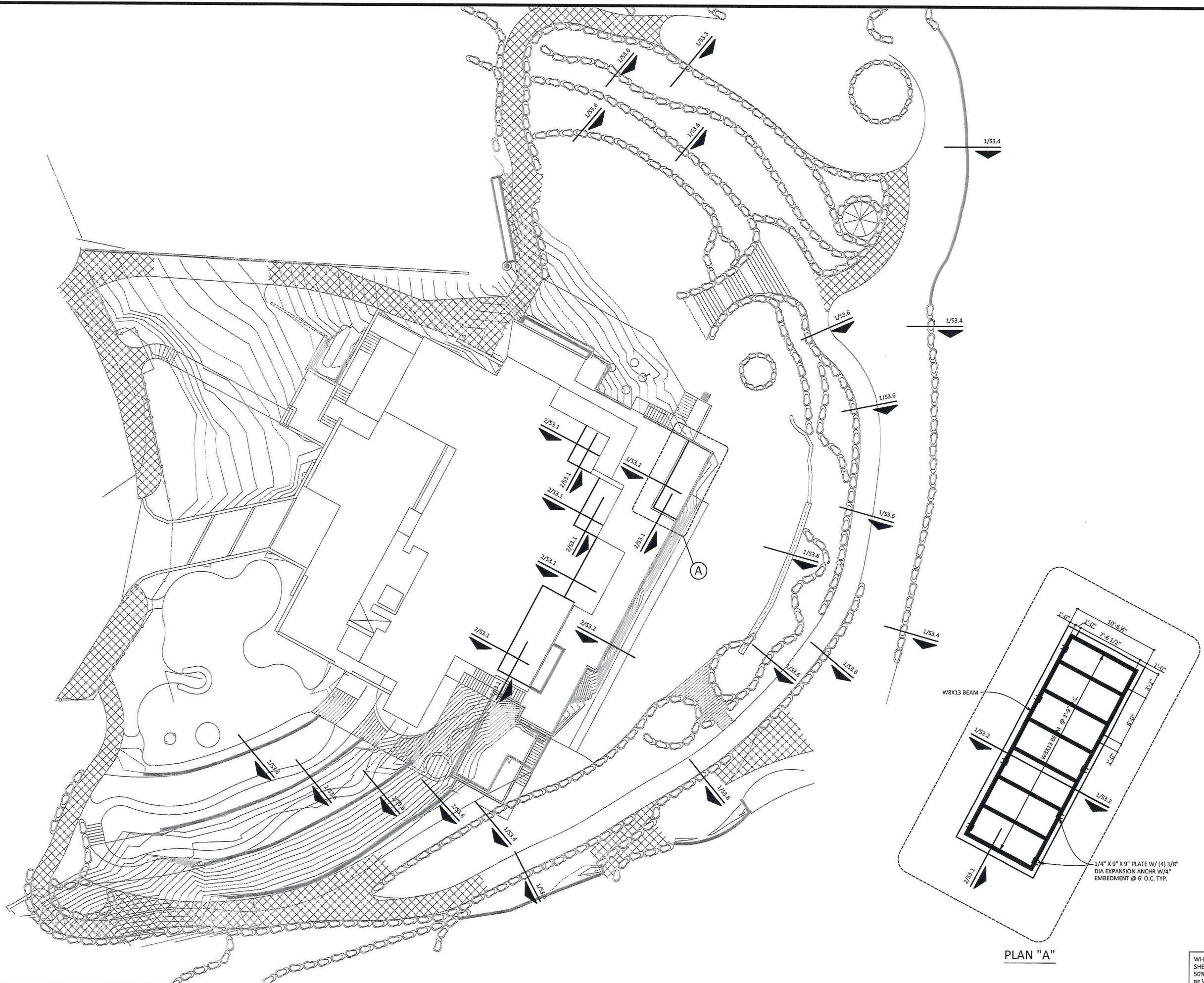
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| DRAWN BY:   | UG | CONTACT:       | DA |
| CHECKED BY: | DA | JOB #: R19.489 |    |

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OVERALL SITE PLAN

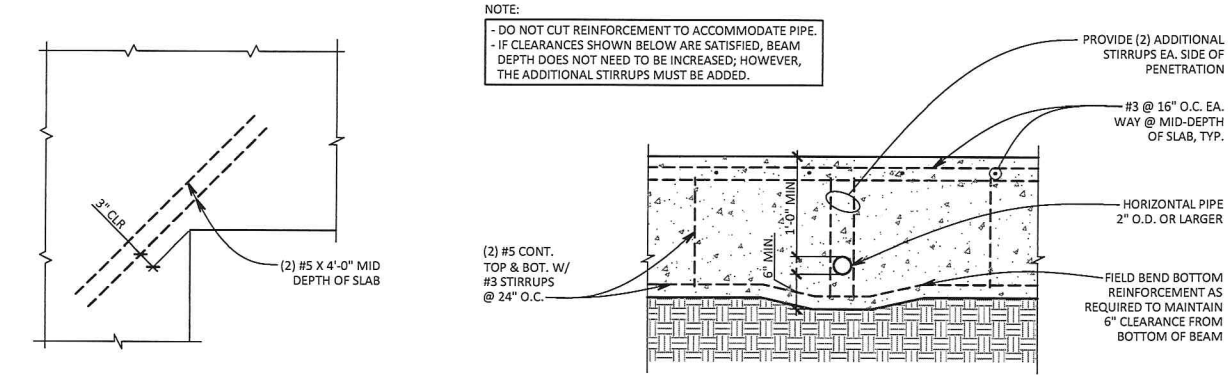
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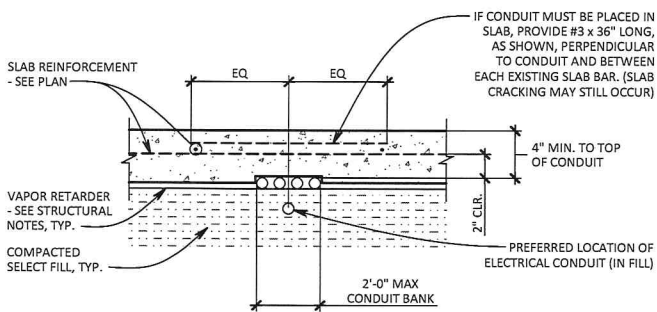


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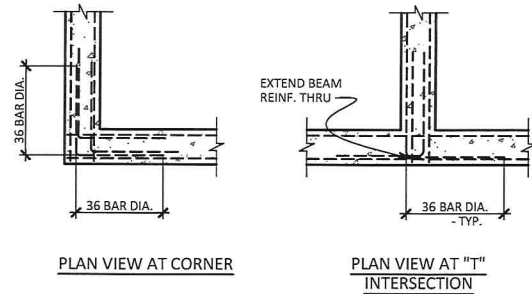


1 PLAN AT INSIDE CORNER  
3 / 4" = 1' - 0"

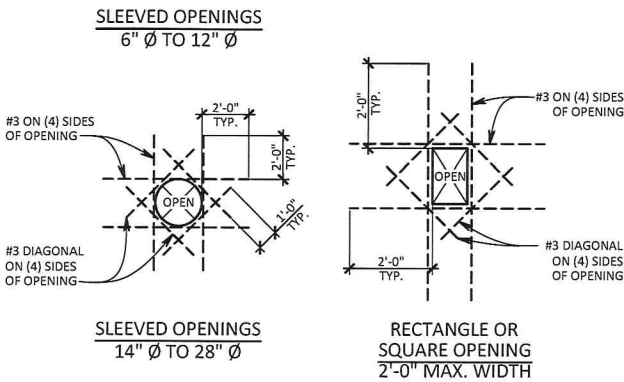
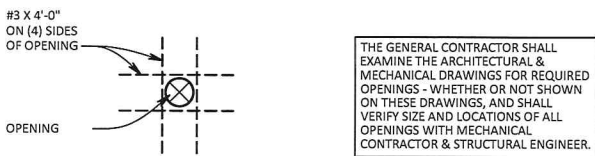
2 HORIZONTAL PENETRATION OF GRADE BEAM  
3 / 4" = 1' - 0"



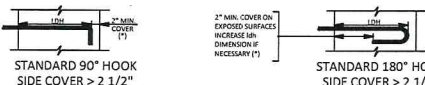
3 SLAB REINFORCING AT CONDUIT  
1 1 / 2" = 1' - 0"



4 TYPICAL GRADE BEAM BAR PLACEMENT DETAILS  
N.T.S.



5 TYPICAL REINFORCEMENT AT SLEEVES OR OPENINGS THRU SLAB ON GRADE  
N.T.S.

| 'LDH' TENSION DEVELOPMENT LENGTH (EMBEDMENT LENGTH) FOR STANDARD END HOOKS          |              |              |              |              |              |
|-------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|
| (GRADE 60 UNCOATED BARS)                                                            |              |              |              |              |              |
| NORMAL WEIGHT CONCRETE                                                              |              |              |              |              |              |
|  |              |              |              |              |              |
| BAR SIZE                                                                            | f'c=3000 PSI | f'c=4000 PSI | f'c=5000 PSI | f'c=6000 PSI | f'c=8000 PSI |
|                                                                                     | LDH          | LDH          | LDH          | LDH          | LDH          |
| #3                                                                                  | 6"           | 6"           | 6"           | 6"           | 6"           |
| #4                                                                                  | 8"           | 7"           | 6"           | 6"           | 6"           |
| #5                                                                                  | 10"          | 9"           | 8"           | 7"           | 6"           |
| #6                                                                                  | 12"          | 10"          | 9"           | 8"           | 7"           |
| #7                                                                                  | 14"          | 12"          | 11"          | 10"          | 9"           |
| #8                                                                                  | 16"          | 14"          | 12"          | 11"          | 10"          |
| #9                                                                                  | 18"          | 15"          | 14"          | 13"          | 11"          |
| #10                                                                                 | 20"          | 17"          | 15"          | 14"          | 12"          |
| #11                                                                                 | 22"          | 19"          | 17"          | 16"          | 14"          |

- NOTES:
1. WHEN EITHER SIDE OR END COVER IS SMALLER THAN 2 1/2", MULTIPLY "LDH" BY 1.4.
  2. END CONCRETE COVER (90° HOOKS) ≥ 2".
  3. \* FOR 180° HOOKS AT RIGHT ANGLES TO EXPOSED SURFACES, 2" MINIMUM COVER TO TAIL SHALL BE PROVIDED.

| TENSION LAP SPLICES - CLASS B - TOP & BOTTOM BARS |                |        |                |        |                |        |                |        |                |        |
|---------------------------------------------------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|
| (GRADE 60 UNCOATED BARS)                          |                |        |                |        |                |        |                |        |                |        |
| NORMAL WEIGHT CONCRETE                            |                |        |                |        |                |        |                |        |                |        |
| BAR SIZE                                          | f'c = 3000 PSI |        | f'c = 4000 PSI |        | f'c = 5000 PSI |        | f'c = 6000 PSI |        | f'c = 8000 PSI |        |
|                                                   | TOP            | BOTTOM | TOP            | BOTTOM | TOP            | BOTTOM | TOP            | BOTTOM | TOP            | BOTTOM |
| #3                                                | 28"            | 22"    | 24"            | 19"    | 22"            | 17"    | 20"            | 16"    | 17"            | 16"    |
| #4                                                | 37"            | 29"    | 32"            | 25"    | 29"            | 22"    | 26"            | 20"    | 23"            | 18"    |
| #5                                                | 47"            | 36"    | 40"            | 31"    | 36"            | 28"    | 33"            | 25"    | 29"            | 22"    |
| #6                                                | 56"            | 43"    | 48"            | 37"    | 43"            | 33"    | 40"            | 31"    | 34"            | 26"    |
| #7                                                | 81"            | 63"    | 70"            | 54"    | 63"            | 49"    | 58"            | 44"    | 50"            | 38"    |
| #8                                                | 93"            | 72"    | 80"            | 62"    | 72"            | 55"    | 66"            | 51"    | 57"            | 44"    |
| #9                                                | 105"           | 81"    | 91"            | 70"    | 81"            | 63"    | 74"            | 57"    | 64"            | 49"    |
| #10                                               | 118"           | 91"    | 102"           | 79"    | 91"            | 70"    | 83"            | 64"    | 72"            | 56"    |
| #11                                               | 131"           | 101"   | 113"           | 87"    | 101"           | 78"    | 93"            | 71"    | 80"            | 62"    |

- NOTES:
1. TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', CLEAR COVER IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'ld' IS NOT LESS THAN CODE MINIMUM OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2X 'db' AND CLEAR COVER IS NOT LESS THAN 'db'. WHERE db IS THE NOMINAL DIAMETER OF THE BAR.
  2. 'TOP' BARS ARE HORIZONTAL REBAR WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS AT THE END DEVELOPMENT LENGTH.
  3. FOR LIGHT WEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
  4. FOR EPOXY COATED BARS, MULTIPLY TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.
  5. FOR CLASS "A" SPLICE USE VALUE AS NOTED IN THE TENSION DEVELOPMENT LENGTH TABLE.

| 'LD' TENSION DEVELOPMENT LENGTH |                |           |                |           |                |           |                |           |                |           |
|---------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
| (GRADE 60 UNCOATED BARS)        |                |           |                |           |                |           |                |           |                |           |
| NORMAL WEIGHT CONCRETE          |                |           |                |           |                |           |                |           |                |           |
| BAR SIZE                        | f'c = 3000 PSI |           | f'c = 4000 PSI |           | f'c = 5000 PSI |           | f'c = 6000 PSI |           | f'c = 8000 PSI |           |
|                                 | LD TOP         | LD BOTTOM | LD TOP         | LD BOTTOM | LD TOP         | LD BOTTOM | LD TOP         | LD BOTTOM | LD TOP         | LD BOTTOM |
| #3                              | 22"            | 17"       | 19"            | 15"       | 17"            | 13"       | 15"            | 12"       | 13"            | 12"       |
| #4                              | 29"            | 22"       | 25"            | 19"       | 22"            | 17"       | 20"            | 16"       | 18"            | 14"       |
| #5                              | 36"            | 28"       | 31"            | 24"       | 28"            | 22"       | 25"            | 20"       | 22"            | 17"       |
| #6                              | 43"            | 33"       | 37"            | 29"       | 33"            | 26"       | 31"            | 24"       | 26"            | 20"       |
| #7                              | 63"            | 48"       | 54"            | 42"       | 49"            | 37"       | 44"            | 34"       | 38"            | 30"       |
| #8                              | 72"            | 55"       | 62"            | 48"       | 55"            | 43"       | 51"            | 39"       | 44"            | 34"       |
| #9                              | 81"            | 62"       | 70"            | 54"       | 63"            | 48"       | 57"            | 44"       | 49"            | 38"       |
| #10                             | 91"            | 70"       | 79"            | 61"       | 70"            | 54"       | 64"            | 49"       | 56"            | 43"       |
| #11                             | 101"           | 78"       | 87"            | 67"       | 78"            | 60"       | 71"            | 55"       | 62"            | 48"       |

- NOTES:
1. TABULATED VALUES ARE APPLICABLE ONLY IF CLEAR COVER OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 'db', AND STIRRUPS OR TIES THROUGHOUT 'LD' IS NOT LESS THAN CODE MINIMUM, OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2X 'db' AND CLEAR COVER IS NOT LESS THAN 'db'. WHERE db IS THE NOMINAL DIAMETER OF THE BAR.
  2. 'TOP' BARS ARE HORIZONTAL REBAR WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPMENT LENGTH.
  3. FOR LIGHT WEIGHT CONCRETE, MULTIPLY TABULATED VALUES BY 1.3.
  4. FOR EPOXY COATED BARS, MULTIPLY TABULATED VALUES BY 1.5 FOR BOTTOM BARS, AND BY 1.3 FOR TOP BARS.
  5. FOR REINFORCEMENT OTHER THAN GRADE 60, MODIFY THE TABULATED VALUES BY THE RATIO OF THE REINFORCEMENT YIELD STRENGTH DIVIDED BY 60 KSI.

| 'LDC' COMPRESSION DEVELOPMENT LENGTH AND COMPRESSION LAP SPLICES |                |                    |                     |
|------------------------------------------------------------------|----------------|--------------------|---------------------|
| (GRADE 60 UNCOATED BARS)                                         |                |                    |                     |
| NORMAL WEIGHT CONCRETE                                           |                |                    |                     |
| BAR SIZE                                                         | f'c ≥ 3000 PSI | MINIMUM LAP SPLICE |                     |
|                                                                  | LDC            | STANDARD LAP       | WITH COLUMN SPIRALS |
| #3                                                               | 9"             | 12"                | 12"                 |
| #4                                                               | 11"            | 15"                | 12"                 |
| #5                                                               | 14"            | 19"                | 14"                 |
| #6                                                               | 17"            | 23"                | 17"                 |
| #7                                                               | 20"            | 26"                | 20"                 |
| #8                                                               | 22"            | 30"                | 23"                 |
| #9                                                               | 25"            | 34"                | 25"                 |
| #10                                                              | 28"            | 38"                | 29"                 |
| #11                                                              | 31"            | 42"                | 32"                 |

- NOTES:
1. STANDARD LAP SPLICE LENGTH FOR COMPRESSION BARS = 30 BAR DIAMETERS, BUT NOT LESS THAN 12".
  2. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, SPLICE LENGTH SHALL BE THE LARGER OF LDC.
  3. SPIRALS SHALL CONFORM TO ACI 7.10.4 & 10.9.3.

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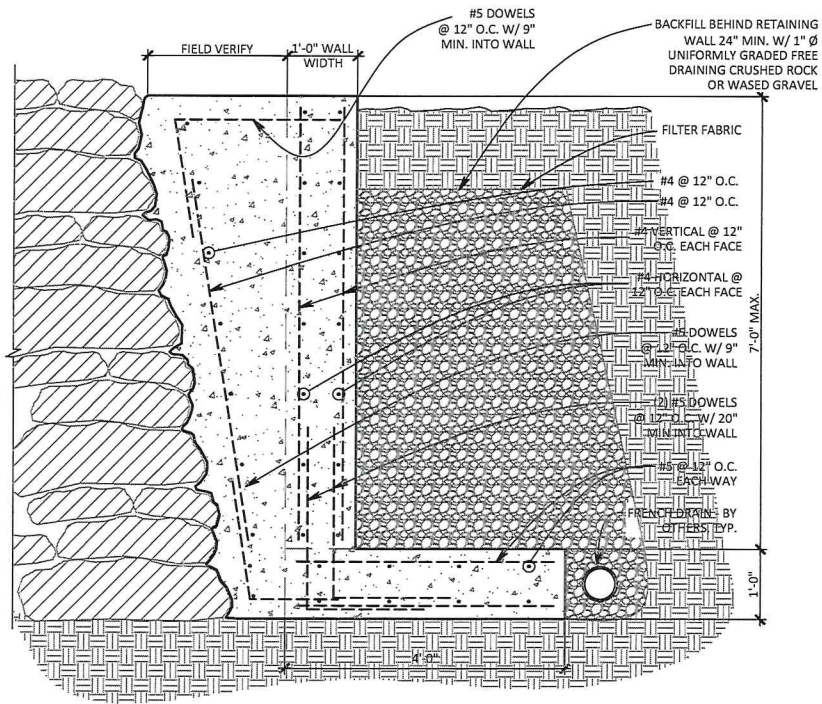
RETAINING WALL DETAIL

|             |     |                |    |
|-------------|-----|----------------|----|
| DRAWN BY:   | LIG | CONTACT:       | DA |
| CHECKED BY: | DA  | JOB #: R19.489 |    |

S3.0



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NOTES:

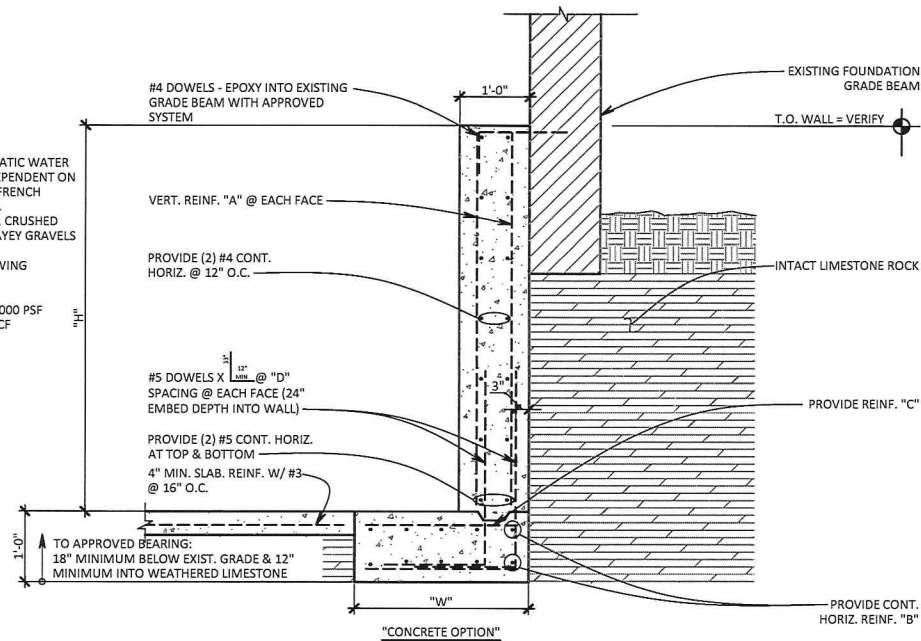
1. WALL DESIGNS DO NOT INCLUDE HYDROSTATIC WATER PRESSURE BEHIND THE WALL. DESIGN IS DEPENDENT ON INSTALLATION OF WRAPPED GRAVEL AND FRENCH DRAIN. REFER TO CIVIL FOR DRAIN DETAILS.
2. BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
3. ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
Fc > 4,000 PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 250 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 40 PSF  
SURCHARGE ON TOE = 0 PSF

| FACTORS OF SAFETY     | REQ'D | ACTUAL (7'-0" WALL) |
|-----------------------|-------|---------------------|
| 1. SLIDING =          | >1.5  | 2.91                |
| 2. OVERTURNING =      | >1.5  | 2.51                |
| 3. BEARING PRESSURE = | >1.0  | 1.27                |

1 CONCRETE RETAINING WALL DETAIL  
3/4" = 1' - 0"

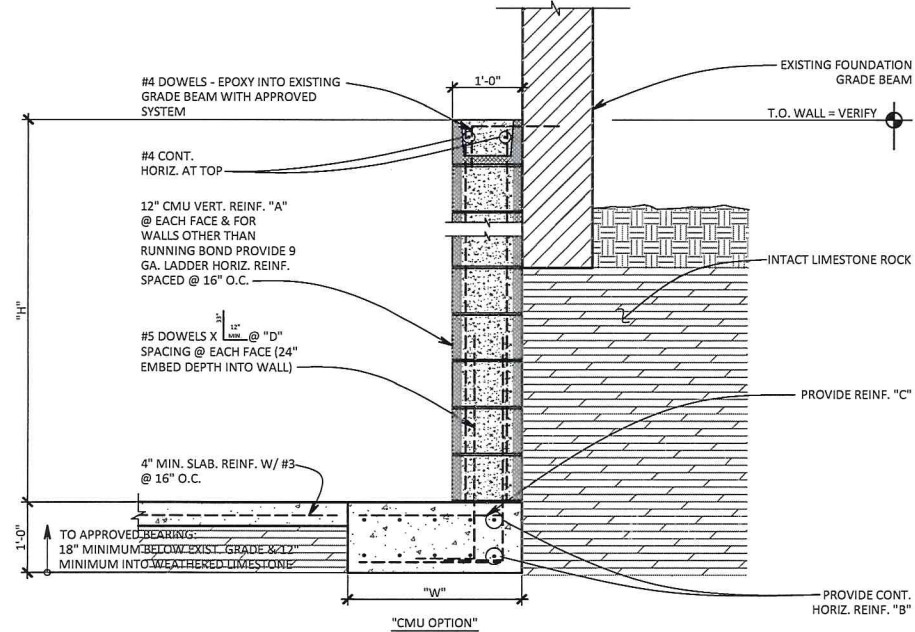
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3. ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
Fc > 4,000 PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 250 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 40 PSF  
SURCHARGE ON TOE = 0 PSF



| RETAINING WALL SCHEDULE |               |               |               |             |       | FACTOR OF SAFETY |             |                  |
|-------------------------|---------------|---------------|---------------|-------------|-------|------------------|-------------|------------------|
| "H"                     | REINF. "A"    | REINF. "B"    | REINF. "C"    | "D" SPACING | "W"   | SLIDING          | OVERTURNING | BEARING PRESSURE |
| ≤ 4'-0"                 | #5 @ 12" O.C. | #5 @ 12" O.C. | #5 @ 12" O.C. | @ 12" O.C.  | 2'-6" | N/A              | 2.05        | 2.90             |
| ≤ 7'-0"                 | #5 @ 12" O.C. | #5 @ 12" O.C. | #5 @ 12" O.C. | @ 12" O.C.  | 4'-3" | N/A              | 1.70        | 2.47             |
| ≤ 10'-0"                | #5 @ 12" O.C. | #5 @ 12" O.C. | #6 @ 12" O.C. | @ 12" O.C.  | 6'-6" | N/A              | 1.56        | 2.29             |

2 SUBTERRANEAN ROOM RETAINING WALL DETAIL & SCHEDULE  
3/4" = 1' - 0"



NOTES:

1. WALL DESIGNS DO NOT INCLUDE HYDROSTATIC WATER PRESSURE BEHIND THE WALL. DESIGN IS DEPENDENT ON INSTALLATION OF WRAPPED GRAVEL AND FRENCH DRAIN. REFER TO CIVIL FOR DRAIN DETAILS.
2. BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
3. ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
Fc > 4,000 PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 250 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 40 PSF  
SURCHARGE ON TOE = 0 PSF

| RETAINING WALL SCHEDULE |               |               |               |             |       | FACTOR OF SAFETY |             |                  |
|-------------------------|---------------|---------------|---------------|-------------|-------|------------------|-------------|------------------|
| "H"                     | REINF. "A"    | REINF. "B"    | REINF. "C"    | "D" SPACING | "W"   | SLIDING          | OVERTURNING | BEARING PRESSURE |
| ≤ 4'-0"                 | #5 @ 12" O.C. | #5 @ 12" O.C. | #5 @ 12" O.C. | @ 12" O.C.  | 2'-6" | N/A              | 1.79        | 2.75             |
| ≤ 7'-0"                 | #5 @ 12" O.C. | #5 @ 12" O.C. | #5 @ 12" O.C. | @ 12" O.C.  | 4'-6" | N/A              | 1.61        | 2.55             |
| ≤ 10'-0"                | #5 @ 12" O.C. | #5 @ 12" O.C. | #6 @ 12" O.C. | @ 12" O.C.  | 7'-0" | N/A              | 1.51        | 2.44             |

WHEN PRINTED ON 11X17 SHEETS, REDUCE PRINT SCALE TO 50% SO THAT ALL SCALES SHALL BE 1/2 THE SIZE OF NOTED SCALES.



6926 N. LAMAR BLVD  
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PHONE: 512.499.0919  
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FIRM NO.: F-3323

NEW RETAINING WALLS AND  
SUBTERRANEAN ROOMS  
1405 WILDCAT HOLLOW  
AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
|-------|-------------|----------|
| A     | PERMIT SET  | 12.19.19 |



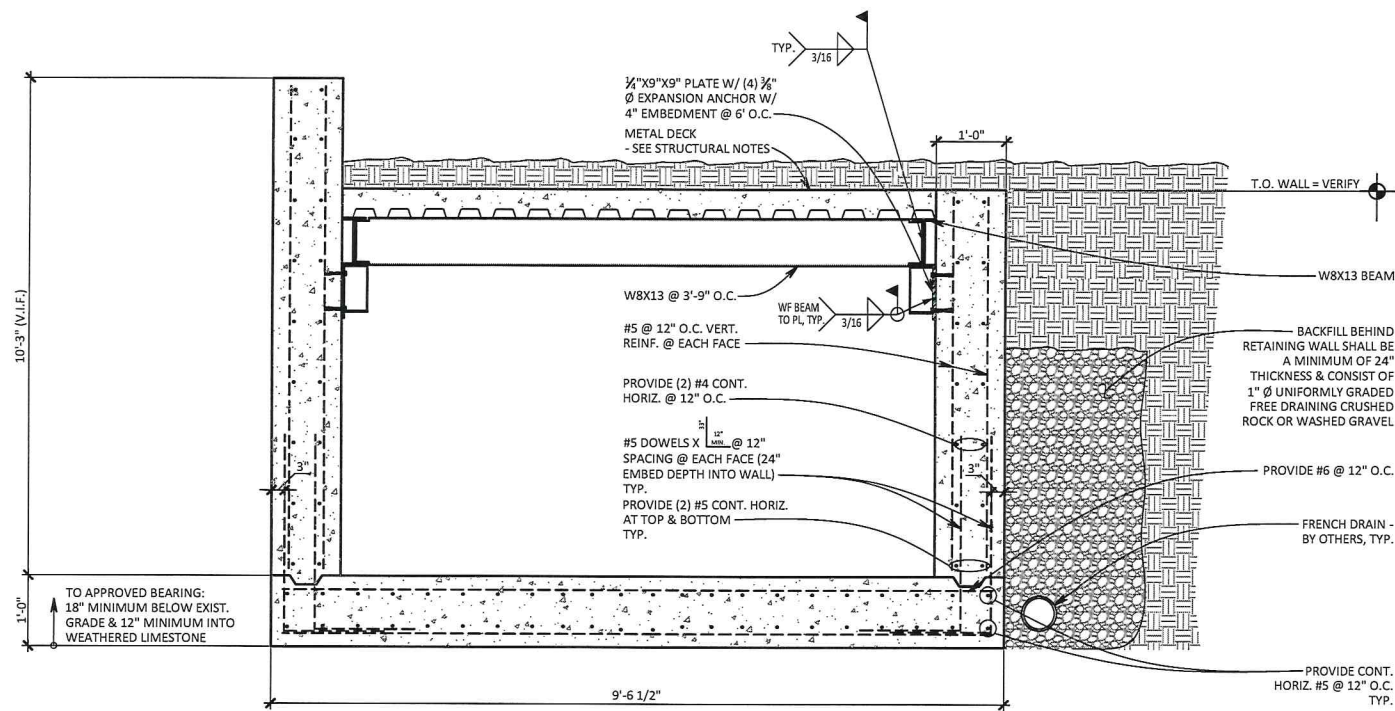
RETAINING WALL  
DETAILS

DRAWN BY: UG CONTACT: DA  
CHECKED BY: DA JOB #: R19-489

S3.1



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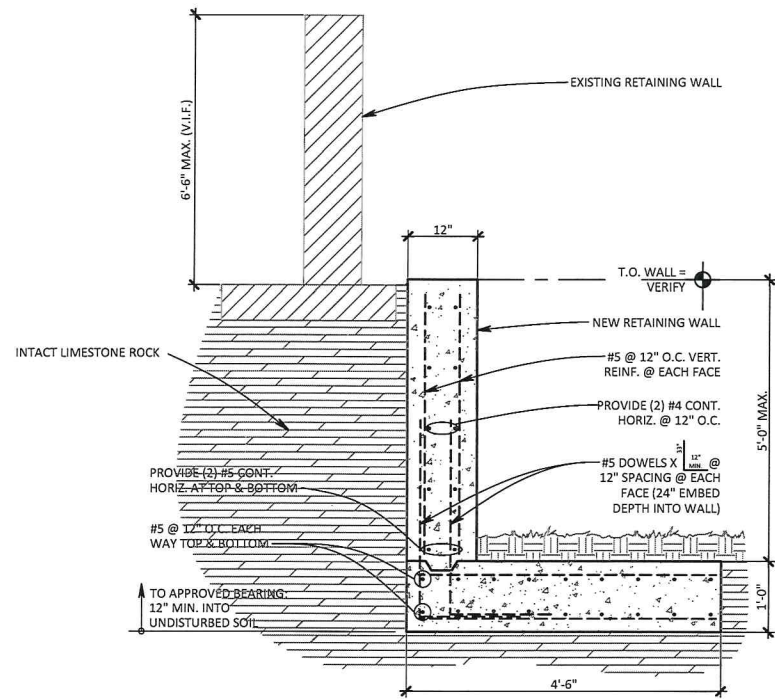


- NOTES:
1. WALL DESIGNS DO NOT INCLUDE HYDROSTATIC WATER PRESSURE BEHIND THE WALL. DESIGN IS DEPENDENT ON INSTALLATION OF WRAPPED GRAVEL AND FRENCH DRAIN. REFER TO CIVIL FOR DRAIN DETAILS.
  2. BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
  3. ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
F<sub>c</sub> > 4,000 PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 250 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 40 PSF  
SURCHARGE ON TOE = 0 PSF

| FACTORS OF SAFETY     | REQ'D | ACTUAL (5'-0" WALL) |
|-----------------------|-------|---------------------|
| 1. SLIDING =          | >1.5  | N/A                 |
| 2. OVERTURNING =      | >1.5  | N/A                 |
| 3. BEARING PRESSURE = | >1.0  | 2.06                |

## 1 SUBTERRAREAN ROOM RETAINING WALL DETAIL

3/4" = 1' - 0"



- NOTES:
1. WALL DESIGNS DO NOT INCLUDE HYDROSTATIC WATER PRESSURE BEHIND THE WALL. DESIGN IS DEPENDENT ON INSTALLATION OF WRAPPED GRAVEL AND FRENCH DRAIN. REFER TO CIVIL FOR DRAIN DETAILS.
  2. BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
  3. ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
F<sub>c</sub> > 4,000 PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 250 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 100 PSF  
SURCHARGE ON TOE = 0 PSF

| FACTORS OF SAFETY     | REQ'D | ACTUAL (5'-0" WALL) |
|-----------------------|-------|---------------------|
| 1. SLIDING =          | >1.5  | 1.51                |
| 2. OVERTURNING =      | >1.5  | 2.90                |
| 3. BEARING PRESSURE = | >1.0  | 4.33                |

## 2 RETAINING WALL DETAIL

3/4" = 1' - 0"

WHEN PRINTED ON 11X17 SHEETS, REDUCE PRINT SCALE TO 50% SO THAT ALL SCALES SHALL BE 1/2 THE SIZE OF NOTED SCALES.



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# NEW RETAINING WALLS AND SUBTERRANEAN ROOMS 1405 WILDCAT HOLLOW AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
|-------|-------------|----------|
| A     | PERMIT SET  | 12.19.19 |



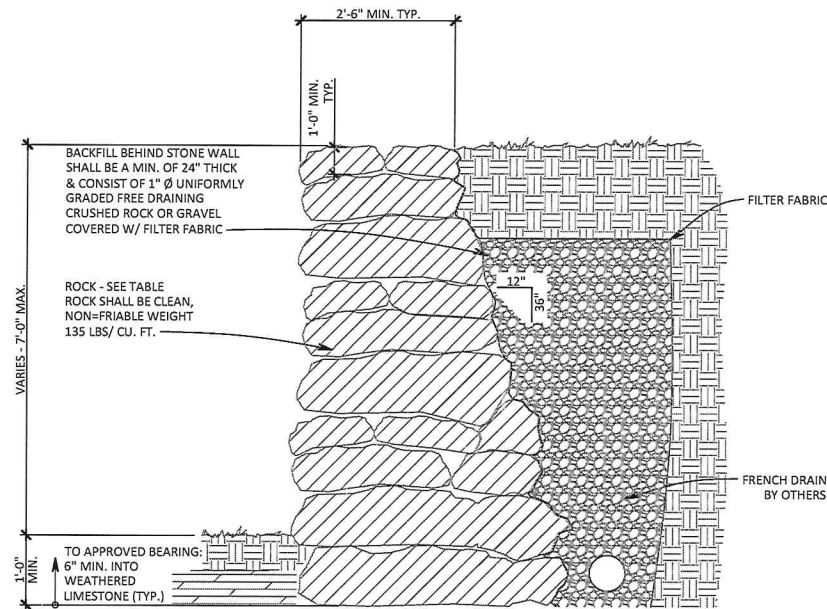
### RETAINING WALL DETAILS

|             |     |          |         |
|-------------|-----|----------|---------|
| DRAWN BY:   | LIG | CONTACT: | DA      |
| CHECKED BY: | DA  | JOB #:   | R19.489 |

## S3.2



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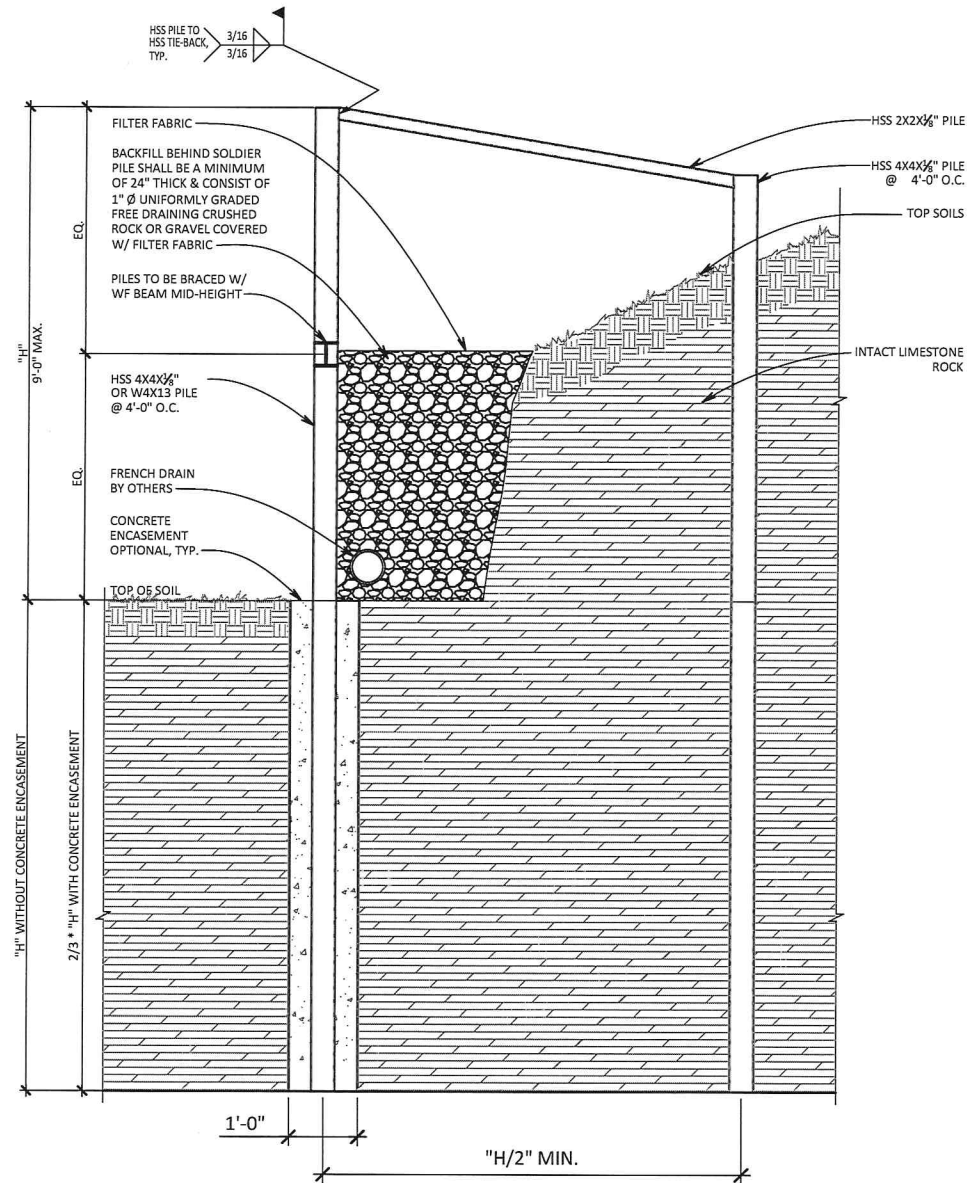


| GRAVITY WALL STONE REQUIREMENTS |                    |                          | FACTOR OF SAFETY |             |                  |
|---------------------------------|--------------------|--------------------------|------------------|-------------|------------------|
| HEIGHT FROM BOTTOM              | MINIMUM STONE SIZE | MINIMUM CONTACT AREA (%) | SLIDING          | OVERTURNING | BEARING PRESSURE |
| 1'-0"                           | 12" X 36" X 36"    | 50 %                     | 7.31             | 30.88       | 6.62             |
| 3'-0"                           | 12" X 42" X 36"    | 50 %                     | 3.45             | 7.80        | 2.75             |
| 5'-0"                           | 12" X 50" X 36"    | 50 %                     | 2.58             | 4.59        | 1.65             |
| 7'-0"                           | 12" X 58" X 36"    | 50 %                     | 2.21             | 3.40        | 1.19             |

- NOTES:
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  - BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
  - ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
 $f_c > 2,500$  PSI  
ALLOWABLE BEARING PRESSURE = 3,000 PSF  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 300 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 0 DEGREES  
SURCHARGE ON HEEL = 50 PSF  
SURCHARGE ON TOE = 0 PSF

## 1 GRAVITY RETAINING WALL DETAIL

3 / 4" = 1' - 0"



- NOTES:
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  - BACKFILL SOILS SHALL BE WASHED GRAVEL, CRUSHED LIMESTONE, CLEAN SAND, OR PUT RUN CLAYEY GRAVELS AND SANDS.
  - ABOVE VALUES ARE BASED ON THE FOLLOWING CRITERIA:  
FACTOR OF SAFETY = 1.2  
SOIL  $\phi$  = 30 DEGREES  
EQUIVALENT FLUID PRESSURE = 45 PCF  
PASSIVE PRESSURE = 330 PSF  
COEFFICIENT OF FRICTION = 0.6  
BACKFILL SLOPE = 20 DEGREES  
SURCHARGE ON RETAINING SIDE = 40 PSF  
SOIL DENSITY = 110 PCF  
ARCHING FACTOR = 1

## 2 SOLDIER PILE RETAINING WALL

3 / 4" = 1' - 0"

WHEN PRINTED ON 11X17 SHEETS, REDUCE PRINT SCALE TO 50% SO THAT ALL SCALES SHALL BE 1/2 THE SIZE OF NOTED SCALES.



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# NEW RETAINING WALLS AND SUBTERRANEAN ROOMS 1405 WILDCAT HOLLOW AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
|-------|-------------|----------|
| A     | PERMIT SET  | 12.19.19 |



RETAINING WALL  
DETAILS

|             |     |          |         |
|-------------|-----|----------|---------|
| DRAWN BY:   | LIG | CONTACT: | DA      |
| CHECKED BY: | DA  | JOB #:   | R19.489 |

S3.3

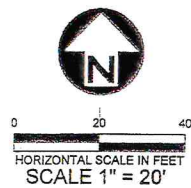


# LEGEND

|   |                                                              |
|---|--------------------------------------------------------------|
| ○ | IRON ROD SET WITH YELLOW CAP<br>STAMPED "LANDMARK SURVEYING" |
| ● | SQUARE BOLT FOUND                                            |
| ○ | IRON PIPE FOUND SIZE AS NOTED                                |
| ● | IRON ROD FOUND SIZE AS NOTED                                 |
| △ | 60D NAIL SET - TRAVERSE CONTROL POINT                        |
| + | SIGN                                                         |
| — | ELECTRIC UTILITY POLE                                        |
| — | ELECTRIC DOWN GUY ANCHOR                                     |
| — | ELECTRIC METER                                               |
| — | ELECTRIC JUNCTION BOX                                        |
| — | GAS VALVE                                                    |
| — | IRRIGATION CONTROL VALVE                                     |
| — | WASTE WATER CLEANOUT                                         |
| — | WATER METER                                                  |
| — | MAILBOX                                                      |
| — | PLAT RECORD                                                  |
| — | ADJOINER RECORD                                              |
| — | TREE SYMBOL, TAG # &<br>CRITICAL ROOT ZONE                   |
| — | ELEVATION SPOT                                               |
| — | SPOT OF FINISHED FLOOR ELEVATION                             |
| — | CONCRETE IMPROVEMENTS                                        |
| — | BARB WIRE FENCE                                              |
| — | RIGHT OF WAY LINE                                            |
| — | EASEMENT LINE                                                |
| — | ROAD PAVEMENT                                                |
| — | ELECTRIC OVERHEAD                                            |

# ABBREVIATIONS

|              |                                                   |
|--------------|---------------------------------------------------|
| O.P.R.T.C.T. | OFFICIAL PUBLIC<br>RECORDS TRAVIS<br>COUNTY TEXAS |
| R.P.R.T.C.T. | REAL PROPERTY<br>RECORDS TRAVIS<br>COUNTY TEXAS   |
| P.R.T.C.T.   | PLAT RECORDS<br>TRAVIS COUNTY<br>TEXAS            |
| IRF          | IRON ROD FOUND                                    |
| IRS          | IRON ROD SET                                      |
| IPF          | IRON PIPE FOUND                                   |
| BL           | BUILDING SETBACK                                  |
| B.S.L.       | BUILDING SETBACK LINE                             |
| (L1)         | LOWER LEVEL                                       |
| TCAD#        | TRAVIS COUNTY<br>APPRAISAL NUMBER                 |
| TBM          | TEMPORARY BENCHMARK                               |



# HORIZONTAL DATUM

TEXAS COORDINATE SYSTEM OF 1983, (CENTRAL ZONE-4203)  
NAD 83, (CORS) U.S. SURVEY FEET  
GEOID MODEL 12A (CONUS)

**TREE NOTE:**  
1. DETERMINATION AS TO WHETHER A TREE IS ALIVE OR DEAD IS NOT WITHIN THE FIELD OF EXPERTISE OF THE UNDERSIGNED SURVEYOR. LOCATION, DIMENSION AND TREE TYPE IS PART OF A STANDARD TREE SURVEY. TREES IDENTIFIED ON THIS TREE LIST AS DEAD ARE ONLY A FIELD OBSERVATION OF THE GENERAL APPEARANCE OF THE TREE AND IS NO WAY A STATEMENT OF FACT AS TO THE ACTUAL HEALTH CONDITION OF THE TREE.  
2. TREE SIZE WAS DETERMINED AS PER THE CITY OF WEST LAKE CODE "SEC. 22.03.304(b)(1)(C) ALL TREE SURVEYS MUST BE CONDUCTED BY A STATE-REGISTERED SURVEYOR OR ENGINEER PRIOR TO A PERMIT BEING ISSUED AND MUST INCLUDE ALL TREES WITH TRUNK DIAMETERS OF 3 INCHES OR GREATER AT 12 INCHES ABOVE THE GROUND."  
3. ONLY 3" AND LARGER TREES ARE SHOWN.  
4. TREE LOCATIONS AND SIZES WERE COLLECTED ON THE DATE OF PREVIOUS TREE SURVEY (DECEMBER 19, 2018), AND WERE NOT VERIFIED ON THIS UPDATE.

# VERTICAL DATUM

BASIS OF VERTICAL DATUM FOR THIS SURVEY IS CONTROL POINT LS#1 (MAG NAIL SET IN ASPHALT) ESTABLISHED USING REDUNDANT RTK METHODOLOGY UTILIZING LEICA SMARTNET NORTH AMERICAN NETWORK BASED ON RTCM-REFERENCE STATION 2292, GEOID MODEL 12A (CONUS), (DATUM NAVD 88), DIFFERENTIAL LEVELING FROM CONTROL POINT LS#1 WAS DONE TO ESTABLISH ELEVATION FOR CONTROL POINTS.  
SEE BELOW FOR DETAILS OF LS#1.

# LANDMARK SURVEYING CONTROL POINT (MAP COORDINATES)

| PT. NO. | NORTHING        | EASTING        | ELEVATION | DESCRIPTION  |
|---------|-----------------|----------------|-----------|--------------|
| LS#1    | 10,081,020.6580 | 3,097,117.0110 | 726.8690  | MAG NAIL SET |
| LS#2    | 10,081,130.6990 | 3,097,033.9580 | 725.7900  | MAG NAIL SET |
| LS#3    | 10,080,917.5808 | 3,097,063.6441 | 726.3755  | MAG NAIL SET |

# UPDATED TOPOGRAPHIC SURVEY OF A PORTION OF LOT 1, K & J P SUBDIVISION RECORDED IN VOLUME 91, PAGE 389, PLAT RECORDS OF TRAVIS COUNTY, TEXAS SHEET 1 OF 1

# TITLE COMMITMENT NOTE:

A TITLE COMMITMENT WAS NOT AVAILABLE AT THE TIME OF THIS SURVEY; THEREFORE, EASEMENTS MAY EXIST WHICH ARE NOT SHOWN HEREON.

NOTE:  
THIS DRAWING IS BASED ON MEASURED DISTANCES IN THE FIELD NOT ON GRID DISTANCES.  
UTILITY AND IMPROVEMENT NOTE:  
ONLY SURFACE EVIDENCE OF UTILITIES AND IMPROVEMENTS ARE SHOWN ON THIS SURVEY.

0.35 ACRES OUT OF THE  
WILKINSON SPARKS SURVEY No.4  
R. SCOTT GILL, TRUSTEE OF THE R. SCOTT GILL TRUST  
DATED OCTOBER 30, 2002 AND  
WILLIAM J. STEGEMAN, TRUSTEE OF THE WILLIAM J. STEGEMAN  
TRUST DATED MARCH 6, 2002  
AS TENANTS IN COMMON  
DOC#2013058711 O.P.R.T.C.T.  
1407 WILD CAT HOLLOW  
TCAD#0117130305

| TREE TAG NO. | DESCRIPTION                 | TREE TAG NO. | DESCRIPTION           | TREE TAG NO. | DESCRIPTION                | TREE TAG NO. | DESCRIPTION                  |
|--------------|-----------------------------|--------------|-----------------------|--------------|----------------------------|--------------|------------------------------|
| 1101         | 9" LIVE OAK                 | 1146         | 13" LIGUSTRUM         | 1195         | 24" LIVE OAK (MS12-10-8-5) | 1714         | 8" CEDAR                     |
| 1102         | 12" LIVE OAK                | 1147         | 8" HACKBERRY          | 1196         | 13" CEDAR (MS10-6)         | 1715         | 8" CEDAR                     |
| 1103         | 11" LIVE OAK                | 1148         | 6" CEDAR              | 1197         | 11" CEDAR                  | 1716         | 16" LIGUSTRUM                |
| 1104         | 11" CEDAR                   | 1149         | 16" CEDAR (MS11-10)   | 1198         | 8" CEDAR                   | 1717         | 7" LIGUSTRUM                 |
| 1105         | 9" HACKBERRY                | 1150         | 9" CEDAR (MS7-4)      | 1199         | 7" CEDAR (MS5-4)           | 1718         | 6" BUCKEYE (MS4-4)           |
| 1106         | 9" LIVE OAK (MS8-6)         | 1151         | 10" CEDAR             | 1243         | 15" LIVE OAK               | 1719         | 4" BUCKEYE                   |
| 1107         | 8" CEDAR                    | 1152         | 11" CEDAR             | 1244         | 12" LIVE OAK               | 1720         | 9" TEXAS PERSIMMON (MS5-4-3) |
| 1108         | 10" CEDAR                   | 1153         | 7" CHINABERRY         | 1245         | 13" LIVE OAK (MS10-5)      | 1721         | 4" CEDAR                     |
| 1109         | 10" CEDAR                   | 1154         | 6" CHINABERRY         | 1246         | 23" LIVE OAK (MS17-12)     | 1722         | 9" CEDAR                     |
| 1110         | 17" LIVE OAK                | 1155         | 6" CEDAR              | 1247         | 13" LIVE OAK               | 1723         | 5" CEDAR                     |
| 1111         | 11" LIVE OAK                | 1156         | 13" LIGUSTRUM         | 1248         | 11" CEDAR                  | 1724         | 6" CEDAR                     |
| 1112         | 15" LIVE OAK (MS11-8)       | 1157         | 10" LIVE OAK          | 1249         | 4" CEDAR                   | 1725         | 6" UNKNOWN (MS4-3)           |
| 1113         | 14" HACKBERRY               | 1158         | 10" RED OAK           | 1250         | 3" CEDAR ELM               | 1726         | 11" CEDAR (MS7-7)            |
| 1114         | 12" HACKBERRY               | 1159         | 5" LIGUSTRUM          | 1251         | 6" CEDAR                   | 1727         | 8" CEDAR                     |
| 1115         | 14" CEDAR ELM               | 1160         | 11" LIGUSTRUM (MS8-6) | 1252         | 3" CEDAR                   | 1728         | 4" LIGUSTRUM (MS3-2)         |
| 1116         | 19" LIVE OAK (MS14-9)       | 1161         | 10" LIGUSTRUM         | 1253         | 14" CEDAR (MS11-5)         | 1729         | 10" CEDAR                    |
| 1117         | 6" CEDAR                    | 1162         | 13" CEDAR (MS9-8)     | 1254         | 6" CEDAR                   | 1730         | 7" CEDAR                     |
| 1118         | 9" LIGUSTRUM                | 1163         | 14" CEDAR (MS10-7)    | 1255         | 5" CEDAR                   | 1731         | 9" CEDAR (MS7-4)             |
| 1119         | 13" CEDAR                   | 1164         | 19" LIVE OAK          | 1256         | 5" HACKBERRY               | 1732         | 4" LIGUSTRUM                 |
| 1120         | 19" LIVE OAK                | 1165         | 6" CEDAR              | 1257         | 8" CEDAR                   | 1733         | 13" LIVE OAK                 |
| 1121         | 30" CEDAR (MS20-10-10)      | 1166         | 7" CEDAR              | 1258         | 4" CEDAR                   | 1734         | 8" LIVE OAK                  |
| 1122         | 13" BUR OAK (MS10-6)        | 1167         | 12" CEDAR (MS7-5-4)   | 1259         | 7" CEDAR ELM (MS5-3)       | 1735         | 8" CEDAR                     |
| 1123         | 14" BUR OAK (MS9-9)         | 1168         | 11" CEDAR             | 1260         | 9" UNKNOWN (MS7-4)         | 1736         | 4" CEDAR                     |
| 1124         | 6" HACKBERRY                | 1169         | 11" CEDAR             | 1261         | 4" CEDAR                   | 1737         | 5" CEDAR                     |
| 1125         | 9" CEDAR                    | 1170         | 7" CEDAR              | 1262         | 13" CEDAR                  | 1738         | 4" HACKBERRY                 |
| 1126         | 13" CEDAR (MS10-5)          | 1171         | 4" CEDAR              | 1263         | 5" CEDAR ELM               | 1739         | 11" LIVE OAK                 |
| 1127         | 17" CEDAR                   | 1172         | 13" CEDAR             | 1264         | 5" CEDAR                   | 1740         | 5" CEDAR                     |
| 1128         | 18" LIVE OAK (MS13-9)       | 1173         | 15" CEDAR (MS12-5)    | 1265         | 4" CEDAR                   | 1741         | 9" CEDAR                     |
| 1129         | 9" LIGUSTRUM (MS6-6)        | 1174         | 6" CEDAR              | 1266         | 9" UNKNOWN (MS4-4-3-3)     | 1742         | 6" CEDAR                     |
| 1130         | 11" CEDAR                   | 1175         | 6" CEDAR              | 1267         | 12" CEDAR                  | 1743         | 8" CEDAR                     |
| 1131         | 9" CEDAR                    | 1176         | 9" RED OAK (MS7-4)    | 1268         | 9" CEDAR ELM (MS6-6)       | 1744         | 8" CEDAR                     |
| 1132         | 28" RED OAK (MS12-11-10-10) | 1177         | 9" CEDAR (MS6-4)      | 1269         | 6" HACKBERRY               | 1745         | 14" CEDAR                    |
| 1133         | 23" LIVE OAK                | 1178         | 5" RED OAK            | 1270         | 5" HACKBERRY               | 1746         | 5" LIGUSTRUM                 |
| 1134         | 26" LIVE OAK                | 1179         | 6" RED OAK            | 1271         | 6" HACKBERRY (MS4-3)       | 1747         | 12" CEDAR                    |
| 1135         | 8" RED OAK                  | 1180         | 15" CEDAR (MS10-7-3)  | 1272         | 4" HACKBERRY               | 1748         | 5" ASH                       |
| 1136         | 11" RED OAK (MS8-6)         | 1181         | 4" CEDAR              | 1273         | 4" UNKNOWN                 | 1749         | 7" CEDAR                     |
| 1137         | 9" CEDAR                    | 1182         | 4" CEDAR              | 1274         | 4" ASH                     | 1750         | 12" CEDAR                    |
| 1138         | 7" HACKBERRY (MS5-3)        | 1183         | 4" CEDAR              | 1275         | 7" CEDAR ELM               | 1751         | 20" LIGUSTRUM (MS10-3)       |
| 1139         | 10" CEDAR                   | 1184         | 4" CEDAR              | 1276         | 11" LIVE OAK               | 1752         | 8" CEDAR                     |
| 1140         | 14" CEDAR (MS9-6-4)         | 1185         | 6" CEDAR              | 1277         | 16" LIVE OAK               | 1753         | 4" HACKBERRY                 |
| 1141         | 10" CEDAR (MS7-6)           | 1186         | 10" CEDAR             | 1278         | 24" LIVE OAK (MS17-13)     | 1754         | 9" CEDAR                     |
| 1142         | 4" ASH                      | 1187         | 17" CEDAR (MS11-7-5)  | 1279         | 11" CEDAR                  | 1755         | 8" RED OAK                   |
| 1143         | 6" CEDAR                    | 1188         | 11" CEDAR             | 1280         | 6" HACKBERRY               | 1756         | 7" CEDAR                     |
| 1144         | 6" CEDAR                    | 1189         | 14" CEDAR (MS10-8)    | 1281         | 3" LIGUSTRUM               | 1757         | 10" LIVE OAK (MS7-5)         |
| 1145         | 5" UNKNOWN (MS4-4) (DEAD)   | 1190         | 3" CEDAR              | 1282         | 5" LIGUSTRUM               | 1758         | 9" RED OAK                   |
|              |                             | 1191         | 7" CEDAR              | 1283         | 5" CEDAR ELM               | 1759         | 6" RED OAK                   |
|              |                             | 1192         | 9" LIVE OAK           | 1284         | 4" CHINABERRY              |              |                              |
|              |                             | 1193         | 16" CEDAR (MS12-8)    | 1285         | 6" CHINABERRY              |              |                              |
|              |                             | 1194         | 9" LIVE OAK           | 1286         | 8" LIGUSTRUM               |              |                              |

# LIST OF NEWLY PLANTED TREES (BY OWNER)

| TREE TAG NO. | DESCRIPTION |
|--------------|-------------|
| 3325         | 6" LIVE OAK |
| 3326         | 6" LIVE OAK |
| 3327         | 4" RED OAK  |
| 3328         | 4" RED OAK  |
| 3329         | 7" RED OAK  |
| 3330         | 4" RED OAK  |
| 3331         | 6" LIVE OAK |
| 3387         | 6" LIVE OAK |
| 3524         | 5" LIVE OAK |

# FLOOD PLAIN NOTE

THE PROPERTY DESCRIBED HEREON IS CONTAINED WITHIN ZONE "X", FROM FIRM MAP NUMBER 48453C0445J, DATED JANUARY 6, 2016, AS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THE PURPOSE OF WHICH IS FOR FLOOD INSURANCE ONLY.

# NOTES:

- 1) PER CLIENT'S REQUEST, THE PURPOSE OF THIS SURVEY IS TO UPDATE TOPOGRAPHIC SURVEY ONLY.
- 2) LANDMARK SURVEYING, LP DID NOT VERIFY MATTERS RELATING TO BOUNDARY, TREES, UTILITIES AND CERTAIN AS-BUILT IMPROVEMENTS SHOWN ON THIS SURVEY. SEE STANDARD LAND, AS-BUILT, AND TREE SURVEY DATED DECEMBER 19, 2018, BY LANDMARK SURVEYING, LP.
- 3) TOPOGRAPHIC CONTOURS AND GRADES SHOWN HEREON REPRESENT EXISTING CONDITIONS ON DATE OF FIELD WORK, JULY 29, 2019. ON-GOING LANDSCAPE CONSTRUCTION OF VARIOUS LOCATIONS MIGHT ADVERSELY IMPACT THE ACCURACY OF TOPOGRAPHY AND/OR IMPROVEMENTS SHOWN ON THIS SURVEY.

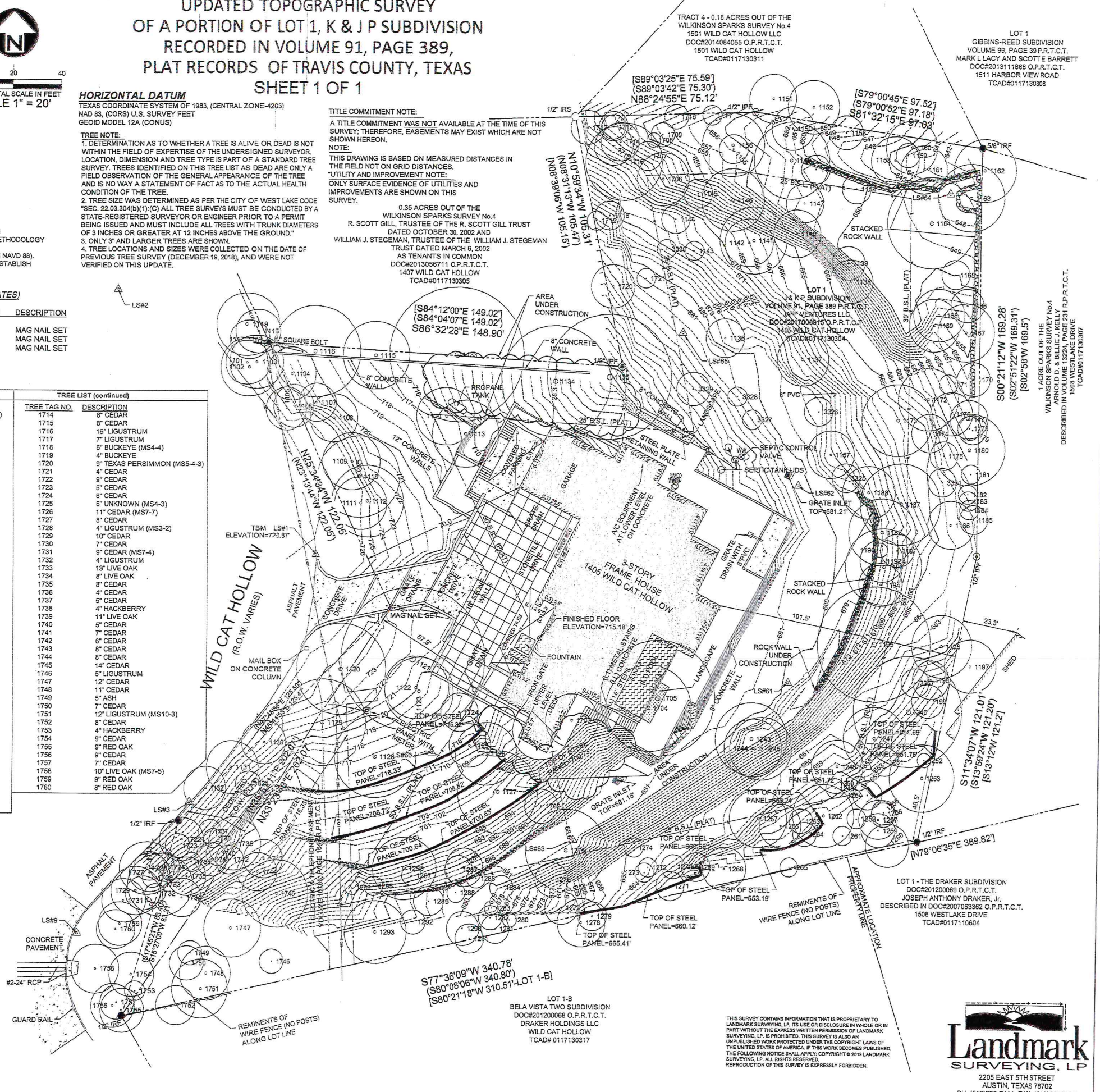
AS SURVEYED BY  
LANDMARK SURVEYING, LP  
TEXAS FIRM REGISTRATION NO. 100727-00

*Juan M. Canales Jr.*  
JUAN M. CANALES, JR.  
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 4453  
DATE: DECEMBER 19, 2018  
UPDATED: AUGUST 7, 2019 - METAL RETAINING WALLS  
AND REGRADED AREAS ONLY



REVIEWED BY  
*JMC*  
DATE: 8.9.2019

Client: DOUGLAS JAFFE, III  
Date: AUGUST 7, 2019  
Office: MFERGUSON/M. BOUADJE/LEON/BANKS  
Drawn: R. GARZA/K. DUNNIE/SCHLIMMER  
F.B.: 162421, 24, 25, 26-29, 192022-03  
P.B.: 1700045, JAFFE, LANDMARK DRAWINGS/GRID STAFF/H45 WILD CAT HOLLOW\_GRID TOPG UPDATE/07.2019.DWG  
Job No.: 1344-01-02-03-04-05



TRACT 4 - 0.16 ACRES OUT OF THE  
WILKINSON SPARKS SURVEY No.4  
1501 WILD CAT HOLLOW LLC  
DOC#2014084055 O.P.R.T.C.T.  
1501 WILD CAT HOLLOW  
TCAD#0117130311

LOT 1  
GIBBINS-REED SUBDIVISION  
VOLUME 99, PAGE 389 P.R.T.C.T.  
MARK L. LACY AND SCOTT E. BARRETT  
DOC#2013111888 O.P.R.T.C.T.  
1511 HARBOR VIEW ROAD  
TCAD#0117130308

1 ACRE OUT OF THE  
WILKINSON SPARKS SURVEY No.4  
ARNOLD D. & BILLIE J. KELLY  
DESCRIBED IN VOLUME 3224, PAGE 231 P.R.T.C.T.  
1508 WESTLAKE DRIVE  
TCAD#0117130307

LOT 1 - THE DRAKER SUBDIVISION  
DOC#20120069 O.P.R.T.C.T.  
JOSEPH ANTHONY DRAKER, JR.  
DESCRIBED IN DOC#2007083562 O.P.R.T.C.T.  
1506 WESTLAKE DRIVE  
TCAD#0117110604

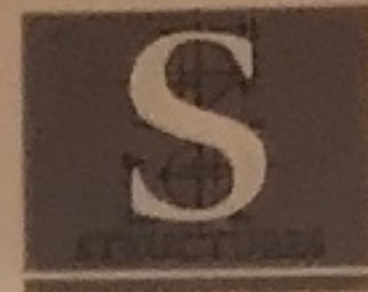
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# 1405 Wildcat Hollow Variance



6926 N. LAMAR BLVD  
AUSTIN, TX 78752  
PHONE: 512.459.0919  
WWW.STRUCTURESTX.COM  
FIRM NO.: F-3323

## NEW RETAINING WALLS AND SUBTERRANEAN ROOMS 1405 WILDCAT HOLLOW AUSTIN, TEXAS

| ISSUE | DESCRIPTION | DATE     |
|-------|-------------|----------|
| A     | PERMIT SET  | 12.18.18 |



### STRUCTURAL NOTES

DRAWN BY: LIG CONTACT: DA  
CHECKED BY: DA JOB #: R15.489

S0.0

WHEN PRINTED ON 11X17  
SHEETS, REDUCE PRINT SCALE TO  
50% SO THAT ALL SCALES SHALL  
BE 1/2 THE SIZE OF NOTED SCALES.

26. Construction joints between piers and pier caps, footings and walls or columns, or walls, columns, beams, and the floor system they support shall be prepared by roughening the contact surface to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
27. Reinforcement bars shall not be tack welded, welded, heated, or cut unless indicated on the contract documents or reviewed by the structural engineer.
28. Welding of reinforcement bars, when accepted by the structural engineer, shall conform to the American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.
29. Minimum concrete cover protection for reinforcement bars shall be as follows: (see ACI 318 Section 20.6 for conditions not noted)
- |                                     |                  |
|-------------------------------------|------------------|
| Concrete exposed to weather         | 2 inches         |
| #5 bars and smaller                 | 2 inches         |
| All other bars                      | 2 inches         |
| Concrete cast against earth         | 3 inches         |
| Grade beams:                        |                  |
| Top                                 | 2 inches         |
| Board formed sides                  | 2 inches         |
| Earth formed sides                  | 3 inches         |
| Bottom                              | 3 inches         |
| Slabs on grade:                     |                  |
| Single layer or top layer           | 2 inches         |
| Bottom layer cast against soil      | 3 inches         |
| Bottom layer not cast against soil  | 2 inches         |
| Columns                             | 1 - 1/2 inches   |
| Pilasters & plinths                 | 2 inches         |
| Slabs on metal forms                | 3/4 inches (top) |
| Walls below grade (backfilled side) | 2 inches         |
| Walls below grade (no backfill)     | 2 inches         |
30. Horizontal wall steel shall be continuous with 90 degree bends and 12" returns along each wall at corners.
31. Concrete pours shall not exceed 5000 square feet or 100 linear feet on any side.
32. Include an allowance for 1/2 ton of reinforcing steel (any size) to be used as directed in the field for special conditions not covered by note or drawing (labor for erecting same to be included). Upon completion of the project, owner shall be rebated for any unused portion of allowance materials.

City of West Lake Hills  
Received  
JAN - 6 2020

following areas shall have the following characteristics:

| 28-day<br>Strength (f'c) | Slump (in.) <sup>A</sup> | Max w/<br>cm Ratio | Air content <sup>B,C</sup> |
|--------------------------|--------------------------|--------------------|----------------------------|
| 4000 psi                 | 3-5                      | 0.45               | 0%                         |
| 4000 psi                 | 2-4                      | 0.45               | 0%                         |
| 4000 psi                 | 3-5                      | 0.45               | 0%                         |
| 4000 psi                 | 3-5                      | 0.45               | 0%                         |
| 4000 psi                 | 3-5                      | 0.45               | 0%                         |

shall be measured before adding water reducing admixture or plasticizing mixture.

designs shall be reviewed and approved by the testing agency prior to sending to record for approval.

using cementitious materials, of the same type, brand and source throughout the

ement: ASTM C 150, Type I/II

used as a pozzolan to replace a portion of the portland cement in a concrete mix, approval of the structural engineer. Fly ash, when used, shall conform to ASTM C618, Concrete mixes using fly ash shall be proportioned to account for the properties of the used and to account for the specific properties of the fly ash concrete thus resulting. The amount of the fly ash to the total amount of fly ash and cement in the mix shall not

ing normal-weight aggregates: ASTM C 33, coarse aggregate or better, graded, aggregates from a single source conforming to the following:

Coarse-Aggregate Size: typically 3/4" nominal diameter

ate: free of materials with deleterious reactivity to alkali in cement

Aggregate shall conform to ASTM C 330.

conform to ASTM C 94/C 94M and be potable.

used shall be subject to the approval of the structural engineer.

orting, and placing of concrete shall conform to ACI 301 and ASTM C 94.

to ACI 305.1 "Specification for Hot Weather Concreting" is required when air is above 90 deg F.

to ACI 306 "Cold Weather Concreting" is required when a period for more than three days, the average daily air temperature is below 40 deg F and the air temperature is less than 50 deg F for more than one-half of any 24 hour period.

ation rating for this project is based upon the use of normal weight aggregate concrete carbonate aggregates. Carbonate aggregates consist mainly of calcium or magnesium, limestone or dolomite, and contain 40 percent or less quartz, chert and flint.

ector shall notify the architect and Structures 48 hours prior to placement of concrete

uction, the contractor shall provide temporary shoring of walls which are ultimately top and bottom. Such shoring shall not be removed until the supporting elements are in concrete in the walls and supporting elements has attained the specified 28 day strength (f'c) and compaction of the backfill against the wall has been completed.

age system is required to prevent the build-up of hydrostatic pressure behind the

concrete reinforcement bars and accessories shall conform to the recommendations of ACI 308 and ACI 309 "Manual of Standard Practice for Detailing of Concrete Reinforcement" and ACI 308 "Manual of Standard Practice for Detailing of Concrete Reinforcement".

reinforcing bars shall conform to the recommendations of ACI 315R "Manual of Standard Practice for Detailing of Concrete Reinforcement" and ACI 315R "Manual of Standard Practice for Detailing of Concrete Reinforcement".

or piping larger than 1" I.D. shall be run in structural concrete members unless shown on drawings.

es in concrete members shall be schedule 40 pipe unless shown otherwise on the drawings. Location of the sleeves shall be as approved by the Structural Engineer. Provide stirrups each side of each sleeve in beams and space as directed by the Engineer.

shall be deformed new billet steel bars in accordance with A.S.T.M. Specification 60.

shall be Grade 60 with standard 90 degree hooks.

a 4'-0" "L" shaped bars top and bottom at all corners and "T" intersections of beams.

ends in reinforcing bars shall conform to ACI Standards unless shown otherwise.

er designated as "continuous" may be spliced using Type "B" splices. Reinforcement bar in beams which are located at the centerline of supports for bottom bars and at top bars may be 3/8 bar diameters, unless noted otherwise. Provide standard ACI hooks bottom bars at discontinuous ends of all grade beams.

ts may occur at center of spans at locations reviewed by Structures.

construction joints in concrete pours shall be permitted only where indicated on the drawings. Construction joints shall be made in the center of spans - see drawings for typical detail. of the construction joints shall be as approved by the Architect and the Structural Engineer. Additional reinforcing at construction joints shall be as specified by the Engineer without cost to the owner.



January 8, 2020

Robert Meisel, Chair

Westlake Hills Zoning and Planning Commission

911 Westlake Drive

Westlake Hills, Texas 78746

Re: Variance Request – Stacked Rock Wall within Setback and  
Retaining Walls Over 6 feet High

1405 Wildcat Hollow, West Lake Hills, Texas

Dear Mr. Meisel,

I am requesting a variance for a stacked rock wall within the setback along the east property line at 1405 Wildcat Hollow. The neighboring property along this property line is 1508 Westlake Dr.

Additionally, I am requesting a variance for retaining walls over 6 feet high.

### **Background**

When I purchased the property in 2017, the City was attempting to replace trees removed by the prior owner. Many of the trees removed by the prior owner were near the property line at issue.

### **Stacked Rock Wall – Why It Is Needed?**

Trees cannot be planted into the side of a hill. As per the planting notes (attached), trees must be planted “upright and plumb in all directions.” To help level the earth where the trees are planted, the stacked rock wall is important. Also, once the trees and natural shrubbery are put into place, a natural barrier (sound and sight) will exist between my property and my neighbor at 1508 Westlake Drive, maximizing our respective peace and privacy.

The varying heights of the stacked retaining walls are necessary due to the drastic topography slopes of the lot.

### **Concerns**

The City and others have raised concerns regarding both (a) the structural stability of the wall, and (b) its drainage capabilities. First, to verify the structural stability and drainage system,



Structures Engineering will test and enhance the wall. No later than January 6, 2020, engineering schematics and plans will be provided. The City also has permission to inspect the wall to its full satisfaction. Between the efforts of both Structures Engineering and the City, measures can be taken to ensure that there are no concerns with the wall.

### **Conclusion**

I remain motivated to honor the City's preexisting request to replace trees. To do that along the property line with my neighbor, the stacked rock wall is needed. I respectfully request that the variance be approved so that I can complete the restoration of the natural foliage on my property.

Respectfully submitted,

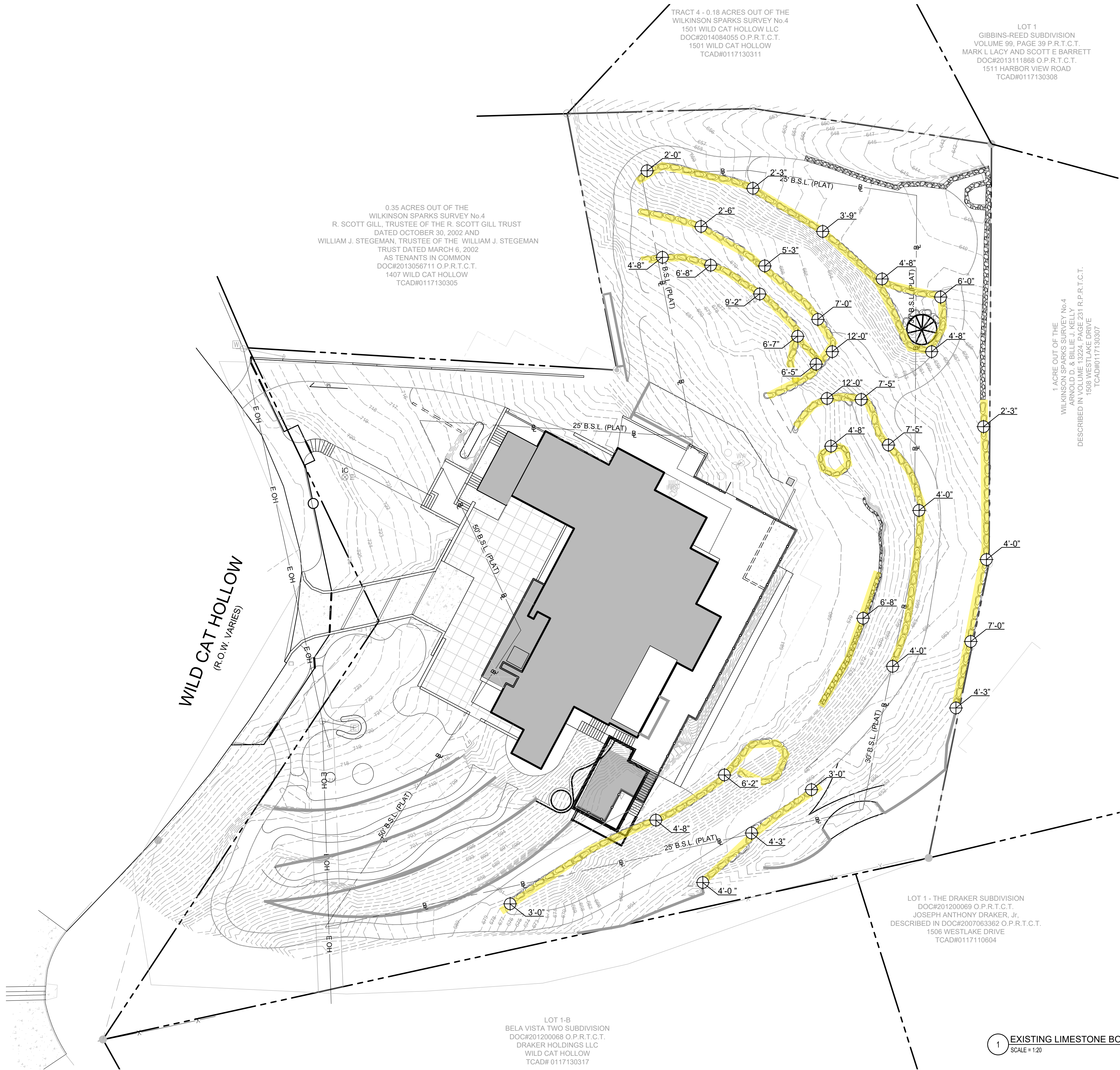
M. Douglas Jaffe, III

1405 Wildcat Hollow

210.445.8533

██████████





- LEGEND
- STEEL STEPS
  - GEOWEB SLOPE STABILIZER
  - STEEL LANDSCAPE EDGE
  - 42" STEEL RAILING
  - STEEL RETAINING WALL (STRUCTURE AND HEIGHT VARIES)
  - PROPERTY LINE
  - LIMESTONE BOULDER WALL (STRUCTURE AND HEIGHT VARIES)
  - GRAVEL TRAIL
  - EXISTING CONCRETE WALL

NOT FOR  
CONSTRUCTION

1405 WILDCAT HOLLOW,  
WEST LAKE HILLS, TX 78746

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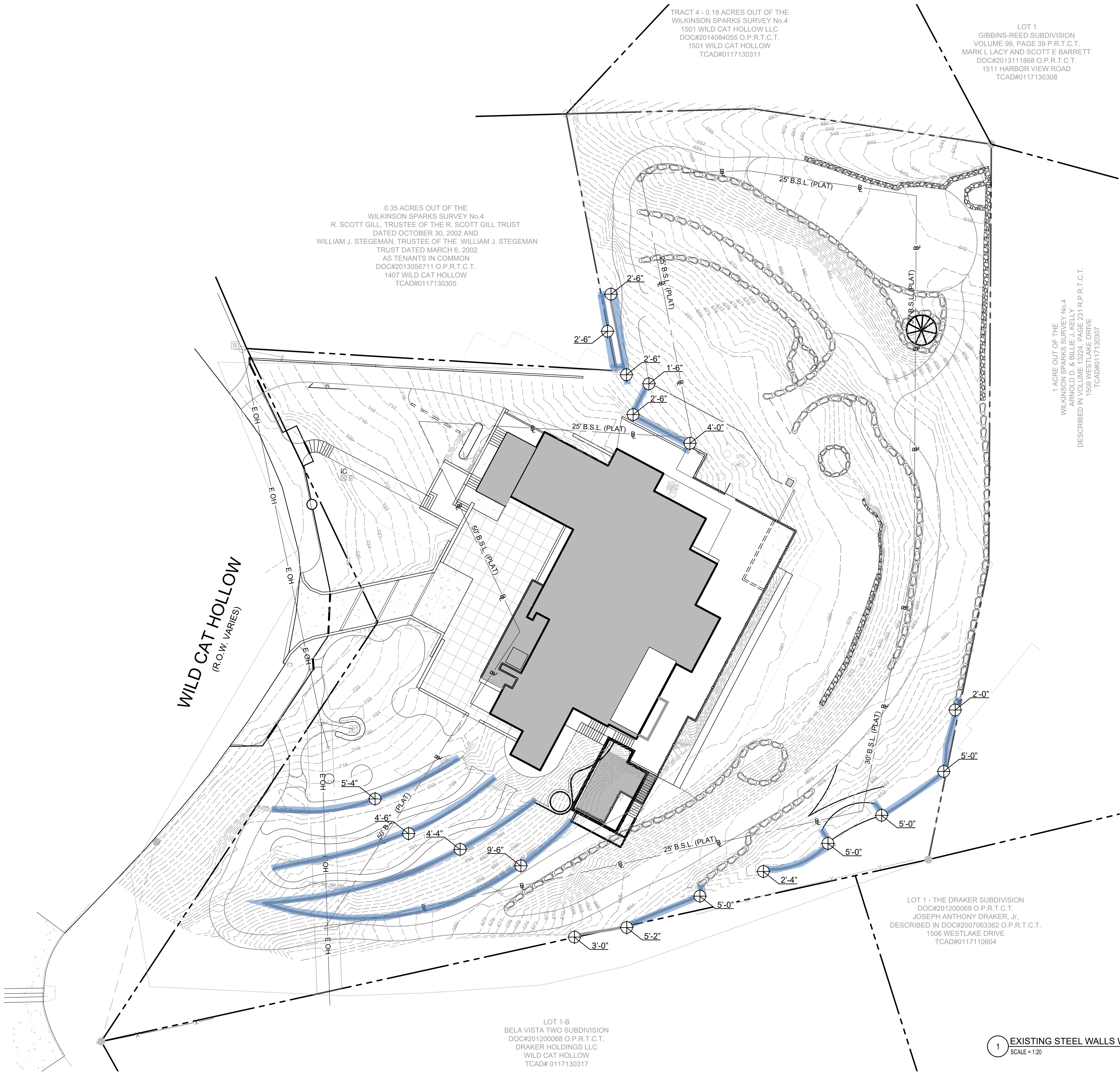
| ISSUED SETS:     |             |
|------------------|-------------|
| Description      | Date Issued |
| VARIANCE REQUEST | 01.13.2020  |
|                  |             |
|                  |             |
|                  |             |
|                  |             |
|                  |             |

Project No. 1912

EXISTING LIMESTONE  
BOULDER WALLS  
WITH HEIGHTS

L-100





- LEGEND
- STEEL STEPS
  - GEOWEB SLOPE STABILIZER
  - STEEL LANDSCAPE EDGE
  - 42" STEEL RAILING
  - STEEL RETAINING WALL (STRUCTURE AND HEIGHT VARIES)
  - PROPERTY LINE
  - LIMESTONE BOULDER WALL (STRUCTURE AND HEIGHT VARIES)
  - GRAVEL TRAIL
  - EXISTING CONCRETE WALL

NOT FOR  
CONSTRUCTION

1405 WILDCAT HOLLOW,  
WEST LAKE HILLS, TX 78746

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| ISSUED SETS:     |             |
|------------------|-------------|
| Description      | Date Issued |
| VARIANCE REQUEST | 01.13.2020  |
|                  |             |
|                  |             |
|                  |             |
|                  |             |
|                  |             |

Project No. 1912

EXISTING STEEL  
WALLS WITH  
HEIGHTS

L-101



City of West Lake Hills  
Received  
FEB - 3 2020

This cover sheet supplements  
and is in addition to  
variance application  
submitted 12/13/19

APPLICATION COVER SHEET

Property Address: 1405 Wildcat Hollow  
Applicant Name: Doug Jaffe  
Designated Agent (if any, Power of Attorney Required): Lu Reyes  
Applicant Phone Number: 210-445-8533 Email Address: [REDACTED]  
Date Application was Submitted: 2/3/20 + 12/13/19  
Variance(s) Requested: Stacked Rock Wall w/in Setback & Stacked Rock Walls > 6 feet

Applicant completes above section; City Staff completes the section below:

Variance File Number: \_\_\_\_\_ [A sequential identifier based on application date and noted in a  
Variance Application Log maintained by staff. Examples: 20110903A, 20110903B, 20111021A, etc.]

Application Fees Due: \$ \_\_\_\_\_ ☐ Fees Received on \_\_\_\_\_ by \_\_\_\_\_

DRAFT APPLICATION PACKET MATERIALS

Draft Application Packet Received on \_\_\_\_\_ by \_\_\_\_\_  
☐ Letter to ZAPCO Chairperson ☐ Variance Approval Criteria Answers  
☐ Site Plan Coversheet ☐ Site Plan Drawings  
☐ Elevation Views and Floor Plans (new structures only)  
☐ Septic Assessment (new structures only)  
☐ Additional Support Materials (if any): \_\_\_\_\_  
☐ Power of Attorney (if any) - Designated Representative: \_\_\_\_\_  
Staff Analysis completed on \_\_\_\_\_ by \_\_\_\_\_  
Staff Analysis sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_

FINAL APPLICATION PACKET

Final Application Packet Reviewed and Approved on \_\_\_\_\_ by \_\_\_\_\_  
Notice to Proceed Letter sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_  
• Notification Letter must be postmarked by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_  
• Sign must be posted by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_  
14 Copies of Final Packet received on \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

ZAPCO

Scheduled for ZAPCO Hearing on: \_\_\_\_\_  
ZAPCO Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_  
ZAPCO Recommendation: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
Modified application and materials (if any) received on \_\_\_\_\_ by \_\_\_\_\_

BOA/CITY COUNCIL

Scheduled for BOA/Council Hearing on: \_\_\_\_\_  
COA/Council Action: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
BOA/Council Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_

FOLLOW-UP

Follow-up dates (vegetative screening installed, survival verification, etc.): \_\_\_\_\_  
• Notifications added to InCode on \_\_\_\_\_ by \_\_\_\_\_

Postponement History (if any): \_\_\_\_\_  
Notes: \_\_\_\_\_



City of West Lake Hills  
Received  
DEC 13 2019

APPLICATION COVER SHEET

Property Address: 1405 Wildcat Hollow  
Applicant Name: Doug Jette  
Designated Agent (if any, Power of Attorney Required): Louis Reeves  
Applicant Phone Number: 210-445-8538 Email Address: [REDACTED]  
Date Application was Submitted: 12-13-19  
Variance(s) Requested: Per

|                   |             |                    |                                                    |                            |
|-------------------|-------------|--------------------|----------------------------------------------------|----------------------------|
| <b>PETTY CASH</b> | AMOUNT \$   | <u>250.00</u>      | FOR                                                | <u>1405 Wildcat Hollow</u> |
|                   | NO.         | <u>150.00</u>      |                                                    |                            |
|                   | DATE        | <u>12/13/19</u>    |                                                    |                            |
|                   | ACCOUNT NO. |                    |                                                    |                            |
|                   | APPROVED BY | <u>[Signature]</u> |                                                    |                            |
|                   | RECEIVED BY |                    |                                                    |                            |
|                   |             |                    | City of West Lake Hills<br>Received<br>DEC 13 2019 |                            |

12-12  
A-1150  
T-4120

Final Packet Reviewed and Approved on \_\_\_\_\_ by \_\_\_\_\_  
Notice to Proceed Letter sent to Applicant on \_\_\_\_\_ by \_\_\_\_\_

- Notification Letter must be postmarked by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_
- Sign must be posted by \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_
- 14 Copies of Final Packet received on \_\_\_\_\_ ☐ Confirmed by \_\_\_\_\_

ZAPCO

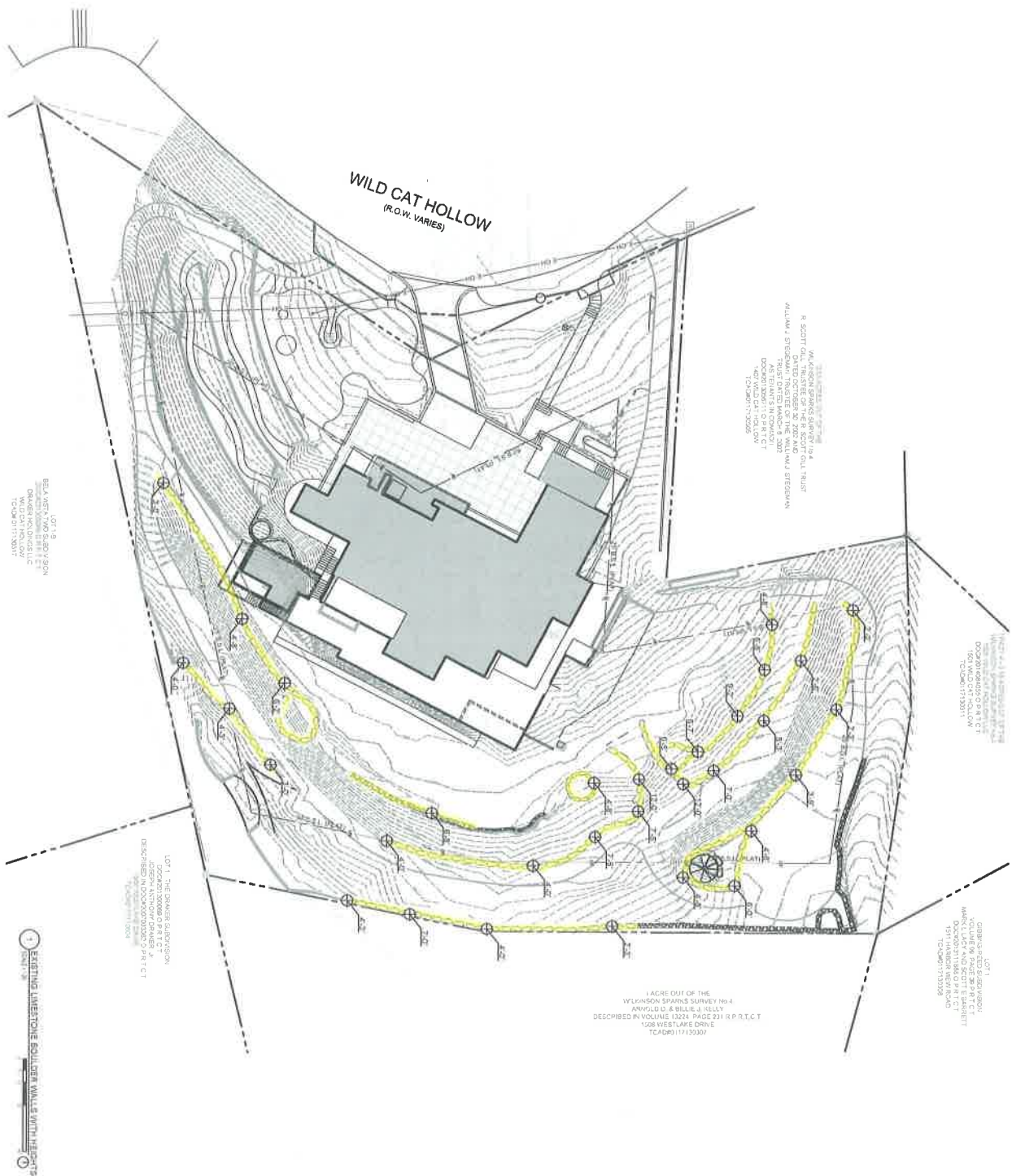
Scheduled for ZAPCO Hearing on: \_\_\_\_\_  
ZAPCO Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_  
ZAPCO Recommendation: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
Modified application and materials (if any) received on \_\_\_\_\_ by \_\_\_\_\_

BOA/CITY COUNCIL

Scheduled for BOA/Council Hearing on: \_\_\_\_\_  
COA/Council Action: \_\_\_\_\_  
Conditions/Comments (if any): \_\_\_\_\_  
BOA/Council Action Letter sent on \_\_\_\_\_ by \_\_\_\_\_

FOLLOW-UP

Follow-up dates (vegetative screening installed, survival verification, etc.): \_\_\_\_\_  
• Notifications added to InCode on \_\_\_\_\_ by \_\_\_\_\_



# LEGEND

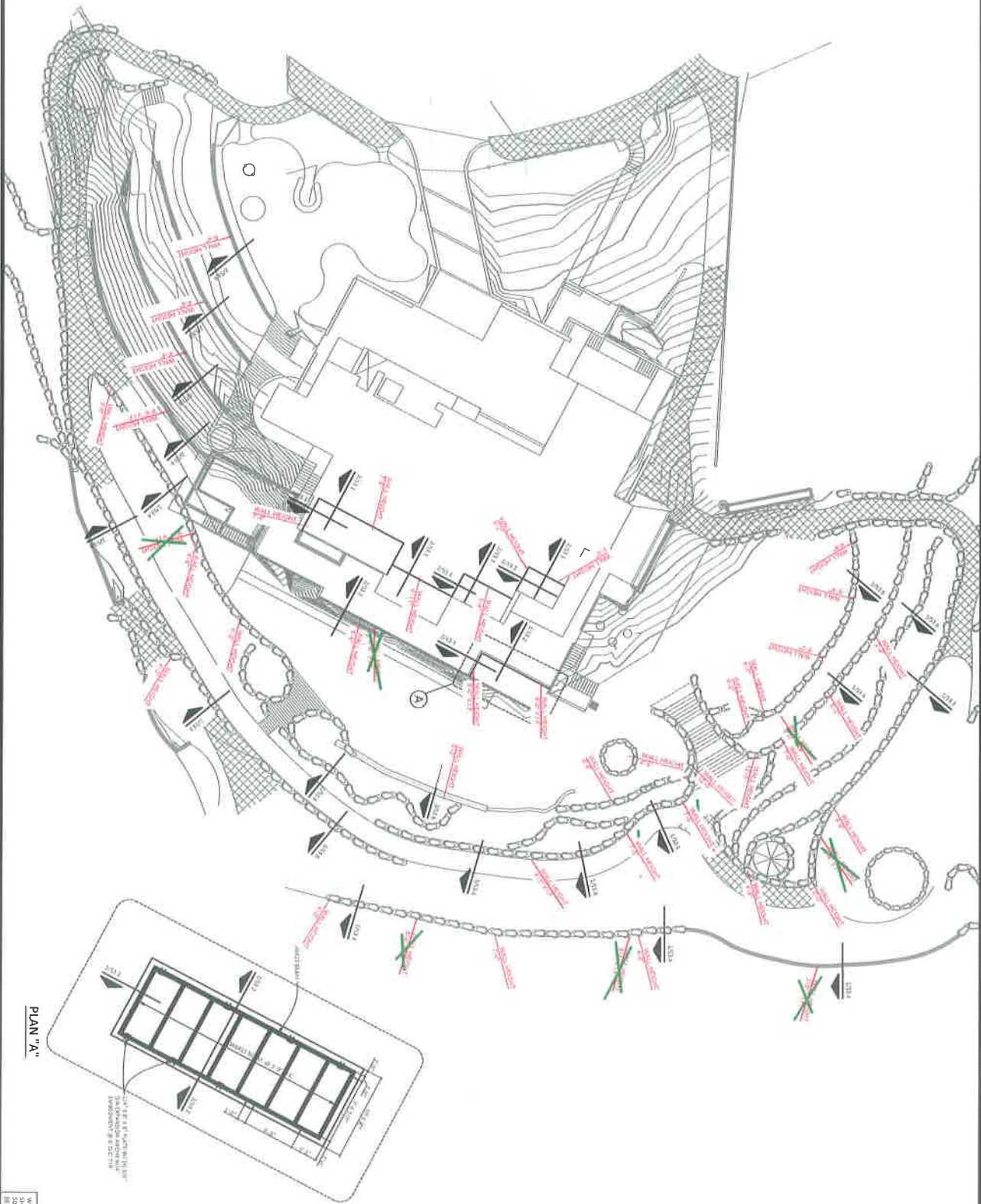
- STEEL STEPS
- GEOWEB SLOPE STABILIZER
- STEEL LANDSCAPE EDGE
- 4\"/>

1405 WILDCAT HOLLOW,  
WEST LAKE HILLS, TX 78746

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LANDSCAPE ARCHITECTURE • URBANISM

300 WEST ANTONIO STREET  
AUSTIN, TX 78701  
OFFICE (512) 342,4415  
www.studiobalcones.com





PLAN "A"

WHEN PRINTED ON 11x17 SHEETS, REDUCE PRINT SCALE TO 50%, SO THAT ALL SCALES SHALL BE AT LEAST 10 INCHES LONG.

## S1.0

OVERALL SITE PLAN



| NAME | DESCRIPTION | DATE     |
|------|-------------|----------|
| A    | PLUMB       | 12/19/19 |

## NEW RETAINING WALLS AND SUBTERRANEAN ROOMS

1405 WILDCAT HOLLOW  
AUSTIN, TEXAS

6926 N. LAMAR BLVD  
AUSTIN, TX 78752  
PHONE: 512.499.0919  
WWW.STRUCTURESTX.CO  
FIRM NO. F-3323





January 20, 2020

Doug Jaffe, III  
1405 Wildcat Hollow  
West Lake Hills, Texas 78746

**RE: Stacked Stone Walls**

Mr. Jaffe,

This letter is to confirm that on-site reviews and reviews of photographs you presented showing the construction of the stacked stone wall system was reviewed by this office. Based on our review we have established the width and depth of the stones, bearing strata, natural grade type, back fill material, drainage system, and retained wall height for all walls except for the stacked stone walls that exceed a 7'-0" retained soil height (see attached drawing).

Based on our site observations, review of photographs, and analysis of the walls based upon the collected information, it is to the best of my knowledge that the existing stacked stone walls retaining a maximum of 7'-0" of back fill are in general compliance to resist the superimposed loads required by the 2015 and 2018 International Residential Code.

Walls exceeding the 7'-0" height need to be further evaluated for depth of batter of the back face of the wall. Based on our visual observations that these walls have functioned well with no signs of tilt, sliding, or overturning during heavy loading periods of increased hydrostatic pressures due to heavy rain fall and surcharges due to construction equipment, it is to the best of my knowledge that these walls do not pose an immediate risk. My request to further evaluate these walls is to verify our engineering assumptions regarding the walls' construction are valid for the areas in question.

Sincerely,

Dante Angelini, P.E.





# **NOTICE TO NEIGHBORS OF AFTER-THE-FACT VARIANCE REQUESTS**

**DATE OF NOTICE: February 12, 2020**

Greetings. You are hereby notified that **Douglas Jaffe**, the recorded owner of a property located at **1405 Wild Cat Hollow** in the City of West Lake Hills, Texas has filed an Application with the City of West Lake Hills, Texas requesting after-the-fact variances according to the following Sections of the City's Code of Ordinances:

- **Section 22.03.281 and Section 22.03.170 – Stacked rock walls encroachment into building setbacks and rock wall height variance.**

The request is so that the property owner may: **Allow stacked rock walls greater than six feet that encroach into the setbacks.**

The Application may be inspected at West Lake Hills City Hall, 911 Westlake Drive, West Lake Hills, Texas between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. This application is scheduled to be considered at a public hearing held by the Zoning and Planning Commission on **March 18, 2020** at **6:30** p.m. and the Board of Adjustment **April 8, 2020** at **7:00** p.m. at West Lake Hills City Hall, located at 911 Westlake Drive, West Lake Hills, Texas. There shall include an opportunity for all interested persons to be heard.

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Mark Littrell, Zoning & Planning Secretary

[Ms. Linda Anthony, Mayor, and Mr. Robert J. Wood, City Administrator]

Re: 1405 Wild Cat Hollow Issue

Dear Linda and Robert,

We are writing to find out where things stand with West Lake Hills' efforts to enforce its ordinances as they concern the ongoing work at our neighbor's property, 1405 Wild Cat Hollow.

As we think you are both well aware, we have grown extremely frustrated with this seemingly endless project that continues without respect for—or apparent consequence from—exhaustive violations of West Lake's codes and ordinances. We think you are also aware that the intolerable and seven-days-a-week noise and dirt disruptions coming from this project have totally ruined any concept of quiet enjoyment we may enjoy at our home, with the consequence that we have been forced to move out pending resolution of this untenable situation.

It is quite evident that our neighbor intends to do whatever he chooses, however he chooses, and whenever he chooses with his property—whether that is building a grossly inappropriate (structurally, visually, and legally) retaining wall along our south boundary, installing steel planter boxes along our east property line, blatantly violating West Lake's own road easement along Wild Cat with plantings and retaining structures, or completely regrading the northeast segment of his lot (including the removal of large amounts of limestone)—all without any approved landscape, architectural, engineering, or drainage plans. We return to the poorly constructed retaining wall along our south property line: to whom do we turn to when this ugly construction fails, sending rocks and earth into our house, and potentially injuring people who may be in the way?

Since this whole mess began over two years ago, we have looked expectantly to the City to ensure that our neighbors follow the law in their pursuit of property improvements. As you know, we have tried to lay low, so as not to get into direct conflict with our neighbors. But as we think you also know, we have broken that silence twice now by speaking up at two of the ZAPCO hearings. We still would like to avoid an antagonistic relationship with the owners of 1405, which is why we still look to West Lake Hills to enforce the codes and ordinances it expects all residents and property owners to respect. Can you tell us where things stand in the City's legal efforts to enforce compliance? To us, it appears that West Lake has all but given up as our neighbor blithely goes about his daily ritual, metaphorically thumbing his nose to all who express concern if not outrage at his complete disregard for the law.

We apologize for the irritated tone of this letter, but we hope you understand: *we have had to move out of our house because the project next door makes living in our own home absolutely unbearable.*

Thank you for any updates or guidance you can give us.

Sincerely,

Scott Gill and Bill Stegeman  
1407 Wild Cat Hollow  
West Lake Hills



**From:** [Scott Gill](#)  
**To:** [Anjali Naini](#)  
**Cc:** [mayor@ mayor](mailto:mayor@mayor)  
**Subject:** For the City Council re: 1405 Wild Cat Hollow  
**Date:** Friday, March 27, 2020 4:18:12 PM  
**Attachments:** [WLH 1405 WCH Letter PDF.pdf](#)  
[Email to wih august 2019.pdf](#)

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Dear Anjali,

We hope this email finds you well. We are sending you this copy of the letter we wrote over a year ago concerning work at 1405 Wild Cat Hollow. We ask that you please forward it and this message to the Council (or appropriate persons at City Hall).

We understand the owners of 1405 are requesting an after-the-fact variance approval of their multiple constructions. To the best of our knowledge, none of the concerns raised in our letter of 2-17-2019 has been properly addressed, so we don't know how and on what basis the City could approve such a post-facto variance.

We remain very concerned about the structural integrity of the retaining wall our neighbor has built along our south property line, as well as the aesthetic compromises this wall and the planter boxes mentioned in our letter present to the otherwise natural landscape we've traditionally enjoyed at West Lake Hills. We similarly would love to see this seemingly endless project (it's in year 3 now, we believe) come to a scheduled completion under some sort of approved plan and timetable.

With many thanks,

Scott Gill and Bill Stegeman  
Owners  
1407 Wild Cat Hollow

Sent from my iPad

**From:** [Travis Askey](#)  
**To:** [Anjali Naini](#)  
**Subject:** FW: Post Facto Variance Request for 1405 Wild Cat Hollow  
**Date:** Monday, March 16, 2020 7:40:05 AM

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FYI

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**From:** Mark Lacy < >  
**Sent:** Sunday, March 15, 2020 7:32 PM  
**To:** mayor@ mayor <mayor@westlakehills.org>; CityCouncil <citycouncil@westlakehills.org>; Robert Meisel <zapco1@westlakehills.org>; James Vaughan <zapco2@westlakehills.org>; Laurie Maccini <zapco3@westlakehills.org>; Jim Pledger <zapco4@westlakehills.org>; William H Vandersteel <zapco5@westlakehills.org>; Sarah Swanson <zapco6@westlakehills.org>; apco7@westlakehills.org  
**Cc:** Scott Barrett < >  
**Subject:** Fwd: Post Facto Variance Request for 1405 Wild Cat Hollow

Dear Mayor Anthony, Members of the WLH City Council and members of the Zoning and Planning Commission:

We strongly oppose the post facto variances requested by the property owner at 1405 Wild Cat Hollow. The denuding of the entire property has been going on for at least 8 months apparently all without any permit. It has been horrifying to watch virtually all the vegetation being removed. There has been “construction” at all hours of the day and night as trees etc have been planted, died and been removed. Walls or fences have been built and removed. There is a massive project presently going on in the back of the residence, which is EXTRAORDINARILY UGLY when seen from Harborview Road, and I think it will look like for years without spending huge amounts of capital

The curve in front of this property is dangerous in the best of times. However, when there are trucks, front end loaders and various pieces of equipment parked in the road there is a public safety danger. The police have been called on many occasions when Wild Cat Hollow has been barely passable. On top of all that, we are forced to look at 1-4 pick up trucks in the middle of the “DIRT (not yard) — very unsightly and clearly not what you expect from living in WLH.

This neighborhood has experienced a plethora of construction in the last few years.....nothing has been as disruptive as what is happening at 1405 Wild Cat Hollow. The property rights and concerns of neighbors have been totally disregarded.

If there is any “hardship” on the part of the property owner it is self-imposed by his total failure to comply with West Lake Hills ordinances and by not even following common sense construction practices. The entire property is such a mess at this point



that the granting of any post facto variances would not remedy the situation.

I join my neighbors in asking ZAPCO to reject the application for the variances requested and to recommend that the BOA do the same.

I appreciate your service to our entire community.

Mark Lacy and Scott Barrett  
1511 Harborview Road  
West Lake Hills, TX 78746

**From:** [Pam Reed](#)  
**To:** [zapco](#); [CityCouncil](#)  
**Subject:** FW: Post Facto Variance Request for 1405 Wild Cat Hollow  
**Date:** Tuesday, March 10, 2020 1:46:25 PM

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Dear Honorables:

I am forwarding the letter I wrote to all of you the last time the homeowner at 1405 Wild Cat Hollow filed a Post Facto Variance Request. Note: February 16 of LAST YEAR.

I cannot believe this horrid abuse of property rights; city staff time and neighbors continues. Most of you have heard more than you would like about this situation. I am sure you are aware of all the hearings, postponed hearing etc that have transpired over the course of this debacle.

I confirm everything contained in my last letter. The state of the neighborhood continues to deteriorate, the property owner continues to disregard the welfare of the neighborhood and to totally ignore and disrespect the West Lake Hills city code.

Any hardship on the part of this applicant is totally self-imposed. I am appalled at the continued arrogance of the applicant in yet again requesting a post facto variance after claiming he needed no permits to denude his property. I will be surprised if the applicant does not request several more continuances and provides no back up to the staff.

Please reject the application for variance and recommend that BOA do the same.

Pam Reed  
1502 Harbor View

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**From:** Pam Reed  
**Sent:** Saturday, February 16, 2019 12:41 PM  
**To:** 'Linda Anthony' <mayor@westlakehills.org>; 'citycouncil@westlakehills.org' <citycouncil@westlakehills.org>; 'zapco1@westlakehills.org' <zapco1@westlakehills.org>; 'zapco2@westlakehills.org' <zapco2@westlakehills.org>; 'zapco3@westlakehills.org' <zapco3@westlakehills.org>; 'zapco4@westlakehills.org' <zapco4@westlakehills.org>; 'zapco5@westlakehills.org' <zapco5@westlakehills.org>; 'zapco6@westlakehills.org' <zapco6@westlakehills.org>; 'apco7@westlakehills.org' <apco7@westlakehills.org>  
**Subject:** Post Facto Variance Request for 1405 Wild Cat Hollow

Dear Mayor Anthony, Members of the WLH City Council and members of the Zoning and Planning Commission:



I strongly oppose the post facto variances requested by the property owner at 1405 Wild Cat Hollow. The denuding of the entire property has been going on for at least 8 months apparently all without any permit. It has been horrifying to watch virtually all the vegetation being removed. There has been "construction" at all hours of the day and night as trees etc have been planted, died and been removed. Walls or fences have been built and removed. There is a massive project presently going on in the back of the residence.

The curve in front of this property is dangerous in the best of times. However, when there are trucks, front end loaders and various pieces of equipment parked in the road there is a public safety danger. The police have been called on many occasions when Wild Cat Hollow has been barely passable.

This neighborhood has experienced a plethora of construction in the last few years.....nothing has been as disruptive as what is happening at 1405 Wild Cat Hollow. The property rights and concerns of neighbors have been totally disregarded.

If there is any "hardship" on the part of the property owner it is self-imposed by his total failure to comply with West Lake Hills ordinances and by not even following common sense construction practices. The entire property is such a mess at this point that the granting of any post facto variances would not remedy the situation.

I join my neighbors in asking ZAPCO to reject the application for the variances requested and to recommend that the BOA do the same.

I appreciate your service to our entire community.

Pam Reed  
1502 Harbor View

17 February 2019

*Re: Construction project at 1405 Wild Cat Hollow*

Dear Mayor Anthony and Members of City Council and the Zoning and Planning Commission,

We are writing to express our concerns about the construction project at 1405 Wild Cat Hollow beyond those laid out in the letter recently sent to you by David Middleman. We are the neighbors immediately to the north of 1405, sharing two property lines, and have probably been impacted the most by the ongoing project there. We have a number of concerns, as follows:

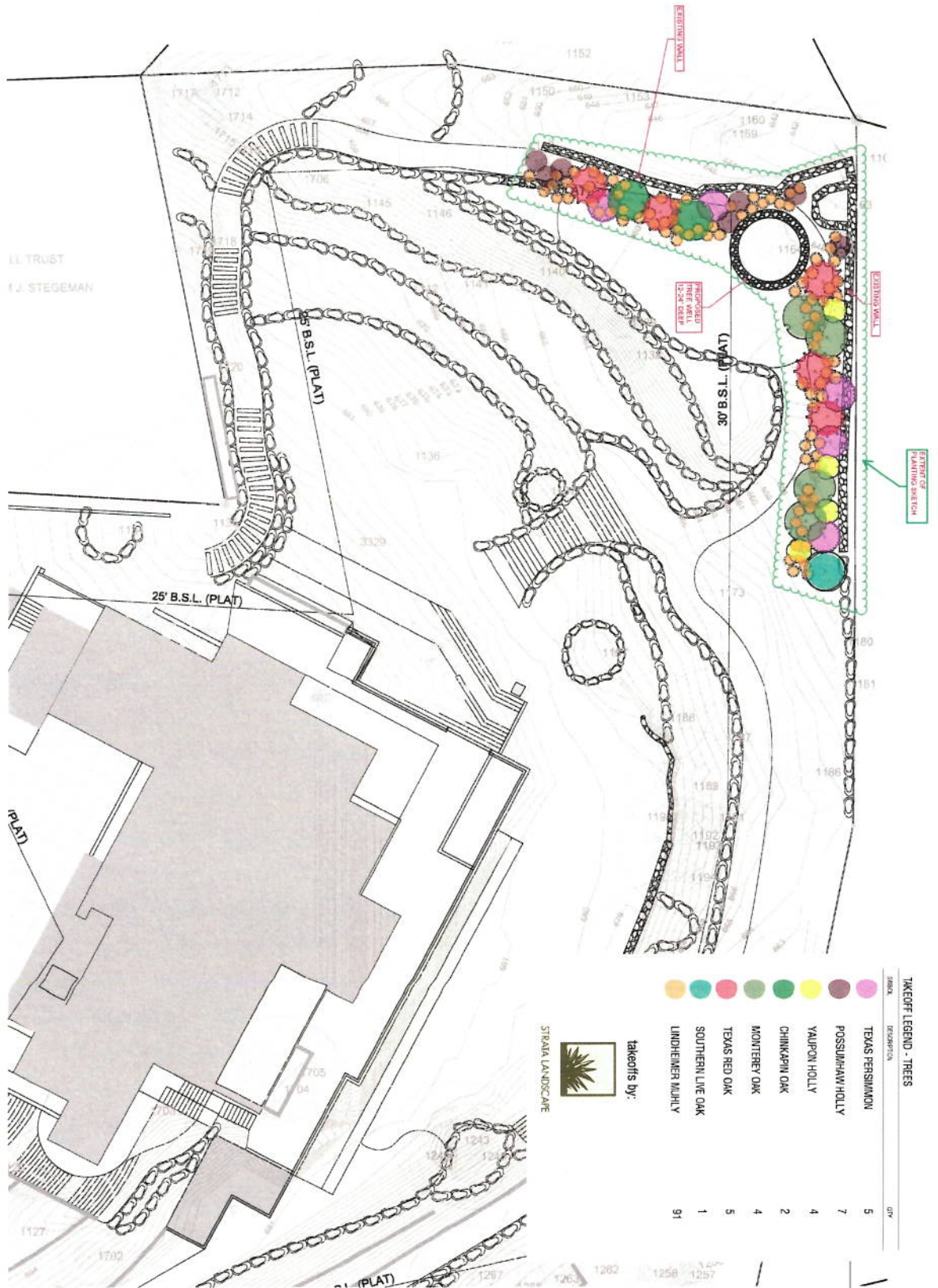
1. To our knowledge, there is no approved plan for the work that's been going on. We were advised at one point that the project was proceeding in accordance with approved drawings the previous owner had developed, but such is evidently not the case. All we know is that a retaining wall has been built along our south property line to support an access drive to the back yard of 1405, steel planter boxes have been installed against our east property line, and a tremendous amount of regrading has been done to the immediate east of our lot to create a play area, or a walking trail, or a vehicular circuit...or some combination of the three. Beyond that, we just don't know what the plan is.
2. The wall along our south boundary is of particular concern, for to our knowledge, it has not been professionally engineered to hold the considerable amount of dirt, rock, and gravel that has been put up against it. We observed the foundations being dug and poured, and they appeared insufficient for holding up a wall, let alone a retaining wall. In fact, when a construction tractor backed into one segment of the concrete block wall, it collapsed, sending chunks down to the walkway next to our house. That segment has since been replaced by a poured-in-place concrete version. But again, we have no idea whether it will support the loads against it. The potential damage to our house should the wall fail could be significant. (When construction on the wall began, we were concerned about its location, and were assured by Mr. Jaffe when we called him that it would be set several feet on his side of the property line, which it appears to be. Whether that's five feet or not, we don't know.)
3. The wall just described is not a privacy fence. Instead, it is a retaining wall, and has elevated the dirt level so that when a vehicle does drive down to the east, we see it in full from our windows, with the effect that privacy between our properties has been reduced. And again, we simply have no idea what, if any, plans there are to mitigate this problem.
4. A series of large rectangular steel planter boxes, stepping down from south to north, was installed several months ago tight against the property line at the southeast corner of our lot. When the boxes were being put in, we noticed that they were crossing over the property line. After we pointed this out to Mr. Jaffe, he had a surveyor out and subsequently moved the planters to abut the property line. We are not sure if they are allowed by West Lake.
5. The project has been going on for well over a year, typically seven days a week, and often into the evening hours (and, for a long while, into the night hours). We are very patient and willing to go along with the disruptions that making improvements entail, but the constant dirt, noise, and uncertainty have been a strain on us. In fact, we now spend as much time away from our house as possible, hoping there will be a resolution—and completion—soon.

When the project first began, we were surprised, for we had no advance notice, but we didn't object because we thought it was moving forward with the approval of West Lake Hills, as would normally be the case. It wasn't until later that we learned, much to our dismay, that it was not. We have taken a low profile position up to this point because, first, we were hoping West Lake Hills and Mr. Jaffe would work things out, and second, we wanted—and still want—to emerge from this issue with a good relationship with our neighbor. To that end, we should note that Mr. Jaffe has been very accommodating when we raised a concern or made a request, including respecting our view corridor across his property. Our biggest wish at this point is that the City and Mr. Jaffe bring this unfortunate situation to a resolution, sooner rather than later and in a manner consistent with the letter and the spirit of the ordinances that make living in West Lake Hills so special.

Sincerely,

Scott Gill and Bill Stegeman  
Owners, 1407 Wild Cat Hollow





PLANTING  
SKETCH  
L-#1

Project No. 1912

DESIGNED BY: [Signature]  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
DATE: 10/1/12

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1405 WILDCAT HOLLOW,  
WEST LAKE HILLS, TX 78746

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# PLANT SCHEDULE

| <u>TREES</u>                                                                        | <u>CODE</u> | <u>QTY</u> | <u>BOTANICAL / COMMON NAME</u>                | <u>CONT</u> |                |
|-------------------------------------------------------------------------------------|-------------|------------|-----------------------------------------------|-------------|----------------|
|  | DT          | 5          | Diospyros texana / Texas Persimmon            | 3" cal.     |                |
|   | ID          | 7          | Ilex decidua / Possumhaw Holly                | 3" Cal      |                |
|    | IV          | 4          | Ilex vomitoria / Yaupon Holly                 | 3" cal.     |                |
|    | QM          | 2          | Quercus muhlenbergii / Chinkapin Oak          | 5" Caliper  |                |
|    | QM2         | 4          | Quercus polymorpha 'Monterey' / Monterey Oak  | 5" Caliper  |                |
|    | QT          | 5          | Quercus texana / Texas Red Oak                | 5" Caliper  |                |
|    | QV          | 1          | Quercus virginiana / Southern Live Oak        | 5" Caliper  |                |
| <u>SHRUBS</u>                                                                       | <u>CODE</u> | <u>QTY</u> | <u>BOTANICAL / COMMON NAME</u>                | <u>SIZE</u> | <u>SPACING</u> |
|    | ML          | 95         | Muhlenbergia lindheimeri / Lindheimer's Muthy | 3 gal       | 36" o.c.       |

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1405 WILDCAT HOLLOW,  
WEST LAKE HILLS, TX 78746

PLANTING  
SCHEDULE  
L-#1







Planting trees and shrubs on a slope can be a challenge.

When landscaping on a hillside with trees or shrubs, proper planting is key. Taking a few extra steps during planting will ensure that your landscaping stays put and grows strong. When planting on a slope, the roots and trunk should be vertical; and the ground modified, so water is directed to the plant's roots, rather than running straight off.

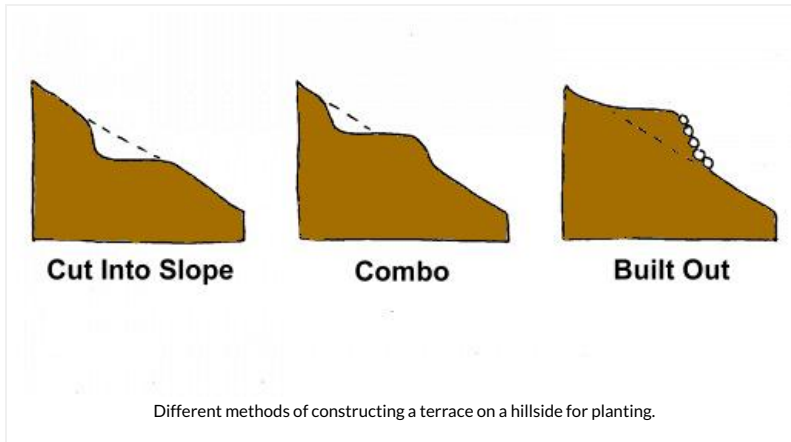
Follow these steps when planting trees and shrubs on a slope.

### Step 1: Build Terrace

Create a flat area or small terrace in your slope, about three times the diameter of the root ball of your tree or shrub. You can create this terrace by:

- Cutting into the hillside.
- Building out of the slope (probably will require a retaining wall or rocks).
- Combination of cutting into and building out the slope.

The less you disturb the original soil, the more stable your slope will be. The finished terrace should be firm enough to stand on while working.



Different methods of constructing a terrace on a hillside for planting.

### Step 2: Plant Tree or Shrub

Now that you have a nice flat spot, plant your tree or shrub (<https://www.todayshomeowner.com/how-to-plant-container-grown-shrubs/>) with the trunk upright and vertical and the root ball at the proper planting depth. Position your planting hole near the center of the terrace, and try to leave some undisturbed soil on the downhill side to keep from having the following problems:

- If the plant is too close to the bottom edge of the slope, the roots may become exposed by erosion.
- If the plant is too close to the top of the slope, it may become buried by soil or debris tumbling down the hill.

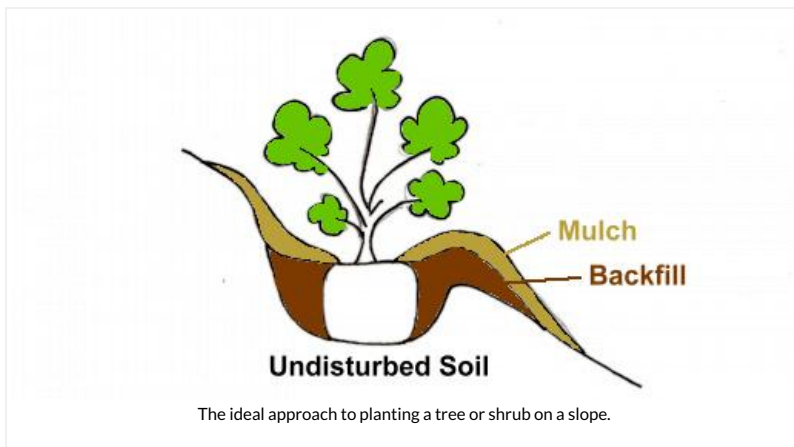
### Step 3: Create Berm to Hold Water

As you backfill around your tree or shrub, put the excess dirt on the downhill side to create a small berm to catch water as it runs down the slope. Make sure not to pile extra dirt directly on the root ball, but make a "half-donut" shape around the plant instead.

### Step 4: Apply Mulch



Put about 2-3 inches of mulch (<https://www.todayshomeowner.com/using-mulch-in-your-garden/>) around the tree or shrub to help hold the dirt and berm in place, keeping the mulch a few inches away from the trunk. If you'd like, you can first put down a layer of landscape fabric (<https://www.todayshomeowner.com/how-to-install-landscape-fabric-and-plastic/>) or mesh held firmly in place with garden staples. Be sure to choose non-slippery landscape fabric, so your mulch won't slide off.



### Step 5: Water Plant

Water your tree or shrub well to help settle the soil. Fix any problems that arise after the first watering, to make sure the planting is stable.

### Step 6: Monitor Plant

Keep an eye on the tree or shrub for a few months to make sure the soil is settling properly, water is being captured, and the roots are staying in place. Make sure the roots aren't being buried by falling debris, and the berm stays in place for at least a year or two, until the plant is well established. Reapply mulch as needed to help hold water.

## Further Information

- How to Landscape a Steep Hillside on Your Yard (<https://www.todayshomeowner.com/video/how-to-landscape-a-steep-hillside-on-your-yard/>) (video)
- DIY Tip for Anchoring Plants on a Steep Slope in Your Yard (<https://www.todayshomeowner.com/video/diy-tip-for-anchoring-plants-on-a-steep-slope-in-your-yard/>) (video)
- How To Plant Container Grown Trees and Shrubs (<https://www.todayshomeowner.com/how-to-plant-container-grown-shrubs/>) (article)
- How To Plant Balled and Burlapped Trees and Shrubs (<https://www.todayshomeowner.com/how-to-plant-balled-and-burlapped-trees-and-shrubs/>) (article)

# How to Plant Trees and Shrubs on a Slope

