

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
CONTRIBUTING ZONE PLAN**

**FOR**

**COVERT BEE CAVE 4.25-AC ADDITION**

**AUGUST 2023**

**PREPARED FOR**

**MATHEWS-BARNES BROTHERS INVESTMENTS II, LP  
11750 RESEARCH BOULEVARD  
AUSTIN, TEXAS 78759-2446**

**PREPARED BY**

**LJA ENGINEERING, INC.  
7500 RIALTO BOULEVARD, BUILDING 2, SUITE 100  
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(512) 439-4700  
FIRM NO. F-1386**

**LJA JOB NO. A338-0403**

## Contributing Zone Plan Checklist

X **Edwards Aquifer Application Cover Page (TCEQ-20705)**

X **Contributing Zone Plan Application (TCEQ-10257)**

Attachment A - Road Map

Attachment B - USGS Quadrangle Map

Attachment C - Project Narrative

Attachment D - Factors Affecting Surface Water Quality

Attachment E - Volume and Character of Stormwater

Attachment F - Suitability Letter from Authorized Agent (if OSSF is proposed)

Attachment G - Alternative Secondary Containment Methods (if AST with an alternative method of secondary containment is proposed)

Attachment H - AST Containment Structure Drawings (if AST is proposed)

Attachment I - 20% or Less Impervious Cover Declaration (if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site)

Attachment J - BMPs for Upgradient Stormwater

Attachment K - BMPs for On-site Stormwater

Attachment L - BMPs for Surface Streams

Attachment M - Construction Plans

Attachment N - Inspection, Maintenance, Repair and Retrofit Plan

Attachment O - Pilot-Scale Field Testing Plan, if BMPs not based on Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs

Attachment P - Measures for Minimizing Surface Stream Contamination

X **Storm Water Pollution Prevention Plan (SWPPP)**

-OR-

– **Temporary Stormwater Section (TCEQ-0602)**

Attachment A - Spill Response Actions

Attachment B - Potential Sources of Contamination

Attachment C - Sequence of Major Activities

Attachment D - Temporary Best Management Practices and Measures

Attachment E - Request to Temporarily Seal a Feature, if sealing a feature

Attachment F - Structural Practices

Attachment G - Drainage Area Map

Attachment H - Temporary Sediment Pond(s) Plans and Calculations

Attachment I - Inspection and Maintenance for BMPs

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

X **Copy of Notice of Intent (NOI)**

X **Agent Authorization Form (TCEQ-0599), if application submitted by agent**

- Application Fee Form (TCEQ-0574)**
- Check Payable to the "Texas Commission on Environmental Quality"**
- Core Data Form (TCEQ-10400)**

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

**The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with [30 TAC 213](#).**

### Administrative Review

1. [Edwards Aquifer applications](#) must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <http://www.tceq.texas.gov/field/eapp>.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited.**
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

### Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a “Mid-Review Modification”. Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ’s Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ’s San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

<b>1. Regulated Entity Name:</b> Covert Bee Cave 4-AC					<b>2. Regulated Entity No.:</b>				
<b>3. Customer Name:</b> Matthews-Barnes Brothers Investments II, LP					<b>4. Customer No.:</b>				
<b>5. Project Type:</b> (Please circle/check one)	<input checked="" type="checkbox"/> New	Modification			Extension		Exception		
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	<input checked="" type="checkbox"/> CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential		<input checked="" type="checkbox"/> Non-residential			<b>8. Site (acres):</b>		4.25-AC of 36.46-AC	
<b>9. Application Fee:</b>	\$4,000		<b>10. Permanent BMP(s):</b>			Sand Filter, Bioretention Pond, Infiltration Trench			
<b>11. SCS (Linear Ft.):</b>	N/A		<b>12. AST/UST (No. Tanks):</b>			N/A			
<b>13. County:</b>	Travis		<b>14. Watershed:</b>			Little Barton Creek			

# Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the “Texas Groundwater Conservation Districts within the EAPP Boundaries” map found at:

[http://www.tceq.texas.gov/assets/public/compliance/field\\_ops/eapp/EAPP%20GWCD%20map.pdf](http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf)

For more detailed boundaries, please contact the conservation district directly.

<b>Austin Region</b>			
<b>County:</b>	<b>Hays</b>	<b>Travis</b>	<b>Williamson</b>
Original (1 req.)	—	X	—
Region (1 req.)	—	X	—
County(ies)	—	X	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	—	—	—	—
Region (1 req.)	—	—	—	—	—
County(ies)	—	—	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA <input type="checkbox"/> Medina	<input type="checkbox"/> EAA <input type="checkbox"/> Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park <input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Charles Hager V, P.E.

Print Name of Customer/Authorized Agent

*CR Hager*

6/12/2023

Signature of Customer/Authorized Agent

Date

**\*\*FOR TCEQ INTERNAL USE ONLY\*\***

Date(s) Reviewed:		Date Administratively Complete:	
Received From:		Correct Number of Copies:	
Received By:		Distribution Date:	
EAPP File Number:		Complex:	
Admin. Review(s) (No.):		No. AR Rounds:	
Delinquent Fees (Y/N):		Review Time Spent:	
Lat./Long. Verified:		SOS Customer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):
Core Data Form Complete (Y/N):			Signed (Y/N):
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):

# Contributing Zone Plan Application

## Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), Effective June 1, 1999

*To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.*

*Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.*

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Contributing Zone Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Charles Hager V, P.E.

Date: 6/12/2023

Signature of Customer/Agent:



Regulated Entity Name: Covert Bee Cave 4-AC

## Project Information

1. County: Travis
2. Stream Basin: Little Barton Creek
3. Groundwater Conservation District (if applicable): Barton Springs Zone
4. Customer (Applicant):

Contact Person: Philip Robinson

Entity: Matthews-Barnes Brothers Investments II, LP

Mailing Address: 11750 Research Blvd

City, State: Austin, Texas

Telephone: (512) 583-3030

Email Address: philip@covertauto.com

Zip: 78759

Fax: \_\_\_\_\_

5. Agent/Representative (If any):

Contact Person: Charles Hager V

Entity: LJA Engineering, Inc.

Mailing Address: 7500 Rialto Boulevard

City, State: Austin, Texas

Zip: 78735

Telephone: (303) 564-2715

Fax: \_\_\_\_\_

Email Address: chager@lja.com

6. Project Location:

- The project site is located inside the city limits of \_\_\_\_\_.
- The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Bee Cave, TX.
- The project site is not located within any city's limits or ETJ.

7.  The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

16501 Sweetwater Village Drive, Austin, TX 78738

8.  **Attachment A - Road Map.** A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

9.  **Attachment B - USGS Quadrangle Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000") is attached. The map(s) clearly show:

- Project site boundaries.
- USGS Quadrangle Name(s).

10.  **Attachment C - Project Narrative.** A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

- Area of the site
- Offsite areas
- Impervious cover
- Permanent BMP(s)
- Proposed site use
- Site history
- Previous development
- Area(s) to be demolished

11. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site

- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Not cleared)
- Other: \_\_\_\_\_

12. The type of project is:

- Residential: # of Lots: \_\_\_\_\_
- Residential: # of Living Unit Equivalents: \_\_\_\_\_
- Commercial
- Industrial
- Other: Parking Lot & Car Wash

13. Total project area (size of site): 4.25 Acres

Total disturbed area: 3.88 Acres

14. Estimated projected population: 0

15. The amount and type of impervious cover expected after construction is complete is shown below:

**Table 1 - Impervious Cover**

<i>Impervious Cover of Proposed Project</i>	<i>Sq. Ft.</i>	<i>Sq. Ft./Acre</i>	<i>Acres</i>
Structures/Rooftops	4,783	÷ 43,560 =	0.11
Parking	43,027	÷ 43,560 =	0.99
Other paved surfaces	57,170	÷ 43,560 =	1.31
Total Impervious Cover	104,980	÷ 43,560 =	2.41

**Total Impervious Cover 2.41 ÷ Total Acreage 4.25 X 100 = 56.71% Impervious Cover**

16.  **Attachment D - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

17.  Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

***For Road Projects Only***

***Complete questions 18 - 23 if this application is exclusively for a road project.***

N/A

18. Type of project:

- TXDOT road project.
- County road or roads built to county specifications.
- City thoroughfare or roads to be dedicated to a municipality.
- Street or road providing access to private driveways.

19. Type of pavement or road surface to be used:

- Concrete
- Asphaltic concrete pavement
- Other: \_\_\_\_\_

20. Right of Way (R.O.W.):

Length of R.O.W.: \_\_\_\_\_ feet.

Width of R.O.W.: \_\_\_\_\_ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

21. Pavement Area:

Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area: \_\_\_\_\_ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

Pavement area \_\_\_\_\_ acres  $\div$  R.O.W. area \_\_\_\_\_ acres  $\times 100 = \text{_____ \%}$  impervious cover.

22.  A rest stop will be included in this project.

A rest stop will not be included in this project.

23.  Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

### ***Stormwater to be generated by the Proposed Project***

24.  **Attachment E - Volume and Character of Stormwater.** A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

### ***Wastewater to be generated by the Proposed Project***

25.  Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

N/A

26. Wastewater will be disposed of by:

On-Site Sewage Facility (OSSF/Septic Tank):

**Attachment F - Suitability Letter from Authorized Agent.** An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the South Austin Regional WWTP (name) Treatment Plant. The treatment facility is:

Existing.

Proposed.

N/A

**Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons**

*Complete questions 27 - 33 if this project includes the installation of AST(s) with volume(s) greater than or equal to 500 gallons.*

N/A

27. Tanks and substance stored:

**Table 2 - Tanks and Substance Storage**

<i>AST Number</i>	<i>Size (Gallons)</i>	<i>Substance to be Stored</i>	<i>Tank Material</i>
1			
2			
3			
4			
5			

**Total x 1.5 = \_\_\_\_\_ Gallons**

28.  The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than

one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

- Attachment G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are attached.

29. Inside dimensions and capacity of containment structure(s):

**Table 3 - Secondary Containment**

<i>Length (L)(Ft.)</i>	<i>Width(W)(Ft.)</i>	<i>Height (H)(Ft.)</i>	<i>L x W x H = (Ft3)</i>	<i>Gallons</i>

**Total: \_\_\_\_\_ Gallons**

30. Piping:

- All piping, hoses, and dispensers will be located inside the containment structure.
- Some of the piping to dispensers or equipment will extend outside the containment structure.
- The piping will be aboveground
- The piping will be underground

31.  The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: \_\_\_\_\_.

32.  **Attachment H - AST Containment Structure Drawings.** A scaled drawing of the containment structure is attached that shows the following:

- Interior dimensions (length, width, depth and wall and floor thickness).
- Internal drainage to a point convenient for the collection of any spillage.
- Tanks clearly labeled
- Piping clearly labeled
- Dispenser clearly labeled

33.  Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

- In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

- In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

## **Site Plan Requirements**

**Items 34 - 46 must be included on the Site Plan.**

34.  The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 40'.
35. 100-year floodplain boundaries:
- Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- No part of the project site is located within the 100-year floodplain.  
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Panel 48453C0385J, Effective January 22, 2020.
36.  The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37.  A drainage plan showing all paths of drainage from the site to surface streams.
38.  The drainage patterns and approximate slopes anticipated after major grading activities.
39.  Areas of soil disturbance and areas which will not be disturbed.
40.  Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
41.  Locations where soil stabilization practices are expected to occur.
42.  Surface waters (including wetlands).  
 N/A
43.  Locations where stormwater discharges to surface water.  
 There will be no discharges to surface water.
44.  Temporary aboveground storage tank facilities.  
 Temporary aboveground storage tank facilities will not be located on this site.

45.  Permanent aboveground storage tank facilities.  
 Permanent aboveground storage tank facilities will not be located on this site.
46.  Legal boundaries of the site are shown.

### ***Permanent Best Management Practices (BMPs)***

#### ***Practices and measures that will be used during and after construction is completed.***

47.  Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.  
 N/A
48.  These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.  
 The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.  
 A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: \_\_\_\_\_.  
 N/A
49.  Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.  
 N/A
50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.  
 The site will be used for low density single-family residential development and has 20% or less impervious cover.  
 The site will be used for low density single-family residential development but has more than 20% impervious cover.  
 The site will not be used for low density single-family residential development.

51. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

- Attachment I - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- The site will not be used for multi-family residential developments, schools, or small business sites.

52.  **Attachment J - BMPs for Upgradient Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53.  **Attachment K - BMPs for On-site Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

54.  **Attachment L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

N/A

55.  **Attachment M - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are

attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

N/A

56.  **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan.** A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

Prepared and certified by the engineer designing the permanent BMPs and measures

Signed by the owner or responsible party

Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.

Contains a discussion of record keeping procedures

N/A

57.  **Attachment O - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

N/A

58.  **Attachment P - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.

N/A

***Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.***

59.  The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
60.  A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

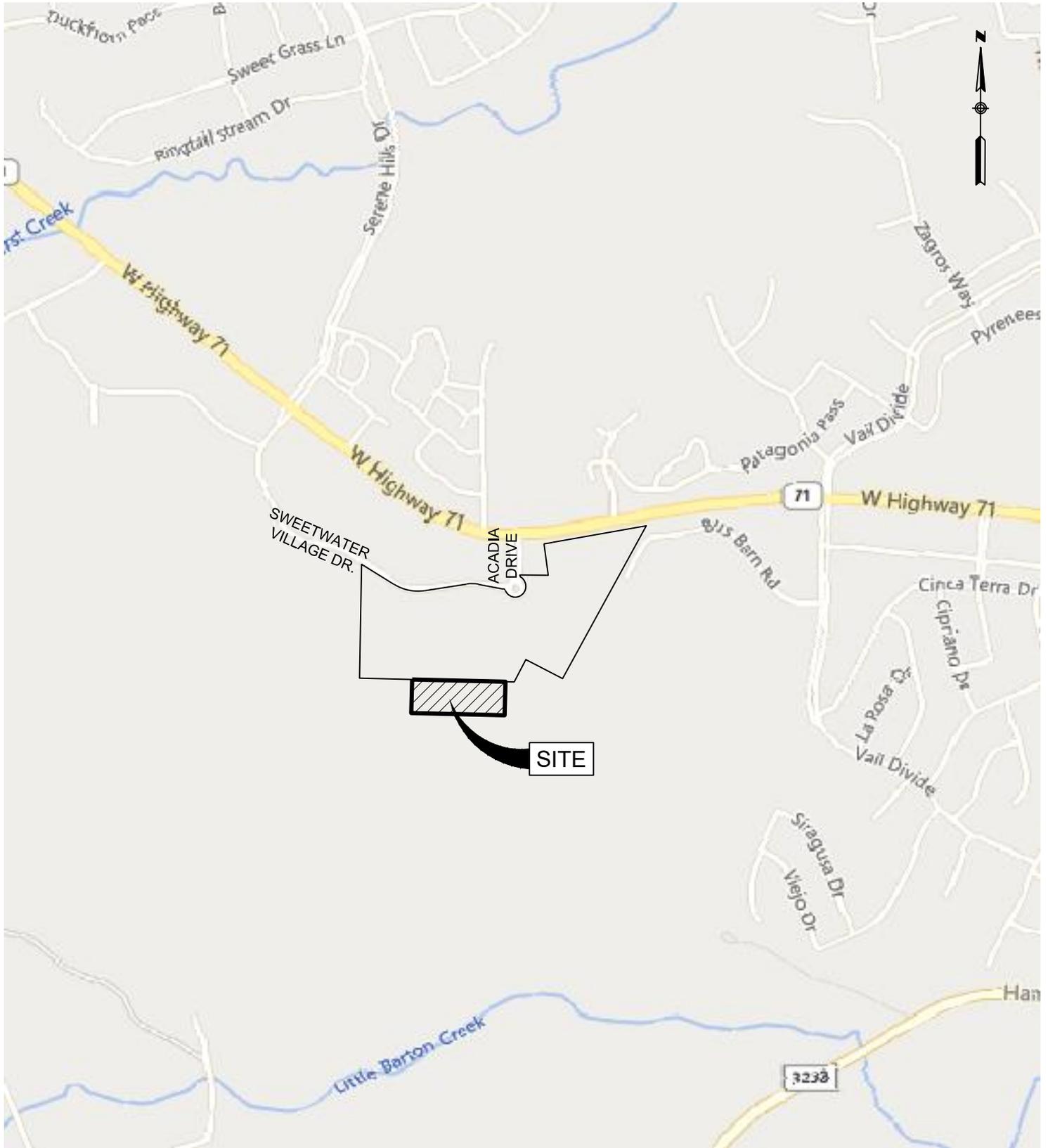
### ***Administrative Information***

- 61.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.
- 62.  Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.
- 63.  The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.
  - The Temporary Stormwater Section (TCEQ-0602) is included with the application.

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**ATTACHMENT A**  
**SITE LOCATION ROAD MAP**

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**LJA Engineering, Inc.**

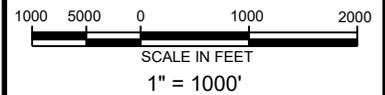
7500 Rialto Boulevard Building II  
 Suite 100  
 Austin, Texas 78735



Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

**ROAD MAP**  
 COVERT BEE CAVE 4-AC  
 SWEETWATER VILLAGE DR.,  
 BEE CAVE, TX 78669

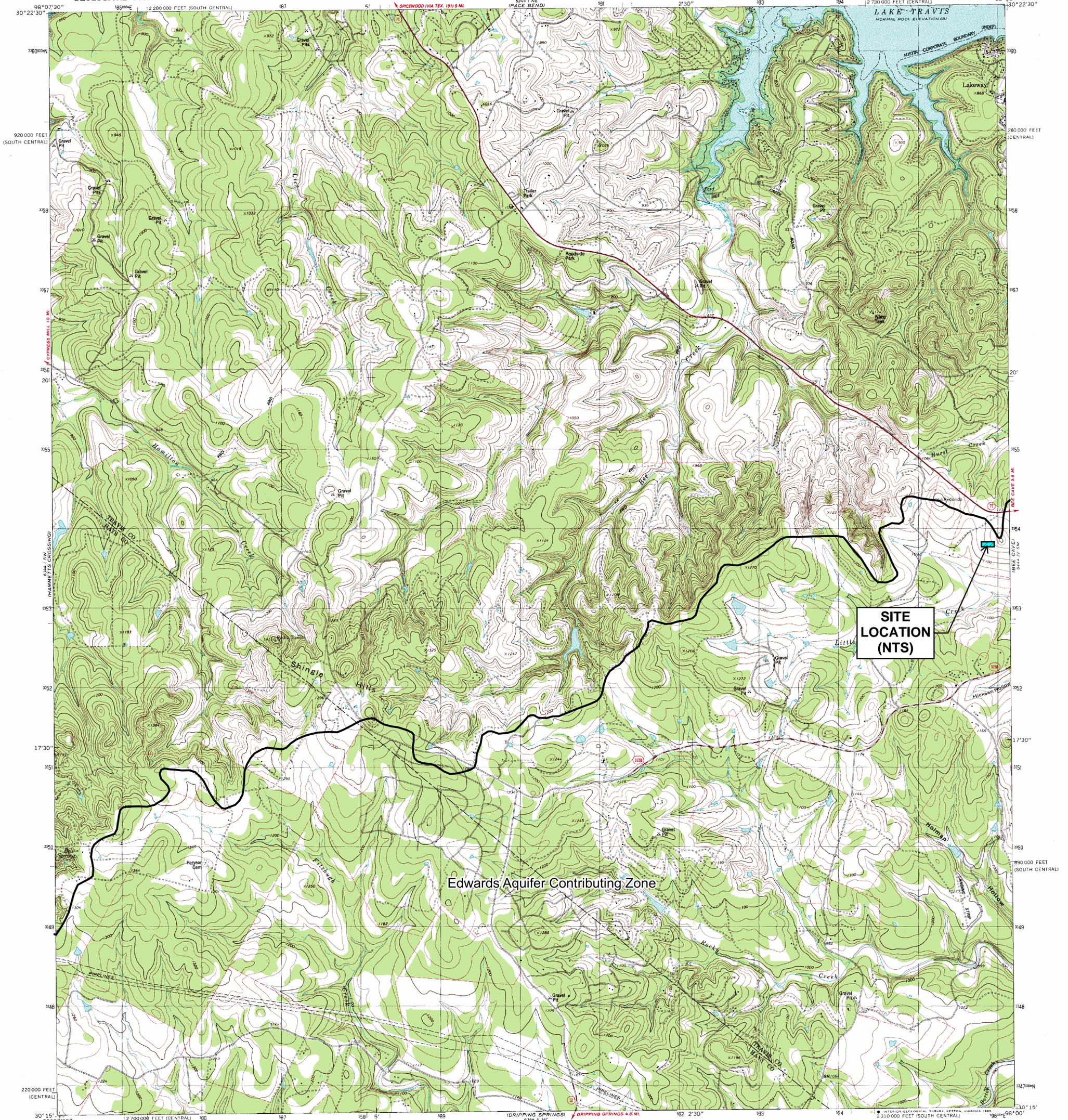
**ATTACHMENT A**



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**ATTACHMENT B**  
**USGS QUADRANGLE MAP**

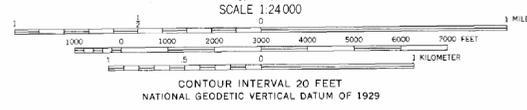
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**SITE  
LOCATION  
(NTS)**

Edwards Aquifer Contributing Zone

Mapped, edited, and published by the Geological Survey  
Revised in cooperation with the Texas Water Development Board  
Control by USGS and NOS/NOAA  
Topography by photogrammetric methods from aerial photographs  
taken 1967. Field checked 1968. Revised from aerial photographs  
taken 1985. Field checked 1986. Map edited 1986  
Projection: Texas coordinate system, central zone  
(Lambert conformal conic)  
10,000-foot grid ticks based on Texas coordinate system,  
central and south central zones  
1000-meter Universal Transverse Mercator grid, zone 14  
1927 North American Datum  
To place on the predicted North American Datum 1983  
move the projection lines 18 meters south and  
28 meters east as shown by dashed corner ticks  
Fine red dashed lines indicate selected fence lines



**ROAD CLASSIFICATION**  
Primary highway, hard surface ——— Light duty road, hard or improved surface ———  
Secondary highway, hard surface ——— Unimproved road ———  
hard surface ———  
Interstate Route ——— U. S. Route ——— State Route ———



**SHINGLE HILLS, TEX.**  
864 SPICEWOOD 15' QUADRANGLE  
30098-C1-TF-024  
1986  
DMA 6544 1 SE-SERIES V882

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



**Regulatory Zones**  
**30 TAC Chapter 213- Edwards Aquifer**  
**Effective March 1974**

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

## **ATTACHMENT C - PROJECT NARRATIVE**

The Covert Bee Cave 4-AC project, Phase 4 of the multi-phased Covert Tract Project, proposes the construction of a car wash including parking, grading, drainage, and utility improvements. The proposed project consists of one car wash structure, one vacuum structure, and a parking lot with access lanes and parking area. The project site is located on a 4.25-acre portion of the 36.46-AC Lot 9A, Block A, a subdivision of Sweetwater Crossing in Travis County, Texas. A total of 2.41 acres of impervious cover is proposed, which is 56.71% of the Phase 4 developed drainage area.

The project site is located to the south of the intersection of State Highway 71 and Acadia Drive. The project is located off of Sweetwater Village Drive which is provided access to State Highway 71 by Acadia Drive. A Road Map is included as **Attachment A**. The project is in the City of Bee Cave's Extra-Territorial Jurisdiction ("ETJ"), within the Slaughter Creek Watershed, part of the Little Barton Creek Zone ("LBA") and is entirely within the Contributing Zone of the Edward's Aquifer. No portion of the proposed development is located within the 100-year floodplain or the associated waterway setbacks. Project wastewater will be disposed of by conveyance to the proposed 4" wastewater line constructed as part of Phase 1 (BY OTHERS). The site is currently undeveloped, with no known history of previous development within the site.

Water quality treatment will be provided for the project by a proposed water quality detention system utilizing 3 BMPs, which shall be designed in accordance with Environmental Criteria Manual ("ECM") Sections 1.6.7 and 1.6.9 and the Save Our Springs ordinance and amended Composite Ordinance. The water quality pond is sized to process the first 4,314 cubic feet that enters the sedimentation basin splitter through the 24" storm pipe. The splitter box contains two rectangular orifices set at the flow line elevation of 1124.75. The flow continues through a 3' wide gabion with a top elevation of 1127.75 which separates the sedimentation basin and the filter basin. The filter basin consists of a sand bed covering 6" perforated PVC pipes which conveys the water to the bio retention basin. The bio retention basin is made up of an 18" to 24" filter media above a 6" to 12" sand layer. The flow continues through 12" PVC pipe to the infiltration trench where it will drain upwards through a maximum of 8' of 1.5" – 3.0" washed bank run gravel aggregate with no fines.

Once the water quality volume is captured by the water quality pond, the additional storm water runoff shall be diverted to a proposed detention pond with a splitter box structure. The proposed detention pond is sized to detain, and discharge proposed flows on the site at or below existing flow rates for the 2-, 10-, 25-, and 100-year storm events. The detention pond was designed utilizing HEC-HMS version 4.8.1 with the COA Atlas-14 rain flow data for Frequency Storm meteorologic modeling.

Offsite areas include roughly 1.78-acres to the east of the project. This area is undeveloped. All offsite flows will be redirected around the proposed developed site using open channels on the eastern boundary of the property, which will deposit the storm water in natural channel flow areas closest to existing conditions.

Temporary erosion controls consisting of silt fence, mulch sock, stabilized construction entrance, and tree protection/limits of construction fencing will be installed per the site plan's Erosion and Sedimentation Control Plan prior to commencement of ground disturbance. Permanent erosion controls will include seeding/hydro mulch on all unpaved areas and rock riprap at storm sewer and detention pond outlets. There are no existing improvements to be demolished.

## **ATTACHMENT D – FACTORS AFFECTING SURFACE WATER QUALITY**

The following factors could have an impact on surface and groundwater quality during construction:

1. Non-Stormwater Discharges: It is expected that the following non-stormwater discharges will occur from the site during the construction period:
  - Water from water line flushing
  - Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred)
  - Uncontaminated groundwater (from dewatering of excavation)
  - All non-storm water discharges will be directed towards erosion control structures prior to discharge
  
2. Material Inventory: The materials or substances listed below are expected to be present onsite during construction:
  - Concrete and concrete products
  - Metal reinforcing materials - rebar, welded wire fabric
  - Fertilizers
  - Petroleum-based products
  - Wood
  - Plastic (PVC) and metal pipe and fittings
  - Paints
  - Rock, gravel, sand, and soil

The following factors could have an impact on surface and groundwater quality after construction:

1. Increased Impervious Cover: The total area of the site, a portion of the 36.46-AC Lot 9A is approximately 4.25 acres and was previously undeveloped with an impervious cover percentage of 0.0%. The proposed improvements for this application will increase the impervious cover to 56.71% of the total 4.25 project area.
  
2. Revegetation / Water Quality Treatment of Stormwater: Permanent erosion controls will include seeding/hydro mulch on all unpaved areas and rock riprap at storm sewer and detention pond outlets. Runoff from the completed project will be routed to the proposed water quality and detention system.

## **ATTACHMENT E – VOLUME AND CHARACTER OF STORMWATER**

The proposed site improvements will generate 2.41-acres of impervious cover, which is 56.71% of the overall 4.25-acre site. Surface runoff from all areas of the developed site will be captured by proposed storm drain inlets and conveyed by proposed storm sewers to a splitter box and associated water quality improvements.

The proposed water quality improvements consist of primary treatment via a proposed Partial Sedimentation and Filtration Water Quality Pond (Water Quality Pond C), secondary treatment via a Partial Bioretention Basin, and tertiary treatment via an Infiltration Trench. These improvements will treat all the impervious runoff from the 4.25-acre project site.

Proposed Water Quality Pond C will receive impervious cover runoff from the developed portion of the 4.25-ac site and requires a water quality capture volume of 11,270 cubic feet (CF), per the attached TCEQ TSS Removal Calculations. In order to meet Bee Cave requirements, the required water quality capture depth is 1.14 inches, which results in a required water quality capture volume of 11,888 CF. The provided water quality volume is 13,164 CF. All runoff volume associated with the 1.14-inch capture depth will enter the proposed water quality pond and collect in a sediment chamber. The stormwater will filter through a rock gabion and enter the sand bed chamber of the pond. The water will filter through the sand and be collected by underdrain piping before being discharged to the secondary and tertiary water quality improvements.

The proposed Partial Sedimentation and Filtration Water Quality Pond is sufficient to provide adequate TSS removal per TCEQ requirements, but the City of Bee Cave requires additional water quality treatment. Therefore, the water will drain to secondary treatment via a Partial Bioretention Basin, and tertiary treatment via an Infiltration Trench as described in the following paragraph to provide additional water quality, per the City of Bee Cave requirements.

Upon the initial rain event, the stormwater will convey through Water Quality Pond C and discharge into a Partial Bioretention Basin. Pond C is designed to have an orifice plate on the final underdrain discharge pipe that will allow for the pond to drain between 24 and 48 hours. After release into the Partial Bioretention Basin, the water will pass through another underdrain orifice plate designed to allow the pond to drain in 24-48 hours and it will infiltrate into the ground via an infiltration trench. Since the water quality elevations for each system are isolated by the respective water quality and outfall elevations, the improvements shall be empty of stormwater within 72 hours of the rainfall event.

Stormwater runoff in excess of the 1.14-inch water quality capture depth for Pond C will flow over the proposed splitter weir into a detention pond. The detention pond provides 2-, 10-, 25-, and 100-year detention for the site.

Pond C drainage area runoff coefficients for the 25-year and 100-year events before construction are estimated to be 0.39 and 0.46, respectively. The post construction runoff coefficients are expected to be 0.71 and 0.79 for the overall developed site, respectively.

The water quality calculations are based on the TCEQ Technical Guidance Manual (July 2005) for the proposed water quality pond, which is provided on the next page.

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.  
 Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.  
 Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:  $L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load  
 $A_N$  = Net increase in impervious area for the project  
 $P$  = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project  
 County = **Travis**  
 Total project area included in plan = **3.56** acres  
 Predevelopment impervious area within the limits of the plan = **0.00** acres  
 Total post-development impervious area within the limits of the plan = **2.41** acres  
 Total post-development impervious cover fraction = **0.68**  
 $P$  = **32** inches

$L_{M \text{ TOTAL PROJECT}}$  = **2101** lbs.

\* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **1**

**2. Drainage Basin Parameters (This information should be provided for each basin):**

Drainage Basin/Outfall Area No. = **1**  
 Total drainage basin/outfall area = **3.56** acres  
 Predevelopment impervious area within drainage basin/outfall area = **0.00** acres  
 Post-development impervious area within drainage basin/outfall area = **2.41** acres  
 Post-development impervious fraction within drainage basin/outfall area = **0.68**  
 $L_{M \text{ THIS BASIN}}$  = **2101** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Sand Filter**  
 Removal efficiency = **89** percent

**4. Calculate Maximum TSS Load Removed ( $L_R$ ) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7:  $L_R = (\text{BMP efficiency}) \times P \times (A_c \times 34.6 + A_p \times 0.54)$

where:  $A_c$  = Total On-Site drainage area in the BMP catchment area  
 $A_p$  = Impervious area proposed in the BMP catchment area  
 $A_p$  = Pervious area remaining in the BMP catchment area  
 $L_R$  = TSS Load removed from this catchment area by the proposed BMP

$A_c$  = **3.56** acres  
 $A_p$  = **2.41** acres  
 $A_p$  = **1.15** acres  
 $L_R$  = **2396** lbs

**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**

Desired  $L_{M \text{ THIS BASIN}}$  = **2101** lbs.  
 $F$  = **0.88**

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.** Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth = **1.50** inches  
 Post Development Runoff Coefficient = **0.48**  
 On-site Water Quality Volume = **9392** cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP = **0.00** acres  
 Off-site Impervious cover draining to BMP = **0.00** acres  
 Impervious fraction of off-site area = **0**  
 Off-site Runoff Coefficient = **0.00**  
 Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **1878**  
 Total Capture Volume (required water quality volume(s) x 1.20) = **11270** cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.  
 The values for BMP Types not selected in cell C45 will show NA.

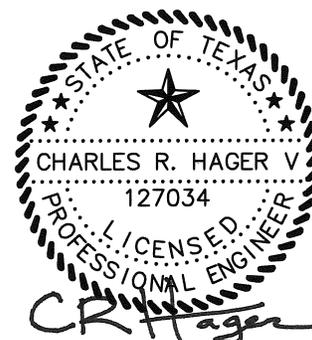
**9. Filter area for Sand Filters** Designed as Required in RG-348 Pages 3-58 to 3-63

**9A. Full Sedimentation and Filtration System**

Water Quality Volume for sedimentation basin = **11270** cubic feet  
 Minimum filter basin area = **522** square feet  
 Maximum sedimentation basin area = **4696** square feet For minimum water depth of 2 feet  
 Minimum sedimentation basin area = **1174** square feet For maximum water depth of 8 feet

**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = **11270** cubic feet  
 Minimum filter basin area = **939** square feet  
 Maximum sedimentation basin area = **3757** square feet For minimum water depth of 2 feet  
 Minimum sedimentation basin area = **235** square feet For maximum water depth of 8 feet



**ATTACHMENT F – Suitability Letter from Authorized Agent (if OSSF is proposed)**

Not Applicable.

**ATTACHMENT G – Alternative Secondary Containment Methods (if AST with an alternative method of secondary containment is proposed)**

Not Applicable.

**ATTACHMENT H – AST Containment Structure Drawings (if AST is proposed)**

Not Applicable.

**ATTACHMENT I – 20% or Less Impervious Cover Waiver**

Not applicable.

**ATTACHMENT J – BMPs for Upgradient Stormwater**

Not Applicable.

**ATTACHMENT K – BMPs for On-Site Stormwater**

Temporary Controls: Prior to site clearing, grading and excavation, the stabilized construction entrance will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed where more concentrated flow occurs. The water quality ponds will be rough graded to act as sediment traps for the project. All runoff from the developed site will be directed into the rough cut water quality ponds by the use of silt fence and grading during construction until curb and gutter is installed. During all aspects of construction, the contractor shall maintain these controls. The contractor will be responsible for stabilization practices (revegetation). The contractor will be responsible for removing the temporary controls once the revegetation is established.

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas through use of a sand filter type water quality pond. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified splitter box and water quality pond improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

**ATTACHMENT L – BMPs for Surface Streams**

Temporary Controls: Prior to site clearing, grading and excavation, the stabilized construction entrance will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed where more concentrated flow occurs. The water quality ponds will be rough graded to act as a sediment trap for the project. All runoff from the developed site will be directed into the rough cut water quality pond by the use of silt fence and grading during construction until curb and gutter is installed. During all aspects of construction, the contractor shall

maintain these controls. The contractor will be responsible for stabilization practices (revegetation). The contractor will be responsible for removing the temporary controls once the revegetation is established.

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas through use of a sand filter type water quality pond. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified splitter box and water quality improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

#### **ATTACHMENT M – CONSTRUCTION PLANS**

The Covert Bee Cave 4-AC construction and site plans are attached to this application.

#### **ATTACHMENT N - INSPECTION, MAINTENANCE, REPAIR, AND RETROFIT PLAN**

See attached document labeled “Maintenance Plan for Permanent Best Management Practices for Covert Bee Cave”.

#### **ATTACHMENT O – Pilot-Scale Field Testing Plan, if BMPs not based on Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs**

Not Applicable

#### **ATTACHMENT P – Measures for Minimizing Surface Stream Contamination**

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas through use of a sand filter type water quality pond. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified splitter box and water quality improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

Stormwater runoff in excess of the provided water quality volume will flow over the proposed splitter weir into the adjacent detention basin. The proposed detention basins will provide 2-, 10-, 25-, and 100-Year detention for the contributing drainage area and associated impervious cover. The only uncontrolled discharges from the proposed site will be from existing undisturbed areas that will decrease in size post construction due to the proposed involvements.

**Maintenance Plan  
For Permanent Best Management Practices  
Covert - Bee Cave**

PROJECT NAME: Covert – Bee Cave Phase 4 (4-ac)  
ADDRESS: 16501 Sweetwater Village Drive  
CITY, STATE ZIP: Austin, Texas 78738  
RESPONSIBLE PARTY: Matthews-Barnes Brothers Investments II, LP

**A) PROJECT DESCRIPTION**

*The Covert Bee Cave Phase 4 project is a proposed 4.25-acre commercial site development located within the ETJ of the City of Bee Cave in Travis County, Texas. The proposed site is located on the south side of State Highway 71 approximately 5 miles west of the City of Bee Cave and ½ mile west of Vail Divide Road. The proposed development will ultimately include the construction of car dealerships parking area, with associated parking, paving, site drive aisles, car wash, water and wastewater utility improvements, drainage improvements, a partial sed/fil water quality pond, partial bioretention pond, and a detention pond, retaining walls, and required landscaping.*

**B) MAINTENANCE SCHEDULE AND DETAILS**

*The Best Management Practices associated with Water Quality for this project includes the use of a Partial Sedimentation Partial Sedimentation and Filtration Water Quality Pond (Water Quality Pond C), secondary treatment via a Partial Bioretention Basin, and tertiary treatment via an Infiltration Trench. These improvements will treat all the impervious runoff from the 4.25-acre project site.*

*BMP facilities must be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation.*

*The inspection should include a review of the structural elements for cracks/voids, the inlet and outlet for clogging, the adequacy of both upstream and downstream erosion protection measures, the embankment for subsidence or erosion/damage, and the Filtration and Infiltration systems for proper function.*

**C) INSPECTION/MAINTENANCE FOR STRUCTURAL ELEMENTS**

**Routine Maintenance for All Structural Systems**

*Water quality ponds of all types have similar routine maintenance requirements, although most ponds have some unique maintenance needs, as detailed in this section. The following general maintenance requirements apply to all pond BMPs.*

*During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately.*

*Grass areas in and around earthen ponds must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing of grass is performed, a mulching mower must be used, or grass clippings must be caught and removed, as with all water quality BMPs.*

*Debris and litter accumulated in the facility must be removed during each inspection.*

*Excessive sediment must be removed and properly disposed of in an approved off-site disposal area. Excessive sediment is when accumulations reach 6 inches in depth.*

*Design drawdown times must not be exceeded by more than 24 hours. The design drawdown time is 72 hours from the first accumulation of stormwater or when the pond reaches full capacity. If drawdown times are excessive, repairs should occur immediately.*

*With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, gabions, retaining walls, etc.) must be identified and repaired immediately.*

*A maintenance access route shall extend to the pond from the parking lot. The maintenance access shall have a slope no greater than 4:1.*

*Inlet and outlet structures should be inspected and cleaned out of any debris or sediment. If there is major damage to either the inlet or outlet controls, the damaged areas should be repaired.*

*Structural integrity of basins shall be maintained at all times. Woody vegetation should be controlled/removed to prevent basin leakage.*

#### **D) OPERATING GUIDELINES – MAINTENANCE REQUIREMENTS FOR SPECIFIC BMPS**

##### **Partial Sedimentation and Filtration Water Quality Pond & Partial Bioretention Basin**

*Remove sediment from sediment chamber area and from the filtration areas at least 2 times annually or when depth reaches 10% of volume (typically 3-6 inches) .*

*Rake the sand bed and filtration areas to break up any crust that has been formed. Remove all grass from the sand bed area. If sand bed area has any accumulation of sediment on surface, the sediment must be removed. This procedure is performed by hand operations. No mechanized machinery should be allowed on top of the sand bed area. Remove sediment from under-drains at least every 5 years.*

*Immediately repair any leaks or other malfunctions with the underdrain system.*

*After system is completed and constructed and when power is available, pond should be filled to at least ½ capacity to test all system functions.*

*The overall system shall be inspected for the ability to retain the water quality volume on site per COA ECM Section 1.6.7.A.*

**APPLICABLE ORDINANCES AND REGULATORY INSPECTIONS**

Travis County and the TCEQ shall be granted access for inspection as allowed and required by local and state regulation. The site operators will be required to maintain an annual operating permit with the City of Bee Cave pursuant to COBC Code of Ordinances 20.04.058 and 20.04.104.

The Facility Operator shall keep a maintenance log of all activities and inspections performed on the pond for a time period as required by the TCEQ or other regulatory agencies. Such maintenance logs shall be submitted to any interested regulator upon demand.

RECORD KEEPING OF INSPECTIONS, MAINTENANCE AND REPAIRS SHALL BE MAINTAINED BY THE RESPONSIBLE PARTY.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information. The City of Bee Cave shall retain rights to access and inspect the water quality controls as deemed necessary. Owners or operators of water quality controls on the site shall obtain an annual operating permit from the City per City of Bee Cave code of ordinance Section 20.04.058 and 20.04.104.

Responsible Party for Maintenance: Mathews-Barnes Brothers Investments II, LP

Address: 11750 D Research Boulevard

City, State Zip: Austin, Texas 78759

**OPERATING, MAINTENANCE & REPAIR GUIDELINES FOR WATER QUALITY SYSTEM**

1. DEBRIS AND LITTER MAY ACCUMULATE AND CONCENTRATE AT THE STORM WATER INTAKE STRUCTURE. THIS DEBRIS SHOULD BE REMOVED EVERY 3 TO 6 MONTHS, OR MORE OFTEN IF NECESSARY DEPENDING UPON THE RATE OF ACCUMULATION.
2. SILT SHOULD BE REMOVED FROM THE BASIN WHEN THE ACCUMULATION EXCEEDS 6 INCHES. AFTER HEAVY RAINS, THE INTAKE STRUCTURE SHOULD BE INSPECTED AND ANY SILT THAT HAS ACCUMULATED SHOULD BE RAKED BACK TO THE OUTER EDGE. SILT ACCUMULATION ON THE FLOOR OF THE INTAKE STRUCTURE SHOULD NOT BE ALLOWED TO EXCEED 4 INCHES IN DEPTH.
3. SILT REMOVED FROM THE BASIN AS A RESULT OF MAINTENANCE SHOULD BE DISPOSED OF ON-SITE IF PROPERLY STABILIZED ACCORDING TO PRACTICES OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL CRITERIA OF THE CITY OF AUSTIN.
5. WATER QUALITY POND HAS BEEN DESIGNED TO CAPTURE AND HOLD RUNOFF WITHOUT ALLOWING DISCHARGE EXCEPT BY BMP ONTO THE UNDEVELOPED AREA WEST OF THE SITE OR VOLUME EXCEEDING THE WATER QUALITY VOLUME INTO THE DETENTION POND.

The owner has read and understands the general maintenance requirements of the water quality system.

  
\_\_\_\_\_  
Owner Signature

6/12/2023  
\_\_\_\_\_  
Date

**COVERT BEE CAVE 4.25-AC**  
**TEXAS POLLUTANT DISCHARGE**  
**ELIMINATION SYSTEM**  
**STORMWATER POLLUTION**  
**PREVENTION PLAN**

**July 2023**

*Prepared for:*

**MATTHEWS-BARNES BROTHERS INVESTMENTS II, LP**  
**11750 RESEARCH BOULEVARD**  
**AUSTIN, TEXAS 78759**

*Prepared by:*

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FIRM NO. F-1386

**LJA JOB NO. A338-0401**



*CR Hager*  
8/7/2023

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**COVERT BEE CAVE**  
**TEXAS POLLUTANT DISCHARGE**  
**ELIMINATION SYSTEM**  
**STORMWATER POLLUTION PREVENTION PLAN**

**A. SITE DESCRIPTION**

1. Project Name: Covert Bee Cave 4-AC
  
2. Location: The subject tract is located approximately five (5)-miles west of the City of Bee Cave just south of Texas State Highway 71, and approximately ½ mile west of Vail Divide within the City of Bee Cave ETJ, Travis County, Texas. (See *Exhibit 1*)
  
3. Facility Operators: Matthews-Barnes Brothers Investments II, LP  
11750 Research Blvd  
Austin, Texas 78759  
Date N.O.I. submitted: \_\_\_\_\_  
General Permit Authorization No.: \_\_\_\_\_  
  
\_\_\_\_\_ (Contractor)  
\_\_\_\_\_  
\_\_\_\_\_  
  
Date N.O.I. submitted: \_\_\_\_\_  
General Permit Authorization No.: \_\_\_\_\_
  
4. Property Owner: Matthews-Barnes Brothers Investments II, LP  
11750 Research Blvd  
Austin, Texas 78759

Project Description: The Covert Bee Cave project is a proposed 4.25 acre site, part of the 36.46 acre commercial site development located within the two (2)-mile extraterritorial jurisdiction (ETJ) of the City of Bee Cave in Travis County, Texas. The proposed development will be constructed as the last of four phases. The proposed Phase 4 development consists of a carwash and a vacuum area. The proposed improvements also include associated parking and drives, onsite water and wastewater utilities, storm sewers, one water quality pond, one detention pond, retaining walls, and a water quality irrigation area. The water quality and detention ponds will be fully constructed as part of the Phase 4 improvements to accommodate the 4.25 acre tract and have been designed accordingly.

5. Site Area: The construction limits and disturbance caused by construction will include approximately 3.88 acres.
  
6. Runoff Coefficient: The detention and water quality drainage area runoff coefficients for the 25-year and 100-year events before construction are estimated to be .46 and 0.53, respectively. The post construction runoff coefficients are expected to be 0.81 and 0.90 for the 4.25 acre developed site, respectively.

7. Existing Soils: According to the USDA Soil Survey of Travis County, the soil classifications within the proposed site are Brackett-Rock outcrop complex (BID).

*Brackett-Rock Outcrop Complex (BID)*: The Brackett series consist of shallow to paralithic bedrock, well drained soils formed in residuum weathered from limestone of Cretaceous age, mainly from the Glen Rose formation. These nearly level to very steep soils are located on backslopes of ridges on dissected plateaus of the Edwards Plateau. Slopes are 1 to 60 percent. Mean annual air temperature is about 19 degrees C (67 degrees F), and mean annual precipitation is about 737 mm (29 in). This soil belongs to hydrologic group 'D'.

9. Factors Affecting Surface Water Quality: Factors that could affect surface water quality include the disturbance of vegetative cover and transport of sediment during the construction phase. These items will be mitigated by the use of silt fencing, rock berms, stabilized construction entrances, and other appropriate sediment/erosion control and soil stabilization methods. No other significant potential pollutants are anticipated on site.

After construction, there will be runoff from paved areas, which will be mitigated through the use of proposed onsite sedimentation-filtration water quality ponds. Excess stormwater will be detained via onsite detention ponds.

10. Location of Receiving Waters: The Covert Bee Cave project site is located within the Little Barton Creek watershed. Runoff from this site drains to Little Barton Creek, which drains to Barton Creek, and ultimately, to Town Lake. Based on boundary maps prepared by the Texas Commission on Environmental Quality, the property is located in the Edward's Aquifer Contributing Zone. The subject tract is not located within any Special Flood Hazard Area (100 Year Floodplain), according to FEMA Flood Insurance Rate Map No. 48453C0385J, Effective Date January 22, 2020.
11. Off-Site Operations: Disposal of spoil material will be the responsibility of the Contractors. Spoil shall be temporarily disposed of at the designated onsite temporary disposal area and permanently removed to a permitted off-site spoil disposal area. The Contractors shall be independently responsible as Operators for obtaining necessary permits in conjunction with the off-site disposal of spoil material or acquisition of borrow material.
12. Endangered Species:  
There are no known suitable habitats for endangered species on the site.

## B. POLLUTION PREVENTION CONTROLS

### 1. Sequence of Construction:

- a. Assign an Environmental Project Manager who will be onsite greater than 90% of the time during construction activity and be responsible for the items listed under section 1.2.2.3 of the environmental criteria manual.
- b. Install erosion controls and tree protection per approved plans.
- c. The environmental project manager must contact the city of bee cave, at (512)767-6675 to schedule and hold pre-construction conference on site. They must provide 72-hour notification of environmental inspection prior to pre-construction conference.
- d. Erosion controls will be revised, if needed to comply with inspector's directives, and revised construction schedule relative to the water quality plan requirements and the erosion plan.
- e. Rough cut all required or necessary ponds. Either the permanent outlet structure or a temporary outlet must be constructed prior to development of any embankment or excavation that leads to ponding conditions. The outlet system must consist of a low-level outlet and an emergency overflow meeting the requirements of the drainage criteria manual (section 8.3) and/or the environmental criteria manual (section 1.4.2.k) as required. The outlet system shall be protected from erosion and shall be maintained throughout the course of construction until final restoration is achieved.
- f. Temporary control to be inspected and maintained weekly and prior to anticipated rainfall events and after rainfall events, as needed.
- g. Environmental project manager will schedule a mid-construction conference to coordinate changes in the construction schedule and evaluate effectiveness of the erosion control plan after possible construction alterations to the site. participants shall include the city inspector, project engineer, general contractor and environmental project manager. the anticipated completion date and final construction sequence and inspection schedule will be coordinated with the appropriate city inspector. A mid construction conference is required for each phase, if phasing is proposed, with the city of bee cave planning & development department, which will be coordinated based upon completion of buildings, drainage facilities, water quality controls and temporary erosion controls by phase.
- h. Site rough grading.
- i. Install all underground utilities to sub grade elevation.
- j. Install water quality pond overflow pipe & detention pond outlet structure maintain / repair any damage to water quality pond.
- k. Install permanent erosion controls.
- l. Complete and clean out permanent erosion control. Filter media will be installed prior to/concurrently with revegetation of the site. Revegetate disturbed areas, including the removal of temporary erosion/ sedimentation controls and tree protection or execute a developer's contract for the revegetation along with the engineer's concurrence letter submitted to the city of bee cave after the engineer inspects the site. Restore any areas disturbed during removal of erosion/ sedimentation controls.

2. Erosion and Sedimentation Controls:

Temporary vegetative stabilization:

1. From September 15 to March 1, seeding shall be with cool season cover crops (Wheat at 0.5 pounds per 1000 SF, Oats at 0.5 pounds per 1000 SF, Cereal Rye Grain at 0.5 pounds per 1000 SF) with a total rate of 1.5 pounds per 1000 SF. Cool season cover crops are not permanent erosion control.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 1 pound per 1000 SF.
  - a. Fertilizer shall be water soluble with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of ½ pound per 1000 SF.
  - b. Hydromulch shall comply with Table 1, below.
  - c. Temporary erosion control shall be acceptable when the grass has grown at least 1 ½ inches high with 95% coverage, provided no bare spots larger than 16 square feet exist.
  - d. When required, native grass seeding shall comply with requirements of the City of Austin Environmental Criteria Manual.

Table 1 Hydromulching for Temporary Vegetative Stabilization

Material	Description	Longevity	Typical Applications	Applications Rates
100% or any blend of wood, cellulose, straw, and/or cotton plant material (except no mulch shall exceed 30% paper)	70% or greater wood/straw 30% or less paper or natural fibers	0-3 Months	Moderate slopes From flat to 3:1	1500 to 2000 lbs per acre

Permanent vegetative stabilization:

1. From September 15 to March 1, seeding is considered to be temporary stabilization only. If cool season cover crops exist where permanent vegetation stabilization is desired, the grasses shall be mowed to a height of less than one half (1/2) inch and the area shall be re-seeded in accordance with Table 2 below.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 1 pound per 1000 SF with a purity of 95% with 85% germination. Bermuda grass is a warm season grass and is considered permanent erosion control.
  - a. Fertilizer shall be water soluble with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of ½ pound per 1000 SF.
  - b. Hydromulch shall comply with table 2 below.
  - c. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six inches. The irrigation

- shall occur at daily intervals (minimum) during the first two months. Rainfall occurrences of ½ inch or more shall postpone the watering schedule for one week.
- d. Permanent erosion control shall be acceptable when the grass has grown at least 1 ½ inches high with 95% coverage, provided no bare spots larger than 16 square feet exist.
  - e. When required, native grass seeding shall comply with requirements of the City of Austin Environmental Criteria Manual.

Table 2 Hydromulching for Permanent Vegetation Stabilization

Material	Description	Longevity	Typical Applications	Applications Rates
Bonded Fiber Matrix (BFM)	80% Organic Defibrated Fibers 10% Tackifier	6 Months	On slopes up to 2:1 and erosive soil conditions	2500 to 4000 lbs per acre (see manufacturers recommendations)
Fiber Reinforced Matrix (FRM)	65% Organic Defibrated Fibers 25% Reinforcing Fibers or less 10% Tackifier	Up to 12 Months	On slopes up to 1:1 and erosive soil conditions	3000 to 4500 lbs per acre (see manufacturers recommendations)

b. Structural Controls:

- (i) Erosion and sediment structural controls have been designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- (ii) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.
- (iii) Continental Properties will be the facility operator with control over the construction plans and specifications, including the ability to make modifications in the plans and specifications. Prior to site clearing, grading and excavation, stabilized construction entrances will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed downstream of the areas where concentrated runoff occurs. To insure that no additional areas are disturbed other than those included in the limits of construction, orange mesh fences will be placed on the upstream side of the limits of construction to keep construction activity out of areas not designated for construction. The Contractor will install the stabilized construction entrance and silt fence prior to the start of any construction and be responsible for maintenance of those facilities throughout construction. The Contractor will be responsible for stabilization (revegetation). The Contractor will also be responsible for removing the temporary controls once the revegetation is established.

3. Stormwater Management Controls:

- a. Temporary Sediment Controls: two (2) stabilized construction entrances will be placed as shown on the *Erosion/Sedimentation Control & Tree Protection Plan* and silt fences will be constructed at the downstream edges of the disturbed areas. Silt fence will also

be used at selected locations of significant fill, around material stockpile sites, and around any other area that would be a pollutant source during storm events. The rock berms will be placed immediately downstream of areas where concentrated runoff occurs, and within defined channels downstream from development, as appropriate. Additionally, silt fence will typically be utilized on the downstream side of rock berms to supplement sediment removal. The utility trenches will also be utilized as temporary sediment traps to the extent feasible during construction.

The contractor will install the erosion/sedimentation controls prior to the start of any construction. The contractor will be responsible for maintaining the erosion control measures and removing the controls once the revegetation is established. The locations of such controls are shown in *the Erosion/Sedimentation Control & Tree Protection Plan*.

- b. **Permanent Stormwater Controls:** Once construction associated with this project is completed, the site will be revegetated in accordance with the stabilization practices identified in this plan. A sedimentation/filtration pond will provide water quality control and treatment for stormwater runoff from the developed areas being conveyed to the creeks.
4. Other Controls:
- a. **Waste Disposal:** All construction-related waste materials will be collected and stored at a temporary onsite spoil disposal site. The Contractors will be independently responsible as Operators for controlling and preventing offsite migration of litter, construction debris, and construction materials.
  - b. **Sanitary Waste:** The Contractors will be responsible for placing portable units onsite during construction, and waste will be collected and disposed of in accordance with state and local regulations.
  - c. **Off-site Vehicle Tracking:** Stabilized construction entrances will be provided at the entry location to the construction project. The Contractors will be responsible for maintaining the entrances, and removing any sediment deposited onto adjacent streets. Vehicles leaving the site will be washed, as required.
  - d. **Dust Control:** Contractors will spray water on disturbed areas and spoils areas, and apply mulch, as required, to control dust.
  - e. **Dewatering:** When it becomes necessary to pump standing water from the site, the Contractors shall utilize the methods depicted in the Dewatering Detail included with this plan. Standing water removed via open channel will be routed through silt fence and/or rock berm before leaving the site.
5. Timing of Controls and Measures: Erosion and sediment structural control measures will be in place prior to clearing, grading or construction of any portion of the site. Construction phasing may occur, but in all instances erosion and sedimentation control measures will be in place in those areas prior to start of construction. Disturbed areas will be restored as described under Stabilization Practices. Temporary erosion and sediment controls will be removed only after all disturbed areas have been restored.

## C. STATE AND LOCAL REQUIREMENTS

The stormwater pollution prevention plan complies with the requirements of the City of Bee Cave, Travis County, and the Texas Commission on Environmental Quality (TCEQ) in effect at the time of permitting.

## D. INSPECTION AND MAINTENANCE PROCEDURES

Continental Properties (and/or their qualified agents) and Contractors, as Operators, shall be independently responsible for inspection of the controls, and for required record keeping (reference Appendix A). All Operators will be responsible for revisions to the controls, as necessary, based on inspections. The Contractors will be responsible for maintenance of the controls.

### 1. Inspection of Controls:

- a. Personnel provided by the Operators shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of TPDES General Permit No. TXR150000, familiar with the construction site, and knowledgeable of this plan. Sediment and erosion control measures identified in this plan shall be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
- b. Where sites have been finally or temporarily stabilized, inspections shall be conducted at least twice a year (once during or immediately following wet weather) to evaluate facility operation.
- c. In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.
- d. This plan must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the plan must be completed within seven (7) calendar days following the inspection. If existing controls are modified or if additional controls are necessary, an implementation schedule must be described in this plan and/or Inspection and Maintenance Report, and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.
- e. An Inspection and Maintenance Report summarizing the scope of the inspection, the dates of the inspection, and major observations relating to the implementation and/or revision of this plan must be made and retained as part of the plan. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of controls that need to be maintained; locations of controls that failed to operate as designed or proved inadequate for a particular location; and locations where additional controls are needed. Reports must identify any incidents of non-compliance.

## 2. Maintenance of Controls:

- a. All protective measures and controls identified in this plan shall be maintained in effective operating condition. If, through inspections or other means, it is determined that controls are not operating effectively, then the Contractors, as Operators, shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the plan and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.
- b. If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the Operators shall replace or modify the control as soon as practicable after making the discovery.
- c. Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%.
- d. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
- e. If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event if feasible. If the Operators do not own or operate the off-site conveyance, then the Operators must work with the owner or operator of the property to remove the sediment.

## **E. POLLUTION PREVENTION MEASURES**

1. Non-Storm Water Discharges: The following non-stormwater discharges may occur from the site during the construction period:
  - a. discharges from fire fighting activities;
  - b. uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);
  - c. water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local, state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

- d. uncontaminated water used to control dust;
  - e. potable water sources including waterline flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
  - f. uncontaminated air conditioning condensate;
  - g. uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and
  - h. lawn watering and similar irrigation drainage.
2. Material Inventory: The materials or substances listed below are expected to be present onsite during construction:
- Concrete and concrete products
  - Asphalt and asphalt products
  - Metal reinforcing materials - rebar, welded wire fabric
  - Fertilizers
  - Petroleum based products
  - Wood
  - Plastic (PVC) and metal pipe and fittings
  - Rock, gravel, sand, and soil
  - Paint
3. Material Management Practices: The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff:
- a. Good Housekeeping: The following good housekeeping practices will be followed onsite during the construction project:
    - An effort will be made to store only enough product required to do the job.
    - All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers.
    - Materials will be stored in the temporary spoils disposal area as shown on erosion/sedimentation control plan, or an area as may otherwise be approved by Continental Properties and Engineer.

- Products will be kept in their original containers with the original manufacturers' labels.
  - Whenever possible, all of a product will be used before disposing of the container.
  - Manufacturers' recommendations for proper use and disposal will be followed.
  - The Contractor will inspect daily to ensure proper use and disposal of materials onsite.
- b. Hazardous Products: These practices are used to reduce the risks associated with hazardous materials (if applicable):
- Products will be kept in original containers unless they are not resealable.
  - Original labels and material safety data will be retained, as they contain important product information.
  - If surplus product must be disposed of, manufacturers' and/or local and state recommended methods for proper disposal will be followed.
- c. The following product specific practices will be followed onsite:
- Petroleum Products: All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphaltic substances used onsite will be applied according to the manufacturers' recommendations.
  - Fertilizers: Fertilizers will be applied only in the minimum amounts recommended by the manufacturer or as otherwise indicated on the plans. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. The contents of any partially used bags of fertilizer will be stored in a manner so as to avoid spills.
  - Concrete: Onsite concrete truck wash out is allowed, but is restricted as noted below. Excess dried concrete will be removed from the site and transported to a permitted off-site spoil disposal area.
    - Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited.
    - Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measure to prevent runoff from the construction site.

- Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck washout water is prohibited at all times, and the Operators shall insure that controls are sufficient to prevent the discharge of concrete truck wash out as the result of rain.
  - The discharge of wash out water shall not cause or contribute to groundwater contamination.
4. Spill Control Practices: In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:
- Site personnel will be made aware of the manufacturers' recommended methods for spill cleanup and the location of the information and cleanup supplies.
  - Materials and equipment necessary for spill cleanup will be kept onsite in an accessible location known to site personnel.
  - All spills will be cleaned up immediately upon discovery.
5. Releases of Reportable Quantities (RQ): The EPA has issued regulations that define what reportable quantity levels are for oil and hazardous substances. These regulations can be found at 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302. The TCEQ has issued similar regulations under 30 TAC Chapter 327. If there is an RQ release during the construction period, then the following steps must be taken:
- For quantities less than the reportable quantity\* – The contractor will contain and isolate the spilled substance. The remaining spilled substance and contaminated soil will be removed and disposed of properly.
  - For quantities more than the reportable quantity\* – The contractor will contain and isolate the spilled substance in accordance with 30 TAC Chapter 327. The contractor will then contact the appropriate spill response team and the TCEQ Austin Regional Office (512)339-2929 or the State Emergency Response Center at 1 (800)832-8224 and the National Response Center immediately at (800) 424-8802. The remaining spilled substance and contaminated soil will be removed and disposed of in an using approved emergency response methods. The proper authorities shall be kept informed during the cleanup process. Within 14 days, modify the SWPPP with a written description of the release providing the date and circumstances of the release and the steps to be taken to prevent another release.
- \* Reportable quantity (RQ) is defined in 30 TAC Chapter 327. The RQ for petroleum products, oil, and industrial solid waste are shown below. For hazardous substances see 30 TAC Chapter 327.4 and 40 CFR Chapter 302.4.

The RQ for *oil, petroleum product and used oil* is as follows:

- (1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:
  - (A) for spills or discharges onto land – 210 gallons (five barrels); or

- (B) for spills or discharges directly into water in the state – quantity sufficient to create a sheen.
- (2) The RQ for petroleum product or used oil shall be:
  - (A) except as noted under (B) below, for spills or discharges onto land – 25 gallons;
  - (B) for spills or discharges to land from PST exempted facilities – 210 gallons (five barrels); or
  - (C) for spills or discharges directly into water in the state – quantity sufficient to create a sheen.

The RQ for spills or discharges into water in the state for *industrial solid waste or other substances* shall be 100 pounds.

6. Spill Response Handbook: The TCEQ Small-Business Handbook for Spill Response (RG-285) is provided as a supplementary resource and can be found in *Appendix D*.

**F. POLLUTION PREVENTION PLAN CERTIFICATION**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Operator (Plans and Specifications):

By: PHILIP ROBINSON                      MANAGER                      8/2/2022  
Name    Title    Date

Printed Name: PHILIP ROBINSON  
Company: MATTHEWS-BARNES BROTHERS INVESTMENTS II, LP  
Address: 11750 RESEARCH BLVD  
AUSTIN, TEXAS 78759



**F. POLLUTION PREVENTION PLAN CERTIFICATION**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Operator (Contractor):

By: \_\_\_\_\_  
Name Title Date

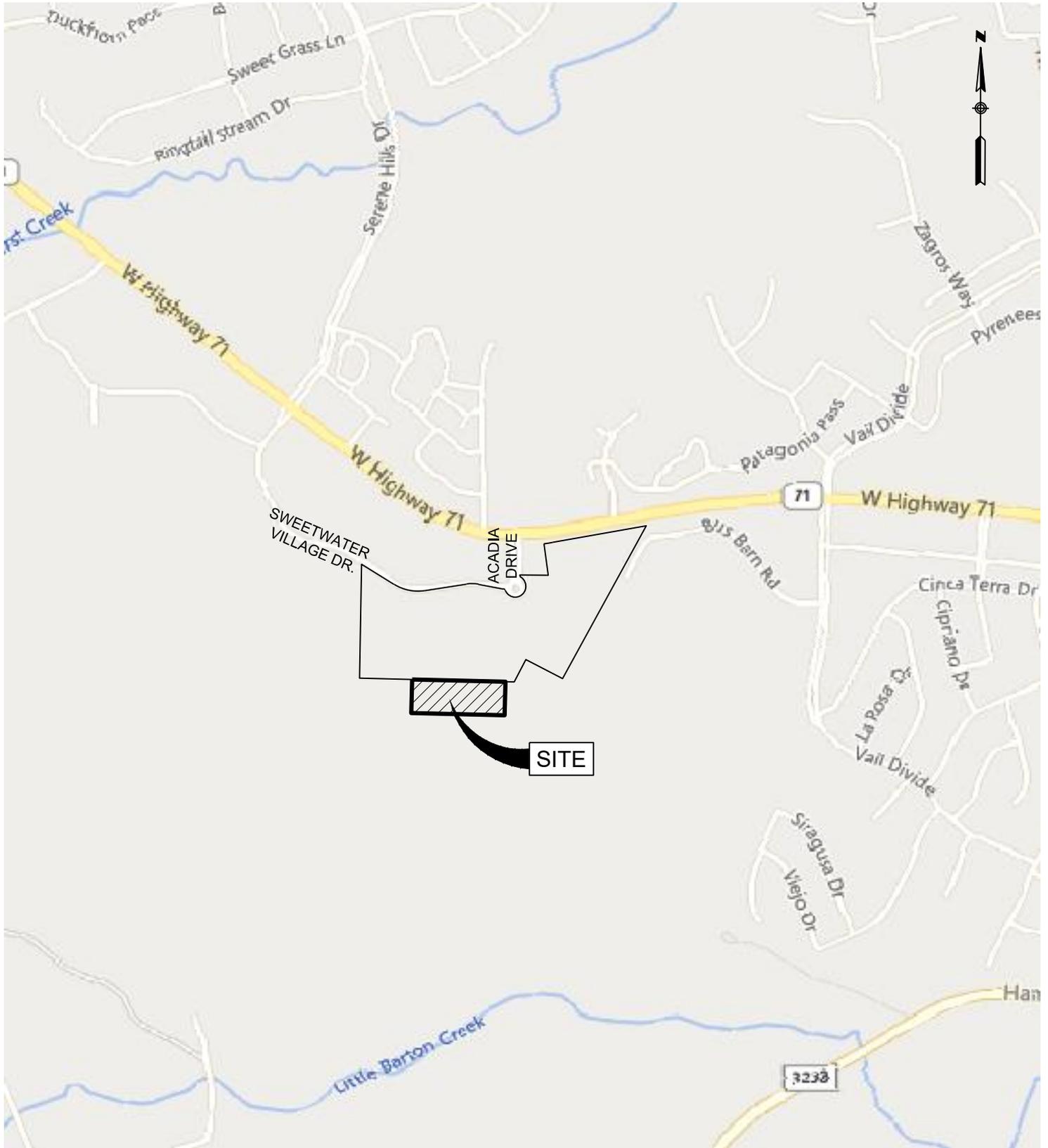
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Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
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**EXHIBIT 1**

**PROJECT LOCATION MAP**

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**LJA Engineering, Inc.**

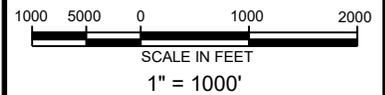
7500 Rialto Boulevard Building II  
 Suite 100  
 Austin, Texas 78735



Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

**ROAD MAP**  
 COVERT BEE CAVE 4-AC  
 SWEETWATER VILLAGE DR.,  
 BEE CAVE, TX 78669

**ATTACHMENT A**

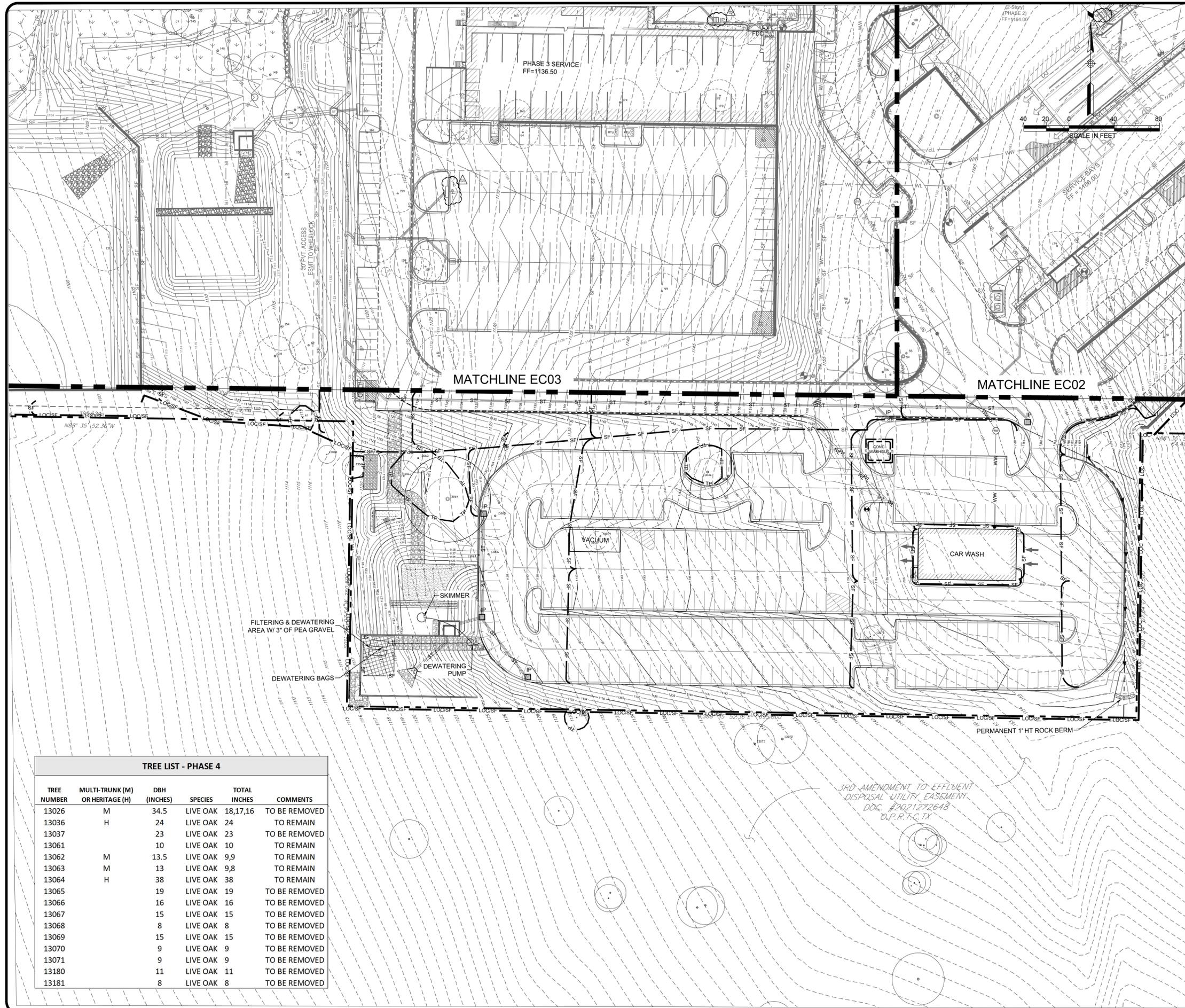


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**EXHIBIT 2**

**SITE MAP / TEMPORARY  
EROSION/SEDIMENTATION CONTROL & TREE  
PROTECTION PLAN (SEE PLAN SET)**

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**LEGEND**

PROPOSED	EXISTING	LIMITS OF CONSTRUCTION
LOC		SILT FENCE
SF		LIMITS OF CONST./SILT FENCE
LOC/SF		TREE PROTECTION
TP		INLET PROTECTION
IP		ROCK BERM
RB		STABILIZED CONSTRUCTION ENTRANCE
SCE		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

- NOTES:**
- CONTRACTOR SHALL PROVIDE INLET PROTECTION, AS EACH PROPOSED INLET IS INSTALLED.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT LIMITS AND ROOT SYSTEMS OF ALL TREES OUTSIDE LIMITS BY NOT PARKING UNDER TREES, NOT DRIVING EQUIPMENT OVER ROOT ZONES AND NOT STORING MATERIALS UNDER TREES. PROTECTION OF VEGETATION TO REMAIN SHALL INCLUDE NOT ONLY HARDWOODS, BUT CEDARS AND UNDERBUSH.
  - ALL VEGETATION WITHIN LIMITS OF CONSTRUCTION AND NOT LOCATED WITHIN AREAS OF CUT/FILL SHALL BE PROTECTED TO THE EXTENT FEASIBLE.
  - TREES TO REMAIN THAT ARE LOCATED INSIDE THE SILT FENCE AND/OR ORANGE MESH FENCE SHALL HAVE TREE PROTECTION FENCING.
  - TEMPORARY STORAGE AND STOCKPILE AREAS SHALL BE USED DURING TIME OF CONSTRUCTION BUT SHALL BE RESTORED AND REVEGETATED.
  - ALL STORM DRAIN LINES ARE TO BE AT A MINIMUM OF FIVE FEET FROM CENTERLINE OF PIPE TO FACE OF TREE. ANY STORM DRAIN LINES TO BE PLACED WITHIN A TREE'S DRIP LINE MUST BE SAWCUT PRIOR TO TRENCHING.
  - PRIOR TO EXCAVATION WITHIN TREE DRIP LINES, OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING, AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH FOUR (4) INCHES OF ORGANIC MULCH TO BE PRODUCED ON SITE, TO MINIMIZE SOIL COMPACTION.
  - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY AS NECESSARY DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
  - WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SITE'S CONTROLS. SEDIMENT REMOVAL SHALL BE PROVIDED AS NOTED ON THE PLANS. REPAIR TO SILT FENCE AND ORANGE MESH FENCING/MANHOLE FENCING SHALL BE PROVIDED TO INSURE: 1) ORANGE MESH FENCE / SILT FENCE REMAINS IN PLACE AND STANDING AT ALL TIMES; 2) SILT FENCING TO BE REPLACED / REPAIRED DUE TO CONTRACTOR DAMAGE OR ANY DAMAGE DUE TO STORM WATER DURING RAIN EVENTS.
  - DEWATERING OF THE TEMPORARY POND WILL BE PROVIDED TO ENSURE THERE IS ADEQUATE STORAGE FOR THE FOLLOWING RAIN EVENT. CONTRACTOR SHALL PROVIDE ADEQUATE FILTRATION DURING PUMPING TO ENSURE SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
  - THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
  - CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
  - SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.2(G).
  - ROUGH SITE GRADING WILL BE CONSTRUCTED IN PHASE ONE AND SHALL IGNORE PHASING LINES. THE REMAINING IMPROVEMENTS FOR PHASE ONE SHALL ADHERE TO THE PHASING LINES. EROSION CONTROL MEASURES AND SEEDING MUST BE INSTALLED ACROSS THE ENTIRE LIMITS OF CONSTRUCTION TO AVOID EROSION.
  - CONCRETE WASHOUT LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTED ON THE SITE MAP AT THAT TIME.
  - POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ON SITE.
  - MUD AND OR DIRT TRACKED INTO THE ROADWAY MUST BE IMMEDIATELY REMOVED UPON DISCOVERY.
  - EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY COUNTY INSPECTOR.
  - LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ON SITE.
  - INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
  - INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
  - SEE SHEET RE01 FOR SITE STABILIZATION AND RESTORATION PLAN.
- ADDITIONAL NOTES:**
- ALL EROSION AND SEDIMENTATION CONTROLS (ESC) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE TO THE PROJECT SITE, UNLESS OTHERWISE CALLED OUT TO BE PHASED.
  - INSTALL SILT FENCE ACCORDINGLY FOR RUN-ON DIVERSION OR OFFSITE SEDIMENT CONTROL, DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
  - ALL ESC USED ON SITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
  - THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
  - ALL DISTURBED AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED. AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
  - COUNTY INSPECTOR MAY REQUEST ADDITIONAL CONTROLS BE INSTALLED ON SITE AS NEEDED.
  - TEMPORARY ESC'S SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN ACHIEVED.
  - CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
  - TRAVIS COUNTY REQUIRES CERTIFIED SWP3 INSPECTORS TO CONDUCT SWP3 INSPECTIONS AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
  - A DE-WATERING PLAN FOR THE POND(S) MUST BE PROVIDED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS TO THE GREATEST EXTENT FEASIBLE BY DRAINING WATER FROM THE SURFACE OF THE IMPROVEMENT.
  - ALL SLOPES STEEPER THAN 3:1 REQUIRE SOIL RETENTION BLANKET (SRB).
  - ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOD ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.

**TREE LIST - PHASE 4**

TREE NUMBER	MULTI-TRUNK (M) OR HERITAGE (H)	DBH (INCHES)	SPECIES	TOTAL INCHES	COMMENTS
13026	M	34.5	LIVE OAK	18,17,16	TO BE REMOVED
13036	H	24	LIVE OAK	24	TO REMAIN
13037		23	LIVE OAK	23	TO BE REMOVED
13061		10	LIVE OAK	10	TO REMAIN
13062	M	13.5	LIVE OAK	9,9	TO REMAIN
13063	M	13	LIVE OAK	9,8	TO REMAIN
13064	H	38	LIVE OAK	38	TO REMAIN
13065		19	LIVE OAK	19	TO BE REMOVED
13066		16	LIVE OAK	16	TO BE REMOVED
13067		15	LIVE OAK	15	TO BE REMOVED
13068		8	LIVE OAK	8	TO BE REMOVED
13069		15	LIVE OAK	15	TO BE REMOVED
13070		9	LIVE OAK	9	TO BE REMOVED
13071		9	LIVE OAK	9	TO BE REMOVED
13180		11	LIVE OAK	11	TO BE REMOVED
13181		8	LIVE OAK	8	TO BE REMOVED

3RD AMENDMENT TO EFFLUENT DISPOSAL UTILITY EASEMENT, DOC. #2021272648, O.P.R. T.C. TX

**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 4  
EROSION & SEDIMENTATION CONTROL & TREE PROTECTION**

DATE: 08/17/2022  
BY: RJS  
REVISIONS: DESCRIPTION: DATE  
NO. CA ELEMENTS

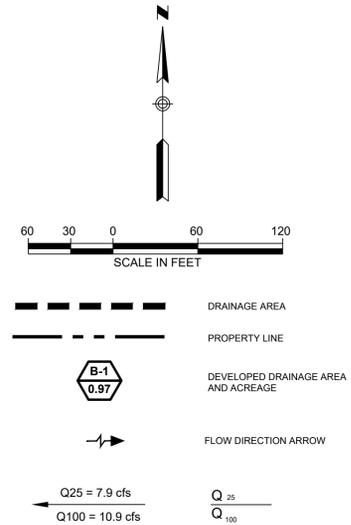
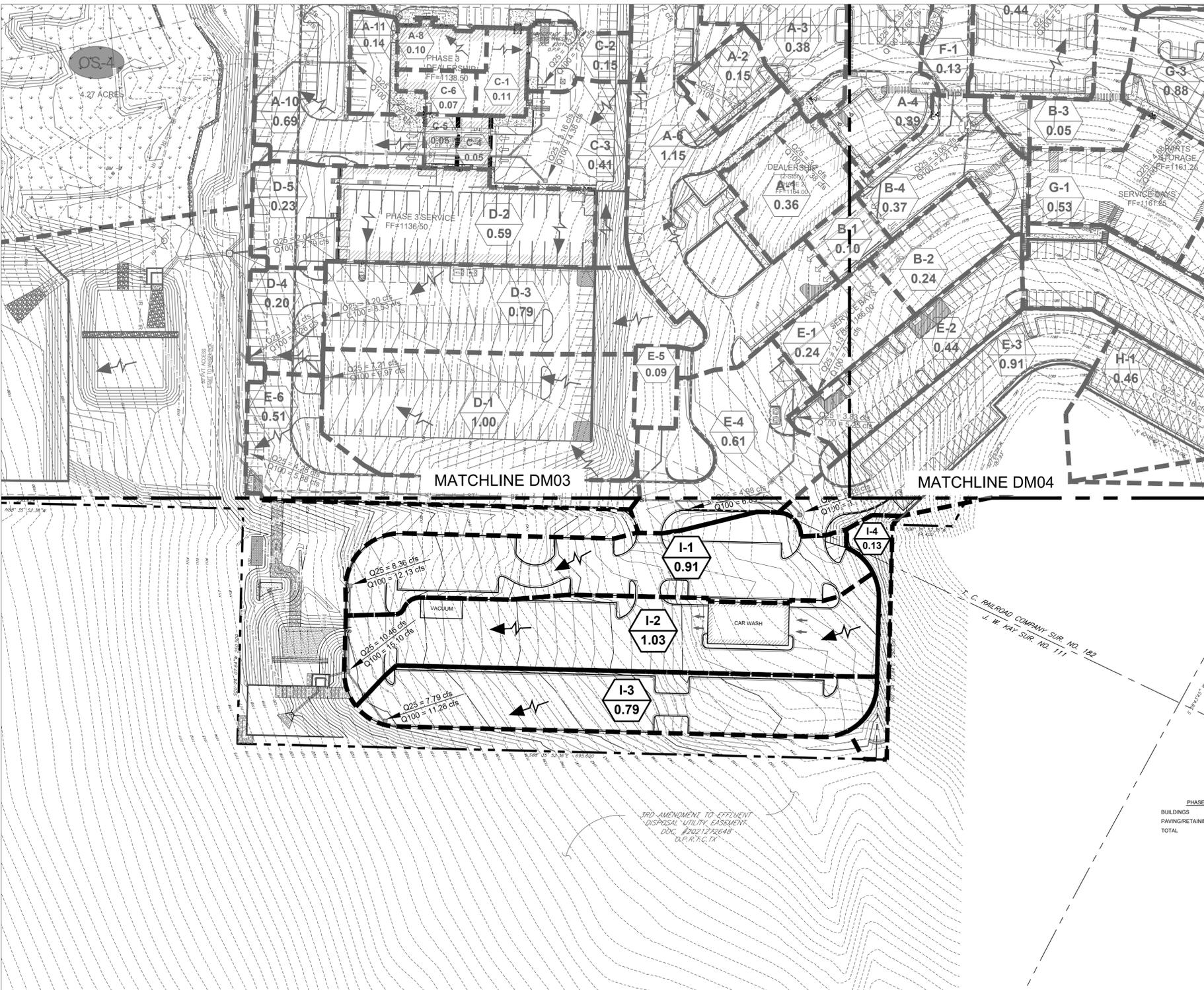
DATE: 09/12/2022  
DESIGNED BY: CRH  
DRAWN BY: RLS  
CHECKED BY: CRH  
DWG NAME: C:\DWG

09/12/2022  
CHARLES R. HAGER  
127034  
PROFESSIONAL ENGINEER  
STATE OF TEXAS

LJA Engineering, Inc.  
7500 Rialto Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F-1386

JOB NUMBER: A338-401  
EC04  
SHEET NO. 83 OF 90 SHEETS

811  
Know what's below.  
Call before you dig.



**RATIONAL METHOD - COA Drainage Criteria and Design Standards**

**Drainage Area Calculations**

City of Austin Zone 1 Atlas 14 intensity-duration-frequency curves

	2 Yr	5 Yr	10 Yr	25 Yr	100 Yr
a	45.24	53.47	61.25	69.96	77.31
b	9.34	8.65	8.35	7.94	6.83
c	0.7399	0.7228	0.7147	0.6954	0.6524

Where:  
 Q = peak runoff in cubic feet per second.  
 C = the coefficient of runoff.  
 A = the area in acres contributing runoff to the point of design.  
 i = the average intensity of rainfall in inches per hour

**Rational Method Runoff Coefficients for Composite Analysis**

	25-YR	100-YR
Asphaltic	0.86	0.85
Concrete	0.88	0.97
GRASS, Fair Cond.		
Over 7%	0.46	0.53

**DEVELOPED CONDITIONS - DRAINAGE CALCULATIONS**

AREA	AREA(AC)	PERV(AC)	IMP(AC)	C25	C100	Tc (min)	I25	I100	Q25	Q100	Water Quality Provided
I-1	0.909	0.217	0.692	0.78	0.86	5.00	11.79	15.42	8.36	12.13	Yes
I-2	1.029	0.044	0.985	0.86	0.95	5.00	11.79	15.42	10.46	15.10	Yes
I-3	0.789	0.060	0.709	0.84	0.93	5.00	11.79	15.42	7.79	11.26	Yes
I-4	0.136	0.136	0.000	0.46	0.53	5.00	11.79	15.42	0.74	1.11	Yes

COVERT BEE CAVE  
 PLANS FOR SITE DEVELOPMENT  
 PHASE 4  
 ONSITE DRAINAGE AREA MAP

REVISIONS

NO.	DATE	DESCRIPTION

DATE: 09/12/2022  
 DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM  
 DWG NAME: C:\DWG



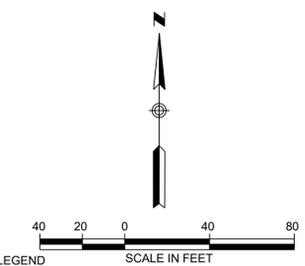
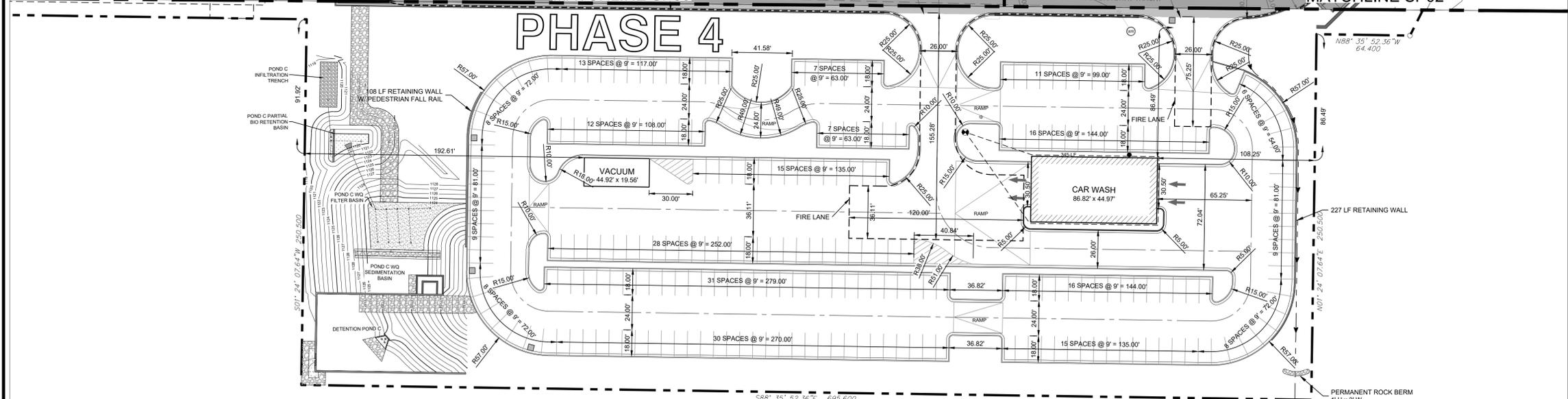
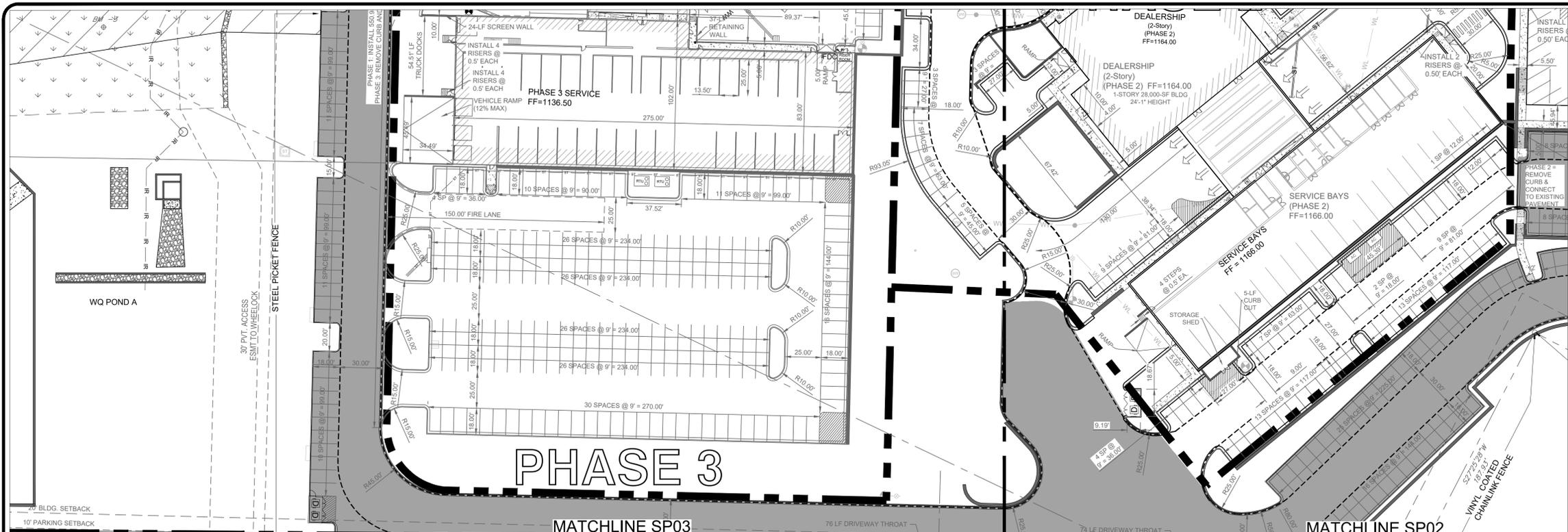
**LJA Engineering, Inc.**  
 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

JOB NUMBER:  
 A338-401  
 DM05  
 SHEET NO.  
**84**  
 OF 90 SHEETS

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



11/13/2022 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401-FR-0803 - C4.dwg  
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 Last Modified: Sep 12, 2022 - 14:39  
 Plot Date/Time: Sep 12, 2022 - 14:41:15



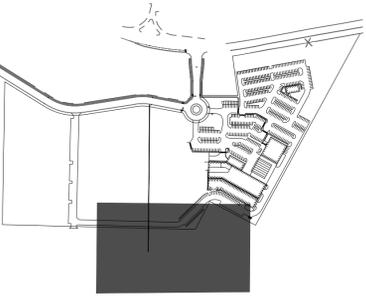
**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	CONCRETE SIDEWALK
[Symbol]	[Symbol]	DECOMPOSED GRANITE WALKWAY
[Symbol]	[Symbol]	PROPERTY BOUNDARY
[Symbol]	[Symbol]	OPEN SPACES
[Symbol]	[Symbol]	FIRE LANE
[Symbol]	[Symbol]	ACCESSIBLE ROUTE
[Symbol]	[Symbol]	SIDEWALK RAMP
[Symbol]	[Symbol]	HANDICAPPED PARKING SPACES & SIDEWALK RAMP
[Symbol]	[Symbol]	CROSSWALK
[Symbol]	[Symbol]	STORM SEWER LINE
[Symbol]	[Symbol]	WASTEWATER LINE
[Symbol]	[Symbol]	WATER LINE
[Symbol]	[Symbol]	WATER VALVE
[Symbol]	[Symbol]	FIRE HYDRANT
[Symbol]	[Symbol]	WASTEWATER MANHOLE
[Symbol]	[Symbol]	STORMSEWER MANHOLE
[Symbol]	[Symbol]	1/2" REBAR FOUND (OR AS NOTED)
[Symbol]	[Symbol]	1/2" REBAR WITH CAP FOUND
[Symbol]	[Symbol]	1/2" REBAR WITH CHAPARRAL CAP SET
[Symbol]	[Symbol]	WATER METER
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	OVERHEAD UTILITIES
[Symbol]	[Symbol]	ELEC. UTILITY
[Symbol]	[Symbol]	ELEC. MANHOLE
[Symbol]	[Symbol]	LIGHT POLE
[Symbol]	[Symbol]	TELEPHONE UTILITY
[Symbol]	[Symbol]	UNDERGROUND FIBER OPTIC MARKER
[Symbol]	[Symbol]	TELEPHONE MANHOLE
[Symbol]	[Symbol]	UNDERGROUND GAS MARKER
[Symbol]	[Symbol]	CHAIN LINK FENCE

**NOTES:**  
 1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.  
 2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.

**PHASE 1 PAVEMENT**

STANDARD	248
ACCESSIBLE	0
ACCESSIBLE (VAN)	0
<b>TOTAL</b>	<b>248</b>



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**COVERT BEE CAVE  
 PLANS FOR SITE DEVELOPMENT**

NO.	REVISIONS	DESCRIPTION	DATE	BY

DATE:	09/12/2022
DESIGNED BY:	CRH
DRAWN BY:	ADG
CHECKED BY:	CRH
DWG NAME:	A338-401-P-SP01-C4.DWG

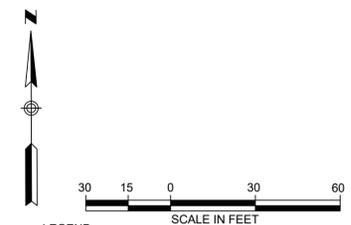
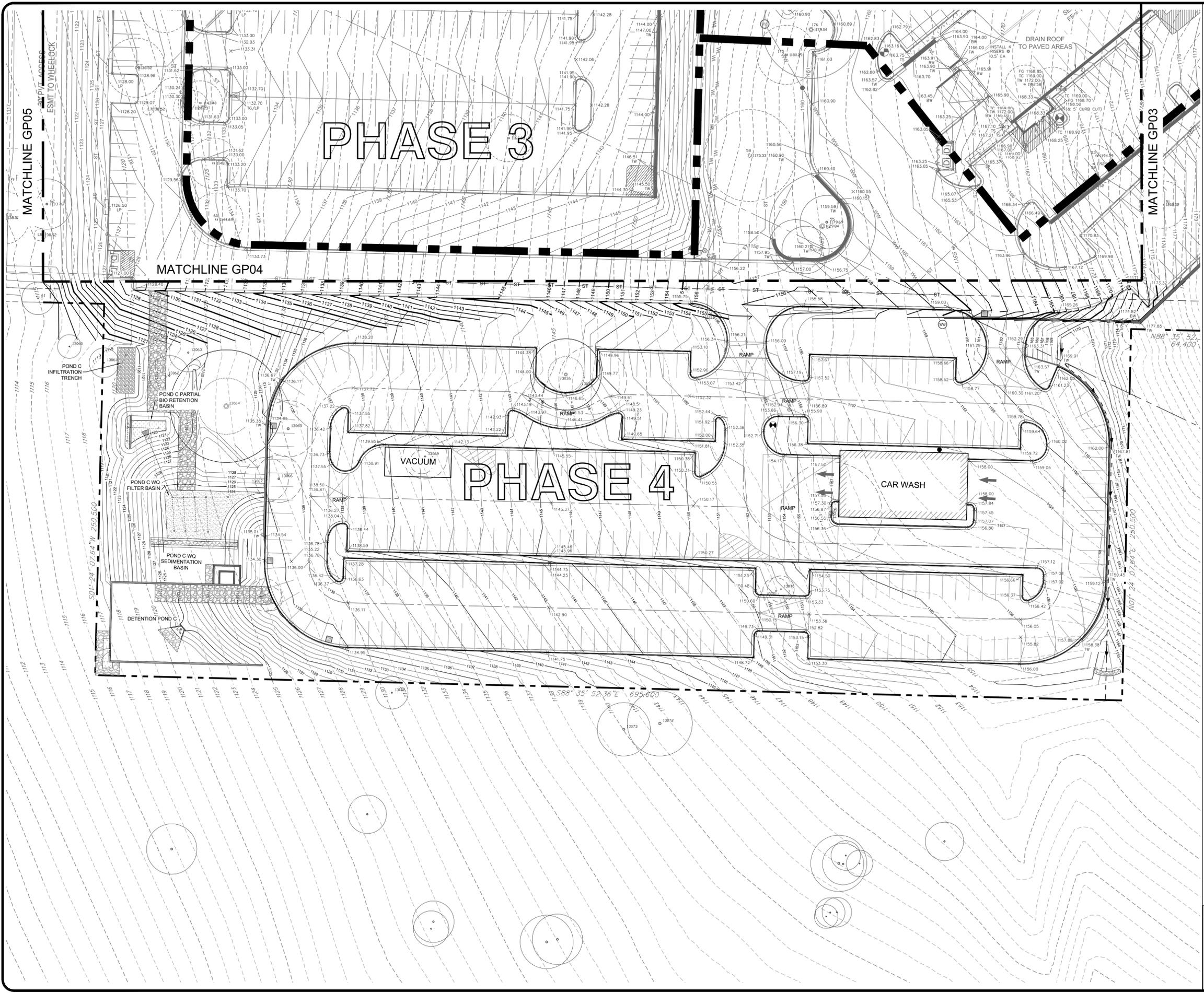


**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

JOB NUMBER:  
 A338-401

SP04  
 SHEET NO.  
**85**  
 OF 90 SHEETS

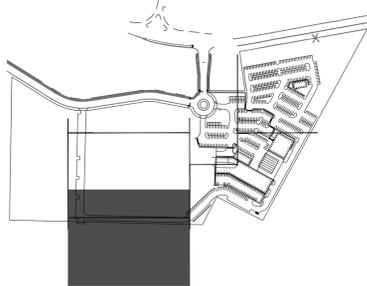
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 User: rmanok  
 Last Modified: Sep 12, 2022 14:44  
 Plot Date/Time: Sep 12, 2022 14:58:36



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(Thick dashed line)	(Thin dashed line)	PROPOSED RETAINING WALL
(Dashed line with 'x')	(Dashed line with 'x')	TOP OF PAVEMENT
(Dashed line with 'c')	(Dashed line with 'c')	TOP OF CURB/CONCRETE
(Dashed line with 'g')	(Dashed line with 'g')	TOP OF GRATE
(Dashed line with 'l')	(Dashed line with 'l')	LOW POINT
(Dashed line with 'h')	(Dashed line with 'h')	HIGH POINT
(Dashed line with 'f')	(Dashed line with 'f')	FINISHED SLAB
(Dashed line with 't')	(Dashed line with 't')	TOP OF WALL
(Dashed line with 'b')	(Dashed line with 'b')	BOTTOM OF WALL
(Dashed line with 'fg')	(Dashed line with 'fg')	FINISHED GROUND
(Circle with dot)	(Circle with dot)	TREE TO REMAIN
(Circle with cross)	(Circle with cross)	TREE TO BE REMOVED
(Circle with 'ST')	(Circle with 'ST')	STORM SEWER LINE
(Circle with 'WW')	(Circle with 'WW')	WASTEWATER LINE
(Circle with 'WL')	(Circle with 'WL')	WATER LINE
(Circle with 'V')	(Circle with 'V')	WATER VALVE
(Circle with 'F')	(Circle with 'F')	FIRE HYDRANT
(Circle with 'M')	(Circle with 'M')	WASTEWATER MANHOLE
(Circle with 'S')	(Circle with 'S')	STORMSEWER MANHOLE
(Circle with 'R')	(Circle with 'R')	1/2" REBAR FOUND (OR AS NOTED)
(Circle with 'C')	(Circle with 'C')	1/2" REBAR WITH CAP FOUND
(Circle with 'W')	(Circle with 'W')	1/2" REBAR WITH CHAPARRAL CAP SET
(Circle with 'S')	(Circle with 'S')	COTTON SPINDLE WITH CHAPARRAL WASHER SET
(Circle with 'M')	(Circle with 'M')	WATER METER
(Circle with 'U')	(Circle with 'U')	UTILITY POLE
(Circle with 'O')	(Circle with 'O')	OVERHEAD UTILITIES
(Circle with 'E')	(Circle with 'E')	ELEC. UTILITY
(Circle with 'M')	(Circle with 'M')	ELEC. MANHOLE
(Circle with 'L')	(Circle with 'L')	LIGHT POLE
(Circle with 'T')	(Circle with 'T')	TELEPHONE UTILITY
(Circle with 'F')	(Circle with 'F')	UNDERGROUND FIBER OPTIC MARKER
(Circle with 'M')	(Circle with 'M')	TELEPHONE MANHOLE
(Circle with 'G')	(Circle with 'G')	UNDERGROUND GAS MARKER
(Circle with 'C')	(Circle with 'C')	CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
  4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
  6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
  7. RAMP SHALL NOT EXCEED 8.33%. RAMP LONGER THAN 6' REQUIRE HANDRAILS. RAMP LONGER THAN 30' REQUIRE A LEVEL LANDING.
  8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.



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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT

NO.	REVISIONS DESCRIPTION	DATE

DATE: 09/12/2022  
DESIGNED BY: CRH  
DRAWN BY: ADG  
CHECKED BY: CRH  
DWG NAME: CLWG



**LJA Engineering, Inc.**  
7500 Riata Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.439.4700  
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FRN-F-1386

JOB NUMBER: A338-401  
GP08  
SHEET NO. 86  
OF 90 SHEETS

13.A338 - Covert Bee Cave Site Development Phase 4 - Revision Plans A338-401-F-08001 - CLWG  
User: rmanok  
Last Modified: Aug 17, 2022 10:09:59 AM  
Plot Date/Time: Sep 02, 2022 12:14:13

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**EXHIBIT 3**

**WATER QUALITY PLAN / PERMANENT CONTROLS  
(SEE PLAN SET)**

---

Additional information is provided for cells with a red triangle in the upper right corner. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG. Characters shown in red are data entry fields. Characters shown in black (bold) are calculated fields. Changes to these fields will require a revision.

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{R} = 27.2(A_{i} \times P)$

where:  $L_{R}$  TOTAL PROJECT = Required TSS removal result  
 $A_{i}$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project  
 County = Travis acres  
 Total project area included in plan = 3.66 acres  
 Predevelopment impervious area within the limits of the plan = 0.00 acres  
 Total post-development impervious area within the limits of the plan = 2.41 acres  
 Total post-development impervious cover fraction = 0.65  
 $P$  = 32 inches

$L_{R}$  TOTAL PROJECT = 2101 lbs.

\* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 1

**2. Drainage Basin Parameters (This information should be provided for each basin):**

Drainage Basin/Outfall Area No. = 1  
 Total drainage basin/outfall area = 3.66 acres  
 Predevelopment impervious area within drainage basin/outfall area = 0.00 acres  
 Post-development impervious area within drainage basin/outfall area = 2.41 acres  
 Post-development impervious fraction within drainage basin/outfall area = 0.65  
 $L_{R}$  THIS BASIN = 2101 lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Sand Filter  
 Removal efficiency = 89 percent

**4. Calculate Maximum TSS Load Removed ( $L_{R}$ ) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7:  $L_{R} = (BMP \text{ efficiency}) \times P \times (A_{i} \times P)$

where:  $A_{i}$  = Total On-Site drainage area  
 $A_{i}$  = Impervious area proposed in plan  
 $A_{p}$  = Pervious area remaining in plan  
 $L_{R}$  = TSS Load removed from this basin

$A_{i}$  = 3.66 acres  
 $A_{p}$  = 2.41 acres  
 $A_{p}$  = 1.16 acres  
 $L_{R}$  = 2396 lbs

**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**

Desired  $L_{R}$  THIS BASIN = 2101 lbs.  
 $F$  = 0.88

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.**

Rainfall Depth = 1.50 inches  
 Post Development Runoff Coefficient = 0.48  
 On-site Water Quality Volume = 9392 cubic feet

Calculations from RG-348

Off-site area draining to BMP = 0.00 acres  
 Off-site impervious cover draining to BMP = 0.00 acres  
 Impervious fraction of off-site area = 0.00  
 Off-site Runoff Coefficient = 0.00  
 Off-site Water Quality Volume = 0 cubic feet

Storage for Sediment = 1678 cubic feet

Total Capture Volume (required water quality volume(s) x 1.20) = 11270 cubic feet  
 The following sections are used to calculate the required water quality volume(s) for the selected BMP. The values for BMP Types not selected in cell C45 will show NA.

**7. Retention/Irrigation System**

Designed as Required in RG

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = 0.1 in/hr  
 Irrigation area = NA square feet  
 NA square feet

**8. Extended Detention Basin System**

Designed as Required in RG

Required Water Quality Volume for extended detention basin = NA cubic feet

**9. Filter area for Sand Filters**

Designed as Required in RG

**9A. Full Sedimentation and Filtration System**

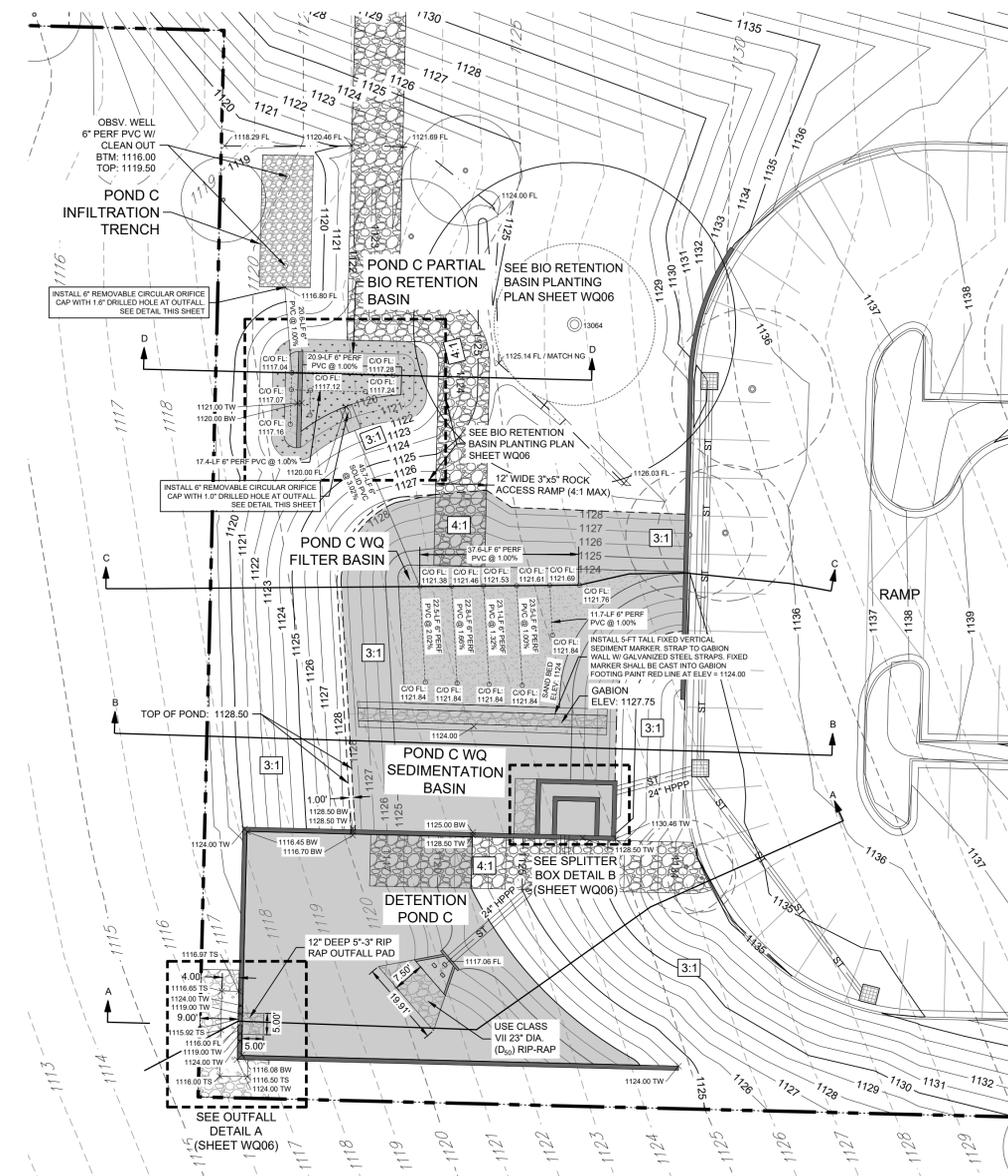
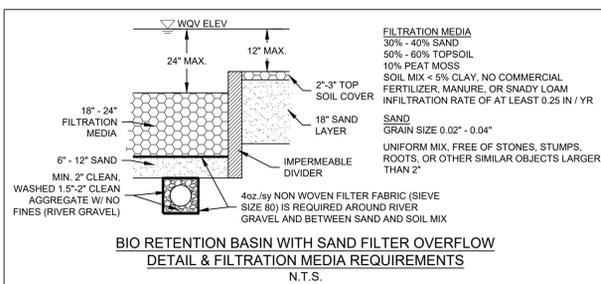
Water Quality Volume for sedimentation basin = 11270 cubic feet  
 Minimum filter basin area = 822 square feet  
 Maximum sedimentation basin area = 4696 square feet  
 Minimum sedimentation basin area = 1174 square feet

**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = 11270 cubic feet  
 Minimum filter basin area = 939 square feet  
 Maximum sedimentation basin area = 3757 square feet  
 Minimum sedimentation basin area = 236 square feet

**ENVIRONMENTAL NOTES:**

- CONTACT POSTINSPECTION@TRAVISCOUNTYTX.GOV TO SCHEDULE THE FOLLOWING MILESTONE INSPECTION(S) FOR THE WATER QUALITY STRUCTURES WITH AT LEAST A 48-HOUR NOTICE, IF APPLICABLE.
- PRE-POUR OF ALL CONCRETE WITHIN THE FOOTPRINT OF THE WQ CONTROL OR POND.
- PLACEMENT OF ALL ROCK-FILLED GABIONS/MATTRESSES AND LEVEL SPREADERS.
- INSPECTION OF SAND/BIO-FILTRATION MEDIA AND/OR ROCK PRIOR TO INSTALLING.
- UNDERDRAIN PIPING PRIOR TO COVERING WITH SAND/BIO-FILTRATION MEDIA OR ROCK IN INFILTRATION TRENCH - IF COVERED, REMOVAL OF MATERIAL WILL BE REQUIRED.
- INSPECTION OF DESIGNED PLANTINGS PRIOR TO INSTALLING IN RAIN GARDEN/BIO-FILTRATION BASINS.
- SUBSOIL INFILTRATION RATE TESTING FOR INFILTRATION TRENCHES/BASINS.
- COMPLETION OF CONSTRUCTION OF WATER QUALITY STRUCTURE(S).



**COVERT - BEE CAVE - WATER QUALITY POND C DESIGN CALCULATIONS WATER QUALITY CONTROLS POND C**

**DRAINAGE AREA DATA:**

DRAINAGE AREA TO CONTROL (DA)	2.87 ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	84%
CAPTURE DEPTH (CD) = 0.5" * (IC% - 0.2)	1.14 INCHES
25 YEAR PEAK FLOW RATE TO CONTROL (Q25)	21.40 CFS
100 YEAR PEAK FLOW RATE TO CONTROL (Q100)	30.10 CFS

**WATER QUALITY CONTROL CALCULATIONS:**

WATER QUALITY VOLUME (WQV = CD*DA*3630)	11,888 CF
PROPOSED WATER QUALITY CONTROLS:	
1) SAND FILTER	
2) BIORETENTION	
3) INFILTRATION TRENCH	

**ORIFICE SIZING FOR SEDIMENTATION AND FILTRATION BASIN**

WQ VOLUME =	13164 CF
MINIMUM DRAWDOWN TIME = 48 HR = 172800 SECONDS	
FLOW = 13164 CF / 172800 SEC =	0.076 CFS
HEAD = 1127.75-1121.38 = 6.40 (POND AVG HEAD TO ORIFICE CL)	
A = 0.076 CFS/(60 * (64.4 * 6.40) ^ 0.5) =	0.00254 SF
R = A/(3.14) ^ 0.5 =	0.04 FT
D (in.) = 2R * 12 =	1.07 inch orifice
Q = 0.0063 * 60 * (64.4 * 6.40) ^ 0.5 =	0.076 CFS
DRAWDOWN TIME = 13164 CF / 0.076 CFS =	172800 SEC = 48 HRS
THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS	

**ORIFICE SIZING FOR BIO RETENTION BASIN**

WQ VOLUME =	29543 CF
MINIMUM DRAWDOWN TIME = 48 HR = 172800 SECONDS	
FLOW = 29543 CF / 172800 SEC =	0.171 CFS
HEAD = 1127.75-1121.38 = 6.40 (POND AVG HEAD TO ORIFICE CL)	
A = 0.171 CFS/(60 * (64.4 * 6.40) ^ 0.5) =	0.014036 SF
R = A/(3.14) ^ 0.5 =	0.07 FT
D (in.) = 2R * 12 =	1.60 inch orifice
Q = 0.0140 * 60 * (64.4 * 6.40) ^ 0.5 =	0.171 CFS
DRAWDOWN TIME = 29543 CF / 0.171 CFS =	172800 SEC = 48 HRS
THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS	

**OVERALL DRAINAGE SUMMARY AT STUDY POINT #5**

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED COND. (CFS)
2YR	15.80	14.00
10YR	29.20	27.80
25YR	38.00	36.10
100YR	52.90	50.10

**DETENTION POND C SUMMARY**

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	15.70	12.04	9.20	12.09	1,120.10
10YR	24.30	12.04	17.30	12.08	1,121.00
25YR	29.80	12.04	22.20	12.07	1,121.50
100YR	39.50	12.04	30.20	12.07	1,122.20

**Detention Pond C - Stage Storage Table**

Elevation (FT)	Area (AC)	A1+A2+sq (A1^2A2)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)
1116.00	0.000	0.00	0.00	0.00
1117.00	0.053	0.05	0.02	0.02
1118.00	0.058	0.17	0.06	0.07
1119.00	0.063	0.18	0.06	0.13
1120.00	0.069	0.20	0.07	0.20
1121.00	0.074	0.21	0.07	0.27
1122.00	0.080	0.23	0.08	0.35
1123.00	0.085	0.24	0.16	0.43
1124.00	0.090	0.25	0.17	0.52

**Detention Pond C - Outfall Structure**

Elevation (FT)	1" Weir (CFS)	7" Weir @ 1.119.00 (CFS)	Total Flow (CFS)
1,116	0.00	0.00	0.00
1,117	2.40	0.00	2.40
1,118	5.09	0.00	5.09
1,119	8.49	0.00	8.49
1,120	15.59	0.00	15.59
1,121	24.00	20.40	44.40
1,122	33.54	56.00	89.54
1,123	44.09	99.77	143.86
1,124	55.56	148.80	204.36

**COVERT - BEE CAVE POLLUTANT LOADING AND REMOVAL CALCULATIONS FOR WATER QUALITY BMPs C**

**SITE DATA**

WATER QUALITY AREA ACRES	2.870 WQ Area
IMPERVIOUS COVER	84.11%
RECHARGE ZONE?	No
RUNOFF COEFF.	0.6920
LAND USE (SF, MF, CO?)	CO
PAVED AREA (NO ROOFTOPS)	2,414 ac.

**BASE BMP POLLUTANT LOAD REMOVAL EFFICIENCIES (PER THE 2007 LCRA TGM)**

$E_{TOT} = [1 - (E_1)(1 - E_2)](1 - E_3)(1 - E_4)(1 - E_5)$

	TSS	TP	O&G
SAND FILTER	80%	55%	89%
BIORETENTION POND	80%	72%	89%
INFILTRATION TRENCH	90%	90%	90%
TOTAL EFFICIENCY	97.98%	95.61%	99.11%

**BASELINE LOADING**

POLLUTANT	UNIT LOAD(Dp)	BASELINE LOAD (Tp)
TSS	19.9	57.11
TP	0.014	0.040
O&G	0	0

**POLLUTANT CONCENTRATIONS FOR DEVELOPED SITES**

SF: 0-15%	SF: >15%	MF: 0-15%	MF: >15%	CO: 0-15%	CO: >15%
82.5	110	82.5	110	82.5	110
0.1	0.16	0.1	0.16	0.1	0.16
5	5	5	5	5	5

**DEVELOPED LOADING**

POLLUTANT	UNIT LOAD(Dp)	DEVELOPED LOAD (Tp)
TSS	560.8	1609.54
TP	0.816	2.34
O&G	25.492	61.54

**UNIT LOADS FOR DEVELOPED SITES**

SF: 0-15%	SF: >15%	MF: 0-15%	MF: >15%	CO: 0-15%	CO: >15%
420.6	560.8	420.6	560.8	420.6	560.8
0.8	0.5	0.8	0.5	0.8	0.5
25.5	25.5	25.5	25.5	25.5	25.5

**REMOVAL SUMMARY**

POLLUTANT	REQ'D REMOVAL (LB)	BMP REMOVAL LOAD REMOVED BY BMP (LB)	% OF INCREASED LOAD REMOVED	% OF TOTAL LOAD REMOVED
TSS Removed (Sand Filter)		1287.63	82.94%	80.00%
TSS Removed (Bioretention)	95.0%	208.02	98.21%	12.50%
TSS Removed (Infiltration Trench)	1475	83.44	101.59%	5.18%
TSS Removed (Total)		1577.09	101.59%	97.98%
TP Removed (Retention Irrigation)		1.29	55.96%	55.00%
TP Removed (Bioretention)	95.0%	0.61	82.33%	25.92%
TP Removed (Infiltration Trench)		0.32	98.31%	13.74%
TP Removed (Total)		2.22	96.31%	94.66%
O&G Removed (Retention Irrigation)		54.77	89.00%	89.00%
O&G Removed (Bioretention)	95.0%	4.82	96.83%	7.83%
O&G Removed (Infiltration Trench)		1.40	99.11%	2.28%
O&G Removed (Total)		60.99	99.11%	99.11%

**COVERT - BEE CAVE - POND C PARTIAL SEDIMENTATION / FILTRATION WATER QUALITY BASIN CALCULATIONS FOR DEVELOPMENT PERMITS COVERT BEE CAVE POND C**

**DRAINAGE AREA DATA:**

DRAINAGE AREA TO CONTROL (DA)	2.87 ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	0.84 PERCENT
CAPTURE DEPTH (CD) = (0.5" * (IC - 20)/100)	1.14 INCHES

**WATER QUALITY CONTROL CALCULATIONS:**

	REQUIRED	PROVIDED
WATER QUALITY VOLUME (WQV = CD*DA*3630)	11,888 CF	13,164 CF
TOTAL CAPTURE VOLUME (WQV X 1.05)	12,483 CF	13,164 CF
MAX PONDING DEPTH ABOVE FILTRATION MEDIUM (H)	3.75 FT	3.75 FT
SEDIMENTATION BASIN VOLUME (> 20% WQV)	2,633 CF	4,317 CF
FILTRATION BASIN AREA (WQV/10)	1,316 SF	1,427 SF
FILTRATION POND VOLUME:		8,847 CF
TOTAL POND VOLUME (WQV+FREEBOARD)		13,164 CF

**WATER QUALITY ELEVATION**

ELEVATION OF SPILLER/OVERFLOW WEIR	1127.75 FT MSL	1127.75 FT MSL
HEIGHT OF GABION WALL	1127.25 FT MSL	1127.25 FT MSL

SEDIMENTATION BASIN:				FILTRATION BASIN:				TOTAL	
ELEV.	AREA [SF]	VOL [CF]	TOT. VOL [CF]	ELEV.	AREA [SF]	VOL [CF]	TOT. VOL [CF]	POND VOL [CF]	
1124	0	0	0	1124	1427	0	0	0	
1125	1115	558	558	1125	1952	1689	1689	2,247	
1126	1295	1205	1763	1126	2426	2189	3878	5,641	
1127	1475	1385	3148	1127	2902	2664	6542	9,690	
1127.75	1643	1169	4317	1127.75	3243	2304	8847	13,164	
1128	1655	412	4729	1128	3376	827	9674	14,403	
1128.5	1745	850	5579	1128.5	3602	1745	11419	16,998	

**BIORETENTION POND - C**

	Required	Provided
Water Quality Volume	11,888 cf	-
Required Bioretention BMP Volume (WQV x .044)	523 cf	1,300 cf
Sand Filter Overflow Area (WQV/18)	29 sf	64 sf
Sand Filter Ponding Depth	1 ft max	1 ft
Basin Area	247 sf	245 sf
Basin Area Ponding Depth	2 ft	2 ft
Total Area	276 sf	309 sf

**INFILTRATION TRENCH - C**

	Required	Provided
Water Quality Volume	11,888 cf	-
Soil Infiltration Rate (Infiltration Rate based on NRCS soil survey) (Vr per HLWO Technical Manual)	0.50 in/hr	-
Reduced Infiltration Trench BMP Volume	0%	-
WQV Vr = WQV (WQV x .03) (1 - Vr)	357 cf	-
Required Infiltration Trench Volume = (WQV Vr)/0.35	1,019 cf	-
Required Surface Area	-	509 sf
Required Water Quality Volume / 48 hour / Porosity / 12	-	-
Trench Depth	8.00 ft	-
Trench Width	12 ft	-
Trench Length	31 ft	-
Infiltration Surface Area	1,080 sf	-
Infiltration Trench Volume	1,042 cf	-
Infiltration Trench Volume / Infiltration Surface Area	0.98	-

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



COVERT BEE CAVE PLANS FOR SITE DEVELOPMENT PHASE 4 DETENTION & WATER QUALITY POND PLAN

DATE	DESCRIPTION
06/22/2023	DESIGNED BY: ADG
	DRAWN BY: ADG
	CHECKED BY: CRH
	APPROVED BY: WOI
	CADWIG

06/22/2023  
 DESIGNED BY: ADG  
 DRAWN BY: ADG  
 CHECKED BY: CRH  
 APPROVED BY: WOI  
 CADWIG

06/22/2023  
 CHARLES R. HAGER  
 LICENSED PROFESSIONAL ENGINEER  
 127034

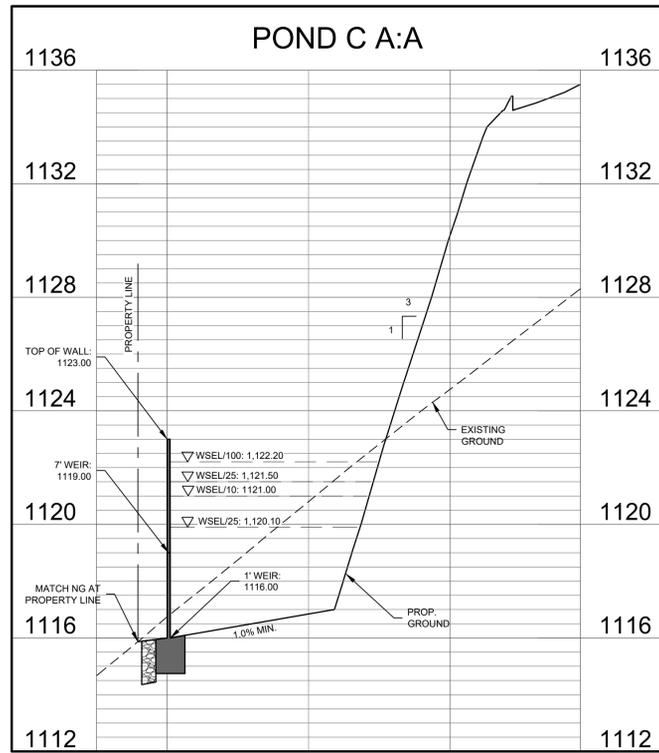
Phone 512.438.4700  
 Fax 512.438.4716  
 FRN-F-1386

**LJA Engineering, Inc.**  
 7500 Rialto Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735

JOB NUMBER: A338-401  
 SHEET NO. WQ05  
 89 OF 90 SHEETS

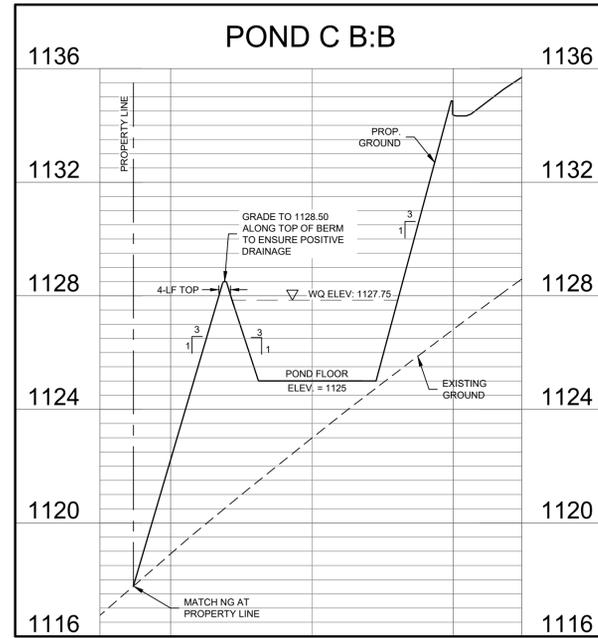
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 Plot Date: Fri, Jun 23, 2023 10:55:48

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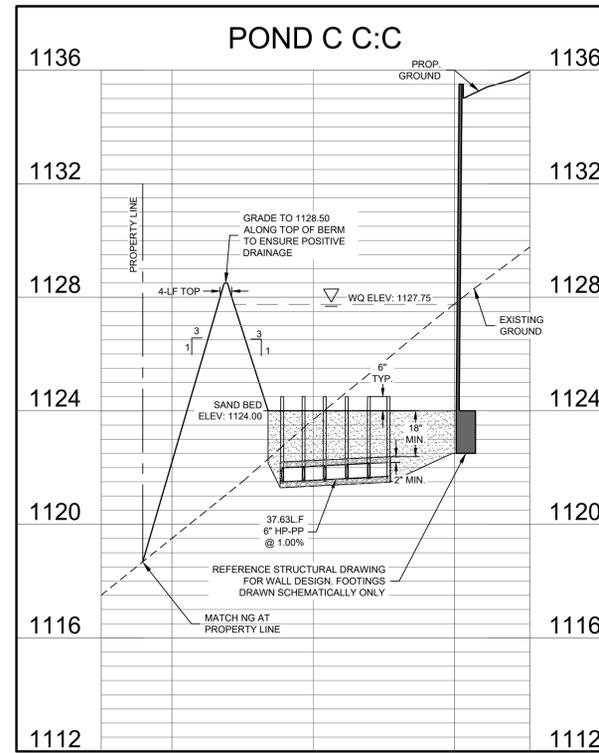
**DETENTION POND C**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL



**POND C PARTIAL SEDIMENTATION BASIN  
CROSS SECTION B:B**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL



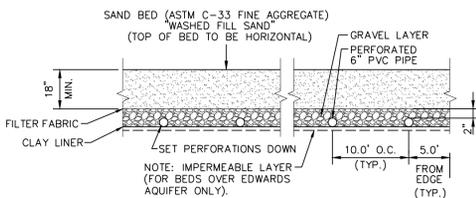
**POND C PARTIAL FILTRATION BASIN  
CROSS SECTION C:C**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL

**SAND BED SPECIFICATION**

THE TOP LAYER SHALL BE TWELVE (12) TO EIGHTEEN (18) INCHES OF 0.02-0.04 INCH DIAMETER SAND WHICH CORRESPONDS WITH ASTM C-33 CONCRETE SAND (SMALLER SAND SIZE IS NOT ACCEPTABLE). UNDER THE SAND SHALL BE A LAYER OF ONE-HALF (0.5) TO ONE AND ONE-HALF (1.5) INCH DIAMETER WASHED, ROUND RIVER GRAVEL WHICH PROVIDES A MINIMUM OF THREE (3) INCHES OF COVER OVER THE TOP OF THE UNDERDRAIN LATERAL PIPES. TWO (2) INCHES OF GRAVEL IS REQUIRED UNDER THE LATERAL PIPES. THE SAND AND GRAVEL MUST BE SEPARATED BY A LAYER OF GEOTEXTILE FABRIC MEETING THE SPECIFICATIONS LISTED BELOW.

- NOTES:  
1. ALL LATERALS SHALL BE SCH-40 PVC PERFORATED PIPE. PERFORATIONS SHOULD BE THREE-EIGHTHS (3/8) INCH. MAXIMUM SPACING BETWEEN ROWS OF PERFORATIONS SHOULD NOT EXCEED SIX (6) INCHES.



**SAND BED PROFILE (WITH GRAVEL FILTER)**  
N.T.S.

**GEOTEXTILE FABRIC SPECIFICATIONS**

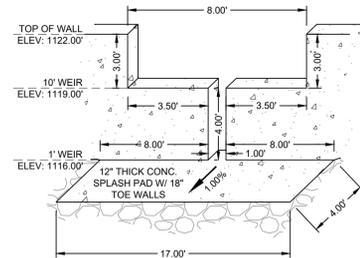
Property	Test Method	Unit	Specification
Material	Nonwoven geotextile fabric		
Unit Weight	ASTM D-3376	Oz/Sq. Yd.	3 (min.)
Water Flow Rate	ASTM D-4911	gpm/ft.	275 (min.)
Puncture Strength	ASTM D-751 (Modified)	Lb.	125 (min.)
Mullen Burst Strength	ASTM D-3378	Psi	120 (min.)
Tensile Strength	ASTM D-1682	Lb.	200 (min.)
Equip. Opening Size	US Standard Sieve	No.	80 (min.)
uv Radiation Stability	ASTM D-4355	%	70% (min.)

Equivalent methods for protection of the geomembrane liner will be considered by the Environmental and Conservation Services Department on a case by case basis. Equivalency will be judged on the basis of ability to protect the geomembrane from puncture, tearing and abrasion.

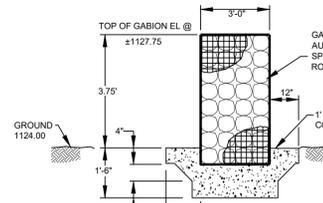
Source: City of Austin

**SAND FILTER BASIN NOTES:**

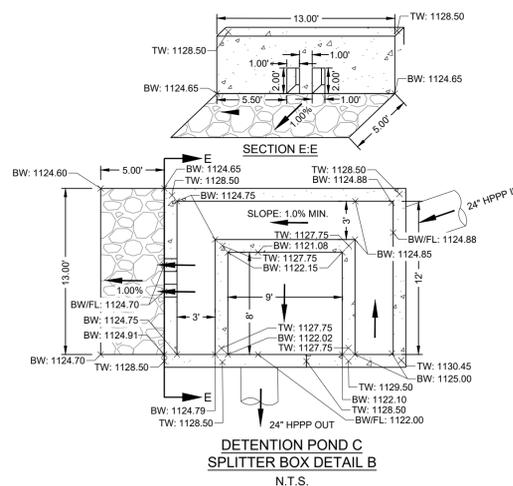
- SAND FILTER BASIN MUST BE LOCATED OUTSIDE BUFFER ZONE
- CONTRIBUTING DRAINAGE AREA LESS THAN 20 AC RECOMMENDED
- PRE-TREATMENT REQUIRED IN FORM OF SEDIMENT FOREBAY
- SECONDARY TREATMENT REQUIRED BEFORE OR AFTER BASIN
- BMP VOL = 1.05 \* IWKV
- AT LEAST 2:1 LENGTH TO WIDTH RATIO
- SECONDARY TREATMENT REQUIRED



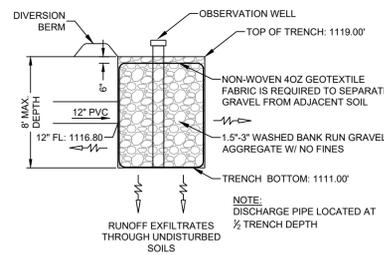
**DETENTION POND C OUTFALL  
STRUCTURE DETAIL A**  
N.T.S.



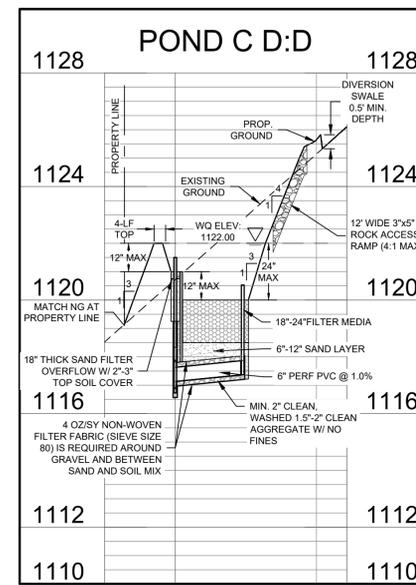
**GABION BASKET DETAIL C**  
N.T.S.



**DETENTION POND C  
SPLITTER BOX DETAIL B**  
N.T.S.



**INFILTRATION TRENCH DETAIL D**  
N.T.S.



**POND C BIO-RETENTION BASIN  
CROSS SECTION D:D**

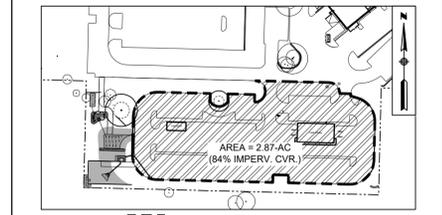
SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL

- NOTES:**
- THE DETENTION AND WATER QUALITY POND IS TO BE CONSTRUCTED FIRST IN THE SEQUENCE OF CONSTRUCTION (SOC) BEFORE SITE CLEARING AND GRADING TO ACT AS A SEDIMENTATION POND DURING CONSTRUCTION.
  - A DE-WATERING METHOD/PLAN FOR THE POND MUST BE APPROVED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD/PLAN MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS IN THE PONDED WATER TO THE GREATEST EXTENT FEASIBLE.

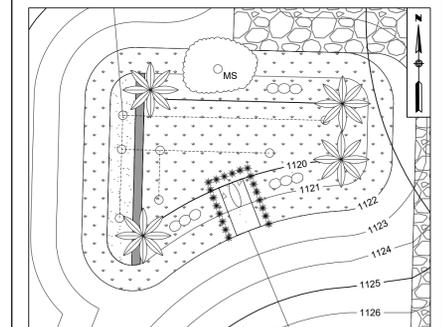
WATER QUALITY IMPROVEMENTS HAVE BEEN DESIGNED TO MEET THE CITY OF BEE CAVE NPS REGULATIONS (ARTICLE 20.04), AS REQUIRED FOR PROJECTS DRAINING TO LITTLE BARTON CREEK BY ARTICLE II, SECTION 2.02.A.XI OF THE DEVELOPMENT AGREEMENT BETWEEN WS-COS DEVELOPMENT INC., WS-COS INVESTMENTS, LLC, MATTHEWS-BARNES BROTHERS INVESTMENT, THE CITY OF BEE CAVE, AND THE LAZY NINE MUNICIPAL UTILITY DISTRICT NO. 1A

**ENVIRONMENTAL NOTES:**  
CONTACT POSTINSPECTION@TRAVISCOUNTYTX.GOV TO SCHEDULE THE FOLLOWING MILESTONE INSPECTION(S) FOR THE WATER QUALITY STRUCTURES WITH AT LEAST A 48-HOUR NOTICE, IF APPLICABLE:

- PRE-POUR OF ALL CONCRETE WITHIN THE FOOTPRINT OF THE WQ CONTROL OR POND
- PLACEMENT OF ALL ROCK-FILLED GABIONS/MATTRESSES AND LEVEL SPREADERS.
- INSPECTION OF SAND/BIO-FILTRATION MEDIA AND/OR ROCK PRIOR TO INSTALLING.
- UNDERDRAIN PIPING PRIOR TO COVERING WITH SAND/BIO-FILTRATION MEDIA OR ROCK IN INFILTRATION TRENCH - IF COVERED, REMOVAL OF MATERIAL WILL BE REQUIRED.
- INSPECTION OF DESIGNED PLANTINGS PRIOR TO INSTALLING IN RAIN GARDEN/BIO-FILTRATION BASINS.
- SUBSOIL INFILTRATION RATE TESTING FOR INFILTRATION TRENCHES/BASINS.
- COMPLETION OF CONSTRUCTION OF WATER QUALITY STRUCTURE(S).



**PHASE 4 WQ TREATMENT AREA MAP**  
SCALE: 1" = 200'



**BIO RETENTION BASIN PLANTING PLAN**  
SCALE: 1" = 10'

**PLANT LEGEND**

- BERMUDA BLUE SEED (REFER TO ECS NOTES)
- BUSHY BLUE STEM
- BUNCH GRASS HEDGE ROW (BIG MUHLV.) EVERY 1' O.C.
- DWARF PALMETTO
- MEXICAN SYCAMORE

**Outfall Rip Rap Sizing (POND C OUT)**

$Q_{100} = 31.60$ cfs
$A = 35.00$ ft <sup>2</sup> (1' Ht x 35' Length Rock Berm)
$V = 0.90$ fps ( $V=Q/A$ )
$D_{50} = 0.10$ ( $D_{50} = 0.0105V^{2.00}$ ) inches min.
<b>USE 12" THICK CLASS 1 6" DIA. (D<sub>50</sub>) RIP-RAP.</b>

**Outfall Rip Rap Sizing (POND C IN - SSL)**

$Q_{100} = 38.49$ cfs
$A = 3.14$ ft <sup>2</sup> (36" Pipe IN)
$V = 12.25$ fps ( $V=Q/A$ )
$D_{50} = 21.98$ ( $D_{50} = 0.0105V^{2.00}$ ) inches min.
<b>USE CLASS VII 23" DIA. (D<sub>50</sub>) RIP-RAP</b>

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 4  
DETENTION & WATER QUALITY POND DETAILS**

NO.	DATE	DESCRIPTION	BY
C1	9/7/2018	REVISE SITE PLAN/AVAILABILITY PLAN AND MASS GRADING	CRH
C2	8/30/2019	ADD PHASE 2 SITE PLANS TO PLANS	CRH
C3	6/29/2021	ADD PHASE 3 SITE PLAN TO PLANS AND REVISION GRADING	CRH
RF	11/16/2021	REMOVE CAR WASH / FUEL PAD & FIK DUMPSTER	CRH

DESIGNED BY: ADG  
DRAWN BY: CRH  
CHECKED BY: CRH  
DATE: 06/22/2023  
DWG NAME: A338-40-P-WQ01  
CADDWG

06/22/2023  
DESIGNED BY: ADG  
DRAWN BY: CRH  
CHECKED BY: CRH  
DATE: 06/22/2023  
DWG NAME: A338-40-P-WQ01  
CADDWG

STATE OF TEXAS  
CHARLES R. HAGER  
127034  
PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
Phone 512.438.4700  
Fax 512.438.4716  
7500 Riatico Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
FRN-F-1386

JOB NUMBER: A338-401  
WQ06  
SHEET NO. 90 OF 90 SHEETS

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**APPENDIX A**

**SAMPLE INSPECTION AND MAINTENANCE  
REPORT FORM**

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**APPENDIX B**

**NAMES AND QUALIFICATIONS OF PERSONNEL  
MAKING INSPECTIONS**

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**APPENDIX C**

**CERTIFIED NOTICES OF INTENT AND  
ACKNOWLEDGEMENT CERTIFICATES**

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# Notice of Intent (NOI) for an Authorization for Stormwater Discharges Associated with Construction Activity under TPDES General Permit TXR150000

## IMPORTANT INFORMATION

Please read and use the General Information and Instructions prior to filling out each question in the NOI form.

Use the NOI Checklist to ensure all required information is completed correctly.

**Incomplete applications delay approval or result in automatic denial.**

Once processed your permit authorization can be viewed by entering the following link into your internet browser: [http://www2.tceq.texas.gov/wq\\_dpa/index.cfm](http://www2.tceq.texas.gov/wq_dpa/index.cfm) or you can contact TCEQ Stormwater Processing Center at 512-239-3700.

## ePERMITS

**Effective September 1, 2018, this paper form must be submitted to TCEQ with a completed electronic reporting waiver form (TCEQ-20754).**

To submit an NOI electronically, enter the following web address into your internet browser and follow the instructions: <https://www3.tceq.texas.gov/steers/index.cfm>

## APPLICATION FEE AND PAYMENT

The application fee for submitting a paper NOI is \$325. The application fee for electronic submittal of a NOI through the TCEQ ePermits system (STEERS) is \$225.

Payment of the application fee can be submitted by mail or through the TCEQ ePay system. The payment and the NOI must be mailed to separate addresses. To access the TCEQ ePay system enter the following web address into your internet browser: <http://www.tceq.texas.gov/epay>.

Provide your payment information for verification of payment:

- If payment was mailed to TCEQ, provide the following:
  - Check/Money Order Number:
  - Name printed on Check:
- If payment was made via ePay, provide the following:
  - Voucher Number:
  - A copy of the payment voucher is attached to this paper NOI form.

**RENEWAL** (This portion of the NOI is not applicable after June 3, 2018)

Is this NOI for a renewal of an existing authorization?  Yes  No

If Yes, provide the authorization number here: TXR15 [REDACTED]

NOTE: If an authorization number is not provided, a new number will be assigned.

**SECTION 1. OPERATOR (APPLICANT)**

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? CN [REDACTED]

(Refer to Section 1.a) of the Instructions)

b) What is the Legal Name of the entity (applicant) applying for this permit? (The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

Matthew-Barnes Brothers Investments II, LP

c) What is the contact information for the Operator (Responsible Authority)?

Prefix (Mr. Ms. Miss): Matthew-Barnes Brothers Investments II, LP

First and Last Name: Philip Robinson Suffix: [REDACTED]

Title: Authorized Signatory Credentials: [REDACTED]

Phone Number: (512) 583-3030 Fax Number: [REDACTED]

E-mail: philip@covertauto.com

Mailing Address: 11750 Research Blvd.

City, State, and Zip Code: Austin, TX 78759

Mailing Information if outside USA:

Territory: [REDACTED]

Country Code: [REDACTED] Postal Code: [REDACTED]

d) Indicate the type of customer:

- |   |   |
|---|---|
| <input type="checkbox"/> Individual                     | <input type="checkbox"/> Federal Government |
| <input checked="" type="checkbox"/> Limited Partnership | <input type="checkbox"/> County Government  |
| <input type="checkbox"/> General Partnership            | <input type="checkbox"/> State Government   |
| <input type="checkbox"/> Trust                          | <input type="checkbox"/> City Government    |
| <input type="checkbox"/> Sole Proprietorship (D.B.A.)   | <input type="checkbox"/> Other Government   |
| <input type="checkbox"/> Corporation                    | <input type="checkbox"/> Other: [REDACTED]  |
| <input type="checkbox"/> Estate                         |   |

e) Is the applicant an independent operator?  Yes  No

(If a governmental entity, a subsidiary, or part of a larger corporation, check No.)

f) Number of Employees. Select the range applicable to your company.

0-20

251-500

21-100

501 or higher

101-250

g) Customer Business Tax and Filing Numbers: (**Required** for Corporations and Limited Partnerships. **Not Required** for Individuals, Government, or Sole Proprietors.)

State Franchise Tax ID Number: [REDACTED]

Federal Tax ID: [REDACTED]

Texas Secretary of State Charter (filing) Number: 0803818723

DUNS Number (if known): [REDACTED]

## SECTION 2. APPLICATION CONTACT

Is the application contact the same as the applicant identified above?

Yes, go to Section 3

No, complete this section

Prefix (Mr. Ms. Miss): [REDACTED]

First and Last Name: [REDACTED] Suffix: [REDACTED]

Title: [REDACTED] Credential: [REDACTED]

Organization Name: [REDACTED]

Phone Number: [REDACTED] Fax Number: [REDACTED]

E-mail: [REDACTED]

Mailing Address: [REDACTED]

Internal Routing (Mail Code, Etc.): [REDACTED]

City, State, and Zip Code: [REDACTED]

Mailing information if outside USA:

Territory: [REDACTED]

Country Code: [REDACTED] Postal Code: [REDACTED]

## SECTION 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) If this is an existing permitted site, what is the Regulated Entity Number (RN) issued to this site? RN [REDACTED]

(Refer to Section 3.a) of the Instructions)

- b) Name of project or site (the name known by the community where it's located):  
Covert Bee Cave
- c) In your own words, briefly describe the type of construction occurring at the regulated site (residential, industrial, commercial, or other): Construction for the commercial parking lot and car wash will consist of site grading, paving, installation of car wash and vacuums.
- d) County or Counties (if located in more than one): Travis
- e) Latitude: 30.314499                      Longitude: -98.002942
- f) Site Address/Location

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete *Section A*.

If the site does not have a physical address, provide a location description in *Section B*. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

*Section A:*

Street Number and Name: 16501 Sweetwater Village Drive

City, State, and Zip Code: Austin, TX 78738

*Section B:*

Location Description: [REDACTED]

City (or city nearest to) where the site is located: [REDACTED]

Zip Code where the site is located: [REDACTED]

**SECTION 4. GENERAL CHARACTERISTICS**

- a) Is the project or site located on Indian Country Lands?
  - Yes, do not submit this form. You must obtain authorization through EPA Region 6.
  - No
- b) Is your construction activity associated with a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources?
  - Yes. Note: The construction stormwater runoff may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization through EPA Region 6.
  - No
- c) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site? 7542
- d) What is the Secondary SIC Code(s), if applicable? [REDACTED]
- e) What is the total number of acres to be disturbed? 3.88 Acres
- f) Is the project part of a larger common plan of development or sale?

Yes

No. The total number of acres disturbed, provided in e) above, must be 5 or more. If the total number of acres disturbed is less than 5, do not submit this form. See the requirements in the general permit for small construction sites.

g) What is the estimated start date of the project? October 2023

h) What is the estimated end date of the project? December 2023

i) Will concrete truck washout be performed at the site?  Yes  No

j) What is the name of the first water body(ies) to receive the stormwater runoff or potential runoff from the site? Little Barton Creek

k) What is the segment number(s) of the classified water body(ies) that the discharge will eventually reach? 1430

l) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?

Yes  No

If Yes, provide the name of the MS4 operator: \_\_\_\_\_

Note: The general permit requires you to send a copy of this NOI form to the MS4 operator.

m) Is the discharge or potential discharge from the site within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?

Yes, complete the certification below.

No, go to Section 5

I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented.  Yes

## SECTION 5. NOI CERTIFICATION

a) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000).  Yes

b) I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.  Yes

c) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.  Yes

d) I certify that a Stormwater Pollution Prevention Plan has been developed, will be implemented prior to construction and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the Construction General Permit (TXR150000).  Yes

Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3, provided all obligations are confirmed by at least one operator.

**SECTION 6. APPLICANT CERTIFICATION SIGNATURE**

Operator Signatory Name: Philip Robinson

Operator Signatory Title:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink):  Date: 8/2/2023

# NOTICE OF INTENT CHECKLIST (TXR150000)

Did you complete everything? Use this checklist to be sure!

Are you ready to mail your form to TCEQ? Go to the General Information Section of the Instructions for mailing addresses.

Confirm each item (or applicable item) in this form is complete. This checklist is for use by the applicant to ensure a complete application is being submitted. **Missing information may result in denial of coverage under the general permit.** (See NOI process description in the General Information and Instructions.)

## APPLICATION FEE

If paying by check:

- Check was mailed **separately** to the TCEQs Cashier's Office. (See Instructions for Cashier's address and Application address.)
- Check number and name on check is provided in this application.

If using ePay:

- The voucher number is provided in this application and a copy of the voucher is attached.

## RENEWAL

- If this application is for renewal of an existing authorization, the authorization number is provided.

## OPERATOR INFORMATION

- Customer Number (CN) issued by TCEQ Central Registry
- Legal name as filed to do business in Texas. (Call TX SOS 512-463-5555 to verify.)
- Name and title of responsible authority signing the application.
- Phone number and e-mail address
- Mailing address is complete & verifiable with USPS. [www.usps.com](http://www.usps.com)
- Type of operator (entity type). Is applicant an independent operator?
- Number of employees.
- For corporations or limited partnerships - Tax ID and SOS filing numbers.
- Application contact and address is complete & verifiable with USPS. <http://www.usps.com>

## REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

- Regulated Entity Number (RN) (if site is already regulated by TCEQ)
- Site/project name and construction activity description
- County
- Latitude and longitude <http://www.tceq.texas.gov/gis/sqmaview.html>

Site Address/Location. Do not use a rural route or post office box.

#### GENERAL CHARACTERISTICS

Indian Country Lands -the facility is not on Indian Country Lands.

Construction activity related to facility associated to oil, gas, or geothermal resources

Primary SIC Code that best describes the construction activity being conducted at the site.  
[www.osha.gov/oshstats/sicser.html](http://www.osha.gov/oshstats/sicser.html)

Estimated starting and ending dates of the project.

Confirmation of concrete truck washout.

Acres disturbed is provided and qualifies for coverage through a NOI.

Common plan of development or sale.

Receiving water body or water bodies.

Segment number or numbers.

MS4 operator.

Edwards Aquifer rule.

#### CERTIFICATION

Certification statements have been checked indicating Yes.

Signature meets 30 Texas Administrative Code (TAC) §305.44 and is original.

# Instructions for Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity under TPDES General Permit (TXR150000)

## GENERAL INFORMATION

### Where to Send the Notice of Intent (NOI):

By Regular Mail:

TCEQ

Stormwater Processing Center (MC228)

P.O. Box 13087

Austin, Texas 78711-3087

By Overnight or Express Mail:

TCEQ

Stormwater Processing Center (MC228)

12100 Park 35 Circle

Austin, TX

### Application Fee:

The application fee of \$325 is required to be paid at the time the NOI is submitted. Failure to submit payment at the time the application is filed will cause delays in acknowledgment or denial of coverage under the general permit. Payment of the fee may be made by check or money order, payable to TCEQ, or through EPAY (electronic payment through the web).

### Mailed Payments:

Use the attached General Permit Payment Submittal Form. The application fee is submitted to a different address than the NOI. Read the General Permit Payment Submittal Form for further instructions, including the address to send the payment.

### ePAY Electronic Payment: <http://www.tceq.texas.gov/epay>

When making the payment you must select Water Quality, and then select the fee category "General Permit Construction Storm Water Discharge NOI Application". You must include a copy of the payment voucher with your NOI. Your NOI will not be considered complete without the payment voucher.

### TCEQ Contact List:

Application - status and form questions:

512-239-3700, [swpermit@tceq.texas.gov](mailto:swpermit@tceq.texas.gov)

Technical questions:

512-239-4671, [swgp@tceq.texas.gov](mailto:swgp@tceq.texas.gov)

Environmental Law Division:

512-239-0600

Records Management - obtain copies of forms:

512-239-0900

Reports from databases (as available):

512-239-DATA (3282)

Cashier's office:

512-239-0357 or 512-239-0187

### Notice of Intent Process:

When your NOI is received by the program, the form will be processed as follows:

- **Administrative Review:** Each item on the form will be reviewed for a complete response. In addition, the operator's legal name must be verified with Texas Secretary of State as valid and active (if applicable). The address(es) on the form must be verified with the US Postal service as receiving regular mail delivery. Do not give an overnight/express mailing address.

- **Notice of Deficiency:** If an item is incomplete or not verifiable as indicated above, a notice of deficiency (NOD) will be mailed to the operator. The operator will have 30 days to respond to the NOD. The response will be reviewed for completeness.
- **Acknowledgment of Coverage:** An Acknowledgment Certificate will be mailed to the operator. This certificate acknowledges coverage under the general permit.

or

**Denial of Coverage:** If the operator fails to respond to the NOD or the response is inadequate, coverage under the general permit may be denied. If coverage is denied, the operator will be notified.

### General Permit (Your Permit)

For NOIs submitted **electronically** through ePermits, provisional coverage under the general permit begins immediately following confirmation of receipt of the NOI form by the TCEQ.

For **paper** NOIs, provisional coverage under the general permit begins **7 days after a completed NOI is postmarked for delivery** to the TCEQ.

You should have a copy of your general permit when submitting your application. You may view and print your permit for which you are seeking coverage, on the TCEQ web site <http://www.tceq.texas.gov>. Search using keyword TXR150000.

### Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated project or site changes, the present permittee must submit a Notice of Termination and the new operator must submit a Notice of Intent. The NOT and NOI must be submitted no later than 10 days prior to the change in Operator status.

### TCEQ Central Registry Core Data Form

The Core Data Form has been incorporated into this form. Do not send a Core Data Form to TCEQ. After final acknowledgment of coverage under the general permit, the program will assign a Customer Number and Regulated Entity Number, if one has not already been assigned to this customer or site.

For existing customers and sites, you can find the Customer Number and Regulated Entity Number by entering the following web address into your internet browser: <http://www15.tceq.texas.gov/crpub/> or you can contact the TCEQ Stormwater Processing Center at 512-239-3700 for assistance. On the website, you can search by your permit number, the Regulated Entity (RN) number, or the Customer Number (CN). If you do not know these numbers, you can select "Advanced Search" to search by permittee name, site address, etc.

The Customer (Permittee) is responsible for providing consistent information to the TCEQ, and for updating all CN and RN data for all authorizations as changes occur. For this permit, a Notice of Change form must be submitted to the program area.

## INSTRUCTIONS FOR FILLING OUT THE NOI FORM

**Renewal of General Permit.** Dischargers holding active authorizations under the expired General Permit are required to submit a NOI to continue coverage. The existing permit number is required. If the permit number is not provided or has been terminated, expired, or denied, a new permit number will be issued.

### Section 1. OPERATOR (APPLICANT)

#### a) Customer Number (CN)

TCEQ's Central Registry will assign each customer a number that begins with CN, followed by nine digits. **This is not a permit number, registration number, or license number.**

If the applicant is an existing TCEQ customer, the Customer Number is available at the following website: <http://www15.tceq.texas.gov/crpub/>. If the applicant is not an existing TCEQ customer, leave the space for CN blank.

#### b) Legal Name of Applicant

Provide the current legal name of the applicant. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, as filed in the county. You may contact the SOS at 512-463-5555, for more information related to filing in Texas. If filed in the county, provide a copy of the legal documents showing the legal name.

#### c) Contact Information for the Applicant (Responsible Authority)

Provide information for the person signing the application in the Certification section. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. The mailing address must be recognized by the US Postal Service. You may verify the address on the following website: <https://tools.usps.com/go/ZipLookupAction!input.action>.

The phone number should provide contact to the applicant.

The fax number and e-mail address are optional and should correspond to the applicant.

#### d) Type of Customer (Entity Type)

Check only one box that identifies the type of entity. Use the descriptions below to identify the appropriate entity type. Note that the selected entity type also indicates the name that must be provided as an applicant for an authorization.

##### **Individual**

An individual is a customer who has not established a business, but conducts an activity that needs to be regulated by the TCEQ.

##### **Partnership**

A customer that is established as a partnership as defined by the Texas Secretary of State Office (TX SOS). If the customer is a 'General Partnership' or 'Joint Venture' filed in the county (not filed with TX SOS), the legal name of each partner forming the 'General Partnership' or 'Joint Venture' must be provided. Each 'legal entity' must apply as a co-applicant.

### **Trust or Estate**

A trust and an estate are fiduciary relationships governing the trustee/executor with respect to the trust/estate property.

### **Sole Proprietorship (DBA)**

A sole proprietorship is a customer that is owned by only one person and has not been incorporated. This business may:

1. be under the person's name
2. have its own name (doing business as or DBA)
3. have any number of employees.

If the customer is a Sole Proprietorship or DBA, the 'legal name' of the individual business 'owner' must be provided. The DBA name is not recognized as the 'legal name' of the entity. The DBA name may be used for the site name (regulated entity).

### **Corporation**

A customer that meets all of these conditions:

1. is a legally incorporated entity under the laws of any state or country
2. is recognized as a corporation by the Texas Secretary of State
3. has proper operating authority to operate in Texas

The corporation's 'legal name' as filed with the Texas Secretary of State must be provided as applicant. An 'assumed' name of a corporation is not recognized as the 'legal name' of the entity.

### **Government**

Federal, state, county, or city government (as appropriate)

The customer is either an agency of one of these levels of government or the governmental body itself. The government agency's 'legal name' must be provided as the applicant. A department name or other description of the organization is not recognized as the 'legal name'.

### **Other**

This may include a utility district, water district, tribal government, college district, council of governments, or river authority. Provide the specific type of government.

#### **e) Independent Entity**

Check No if this customer is a subsidiary, part of a larger company, or is a governmental entity. Otherwise, check Yes.

#### **f) Number of Employees**

Check one box to show the number of employees for this customer's entire company, at all locations. This is not necessarily the number of employees at the site named in the application.

**g) Customer Business Tax and Filing Numbers**

These are required for Corporations and Limited Partnerships. These are not required for Individuals, Government, and Sole Proprietors.

**State Franchise Tax ID Number**

Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter the Tax ID number.

**Federal Tax ID**

All businesses, except for some small sole proprietors, individuals, or general partnerships should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Sole proprietors, individuals, or general partnerships do not need to provide a federal tax ID.

**TX SOS Charter (filing) Number**

Corporations and Limited Partnerships required to register with the Texas Secretary of State are issued a charter or filing number. You may obtain further information by calling SOS at 512-463-5555.

**DUNS Number**

Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

**Section 2. APPLICATION CONTACT**

Provide the name and contact information for the person that TCEQ can contact for additional information regarding this application.

**Section 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE**

**a) Regulated Entity Number (RN)**

The RN is issued by TCEQ's Central Registry to sites where an activity is regulated by TCEQ. This is not a permit number, registration number, or license number. Search TCEQ's Central Registry to see if the site has an assigned RN at <http://www15.tceq.texas.gov/crpub/>. If this regulated entity has not been assigned an RN, leave this space blank.

If the site of your business is part of a larger business site, an RN may already be assigned for the larger site. Use the RN assigned for the larger site.

If the site is found, provide the assigned RN and provide the information for the site to be authorized through this application. The site information for this authorization may vary from the larger site information.

An example is a chemical plant where a unit is owned or operated by a separate corporation that is accessible by the same physical address of your unit or facility. Other examples include industrial parks identified by one common address but different corporations have control of defined areas within the site. In both cases, an RN would be assigned for the physical address location and the permitted sites would be identified separately under the same RN.

**b) Name of the Project or Site**

Provide the name of the site or project as known by the public in the area where the site is located. The name you provide on this application will be used in the TCEQ Central Registry as the Regulated Entity name.

**c) Description of Activity Regulated**

In your own words, briefly describe the primary business that you are doing that requires this authorization. Do not repeat the SIC Code description.

**d) County**

Provide the name of the county where the site or project is located. If the site or project is located in more than one county, provide the county names as secondary.

**e) Latitude and Longitude**

Enter the latitude and longitude of the site in degrees, minutes, and seconds or decimal form. For help obtaining the latitude and longitude, go to:

<http://www.tceq.texas.gov/gis/sqmapview.html>.

**f) Site Address/Location**

If a site has an address that includes a street number and street name, enter the complete address for the site in *Section A*. If the physical address is not recognized as a USPS delivery address, you may need to validate the address with your local police (911 service) or through an online map site used to locate a site. Please confirm this to be a complete and valid address. Do not use a rural route or post office box for a site location.

If a site does not have an address that includes a street number and street name, provide a complete written location description in *Section B*. For example: "The site is located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1."

Provide the city (or nearest city) and zip code of the site location.

**Section 4. GENERAL CHARACTERISTICS**

**a) Indian Country Lands**

If your site is located on Indian Country Lands, the TCEQ does not have authority to process your application. You must obtain authorization through EPA Region 6, Dallas. Do not submit this form to TCEQ.

**b) Construction activity associated with facility associated with exploration, development, or production of oil, gas, or geothermal resources**

If your activity is associated with oil and gas exploration, development, or production, you may be under jurisdiction of the Railroad Commission of Texas (RRC) and may need to obtain authorization from EPA Region 6.

Construction activities associated with a facility related to oil, gas or geothermal resources may include the construction of a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a

carbon dioxide geologic storage facility; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel.

Where required by federal law, discharges of stormwater associated with construction activities under the RRC's jurisdiction must be authorized by the EPA and the RRC, as applicable. Activities under RRC jurisdiction include construction of a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources, such as a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a carbon dioxide geologic storage facility under the jurisdiction of the RRC; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel. The RRC also has jurisdiction over stormwater from land disturbance associated with a site survey that is conducted prior to construction of a facility that would be regulated by the RRC. Under 33 U.S.C. § 1342(l)(2) and § 1362(24), EPA cannot require a permit for discharges of stormwater from field activities or operations associated with {oil and gas} exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities unless the discharge is contaminated by contact with any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the facility. Under § 3.8 of this title (relating to Water Protection), the RRC prohibits operators from causing or allowing pollution of surface or subsurface water. Operators are encouraged to implement and maintain best management practices (BMPs) to minimize discharges of pollutants, including sediment, in stormwater during construction activities to help ensure protection of surface water quality during storm events.

For more information about the jurisdictions of the RRC and the TCEQ, read the Memorandum of Understanding (MOU) between the RRC and TCEQ at 16 Texas Administrative Code, Part 1, Chapter 3, Rule 3.30, by entering the following link into an internet browser:

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1&p\\_tac=&ti=16&pt=1&ch=3&rl=30](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=30) or contact the TCEQ Stormwater Team at 512-239-4671 for additional information.

**c) Primary Standard Industrial Classification (SIC) Code**

Provide the SIC Code that best describes the construction activity being conducted at this site.

Common SIC Codes related to construction activities include:

- 1521 - Construction of Single Family Homes
- 1522 - Construction of Residential Buildings Other than Single Family Homes
- 1541 - Construction of Industrial Buildings and Warehouses

- 1542 - Construction of Non-residential Buildings, other than Industrial Buildings and Warehouses
- 1611 - Highway and Street Construction, except Highway Construction
- 1622 - Bridge, Tunnel, and Elevated Highway Construction
- 1623 - Water, Sewer, Pipeline and Communications, and Power Line Construction

For help with SIC Codes, enter the following link into your internet browser: <http://www.osha.gov/pls/imis/sicsearch.html> or you can contact the TCEQ Small Business and Local Government Assistance Section at 800-447-2827 for assistance.

**d) Secondary SIC Code**

Secondary SIC Code(s) may be provided. Leave this blank if not applicable. For help with SIC Codes, enter the following link into your internet browser: <http://www.osha.gov/pls/imis/sicsearch.html> or you can contact the TCEQ Small Business and Environmental Assistance Section at 800-447-2827 for assistance.

**e) Total Number of Acres Disturbed**

Provide the approximate number of acres that the construction site will disturb. Construction activities that disturb less than one acre, unless they are part of a larger common plan that disturbs more than one acre, do not require permit coverage. Construction activities that disturb between one and five acres, unless they are part of a common plan that disturbs more than five acres, do not require submission of an NOI. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

If you have any questions about this item, please contact the stormwater technical staff by phone at 512-239-4671 or by email at [swgp@tceq.texas.gov](mailto:swgp@tceq.texas.gov).

**f) Common Plan of Development**

Construction activities that disturb less than five acres do not require submission of an NOI unless they are part of a common plan of development or for sale where the area disturbed is five or more acres. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

For more information on what a common plan of development is, refer to the definition of “Common Plan of Development” in the Definitions section of the general permit or enter the following link into your internet browser:

[www.tceq.texas.gov/permitting/stormwater/common\\_plan\\_of\\_development\\_steps.html](http://www.tceq.texas.gov/permitting/stormwater/common_plan_of_development_steps.html)

For further information, go to the TCEQ stormwater construction webpage enter the following link into your internet browser: [www.tceq.texas.gov/goto/construction](http://www.tceq.texas.gov/goto/construction) and search for “Additional Guidance and Quick Links”. If you have any further questions about the Common Plan of Development you can contact the TCEQ Stormwater Team at 512-239-4671 or the TCEQ Small Business and Environmental Assistance at 800-447-2827.

**g) Estimated Start Date of the Project**

This is the date that any construction activity or construction support activity is initiated at the site. If renewing the permit provide the original start date of when construction activity for this project began.

**h) Estimated End Date of the Project**

This is the date that any construction activity or construction support activity will end and final stabilization will be achieved at the site.

**i) Will concrete truck washout be performed at the site?**

Indicate if you expect that operators of concrete trucks will washout concrete trucks at the construction site.

**j) Identify the water body(s) receiving stormwater runoff**

The stormwater may be discharged directly to a receiving stream or through a MS4 from your site. It eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. You must provide the name of the water body that receives the discharge from the site (a local stream or lake).

If your site has more than one outfall you need to include the name of the first water body for each outfall, if they are different.

**k) Identify the segment number(s) of the classified water body(s)**

Identify the classified segment number(s) receiving a discharge directly or indirectly. Enter the following link into your internet browser to find the segment number of the classified water body where stormwater will flow from the site:

[www.tceq.texas.gov/waterquality/monitoring/viewer.html](http://www.tceq.texas.gov/waterquality/monitoring/viewer.html) or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

You may also find the segment number in TCEQ publication GI-316 by entering the following link into your internet browser: [www.tceq.texas.gov/publications/gi/gi-316](http://www.tceq.texas.gov/publications/gi/gi-316) or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

If the discharge is into an unclassified receiving water and then crosses state lines prior to entering a classified segment, select the appropriate watershed:

- 0100 (Canadian River Basin)
- 0200 (Red River Basin)
- 0300 (Sulfur River Basin)
- 0400 (Cypress Creek Basin)
- 0500 (Sabine River Basin)

Call the Water Quality Assessments section at 512-239-4671 for further assistance.

**l) Discharge into MS4 - Identify the MS4 Operator**

The discharge may initially be into a municipal separate storm sewer system (MS4). If the stormwater discharge is into an MS4, provide the name of the entity that operates the MS4 where the stormwater discharges. An MS4 operator is often a city, town, county, or utility district, but possibly can be another form of government. Please note that the Construction General Permit requires the Operator to supply the MS4 with a

copy of the NOI submitted to TCEQ. For assistance, you may call the technical staff at 512-239-4671.

**m) Discharges to the Edwards Aquifer Recharge Zone and Certification**

The general permit requires the approved Contributing Zone Plan or Water Pollution Abatement Plan to be included or referenced as a part of the Stormwater Pollution Prevention Plan.

See maps on the TCEQ website to determine if the site is located within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer by entering the following link into an internet browser:

[www.tceq.texas.gov/field/eapp/viewer.html](http://www.tceq.texas.gov/field/eapp/viewer.html) or by contacting the TCEQ Water Quality Division at 512-239-4671 for assistance.

If the discharge or potential discharge is within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, a site-specific authorization approved by the Executive Director under the Edwards Aquifer Protection Program (30 TAC Chapter 213) is required before construction can begin.

For questions regarding the Edwards Aquifer Protection Program, contact the appropriate TCEQ Regional Office. For projects in Hays, Travis and Williamson Counties: Austin Regional Office, 12100 Park 35 Circle, Austin, TX 78753, 512-339-2929. For Projects in Bexar, Comal, Kinney, Medina and Uvalde Counties: TCEQ San Antonio Regional Office, 14250 Judson Rd., San Antonio, TX 78233-4480, 210-490-3096.

**Section 5. NOICERTIFICATION**

**Note: Failure to indicate Yes to all of the certification items may result in denial of coverage under the general permit.**

**a) Certification of Understanding the Terms and Conditions of Construction General Permit (TXR150000)**

Provisional coverage under the Construction General Permit (TXR150000) begins 7 days after the completed paper NOI is postmarked for delivery to the TCEQ. Electronic applications submitted through ePermits have immediate provisional coverage. You must obtain a copy and read the Construction General Permit before submitting your application. You may view and print the Construction General Permit for which you are seeking coverage at the TCEQ web site by entering the following link into an internet browser: [www.tceq.texas.gov/goto/construction](http://www.tceq.texas.gov/goto/construction) or you may contact the TCEQ Stormwater processing Center at 512-239-3700 for assistance.

**b) Certification of Legal Name**

The full legal name of the applicant as authorized to do business in Texas is required. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, that is filed in the county where doing business. You may contact the SOS at 512-463 5555, for more information related to filing in Texas.

**c) Understanding of Notice of Termination**

A permittee shall terminate coverage under the Construction General Permit through the submittal of a NOT when the operator of the facility changes, final stabilization has

been reached, the discharge becomes authorized under an individual permit, or the construction activity never began at this site.

**d) Certification of Stormwater Pollution Prevention Plan**

The SWP3 identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter stormwater, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. You must develop this plan in accordance with the TCEQ general permit requirements. This plan must be developed and implemented before you complete this NOI. The SWP3 must be available for a TCEQ investigator to review on request.

**Section 6. APPLICANT CERTIFICATION SIGNATURE**

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code (TAC) §305.44.

**If you are a corporation:**

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(1) (see below). According to this code provision, any corporate representative may sign an NOI or similar form so long as the authority to sign such a document has been delegated to that person in accordance with corporate procedures. By signing the NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

**If you are a municipality or other government entity:**

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(3) (see below). According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statute(s) under which your government entity was formed. An NOI or similar document that is signed by a government official who is not a ranking elected official or principal executive officer does not conform to §305.44(a)(3). The signatory requirement may not be delegated to a government representative other than those identified in the regulation. By signing the NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the TCEQ's Environmental Law Division at 512-239-0600.

## 30 Texas Administrative Code

### §305.44. Signatories to Applications

(a) All applications shall be signed as follows.

(1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the

corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

(2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

# Texas Commission on Environmental Quality General Permit Payment Submittal Form

**Use this form to submit your Application Fee only if you are mailing your payment.**

## Instructions:

- Complete items 1 through 5 below:
- Staple your check in the space provided at the bottom of this document.
- *Do not mail this form with your NOI form*
- *Do not mail this form to the same address as your NOI.*

## Mail this form and your check to either of the following:

### *By Regular U.S. Mail*

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
P.O. Box 13088  
Austin, TX 78711-3088

### *By Overnight or Express Mail*

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
12100 Park 35 Circle  
Austin, TX 78753

**Fee Code: GPA General Permit: TXR150000**

1. Check or Money Order No:
2. Amount of Check/Money Order:
3. Date of Check or Money Order:
4. Name on Check or Money Order:
5. NOI Information:

If the check is for more than one NOI, list each Project or Site (RE) Name and Physical Address exactly as provided on the NOI. **Do not submit a copy of the NOI with this form, as it could cause duplicate permit application entries!**

If there is not enough space on the form to list all of the projects or sites the authorization will cover, then attach a list of the additional sites.

Project/Site (RE) Name:

Project/Site (RE) Physical Address:

**Staple the check or money order to this form in this space.**

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**APPENDIX D**

**TEXAS COMMISSION ON ENVIRONMENTAL  
QUALITY SMALL-BUSINESS HANDBOOK FOR  
SPILL RESPONSE (RG-285)**

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# TNRCC REGULATORY GUIDANCE

Pollution Cleanup Division

RG-285

June 1997

## SUBJECT: Small-Business Handbook for Spill Response

### Purpose

The purpose of this handbook is to help small businesses to comply with the Texas Natural Resource Conservation Commission's (TNRCC's) Spill Rule. From this document, you will learn when and how to report a spill and how to enlist the aid of the TNRCC and other authorities, as needed, in responding to a spill. This handbook is for guidance only; it does not replace or supersede the official rules and regulations.

The purpose of the Spill Rule, which is found in Title 30 Texas Administrative Code (30 TAC) Chapter 327, is to deal responsibly with threats to human health or the environment posed by incidents that may cause the contamination of groundwater or surface water. The rule sets guidelines for initial notification, response actions, and follow-up reports that the responsible person must follow when a discharge or spill occurs.

### The Spill Rule—in a Nutshell

The Spill Rule requires the party responsible for causing a spill that by its nature and size presents the threat of contaminating groundwater or surface water to:

- control and contain the spill (or see that this is done);
- clean up the results of the spill (or see that this is done);
- notify the appropriate authorities, which may range from the local fire department to the TNRCC, depending on the threat posed by the spill;
- make follow-up reports to the TNRCC about the continuing progress or completion of the cleanup.

To explain how to comply with the Spill Rule, this document will address the following questions:

- What is a spill (as far as the Spill Rule is concerned)?
- What should I do when the spill is serious?

- What about less serious spills?
- What kinds of spills need to be reported?
- What should my report say?
- Who can tell me what is in my spill?
- How can the TNRCC help me?
- What happens when I report a spill?
- What kinds of spills are not covered by this rule?
- Where do I look for more information?

### What Is a Spill?

As defined in the rule, a spill is any incident in which oil, hazardous substances, industrial waste, or "other substances" contaminate or may contaminate surface water or groundwater in the state of Texas. Because substances spilled on the ground may find their way into groundwater, lakes, rivers, or streams, the definition includes spills on the ground as well as spills that go directly into water.

The definition of a "discharge or spill" is broad; it covers just about any accidental action or oversight that leads to the possible contamination of water. The following examples represent only a few of the many different kinds of incidents that this definition covers:

- A worker at a pest control service discovers that liquid pesticide has leaked from a storage tank into the ground.
- A landscaper rinses tanks that held herbicide, and then the rinse water escapes into a storm sewer.
- A truck loaded with avocados overturns, spilling its cargo and its fuel on the highway.
- A worker at a boat repair shop accidentally pours a solvent-based varnish remover on pavement. Most of the solvent evaporates quickly.
- A trenching crew hits a buried pipeline, causing oil to leak into the surrounding soil.

For simplicity, the term "spill" will be used in this document to refer to any incident covered by the definition

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given in 30 TAC Section (§) 327.2 for *discharge or spill*. Certain kinds of incidents that might threaten water supplies are covered by other rules or are under the authority of other agencies. Incidents that are not covered by the Spill Rule are described at the end of this document.

## What Should I Do When the Spill Is Serious?

Whenever a spill or discharge involves an imminent threat to human health, notify local emergency authorities *immediately* and cooperate with them in responding to the spill. “Local emergency authorities” usually means the local fire department and law enforcement agency, but could also mean the local fire marshal, health department, or emergency planning committee.

The rule also calls for the responsible person to take certain reasonable steps to respond to the spill:

- Get to the scene, or make sure that hired response personnel get to the scene.
- Begin efforts to stop the discharge or spill.
- Minimize the impact of the spill to public health, surface water, and the ground or subsurface soil.
- Neutralize the effects of the incident.
- Remove the discharged or spilled substances.
- Manage wastes associated with the spill and cleanup.

## What about Less Serious Spills?

Spills that do not present an imminent threat to human health still must be cleaned up. Even if the spill is small enough that a reporting requirement is not triggered, the person responsible for the spill must make sure that the spill is cleaned up.

## What Kinds of Spills Need to Be Reported?

Whether a spill needs to be reported to the TNRCC depends on the material spilled, how much of it is spilled, and where it is spilled. General guidelines for determining whether a spill must be reported, based on this rule and federal standards, appear in Table 1. Spills involving less than 1 pound of material, except for oil spills, do not need to be reported to the TNRCC. They must be reported to local authorities if they pose an imminent threat to public health.

If the amount of material spilled or discharged within any 24-hour period is equal to or greater than the amount indicated in Table 1, the rule calls for the party responsible for the spill to notify the TNRCC within 24 hours. There are three ways to satisfy this reporting requirement by phone:

- Call 1-800-832-8224 (the Environmental Response

Hot Line). This line is answered 24 hours a day.

- Call the TNRCC Spill Reporting Hot Line, which is also answered 24 hours a day, at 512/463-7727.
- During regular business hours, call the TNRCC regional office that serves the county in which the spill occurred.

The Spill Rule also allows the responsible person to use other reasonable methods to provide this initial notification.

## Spills of a Single Hazardous Substance

Whenever an individual hazardous substance is spilled, determining whether a reportable quantity has been spilled only involves developing a reliable estimate of how much material was spilled and comparing that value with the reportable quantity (RQ) found in the column headed “Final RQ” in Table 302.4 of Title 40 Code of Federal Regulations (40 CFR) Part 302.

## Spills of Mixtures

Whenever a mixture that contains a hazardous substance is spilled, a federal rule, often called the Mixture Rule, is used to determine whether a reportable quantity has been spilled. The wording of the Mixture Rule makes it particularly important for small businesses to know as much as possible about the composition of the materials they use or handle.

According to the Mixture Rule, if a mixture is known to contain a hazardous substance, but the amount of that substance in the mixture is not known, then all of the material spilled is assumed to be the hazardous substance for the purpose of determining whether a reportable spill has occurred. On the other hand, if the composition of the mixture is known, that information is used to determine whether the amount of mixture spilled contains a reportable quantity of the hazardous substance.

To see how the Mixture Rule works, let’s look at two possible outcomes involving the spill of 1 quart of an insecticide containing aldrin. The RQ for aldrin is 1 pound.

*First possible outcome.* Assume that the person responsible for the spill knows only that the insecticide contains aldrin, not *how much* aldrin is in the insecticide. According to the Mixture Rule, all of the material spilled must be assumed to be aldrin under these circumstances. A quart of a solution weighs about 2 pounds, which is greater than the RQ for aldrin. This spill must be reported.

*Second possible outcome.* Now assume that the person responsible for the spill knows that the insecticide contains not more than 1 percent aldrin by weight. According to the

Mixture Rule, this person should then calculate how much aldrin could have been in the quart of solution spilled:

$$2 \text{ lb solution} \times 1 \text{ lb aldrin}/100 \text{ lb} = 0.02 \text{ lb aldrin}$$

If aldrin is the only hazardous substance in the mixture, then this spill does not have to be reported according to the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA). Be sure to do this sort of calculation for all the substances in the mixture, even if the

product label describes them as “inert” or “filler.”

The difference between the outcomes in the above example is not *what* was spilled, but *what was known* about the material that was spilled. Because one business had more information available about the materials it uses, its employee was able to determine that the spill was insignificant without contacting the TNRCC.

Table 1. Reportable Quantities (RQs) According to the Spill Rule

TYPE OF SPILL	SITE OF SPILL	
	On Land	In Water
<b>Hazardous substance</b>		
If CERCLA RQ = 1–100 lb	CERCLA RQ	CERCLA RQ
If CERCLA RQ > 100 lb	CERCLA RQ	100 lb
<b>Crude oil</b>	210 gal	Enough to form a sheen
<b>Used oil or petroleum product</b>		
At a PST exempt facility*	210 gal	Enough to form a sheen
All others	25 gal	Enough to form a sheen
<b>Oil other than crude oil, used oil, or petroleum product</b>	210 gal	Enough to form a sheen
<b>Other substances</b>	No RQ	100 lb
<b>Industrial solid waste</b>	No RQ	100 lb'

NOTE: This table applies only to the reporting of spills and discharges according to the Spill Rule, 30 TAC §§327.1–327.5. To find values of CERCLA RQs for hazardous substances, please refer to 40 CFR Table 302.4.

\*The term “PST exempt facility” refers to facilities that are exempt from the Aboveground Storage Tank Program. Petrochemical plants, petroleum refineries, and electricity generation, transmission, and distribution facilities are some examples of PST exempt facilities.

## What Should My Report Say?

There are a number of different levels of reporting, so let’s go through them one at a time.

### Initial Notification

Within 24 hours, report the following information as best it is known:

- Your name, address, and telephone number (as the person making the report)
- The date, time, and location of the spill
- A specific description of the substance or substances spilled
- An estimate of how much was spilled
- The duration of the incident
- The name of the body of water affected or threatened by the spill
- The source of the spill

- A description of the extent of actual or potential water pollution or harmful impacts to the environment
- An identification of any environmentally sensitive areas or natural resources at risk
- The name, address, and telephone number of the responsible person (if not you)
- The name, address, and telephone number of the contact person at the site of the spill (if not you)
- A description of any action that has been taken, is being taken, or will be taken to contain and respond to the spill
- Any known or anticipated health risks
- The identity of any governmental authorities or agencies that are already responding to the spill
- Any other information that may be significant to the response action

The Spill Rule requires only that you provide all of the

above information that you know—by phone, in person, or in writing. The rule does not require that a written report be on a standard form. You may decide to develop your own form, but the rule also allows you to use the reporting form of any other agency that requires you to report the spill.

If you use the reporting form of another agency and it does not provide all of the information described above, you must add the rest of the required information on a separate sheet.

### **Update Notification**

If anything happens that would trigger a change in the response to the spill—for better or for worse—notify the agency as soon as possible.

### **Correction of Records**

If you report a spill and later decide that the spill did not have to be reported, you may send the regional office a letter to show your reasoning. Be sure to include all the information staff will need to understand your new decision.

If, after reviewing your letter, the regional office staff agrees that the spill was not reportable, that determination will be added to the agency records. If staff disagrees with your decision, the agency will notify you (that is, the responsible person) within 30 days.

### **Other Required Notice**

In addition to notifying the TNRCC and local governmental authorities, make a reasonable attempt to notify the owner and occupants of any property adversely affected by the spill. Provide this notice as soon as possible, but no later than two weeks after discovering the spill.

Notifying the TNRCC satisfies the federal requirement to notify the State Emergency Response Commission, but does not satisfy the notification requirements of any permit or any other local, state, or federal law.

Reporting the spill to the Environmental Response Hot Line (1-800-832-8224) satisfies the initial notification requirements of the Spill Rule and the Texas Water Code. Depending on the material spilled, there may be other reporting requirements.

### **Who Can Tell Me What Is in My Spill?**

It is the responsibility of a business to ensure that its employees know the nature and contents of the materials they handle or use. It is not feasible for any document to cover the full range of possible combinations of substances. The manufacturer or supplier of a product may be a good

source of information about the contents and specific formulation of a proprietary mixture.

Often it is not necessary to know the precise formula of a mixture to know how to classify it under the Spill Rule. The TNRCC regional office is one of a number of possible resources that could help you classify at least some materials into broad reporting categories according to the Spill Rule and CERCLA.

### **How Can the TNRCC Help Me?**

Through your local regional office, the Small Business Assistance Program (1-800-447-2827), and the Emergency Response Section (512/239-2507), the TNRCC can help you prepare for spills before they happen as well as respond to them appropriately when they do.

If minor but reportable spills are an unavoidable part of your business, you might call your regional office to investigate the possibility of making one report on a regular schedule (e.g., once a month) to cover all minor spills that occur in that time frame. Depending on the individual situation, the regional manager may approve such an alternative notification plan for a fixed installation. *Such a plan would require the written approval of the regional manager.*

Your regional manager may also permit you to notify the agency by fax of spills that occur during regular business hours. If you do get permission to notify by fax, you may want to prepare a form that employees can fill out quickly when a spill occurs. You could print information that will not change (e.g., location of the facility, the name of the surface water affected, if any, etc.) as part of the form itself.

### **What Happens When I Report a Spill?**

A number of things:

- Of greatest importance, you ensure that all resources that are available and needed to minimize the impact of the spill are put to use.
- Based on the information you provide, the regional staff of the TNRCC can help you to determine whether the spill is serious and, regardless of whether it is serious, the best ways to control the spill and minimize the damage it may cause.
- If necessary, the TNRCC can help coordinate the response to a spill that poses an imminent threat to public health or sources of water.
- You reduce the range of penalties that could be assessed against you or your business as a result of the spill.

Reporting a spill is not the same as admitting that pollution

has occurred (see “Correction of Records” above).

## Does This Rule Cover *All* Spills?

No, it doesn't. Certain spills would fall under the jurisdiction of other agencies in the state of Texas. The following kinds of spills, discharges, or emissions are covered by other rules:

- Oil spills in or near coastal waters. The Railroad Commission of Texas (RRC) regulates such spills when they are relatively small (240 barrels or less). The Texas General Land Office (GLO) has jurisdiction for larger incidents affecting coastal waters. The term *coastal waters* basically includes the Gulf of Mexico and all of its bays, inlets, and estuaries, as well as portions of their navigable tributaries. A detailed definition of *coastal waters* appears in the GLO Rules, 31 TAC §19.2. When reporting a spill, don't worry about this difference in jurisdiction. Use the Environmental Response Hot Line (1-800-832-8224) to report the spill, and your report will be forwarded to the appropriate agency.
- Spills or waste discharges regulated by the RRC. This essentially means incidents related to the exploration, production, and development of oil, gas, geothermal resources, and uranium. Specific details can be found in the Texas Water Code §26.131.
- Emissions only to air. If you spill a liquid and it then evaporates, the spill is not an “emission only to air.” A spill that evaporates is covered by the Spill Rule and may be covered by other regulations.
- Lawful discharges or waste disposal. This category includes the lawful placement of waste or accidental discharge of material into a solid waste management unit registered or permitted under 30 TAC Chapter 335 Subchapter A; any discharge that is covered by a specific permit, order, or rule issued under U.S. or Texas law, if that permit, order, or rule provides another specific reporting requirement; and discharges or spills that are continuous and stable in nature, and are reported to the U.S. Environmental Protection Agency according to 40 CFR §302.8.
- The lawful application of fertilizers, pesticides, or other materials to land or water.
- Certain activities associated with aboveground and underground storage tanks, which are covered by Texas Water Code Chapter 26 Subchapter I.
- Discharges or spills that occur during the normal course of rail transportation.

## Related Literature

Consider reviewing the following documents or having them available as reference materials.

*State of Texas Oil and Hazardous Substances Spill Contingency Plan.* This document, currently being developed by the cooperation of all state agencies that participate in spill response, is a compilation of all state rules that cover spills. When it is available, you may obtain copies from the TNRCC Publications Unit (512/239-0028).

*State of Texas Coastal Oil Spill Prevention and Response.* 31 TAC Chapter 19. This document comprises the GLO's oil spill rules.

The following documents are available from the U.S. Government Printing Office:

*Title 40 Code of Federal Regulations Part 302.* This is a portion of the federal law dealing with the handling of hazardous substances.

*National Oil and Hazardous Substances Pollution Contingency Plan.* 40 CFR Part 300. This document covers all federal rules on spills.

*Emergency Planning and Notification.* 40 CFR Part 355. The regulation establishes the list of extremely hazardous substances, threshold planning quantities, and facility notification responsibilities necessary for developing and implementing state and local emergency response plans.

*Hazardous Chemical Reporting and Community Right-to-Know.* These regulations establish reporting requirements that provide the public with important information about the hazardous chemicals in their communities.

*Toxic Substances Control Act.* 40 CFR Parts 700–766. Several specific constituents, such as PCBs and dioxins, require additional regulation because of their direct impact on human health and the environment. The TSCA specifies procedures for handling these materials. Additional reporting may also be required.

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**APPENDIX E**

**TPDES GENERAL PERMIT NO. TXR150000 FOR  
STORMWATER DISCHARGES FROM  
CONSTRUCTION ACTIVITIES**

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# Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087



## GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of  
Section 402 of the Clean Water Act  
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces  
TPDES General Permit No. TXR150000,  
effective March 5, 2018, and amended January 28, 2022

Construction sites that discharge stormwater associated with construction activity located in the state of Texas may discharge to surface water in the state only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, on March 5, 2028.

EFFECTIVE DATE: March 5, 2023

ISSUED DATE: February 27, 2023

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For the Commission

**TPDES GENERAL PERMIT NUMBER TXR150000**  
**RELATING TO STORMWATER DISCHARGES ASSOCIATED WITH**  
**CONSTRUCTION ACTIVITIES**

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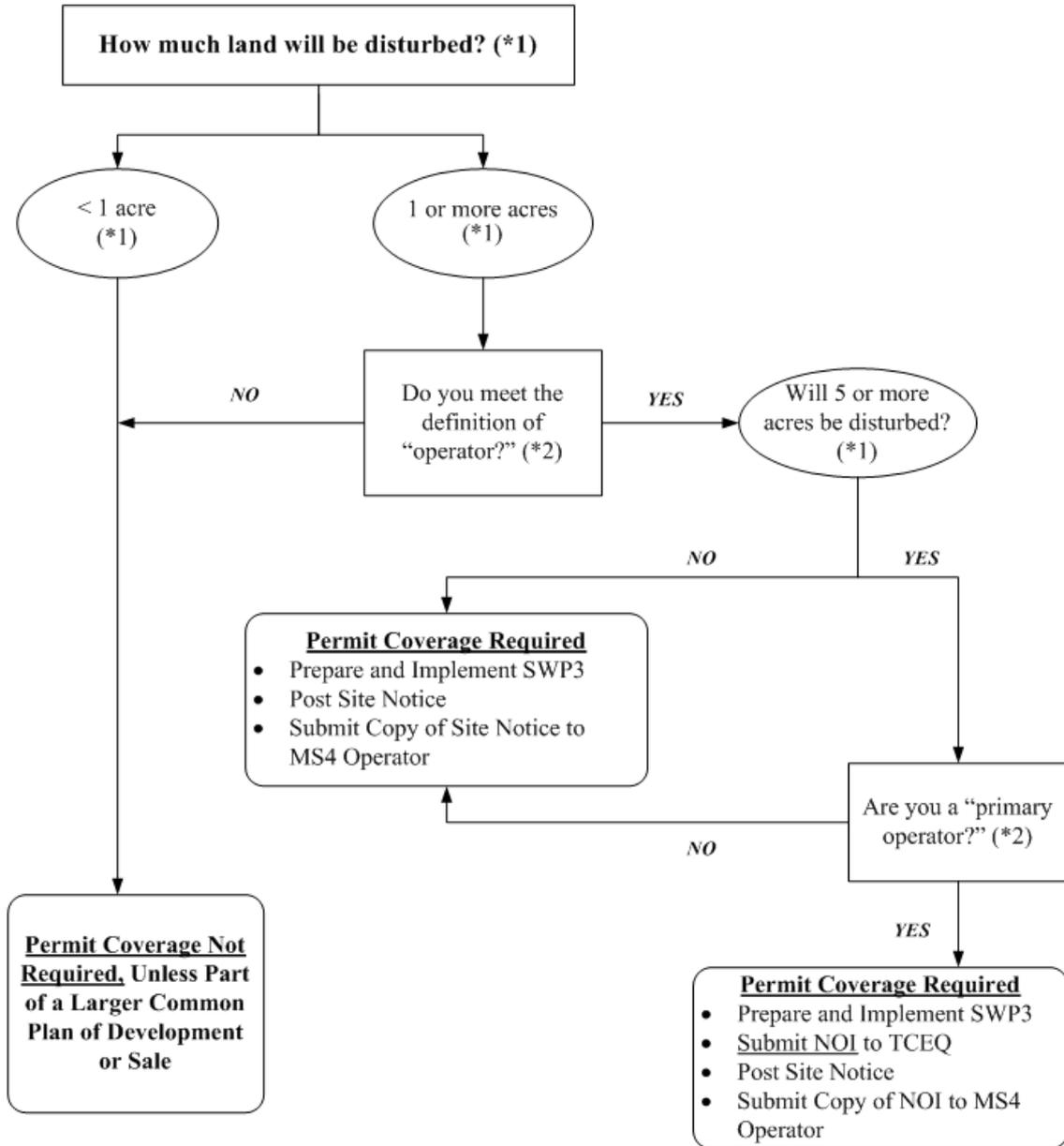
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**Part I. Flow Chart and Definitions**

**Section A. Flow Chart to Determine Whether Coverage is Required**

*When calculating the acreage of land area disturbed, include the disturbed land-area of all construction and construction support activities.*



(\*1) To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").

(\*2) Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.

## Section B. Definitions

**Arid Areas** – Areas with an average annual rainfall of zero (0) to ten (10) inches.

**Best Management Practices (BMPs)** – Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

**Commencement of Construction** – The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., demolition; grubbing; stockpiling of fill material; placement of raw materials at the site).

**Common Plan of Development** – A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a “common plan of development or sale”) is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate “common plans,” with only the interconnected parts of a project being considered part of a “common plan” (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located one quarter (1/4) mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same “common plan” is not included in the area to be disturbed.

**Construction Activity** – Includes soil disturbance activities, including clearing, grading, excavating, construction-related activity (e.g., stockpiling of fill material, demolition), and construction support activity. This does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing rights-of-way, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

**Construction Support Activity** – A construction-related activity that specifically supports construction activity, which can involve earth disturbance or pollutant-generating activities of its own, and can include, but are not limited to, activities associated with concrete or asphalt batch plants, rock crushers, equipment staging or storage areas, chemical storage areas, material storage areas, material borrow areas, and excavated material disposal areas. Construction support activity must only directly support the construction activity authorized under this general permit.

**Dewatering** – The act of draining accumulated stormwater or groundwater from building foundations, vaults, trenches, and other similar points of accumulation.

**Discharge** – For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

**Drought-Stricken Area** – For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration’s U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) “Drought to persist or intensify”, (2) “Drought ongoing, some improvement”, (3) “Drought likely to improve, impacts ease”, or (4) “Drought development likely”. See [http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/seasonal\\_drought.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html).

**Edwards Aquifer** – As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil’s River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

**Edwards Aquifer Recharge Zone** – Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at <https://www.tceq.texas.gov/gis/edwards-viewer.html>

**Edwards Aquifer Contributing Zone** – The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at <https://www.tceq.texas.gov/gis/edwards-viewer.html>

**Effluent Limitations Guideline (ELG)** – Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

**Facility or Activity** – For the purpose of this permit, referring to a construction site, the location of construction activity, or a construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtenances used at a construction site or industrial site.

**Final Stabilization** – A construction site status where any of the following conditions are met:

- (a) All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, or gabions) have been employed.
- (b) For individual lots in a residential construction site by either:
  - (1) the homebuilder completing final stabilization as specified in condition (a) above; or
  - (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization. Fulfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).
- (c) For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.
- (d) In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
  - (1) temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and
  - (2) the temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

**High-Level Radioactive Waste** – Meaning as assigned by 42 United States Code (U.S.C.) Section 10101 (12) and includes spent nuclear fuel as defined by 42 U.S.C. Section 10101 (23).

**Hyperchlorination of Waterlines** – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

**Impaired Water** – A surface water body that is identified as impaired on the latest approved CWA § 303(d) List or waters with an EPA-approved or established total maximum daily load (TMDL) that are found on the latest EPA approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

**Indian Country Land** – (1) All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. (40 CFR § 122.2)

**Indian Tribe** – Any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation (40 CFR § 122.2).

**Infeasible** – Not technologically possible, or not economically practicable and achievable in light of best industry practices. (40 CFR § 450.11(b)).

**Large Construction Activity** – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

**Linear Project** – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

**Low Rainfall Erosivity Waiver (LREW)** – A written submission to the executive director from an operator of a construction site that is considered as small construction activity under the permit, which qualifies for a waiver from the requirements for small construction activities, only during the period of time when the calculated rainfall erosivity factor is less than five (5).

**Minimize** – To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer System (MS4)** – A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

**Notice of Change (NOC)** – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

**Notice of Intent (NOI)** – A written submission to the executive director from an applicant requesting coverage under this general permit.

**Notice of Termination (NOT)** – A written submission to the executive director from a discharger authorized under this general permit requesting termination of coverage.

**Operator** – The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

**Primary Operator** – The person or persons associated with construction activity that meets either of the following two criteria:

- (a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

- (b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

**Secondary Operator** – The person or entity, often the property owner, whose operational control is limited to:

- (a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or
- (b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site, where they have control over the construction plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

**Outfall** – For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

**Permittee** – An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges from construction activity.

**Point Source** – Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff (40 CFR § 122.2).

**Pollutant** – Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

**Pollution** – The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose (Texas Water Code (TWC) § 26.001(14)).

**Rainfall Erosivity Factor (R factor)** – The total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

**Receiving Water** – A “Water of the United States” as defined in 40 CFR § 122.2 or a surface water in the state into which the regulated stormwater discharges.

**Semi-arid Areas** – Areas with an average annual rainfall of 10 to 20 inches.

**Separate Storm Sewer System** – A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

**Small Construction Activity** – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

**Steep Slopes** – Where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a “steep slope”, this permit’s definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

**Stormwater (or Stormwater Runoff)** – Rainfall runoff, snow melt runoff, and surface runoff and drainage.

**Stormwater Associated with Construction Activity** – Stormwater runoff, as defined above, from a construction activity.

**Structural Control (or Practice)** – A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

**Surface Water in the State** – Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

**Temporary Stabilization** – A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

**Thawing Conditions** – For the purposes of this permit, thawing conditions are expected based on the historical likelihood of two (2) or more days with daytime temperatures greater than 32 degrees Fahrenheit (°F). This date can be determined by looking at historical weather data.

NOTE: The estimation of thawing conditions is for planning purposes only. During construction, the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

**Total Maximum Daily Load (TMDL)** – The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

**Turbidity** – A condition of water quality characterized by the presence of suspended solids and/or organic material.

**Waters of the United States** – Waters of the United States or waters of the U.S. means the term as defined in 40 CFR § 122.2.

## **Part II. Permit Applicability and Coverage**

### **Section A. Discharges Eligible for Authorization**

#### **1. Stormwater Associated with Construction Activity**

Discharges of stormwater runoff and certain non-stormwater discharges from small and large construction activities may be authorized under this general permit, except as described in Part II.C. of this permit.

#### **2. Discharges of Stormwater Associated with Construction Support Activities**

Discharges of stormwater runoff and certain non-stormwater discharges from construction support activities as defined in Part I.B. of this general permit may be authorized, provided that the following conditions are met:

- (a) the construction support activities are located within one (1) mile from the boundary of the construction site where the construction activity authorized under the permit is being conducted that requires the support of these activities;
- (b) an SWP<sub>3</sub> is developed and implemented for the permitted construction site according to the provisions in Part III.F. of this general permit, including appropriate controls and measures to reduce erosion and the discharge of pollutants in stormwater runoff according to the provisions in Part IV. of this general permit;
- (c) the activities are directly related to the construction site;
- (d) the activities are not a commercial operation, nor serve other unrelated construction projects; and
- (e) the activities do not continue to operate beyond the completion of the construction activity at the project it supports.

Construction support activities that operate outside the terms provided in (a) through (e) above must obtain authorization under a separate Texas Pollutant Discharge Elimination System (TPDES) permit, which may include the TPDES Multi-Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), an alternative general permit (if available), or an individual water quality permit.

#### **3. Non-Stormwater Discharges**

The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

- (a) discharges from emergency fire-fighting activities (emergency fire-fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);
  - (b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);
  - (c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where solvents, detergents, and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;
  - (d) uncontaminated water used to control dust;
  - (e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;
  - (f) uncontaminated air conditioning condensate;
  - (g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and
  - (h) lawn watering and similar irrigation drainage.
4. Other Permitted Discharges

Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

### **Section B. Concrete Truck Wash Out**

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part VI of this general permit.

### **Section C. Limitations on Permit Coverage**

#### **1. Post Construction Discharges**

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the Notice of Termination (NOT) or removal of the appropriate TCEQ site notice, as applicable, for the regulated construction activity.

#### **2. Prohibition of Non-Stormwater Discharges**

Except as otherwise provided in Part II.A. of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

### 3. Compliance with Water Quality Standards

Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses of surface water in the state are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2. and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.3. of this general permit.

### 4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

The permittee shall determine whether the authorized discharge is to an impaired water body on the latest EPA-approved CWA § 303(d) List or waters with an EPA-approved or established TMDL that are found on the latest EPA-approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standard(s) and are listed as category 4 or 5 in the current version of the *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, and waterbodies listed on the CWA § 303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for coverage under this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

### 5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (see definition for commencement of construction in Part I.B. above) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

- (a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.

- (b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule are in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.
- (c) For discharges located within ten (10) stream miles upstream of the Edwards Aquifer recharge zone, applicants shall also submit a copy of the NOI to the appropriate TCEQ regional office.

Counties: Comal, Bexar, Medina, Uvalde, and Kinney

**Contact:** TCEQ Water Program Manager  
San Antonio Regional Office  
14250 Judson Road  
San Antonio, Texas 78233-4480  
(210) 490-3096

Counties: Williamson, Travis, and Hays

**Contact:** TCEQ Water Program Manager  
Austin Regional Office  
12100 Park 35 Circle  
Room 179, Building A  
Austin, Texas 78753  
(512) 339-2929

#### 6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

#### 7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities.

#### 8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

#### 9. Exempt Oil and Gas Activities

The CWA § 402(l)(2) provides that stormwater discharges from construction activities related to oil and gas exploration, production, processing, or treatment, or transmission facilities are exempt from regulation under this permit. The term “oil and gas exploration, production, processing, or treatment operations, or transmission facilities” is defined in 33 U.S.C. Annotated § 1362 (24).

The exemption in CWA § 402(l)(2) *includes* stormwater discharges from construction activities regardless of the amount of disturbed acreage, which are necessary to prepare a site for drilling and the movement and placement of drilling equipment, drilling waste management pits, in field treatment plants, and in field transportation infrastructure (e.g., crude oil pipelines, natural gas treatment plants, and both natural gas transmission pipeline compressor and crude oil pumping stations) necessary for the operation of most producing oil and gas fields. Construction activities are defined in 33 U.S. Code § 1362(24) and interpreted by EPA in the final rule. *See* June 12, 2006 Amendments to the NPDES Regulations for Storm Water Discharges Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities (71 FR 33628, Part V. Terminology).

The exemption *does not include* stormwater discharges from the construction of administrative buildings, parking lots, and roads servicing an administrative building at an oil and gas site, as these are considered traditional construction activities.

As described in 40 CFR § 122.26(c)(1)(iii) [*regulations prior to 2006*], discharges from oil and gas construction activities are waived from CWA § 402(l)(2) permit coverage *unless* the construction activity (or construction support activity) has had a discharge of stormwater resulting in the discharge of a reportable quantity of oil or hazardous substances or the discharge contributes to a violation of water quality standards.

Exempt oil and gas activities which have lost their exemption as a result of one of the above discharges, must obtain permit coverage under this general permit, an alternative general permit, or a TPDES individual permit prior to the next discharge.

#### 10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

#### 11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

#### 12. Storage of High-Level Radioactive Waste

Discharges of stormwater from construction activities associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 are not authorized by this general permit. Texas Health and Safety Code (THSC) § 401.0525 prohibits TCEQ from issuing any TPDES authorizations for the construction or operation of these facilities.

Discharges of stormwater from the construction activities associated with the construction of a facility located at the site of currently or formerly operating nuclear power reactors and currently or formerly operating nuclear research and test reactors operated by a university are not prohibited under THSC § 401.0525 and continue to be regulated under this general permit.

## 13. Other

Nothing in Part II. of the general permit is intended to negate any person's ability to assert *force majeure* (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC § 70.7

**Section D. Deadlines for Obtaining Authorization to Discharge**

## 1. Large Construction Activities

- (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction – Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under the TPDES Construction General Permit (CGP) TXR150000 (effective on March 5, 2018, and amended on January 28, 2022), must submit an NOI to renew authorization or an NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim or grace period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

## 2. Small Construction Activities

- (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction – Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that do not meet the conditions to qualify for termination of this permit as described in Part II.F. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

**Section E. Obtaining Authorization to Discharge**

## 1. Automatic Authorization for Small Construction Activities with Low Potential for Erosion

Operators of small construction activity, as defined in Part I.B. of this general permit, shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, which occur in certain counties and during periods of low potential for erosion that do not meet the conditions of the waiver described in Part II.G. of this general permit, may be automatically authorized under this general permit if all the following conditions are met prior to the commencement of construction.

- (a) The construction activity occurs in a county and during the corresponding date range(s) listed in Appendix A;

- (b) The construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;
- (c) All temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site; the permittee signs a completed TCEQ Small Construction Site Notice for low potential for erosion (Form TCEQ-20964), including the certification statement;
- (d) A signed and certified copy of the TCEQ Small Construction Site Notice for low potential for erosion is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until final stabilization has been achieved;

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ site notice, with a viewable signature, located on-site and available for review by any applicable regulatory authority.

- (e) A copy of the signed and certified TCEQ Small Construction Site Notice for low potential for erosion is provided to the operator of any MS4 receiving the discharge at least two (2) days prior to commencement of construction activities;
- (f) Discharges of stormwater runoff or other non-stormwater discharges from any supporting concrete batch plant or asphalt batch plant is separately authorized under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and
- (g) Any non-stormwater discharges are either authorized under a separate permit or authorization, are not considered by TCEQ to be a wastewater, or are captured and routed for disposal at a publicly operated treatment works or licensed waste disposal facility.

If all of the conditions in (a) – (h) above are met, then the operator(s) of small construction activities with low potential for erosion are not required to develop a SWP3.

If an operator is conducting small construction activities and any of the above conditions (a) – (h) are not met, the operator cannot declare coverage under the automatic authorization for small construction activities with low potential for erosion and must meet the requirements for automatic authorization (all other) small construction activities, described below in Part II.E.2.

For small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available, an operator may apply for and obtain a waiver from permitting (Low Rainfall Erosivity Waiver – LREW), as described in Part II.G. of this general permit. Waivers from coverage under the LREW do not allow for any discharges of non-stormwater and the operator must ensure that discharges on non-stormwater are either authorized under a separate permit or authorization.

## 2. Automatic Authorization for Small Construction Activities

Operators of small construction activities as defined in Part I.B. of this general permit shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, as defined in Part I.B. of this general permit or as defined but who do not meet in the conditions and requirements located in Part II.E.1 above, may be automatically authorized for small construction activities, provided that they meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement the SWP3 prior to commencing construction activities;
- (b) all operators of regulated small construction activities must post a copy of a signed and certified TCEQ Small Construction Site Notice (Form TCEQ-20963), the notice must be posted at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, at least two (2) days prior to commencing construction activity, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);
- (c) operators must maintain a posted TCEQ Small Construction Site Notice on the approved TCEQ form at the construction site until final stabilization has been achieved; and

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Small Construction Site Notice, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

- (d) provide a copy of the signed and certified TCEQ Small Construction Site Notice to the operator of any municipal separate storm sewer system (MS4) receiving the discharge at least two (2) days prior to commencement of construction activities.
- (e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatory form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Operators for small construction activities must submit this form via mail following the instructions on the approved TCEQ paper form. A new Delegation of Signatory form must be submitted if the delegation changes to another individual or position.

As described in Part I.B of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land and must meet the requirements of Part II.E.3. below.

### 3. Authorization for Large Construction Activities

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site where the applicant is the operator. The SWP3 must be developed and implemented prior to obtaining coverage and prior to commencing construction activities;
- (b) primary operators of large construction activities must submit an NOI prior to commencing construction activity at a construction site. A completed NOI must be submitted to TCEQ electronically using the online ePermits system on TCEQ's website.

Operators with an electronic reporting waiver must submit a completed paper NOI to TCEQ at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the NOI is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the NOI.

If an additional primary operator is added after the initial NOI is submitted, the additional primary operator must meet the same requirements for existing primary operator(s), as indicated above.

If the primary operator changes due to responsibility at the site being transferred from one primary operator to another after the initial NOI is submitted, the new primary operator must submit an electronic NOI, unless they request and obtain a waiver from electronic reporting, at least ten (10) days prior to assuming operational control of a construction site and commencing construction activity.

- (c) all operators of large construction activities must post a TCEQ Large Construction Site Notice on the approved TCEQ form (Form TCEQ-20961) in accordance with Part III.D.2. of this permit. The TCEQ site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and must be maintained in that location until final stabilization has been achieved. For linear construction activities, e.g., pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public, local, state, and federal authorities;
- (d) two days prior to commencing construction activities, all primary operators must:
  - i. provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and
  - ii. list in the SWP3 the names and addresses of all MS4 operators receiving a copy;
- (e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatories form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Primary operators must submit this form electronically using the State of Texas Environmental Electronic Reporting System (STEERS), TCEQ's online permitting system, or by paper if the permittee requested and obtained an electronic reporting waiver. A new Delegation of Signatories form must be submitted, if the delegation changes to another individual or position;
- (f) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or prior to commencement of construction activities, a primary operator is required to submit an NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

- (g) all secondary operators of large construction activities must post a copy of the signed and certified TCEQ Large Construction Site Notice for Secondary Operators on the approved TCEQ form (Form TCEQ-20962) and provide a copy of the signed and certified TCEQ site notice to the operator of any MS4 receiving the discharge at least two (2) days prior to the commencement construction activities.

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Large Construction Site Notice for Secondary Operators, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

Applicants must submit an NOI using the online ePermits system (accessed using STEERS) available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

#### 4. Waivers for Small Construction Activities:

Operators of certain small construction activities may obtain a waiver from coverage under this general permit, if applicable. The requirements are outlined in Part II.G. below.

#### 5. Effective Date of Coverage

- (a) Operators of small construction activities as described in either Part II.E.1. or II.E.2. above are authorized immediately following compliance with the applicable conditions of Part II.E.1. or II.E.2. Secondary operators of large construction activities as described in Part II.E.3. above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.
- (b) Primary operators of large construction activities as described in Part II.E.3. above that electronically submit an NOI are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

Operators with an electronic reporting waiver are provisionally authorized 48-hours from the date that a completed paper NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. An authorization is no longer provisional when the executive director finds the NOI is administratively complete and an authorization number is issued to the permittee for the construction site indicated on the NOI.

For construction activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction activities may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

- (c) Operators are not prohibited from submitting late NOIs or posting late site notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement action for any unpermitted activities that may have occurred between the time construction commenced and authorization under this general permit was obtained.

- (d) If operators that submitted NOIs have active authorizations for construction activities that are ongoing when this general permit expires on March 5, 2028, and a new general permit is issued, a 90-day interim (grace) period is granted to provide coverage that is administratively continued until operators with active authorizations can obtain coverage under the newly issued CGP. The 90-day grace period starts on the effective date of the newly issued CGP.

## 6. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

- (a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;
- (b) the name, address, and telephone number of the operator filing the NOI for permit coverage;
- (c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;
- (d) the number of acres that will be disturbed by the applicant;
- (e) the estimated construction project start date and end date;
- (f) confirmation that the project or site will not be located on Indian Country lands;
- (g) confirmation if the construction activity is associated with an oil and gas exploration, production, processing, or treatment, or transmission facility (see Part II.C.9.)
- (h) confirmation that the construction activities are not associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 (see Part II.C.12.);
- (i) confirmation that a SWP3 has been developed in accordance with all conditions of this general permit, that it will be implemented prior to commencement of construction activities, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;
- (j) name of the receiving water(s);
- (k) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and
- (l) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters or *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)* as not meeting applicable state water quality standards.

## 7. Notice of Change (NOC)

- (a) If relevant information provided in the NOI changes, the operator that has submitted the NOI must submit an NOC to TCEQ at least fourteen (14) days before the change occurs. Where a 14-day advance notice is not possible, the operator must submit an NOC to TCEQ within fourteen (14) days of discovery of the change. If the operator becomes aware that it failed to submit any relevant facts or submitted

incorrect information in an NOI, the correct information must be submitted to TCEQ in an NOC within fourteen (14) days after discovery.

- (b) Information on an NOC may include, but is not limited to, the following:
- i. a change in the description of the construction project;
  - ii. an increase in the number of acres disturbed (for increases of one (1) or more acres);
  - iii. or the name of the operator (where the name of the operator has changed).
- (c) Electronic NOC.

Applicants must submit an NOC using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. All waivers from electronic reporting are not transferrable. Electronic reporting waivers expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance. A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. Operators are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

- (d) Paper NOC.

Applicants who request and obtain an electronic reporting waiver shall submit the NOC on a paper form provided by the executive director, or by letter if an NOC form is not available.

- (e) A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. A list that includes the names and addresses of all MS4 operators receiving a copy of the NOC (or NOC letter) must be included in the SWP3. Information that may not be included on an NOC includes but is not limited to the following:
- i. transfer of operational control from one operator to another, including a transfer of the ownership of a company. A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing or charter number that is on record with the Texas Secretary of State (SOS) must be changed.
  - ii. coverage under this general permit is not transferable from one operator to another. Instead, the new operator will need to submit an NOI or LREW, as applicable, and the previous operator will need to submit an NOT.
  - iii. a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

8. Signatory Requirement for NOI Forms, NOT Forms, NOC Forms, and Construction Site Notices

NOI forms, NOT forms, NOC forms, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

**Section F. Terminating Coverage**

## 1. Notice of Termination (NOT) Required

Each operator that has submitted an NOI for authorization of large construction activities under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit.

Authorization of large construction must be terminated by submitting an NOT electronically via the online ePermits system available through the TCEQ website, or on a paper NOT form to TCEQ supplied by the executive director with an approved waiver from electronic reporting. Authorization to discharge under this general permit terminates at midnight on the day a paper NOT is postmarked for delivery to the TCEQ or immediately following confirmation of the receipt of the NOT submitted electronically by the TCEQ.

Applicants must submit an NOT using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

- (a) final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
- (b) a transfer of operational control has occurred (See Section II.F.4. below); or
- (c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

Compliance with the conditions and requirements of this permit is required until the NOT is submitted and approved by TCEQ.

## 2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

- (a) if authorization for construction activity was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for a specific construction site;
- (b) an indication of whether final stabilization has been achieved at the site and a NOT has been submitted or if the permittee is simply no longer an operator at the site;
- (c) the name, address, and telephone number of the permittee submitting the NOT;
- (d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and
- (e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites
- (a) Each operator that has obtained automatic authorization for small construction or is a secondary operator for large construction must perform the following when terminating coverage under the permit:
- i. remove the TCEQ site notice;
  - ii. complete the applicable portion of the TCEQ site notice related to removal of the TCEQ site notice; and
  - iii. submit a copy of the completed TCEQ site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3).
- (b) The activities described in Part II.F.3.(a) above must be completed by the operator within 30 days of meeting any of the following conditions:
- i. final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
  - ii. a transfer of day-to-day operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions has occurred (See Section II.F.4. below); or
  - iii. the operator has obtained alternative authorization under an individual or general TPDES permit.

For Small Construction Sites and Secondary Operators at Large Construction Sites, authorization to discharge under this general permit terminates immediately upon removal of the applicable TCEQ construction site notice. Compliance with the conditions and requirements of this permit is required until the TCEQ construction site notice is removed. The construction site notice cannot be removed until final stabilization has been achieved.

4. Transfer of Day-to-Day Operational Control
- (a) When the primary operator of a large construction activity changes or operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions is transferred to another primary operator, the original operator must do the following:
- i. submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (c) below; and
  - ii. submit a copy of the NOT from the primary operator terminating its coverage under the permit and its operational control of the construction site and submit a copy of the NOI from the new primary operator to the operator of any MS4 receiving the discharge in accordance with Part II.F.1. above.
- (b) For transfer of operational control, operators of small construction activities and secondary operators of large construction activities who are not required to submit an NOI must do the following:
- i. the existing operator must remove the original TCEQ construction site notice, and the new operator must post the required TCEQ construction site notice prior to the transfer of operational control, in accordance with the conditions in Part II.F.4.(c) i or ii below; and

- ii. a copy of the TCEQ construction site notice, which must be completed and provided to the operator of any MS4 receiving the discharge, in accordance with Part II.F.3. above.
- (c) Each operator is responsible for determining its role as an operator as defined in Part I.B. and obtaining authorization under the permit, as described above in Part II.E. 1. - 3. Where authorization has been obtained by submitting an NOI for coverage under this general permit, permit coverage is not transferable from one operator to another. A transfer of operational control can include changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State (SOS). A transfer of operational control can also occur when one of the following criteria is met, as applicable:
- i. another operator has assumed control over all areas of the site that do not meet the definition for final stabilization;
  - ii. all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the original permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Records of this notification (or attempt at notification) shall be retained by the operator transferring operational control to another operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal; or
  - iii. a homebuilder has purchased one (1) or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements of this permit. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to the lot(s) it has operational control over in a larger common plan of development, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

### **Section G. Waivers from Coverage**

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

#### **1. Waiver Applicability and Coverage**

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, when the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5).

The operator must submit a Low Rainfall Erosivity Waiver (LREW) certification form to the TCEQ electronically via the online ePermits system available through the TCEQ website. The LREW form is a certification by the operator that the small construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5).

Applicants who request and obtain an electronic reporting waiver shall submit the LREW on a paper form provided by the executive director at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the LREW is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the LREW. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

This LREW from coverage does not apply to any non-stormwater discharges, including what is allowed under this permit. The operator must ensure that all non-stormwater discharges are either authorized under a separate permit or authorization or are captured and routed to an authorized treatment facility for disposal.

## 2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

- (a) estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.
- (b) find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.
- (c) find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.
- (d) refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.
- (e) multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than five (5), then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: <https://lew.epa.gov/>, or using another available resource.

A copy of the LREW certification form is not required to be posted at the small construction site.

## 3. Effective Date of an LREW

Unless otherwise notified by the executive director, operators of small construction activities seeking coverage under an LREW are provisionally waived from the otherwise applicable requirements of this general permit 48-hours from the date that a completed paper LREW certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, made via the online ePermits system available through the TCEQ website.

Applicants seeking coverage under an LREW must submit an application for an LREW using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

#### 4. Activities Extending Beyond the LREW Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

- (a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new LREW form at least two (2) days before the end of the original waiver period; or
- (b) obtain authorization under this general permit according to the requirements for automatic authorization for small construction activities in Part II.E.2. of this permit, prior to the end of the approved LREW period.

### Section H. Alternative TPDES Permit Coverage

#### 1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC Chapter 305 (relating to Consolidated Permits). Applications for individual permit coverage must be submitted at least 330 days prior to commencement of construction activities to ensure timely authorization. Existing coverage under this general permit should not be terminated until an individual permit is issued and in effect.

#### 2. General Permit Alternative

Any discharges eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), as applicable.

#### 3. Individual Permit Required

The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

- (a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;
- (b) the activity being determined to cause, has a reasonable potential to cause, or contribute to a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state; and
- (c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC § 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.

A discharger with a TCEQ compliance history rating of “unsatisfactory” is ineligible for coverage under this general permit. In that case, 30 TAC § 60.3 requires the executive director to deny or suspend an authorization to discharge under a general permit. However, per TWC § 26.040(h), a discharger is entitled to a hearing before the commission prior to having an authorization denied or suspended for having an “unsatisfactory” compliance history.

Denial of authorization to discharge under this general permit or suspension of a permittee’s authorization under this general permit for reasons other than compliance history shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

**Section I. Permit Expiration**

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC § 205.3 (relating to Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit. All authorizations that are active at the time the permit term expires will be administratively continued as indicated in Part II.I.2. below and in Part II.D.1.(b) and D.2.(b) of this permit.
2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

**Part III. Stormwater Pollution Prevention Plans (SWP3)**

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2. and II.E.3. of this general permit that will reach waters of the U.S. This includes discharges to MS4s and privately owned separate storm sewer systems that drain into surface water in the state or waters of the U.S.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one (1) SWP3 for a site, operators must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

An SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3., in compliance with the terms and conditions of this permit.

An SWP3 must also identify any potential sources of pollution that have been determined to cause, have a reasonable potential to cause, or contribute to a violation of water quality standards or have been found to cause or contribute to the loss of a designated use of surface water in the state from discharges of stormwater from construction activities and construction support activities. Where potential sources of these pollutants are present at a construction site, the SWP3 must also contain a description of the management practices that will be used to prevent these pollutants from being discharged into surface water in the state or waters of the U.S.

NOTE: Construction support activities can also include vehicle repair areas, fueling areas, etc. that are present at a construction site solely for the support construction activities and are only used by operators at the construction site.

The SWP3 is intended to serve as a road map for how the construction operator will comply with the effluent limits and other conditions of this permit. Additional portions of the effluent limits are established in Part IV. of the permit.

### **Section A. Shared SWP3 Development**

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators of small and large construction activities must independently obtain authorization under this permit but may work together with other regulated operators at the construction site to prepare and implement a single, comprehensive SWP3, which can be shared by some or all operators, for the construction activities that each of the operators are performing at the entire construction site.

1. The SWP3 must include the following:
  - (a) for small construction activities – the name of each operator that participates in the shared SWP3;
  - (b) for large construction activities – the name of each operator that participates in the shared SWP3, the general permit authorization numbers of each operator (or the date that the NOI was submitted to TCEQ by each operator that has not received an authorization number for coverage under this permit); and
  - (c) for large and small construction activities – the signature of each operator participating in the shared SWP3.
2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

### **Section B. Responsibilities of Operators**

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

All secondary operators and primary operators with control over construction plans and specifications shall:

- (a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;
- (b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;
- (c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMP s as necessary to remain compliant with the conditions of this general permit; and

- (d) ensure that the SWP3 for portions of the project where each operator has control indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If a primary operator has not been authorized or has abandoned the site, the secondary operator is considered to be the responsible party and must obtain authorization as a primary operator under the permit, until the authority for day-to-day operational control is transferred to another primary operator. The new primary operator must update or develop a new SWP3 that will reflect the transfer of operational control and include any additional updates to the SWP3 to meet requirements of the permit.

## 2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

- (a) meets the requirements of this general permit for those portions of the project where they are operators;
- (b) identifies the parties responsible for implementation of BMPs described in the SWP3;
- (c) indicates areas of the project where they have operational control over day-to-day activities; and
- (d) the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications for areas where they have operational control over day-to-day activities.

### **Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance**

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

### **Section D. Plan Review and Making Plans Available**

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.

NOTE: The SWP3 may be prepared and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally valid with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

2. Operators with authorization for construction activity under this general permit must post a TCEQ site notice at the construction site at a place readily available for viewing by the general public, and local, state, and federal authorities.

- (a) Primary and secondary operators of large construction activities must each post a TCEQ construction site notice, respective to their role as an operator at the construction site, as required above and according to requirements in Part II.E.3. of this general permit.
  - (b) Primary and secondary operators of small construction activities must post the TCEQ site notice as required in Part III.D.2.(a) above and for the specific type of small construction described in Part II.E.1. and 2. of the permit.
  - (c) If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. TCEQ construction site notices for small and large construction activities at these linear construction sites may be relocated, as necessary, along the length of the project, but must still be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:
    - i. the site-specific TPDES authorization number for the project if assigned;
    - ii. the operator name, contact name, and contact phone number;
    - iii. a brief description of the project; and
    - iv. the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

### **Section E. Revisions and Updates to SWP3s**

The permittee must revise or update the SWP3, including the site map, within seven (7) days of when any of the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by construction site personnel authorized by the permittee, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

### **Section F. Contents of SWP3**

The SWP3 must be developed and implemented by primary operators of small and large construction activities and include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part IV. of the general permit.

1. A site or project description, which includes the following information:
  - (a) a description of the nature of the construction activity;
  - (b) a list of potential pollutants and their sources;
  - (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;

- (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including areas where construction support activities (defined in Part I.B. of this general permit) occur;
- (e) data describing the soil or the quality of any discharge from the site;
- (f) a map showing the general location of the site (e.g., a portion of a city or county map);
- (g) a detailed site map (or maps) indicating the following:
  - i. property boundary(ies);
  - ii. drainage patterns and approximate slopes anticipated before and after major grading activities;
  - iii. areas where soil disturbance will occur (note any phasing), including any demolition activities;
  - iv. locations of all controls and buffers, either planned or in place;
  - v. locations where temporary or permanent stabilization practices are expected to be used;
  - vi. locations of construction support activities, including those located off-site;
  - vii. surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicate whether those waters are impaired;

NOTE: Surface waters adjacent to or in close proximity to the site means any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s).

- viii. locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;
  - ix. vehicle wash areas; and
  - x. designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).
- Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.
- (h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;
  - (i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;
  - (j) a copy of this TPDES general permit (an electronic copy of this TPDES general permit or a current link to this TPDES general permit on the TCEQ webpage is acceptable);
  - (k) the NOI and the acknowledgement of provisional and non-provisional authorization for primary operators of large construction sites, and the TCEQ site notice for small construction sites and for secondary operators of large construction sites;
  - (l) if signatory authority is delegated by an authorized representative, then a copy of the formal notification to TCEQ, as required by 30 TAC 305.128 relating to Signatories to Reports must be filed in the SWP3 and made available for review upon request by TCEQ or local MS4 Operator. For primary operators of large construction activities, the formal notification to TCEQ must be submitted either electronically through

STEERS, TCEQ's electronic reporting system, or, if qualifying for an electronic reporting waiver, by paper on a Delegation of Signatories form. For operators or small construction activities, the formal notification to TCEQ must be submitted by paper on a Delegation of Signatories form.

- (m) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site where construction support activities will occur; and
  - (n) locations of all pollutant-generating activities at the construction site and where construction support activities will occur, such as the following: Paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.
2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for installation and implementation. At a minimum, the description must include the following components:

(a) General Requirements

- i. Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- ii. Control measures must be properly selected, installed, and maintained according to good engineering practices, and the manufacturer's or designer's specifications.
- iii. Controls must be developed to minimize the offsite transport of litter, construction debris, construction materials, and other pollutants required of Part IV.D.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the construction site, where small or large construction activity will occur. The erosion control and stabilization practices selected by the permittee must be compliant with the requirements for sediment and erosion control, located in Part IV. of this permit. The description of the SWP3 must also include a schedule of when the practices will be implemented. Site plans must ensure that existing vegetation at the construction site is preserved where it is possible.

- i. Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.
- ii. The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:
  - (A) the dates when major grading activities occur;
  - (B) the dates when construction activities temporarily or permanently cease on a portion of the site; and
  - (C) the dates when stabilization measures are initiated.
- iii. Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding fourteen (14) calendar days. Stabilization

measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term “immediately” is used to define the deadline for initiating stabilization measures. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than fourteen (14) calendar days after the initiation of soil stabilization measures:

- (A) where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased due to frozen conditions, non-vegetative controls must be implemented until thawing conditions (as defined in Part I.B. of this general permit) are present, and vegetative stabilization measures can be initiated as soon as practicable.
  - (B) in arid areas, semi-arid areas, or drought-stricken areas, as they are defined in Part I.B. of this general permit, where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, other types of erosion control and stabilization measures must be initiated at the site as soon as practicable. Where vegetative controls are infeasible due to arid conditions, and within fourteen (14) calendar days of a temporary or permanent cessation of construction activity in any portion of the site, the operator shall immediately install non-vegetative erosion controls in areas of the construction site where construction activity is complete or has ceased. If non-vegetative controls are infeasible, the operator shall install temporary sediment controls as required in Part III.F.2.(b)iii.(C) below.
  - (C) in areas where non-vegetative controls are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequencies established in Part III.F.8.(c) for unstabilized sites.
  - (D) the requirement for permittees to initiate stabilization is triggered as soon as it is known with reasonable certainty that construction activity at the site or in certain areas of the site will be stopped for 14 or more additional calendar days. If the initiation or completion of vegetative stabilization is prevented by circumstances beyond the control of the permittee, the permittee must employ and implement alternative stabilization measures immediately. When conditions at the site changes that would allow for vegetative stabilization, then the permittee must initiate or complete vegetative stabilization as soon as practicable.
- iv. Final stabilization must be achieved prior to termination of permit coverage.
  - v. TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

## (c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls. Controls selected by the permittee must be compliant with the requirements in Part IV. of this permit.

## i. Sites With Drainage Areas of Ten (10) or More Acres

## (A) Sedimentation Basin(s) or Impoundments

- (1) A sedimentation basin or similar impoundment is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin or impoundment may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin or similar impoundment. Capacity calculations shall be included in the SWP3. Sedimentation basins must be designed for and appropriate for controlling runoff at the site and existing detention or retention ponds at the site may not be appropriate.
- (2) Where rainfall data is not available, or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.
- (3) If a sedimentation basin or impoundment is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin or impoundment is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins or impoundments are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins or impoundments.
- (4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

## ii. Controls for Sites with Drainage Areas Less than Ten (10) Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

- (B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP<sub>3</sub>.
- (C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part IV.F. of this general permit.

### 3. Description of Permanent Stormwater Controls

A description of any stormwater control measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP<sub>3</sub>. Permittees are responsible for the installation and maintenance of stormwater management measures, as follows:

- (a) permittees authorized under the permit for small construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site; or
- (b) permittees authorized under the permit for large construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site and prior to submission of an NOT.

### 4. Other Required Controls and BMPs

- (a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and dust. The SWP<sub>3</sub> shall include a description of controls utilized to control the generation of pollutants that could be discharged in stormwater from the site.
- (b) The SWP<sub>3</sub> must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.
- (c) The SWP<sub>3</sub> must include a description of potential pollutant sources in discharges of stormwater from all areas of the construction site where construction activity, including construction support activities, will be located, and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.
- (d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.
- (e) Permittees shall design and utilize appropriate controls in accordance with Part IV. of this permit to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.
- (f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part IV. of this general permit.
- (g) For demolition of any structure with at least 10,000 square feet of floor space that was built or renovated before January 1, 1980, and the receiving waterbody is impaired for polychlorinated biphenyls (PCBs):
  - i. implement controls to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures to precipitation and to stormwater; and

- ii. ensure that disposal of such materials is performed in compliance with applicable state, federal, and local laws.
5. Documentation of Compliance with Approved State and Local Plans
  - (a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.
  - (b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.
  - (c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.
6. Maintenance Requirements
  - (a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, as soon as the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.
  - (b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.
  - (c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
  - (d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.
7. Observation and Evaluation of Dewatering Controls Pursuant to Part IV.C. of this General Permit
  - (a) Personnel provided by the permittee must observe and evaluate dewatering controls at a minimum of once per day on the days where dewatering discharges from the construction site occur. Personnel conducting these evaluations must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site. Personnel conducting these evaluations are not required to have signatory authority for reports under 30 TAC § 305.128 (relating to Signatories to Reports).

## (b) Requirements for Observations and Evaluations

- i. A report summarizing the scope of any observation and evaluation must be completed within 24-hours following the evaluation. The report must also include, at a minimum, the following:
  - (A) date of the observations and evaluation;
  - (B) name(s) and title(s) of personnel making the observations and evaluation;
  - (C) approximate times that the dewatering discharge began and ended on the day of evaluation, or if the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous (this information can be reported by personnel initiating the dewatering discharge);
  - (D) estimates of the rate (in gallons per day) of discharge on the day of evaluation;
  - (E) whether or not any indications of pollutant discharge were observed at the point of discharge (e.g., foam, oil sheen, noticeable odor, floating solids, suspended sediments, or other obvious indicators of stormwater pollution); and
  - (F) major observations, including: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.
- ii. Actions taken as a result of evaluations, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
- iii. The names and qualifications of personnel making the evaluations for the permittee may be documented once in the SWP3 rather than being included in each report.

## 8. Inspections of All Controls

- (a) Personnel provided by the permittee must inspect disturbed areas (cleared, graded, or excavated) of the construction site that do not meet the requirements of final stabilization in this general permit, all locations where stabilization measures have been implemented, areas of construction support activity covered under this permit, stormwater controls (including pollution prevention controls) for evidence of, or the potential for, the discharge of pollutants, areas where stormwater typically flows within the construction site, and points of discharge from the construction site.
  - i. Personnel conducting these inspections must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site.
  - ii. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128 (relating to Signatories to Reports).

## (b) Requirements for Inspections

- i. Inspect all stormwater controls (including sediment and erosion control measures identified in the SWP<sub>3</sub>) to ensure that they are installed properly, appear to be operational, and minimizing pollutants in discharges, as intended.
- ii. Identify locations on the construction site where new or modified stormwater controls are necessary.
- iii. Check for signs of visible erosion and sedimentation that can be attributed to the points of discharge where discharges leave the construction site or discharge into any surface water in the state flowing within or adjacent to the construction site.
- iv. Identify any incidents of noncompliance observed during the inspection.
- v. Inspect locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
- vi. If an inspection is performed when discharges from the construction site are occurring: identify all discharge points at the site, and observe and document the visual quality of the discharge (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other such indicators of pollutants in stormwater).
- vii. Complete any necessary maintenance needed, based on the results of the inspection and in accordance with the requirements listed in Part III.F.6. above.

## (c) Inspection frequencies:

- i. Inspections of construction sites must be conducted at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, unless as otherwise provided below in Part III.F.8.(c)ii. – v. below.
  - (A) If a storm event produces 0.5 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.5 inches but together produce 0.5 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.5 inches of rain or more has fallen. When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.
  - (B) If a storm event produces 0.5 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.5 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.5 inches or more of rain (i.e., only two (2) inspections would be required for such a storm event). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.
- ii. Inspection frequencies must be conducted at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized.
- iii. Inspection frequencies for construction sites, where runoff is unlikely due to the occurrence of frozen conditions at the site, must be conducted at least once every month until thawing conditions begin to occur (see definitions for thawing conditions in Part I.B.). The SWP<sub>3</sub> must also contain a record of the approximate beginning and ending dates of when frozen conditions occurred at the site, which resulted in inspections being conducted monthly, while those

conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

- iv. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of when drought conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
  - v. As an alternative to the inspection schedule in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.
  - vi. The inspection procedures described in Part III.F.8.(c)i. – v above can be performed at the frequencies and under the applicable conditions indicated for each schedule option, provided that the SWP3 reflects the current schedule and that any changes to the schedule are made in accordance with the following provisions: the inspection frequency schedule can only be changed a maximum of once per calendar month and implemented within the first five (5) business days of a calendar month; and the reason for the schedule change documented in the SWP3 (e.g., end of “dry” season and beginning of “wet” season).
- (d) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.8.(a) above.
- i. Inspection of linear construction sites could require the use of vehicles that could compromise areas of temporary or permanent stabilization, cause additional disturbance of soils, and result in the increase the potential for erosion. In these circumstances, controls must be inspected at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed.
  - ii. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.8.(a) above. The conditions of the controls along each inspected 0.25-mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25-mile portion to either the end of the next 0.25-mile inspected portion, or to the end of the project, whichever occurs first.

As an alternative to the inspection schedule described in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

- iii. the SWP3 for a linear construction site must reflect the current inspection schedule. Any changes to the inspection schedule must be made in accordance with the following provisions:
  - (A) the schedule may be changed a maximum of one time each month;

- (B) the schedule change must be implemented at the beginning of a calendar month, and
  - (C) the reason for the schedule change must be documented in the SWP3 (e.g., end of “dry” season and beginning of “wet” season).
- (e) Adverse Conditions.
- Requirements for inspections may be temporarily suspended for adverse conditions. Adverse conditions are conditions that are either dangerous to personnel (e.g., high wind, excessive lightning) or conditions that prohibit access to the site (e.g., flooding, freezing conditions). Adverse conditions that result in the temporary suspension of a permit requirement to inspect must be documented and included as part of the SWP3. Documentation must include:
- i. the date and time of the adverse condition,
  - ii. names of personnel that witnessed the adverse condition, and
  - iii. a narrative for the nature of the adverse condition.
- (f) In the event of flooding or other adverse conditions which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable. Inspection Reports.
- i. A report summarizing the scope of any inspection must be completed within 24-hours following the inspection. The report must also include the date(s) of the inspection and major observations relating to the implementation of the SWP3. Major observations in the report must include: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.
  - ii. Actions taken as a result of inspections, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
  - iii. The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.
- (g) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. If necessary, modify your site map to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.
9. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3. of this permit.
10. The SWP3 must include the information required in Part III.B. of this general permit.

11. The SWP3 must include pollution prevention procedures that comply with Part IV.D. of this general permit.

#### **Part IV. Erosion and Sediment Control Requirements Applicable to All Sites**

Except as provided in 40 CFR §§ 125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT). The BPT are also required by and must satisfy the Effluent Limitations Guideline (ELG) permitting requirement for application of 40 CFR § 450.24 New Source Performance Standards (NSPS), 40 CFR § 450.22 Best Available Technology Economically Achievable (BAT), and 40 CFR § 450.23 Best Conventional Pollutant Control Technology (BCT).

#### **Section A. Erosion and Sediment Controls**

Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

1. control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges;
2. control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge point(s);
3. minimize the amount of soil exposed during construction activity;
4. minimize the disturbance of steep slopes;
5. minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
6. provide and maintain appropriate natural buffers around surface water in the state. Direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are infeasible and shall implement additional erosion and sediment controls to reduce sediment load;
7. preserve native topsoil at the site, unless the intended function of a specific area of the site dictates that the topsoil be disturbed or removed, or it is infeasible; and
8. minimize soil compaction. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:
  - (a) restrict vehicle and equipment use to avoid soil compaction; or
  - (b) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

9. TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface water" for the purposes of triggering the buffer requirement in Part IV.A.(6) above.

**Section B. Soil Stabilization**

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next workday, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary stabilization must be completed no more than fourteen (14) calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.

**Section C. Dewatering**

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls to address sediment and prevent erosion. Operators must observe and evaluate the dewatering controls once per day while the dewatering discharge occurs as described in Part III.F.7. of this general permit.

**Section D. Pollution Prevention Measures**

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

1. minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
2. minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;
3. minimize the exposure of waste materials by closing waste container lids at the end of the workday and during storm events. For waste containers that do not have lids, where the container itself is not sufficiently secure enough to prevent the discharge of pollutants absent a cover and could leak, the permittee must provide either a cover (e.g., a tarp, plastic sheeting, temporary roof) to minimize exposure of wastes to precipitation, stormwater, and wind, or a similarly effective means designed to minimize the discharge of pollutants (e.g., secondary containment). Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use);
4. minimize exposure of wastes by implementing good housekeeping measures. Wastes must be cleaned up and disposed of in designated waste containers on days of operation at the site. Wastes must be cleaned up immediately if containers overflow;

5. minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release; and
6. minimize exposure of sanitary waste by positioning portable toilets so that they are secure and will not be tipped or knocked over, and so that they are located away from surface water in the state and stormwater inlets or conveyances.

### **Section E. Prohibited Discharges**

The following discharges are prohibited:

1. wastewater from wash out of concrete, unless managed by an appropriate control;
2. wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. soaps or solvents used in vehicle and equipment washing; and
5. toxic or hazardous substances from a spill or other release.

### **Section F. Surface Outlets**

When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible. If infeasible, the permittee must provide documentation in the SWP3 to support the determination, including the specific conditions or time periods when this exception will apply.

## **Part V. Stormwater Runoff from Concrete Batch Plants**

Discharges of stormwater runoff from concrete batch plants present at regulated construction sites and operated as a construction support activity may be authorized under the provisions of this general permit, provided that the following requirements are met for concrete batch plant(s) authorized under this permit. Only the discharges of stormwater runoff and non-stormwater from concrete batch plants that meet the requirements of a construction support activity can be authorized under this permit (see the requirements for “Non-Stormwater Discharges” in Part II.A.3. and “Discharges of Stormwater Associated with Construction Support Activity” in Part II.A.2.).

If discharges of stormwater runoff or non-stormwater from concrete batch plants are not authorized under this general permit, then discharges must be authorized under an alternative general permit or individual permit [see the requirement in Part II.A.2.(c)].

This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

**Section A. Benchmark Sampling Requirements**

- Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

**Table 1. Benchmark Parameters**

<b>Benchmark Parameter</b>	<b>Benchmark Value</b>	<b>Sampling Frequency</b>	<b>Sample Type</b>
Oil and Grease (*1)	15 mg/L	1/quarter (*2) (*3)	Grab (*4)
Total Suspended Solids (*1)	50 mg/L	1/quarter (*2) (*3)	Grab (*4)
pH	6.0 – 9.0 Standard Units	1/quarter (*2) (*3)	Grab (*4)
Total Iron (*1)	1.3 mg/L	1/quarter (*2) (*3)	Grab (*4)

(\*1) All analytical results for these parameters must be obtained from a laboratory that is accredited based on rules located in 30 TAC § 25.4 (a) or through the National Environmental Laboratory Accreditation Program (NELAP). Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

(\*2) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(\*3) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

- January through March
- April through June
- July through September
- October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Part II.E.2., and prior to terminating coverage.

(\*4) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

- (a) any additional potential sources of pollution, such as spills that might have occurred;
- (b) necessary revisions to good housekeeping measures that are part of the SWP3;
- (c) additional BMPs, including a schedule to install or implement the BMPs; and
- (d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater run-on to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

## **Section B. Best Management Practices (BMPs) and SWP3 Requirements**

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit, which include, but are not limited to the applicable requirements located in Part III.F.8. of this general permit, as follows:

1. Description of Potential Pollutant Sources – The SWP3 must provide a description of potential sources (activities and materials) that can cause, have a reasonable potential to cause or contribute to a violation of water quality standards or have been found to cause, or contribute to, the loss of a designated use of surface water in the state in stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater discharges associated with industrial activity and non-stormwater discharges (described in Part II.A.3. of this general permit), in compliance with the terms and conditions of this general permit, including the protection of water quality, and must ensure the implementation of these practices.

The following must be developed, at a minimum, in support of developing this description:

- (a) Drainage – The site map must include the following information:
  - i. the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;
  - ii. a depiction of the drainage area and the direction of flow to the outfall(s);
  - iii. structural controls used within the drainage area(s);

- iv. the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and
  - v. the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.
- (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and precipitation and that have a potential to affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.
- (c) Spills and Leaks – A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and precipitation and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.
- (d) Sampling Data – A summary of existing stormwater discharge sampling data must be maintained, if available.
2. Measures and Controls – The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3’s “Description of Potential Pollutant Sources” from Part V.B.1. of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:
- (a) Good Housekeeping – Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.
    - i. Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.
    - ii. Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.
  - (b) Spill Prevention and Response Procedures – Areas where potential spills that can contribute pollutants to stormwater runoff and precipitation, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.
  - (c) Inspections – Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128. Inspections of facilities in operation must be performed

once every seven (7) days. Inspections of facilities that are not in operation must be performed at a minimum of once per month. The current inspection frequency being implemented at the facility must be recorded in the SWP<sub>3</sub>. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

- (d) Employee Training – An employee training program must be developed to educate personnel responsible for implementing any component of the SWP<sub>3</sub>, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP<sub>3</sub>. The frequency of training must be documented in the SWP<sub>3</sub>, and at a minimum, must consist of one (1) training prior to the initiation of operation of the concrete batch plant.
  - (e) Record Keeping and Internal Reporting Procedures – A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP<sub>3</sub>. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP<sub>3</sub>.
  - (f) Management of Runoff – The SWP<sub>3</sub> shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.
3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP<sub>3</sub> related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following:
- (a) visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include, but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP<sub>3</sub>. The operator shall conduct a visual inspection of equipment needed to implement the SWP<sub>3</sub>, such as spill response equipment.
  - (b) based on the results of the evaluation, the following must be revised as appropriate within two (2) weeks of the evaluation: the description of potential pollutant sources identified in the SWP<sub>3</sub> (as required in Part V.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP<sub>3</sub> (as required in Part V.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.
  - (c) the permittee shall prepare and include in the SWP<sub>3</sub> a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP<sub>3</sub>, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any

incidence(s), and the report must be signed according to 30 TAC § 305.128 (relating to Signatories to Reports).

- (d) the Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part V.B.2.(c) of this general permit.

### **Section C. Prohibition of Wastewater Discharges**

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part VI of this general permit.

### **Part VI. Concrete Truck Wash Out Requirements**

This general permit authorizes the land disposal of wash out from concrete trucks at construction sites regulated under this general permit, provided the following requirements are met. Any discharge of concrete production wastewater to surface water in the state must be authorized under a separate TCEQ general permit or individual permit.

- A.** Discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
- B.** Concrete truck wash out water shall be disposed in areas at the construction site where structural controls have been established to prevent discharge to surface water in the state, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent discharge to surface water in the state. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
- C.** Wash out of concrete trucks during rainfall events shall be minimized. The discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
- D.** The disposal of wash out water from concrete trucks, made under authorization of this general permit must not cause or contribute to groundwater contamination.
- E.** If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

### **Part VII. Retention of Records**

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required in Part II.F.1. and 2. of this permit. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

- A.** a copy of the SWP3;
- B.** all reports and actions required by this permit, including a copy of the TCEQ construction site notice;
- C.** all data used to complete the NOI, if an NOI is required for coverage under this general permit; and
- D.** all records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

**Part VIII. Standard Permit Conditions**

- A.** The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued (CWA and TWC), and is grounds for enforcement action, for terminating, revoking and reissuance, or modification, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (a).
- B.** Authorization under this general permit may be modified, suspended, revoked and reissued, terminated or otherwise suspended for cause, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41(f). Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for modifying, revoking and reissuing, terminating or, otherwise suspending authorization under this permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (h). Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.
- C.** It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
- D.** Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§ 361.032-361.033 and 361.037, and 40 CFR § 122.41(i). The statement in TWC § 26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
- E.** The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
1. negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA § 402, or any requirement imposed in a pretreatment program approved under CWA §§ 402(a)(3) or 402(b)(8);
  2. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
  3. knowingly violating CWA §303 and placing another person in imminent danger of death or serious bodily injury.
- F.** All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
- G.** Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
- H.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

- I.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- J.** The permittee shall comply with the monitoring and reporting requirements in 40 CFR § 122.41(j) and (l), as applicable.
- K.** Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

**Part IX. Fees**

- A.** A fee of must be submitted along with the NOI:
  - 1. \$225 if submitting an NOI electronically, or
  - 2. \$325 if submitting a paper NOI.
- B.** Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
- C.** No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

**Appendix A: Automatic Authorization**

## Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30	Foard: Dec. 15 - Feb. 14
Archer: Dec. 15 - Feb. 14	Gaines: Nov. 15 - Apr. 30
Armstrong: Nov. 15 - Apr. 30	Garza: Nov. 15 - Apr. 30
Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Glasscock: Nov. 15 - Apr. 30
Baylor: Dec. 15 - Feb. 14	Hale: Nov. 15 - Apr. 30
Borden: Nov. 15 - Apr. 30	Hall: Feb. 1 - Mar. 30
Brewster: Nov. 15 - Apr. 30	Hansford: Nov. 15 - Apr. 30
Briscoe: Nov. 15 - Apr. 30	Hardeman: Dec. 15 - Feb. 14
Brown: Dec. 15 - Feb. 14	Hartley: Nov. 15 - Apr. 30
Callahan: Dec. 15 - Feb. 14	Haskell: Dec. 15 - Feb. 14
Carson: Nov. 15 - Apr. 30	Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Castro: Nov. 15 - Apr. 30	Howard: Nov. 15 - Apr. 30
Childress: Dec. 15 - Feb. 14	Hudspeth: Nov. 1 - May 14
Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Hutchinson: Nov. 15 - Apr. 30
Coke: Dec. 15 - Feb. 14	Irion: Dec. 15 - Feb. 14
Coleman: Dec. 15 - Feb. 14	Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14
Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Jones: Dec. 15 - Feb. 14
Concho: Dec. 15 - Feb. 14	Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30
Cottle: Dec. 15 - Feb. 14	Kerr: Dec. 15 - Feb. 14
Crane: Nov. 15 - Apr. 30	Kimble: Dec. 15 - Feb. 14
Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	King: Dec. 15 - Feb. 14
Crosby: Nov. 15 - Apr. 30	Kinney: Dec. 15 - Feb. 14
Culberson: Nov. 1 - May 14	Knox: Dec. 15 - Feb. 14
Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30	Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Dawson: Nov. 15 - Apr. 30	Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Deaf Smith: Nov. 15 - Apr. 30	Lubbock: Nov. 15 - Apr. 30
Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	Lynn: Nov. 15 - Apr. 30
Dimmit: Dec. 15 - Feb. 14	Martin: Nov. 15 - Apr. 30
Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Mason: Dec. 15 - Feb. 14
Eastland: Dec. 15 - Feb. 14	Maverick: Dec. 15 - Feb. 14
Ector: Nov. 15 - Apr. 30	McCulloch: Dec. 15 - Feb. 14
Edwards: Dec. 15 - Feb. 14	Menard: Dec. 15 - Feb. 14
El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14	Midland: Nov. 15 - Apr. 30
Fisher: Dec. 15 - Feb. 14	Mitchell: Nov. 15 - Apr. 30
Floyd: Nov. 15 - Apr. 30	Moore: Nov. 15 - Apr. 30
	Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30
	Nolan: Dec. 15 - Feb. 14
	Oldham: Nov. 15 - Apr. 30

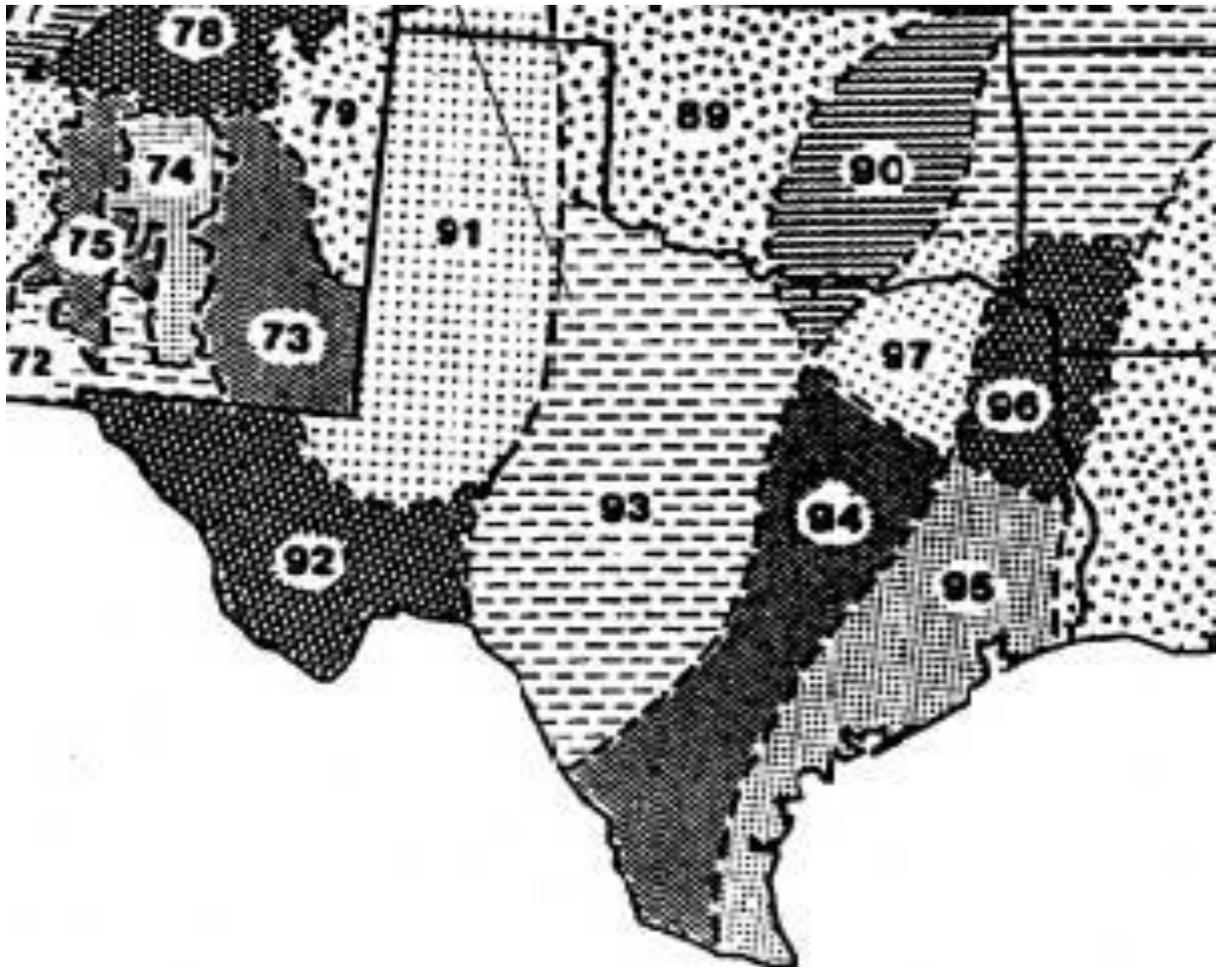
Construction General Permit

TPDES General Permit No. TXR150000  
Appendix A

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30  
Pecos: Nov. 15 - Apr. 30  
Potter: Nov. 15 - Apr. 30  
Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14  
Randall: Nov. 15 - Apr. 30  
Reagan: Nov. 15 - Apr. 30  
Real: Dec. 15 - Feb. 14  
Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14  
Runnels: Dec. 15 - Feb. 14  
Schleicher: Dec. 15 - Feb. 14  
Scurry: Nov. 15 - Apr. 30  
Shackelford: Dec. 15 - Feb. 14  
Sherman: Nov. 15 - Apr. 30  
Stephens: Dec. 15 - Feb. 14  
Sterling: Nov. 15 - Apr. 30  
Stonewall: Dec. 15 - Feb. 14  
Sutton: Dec. 15 - Feb. 14

Swisher: Nov. 15 - Apr. 30  
Taylor: Dec. 15 - Feb. 14  
Terrell: Nov. 15 - Apr. 30  
Terry: Nov. 15 - Apr. 30  
Throckmorton: Dec. 15 - Feb. 14  
Tom Green: Dec. 15 - Feb. 14  
Upton: Nov. 15 - Apr. 30  
Uvalde: Dec. 15 - Feb. 14  
Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30  
Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30  
Wichita: Dec. 15 - Feb. 14  
Wilbarger: Dec. 15 - Feb. 14  
Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14  
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14  
Young: Dec. 15 - Feb. 14  
Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28  
Zavala: Dec. 15 - Feb. 14

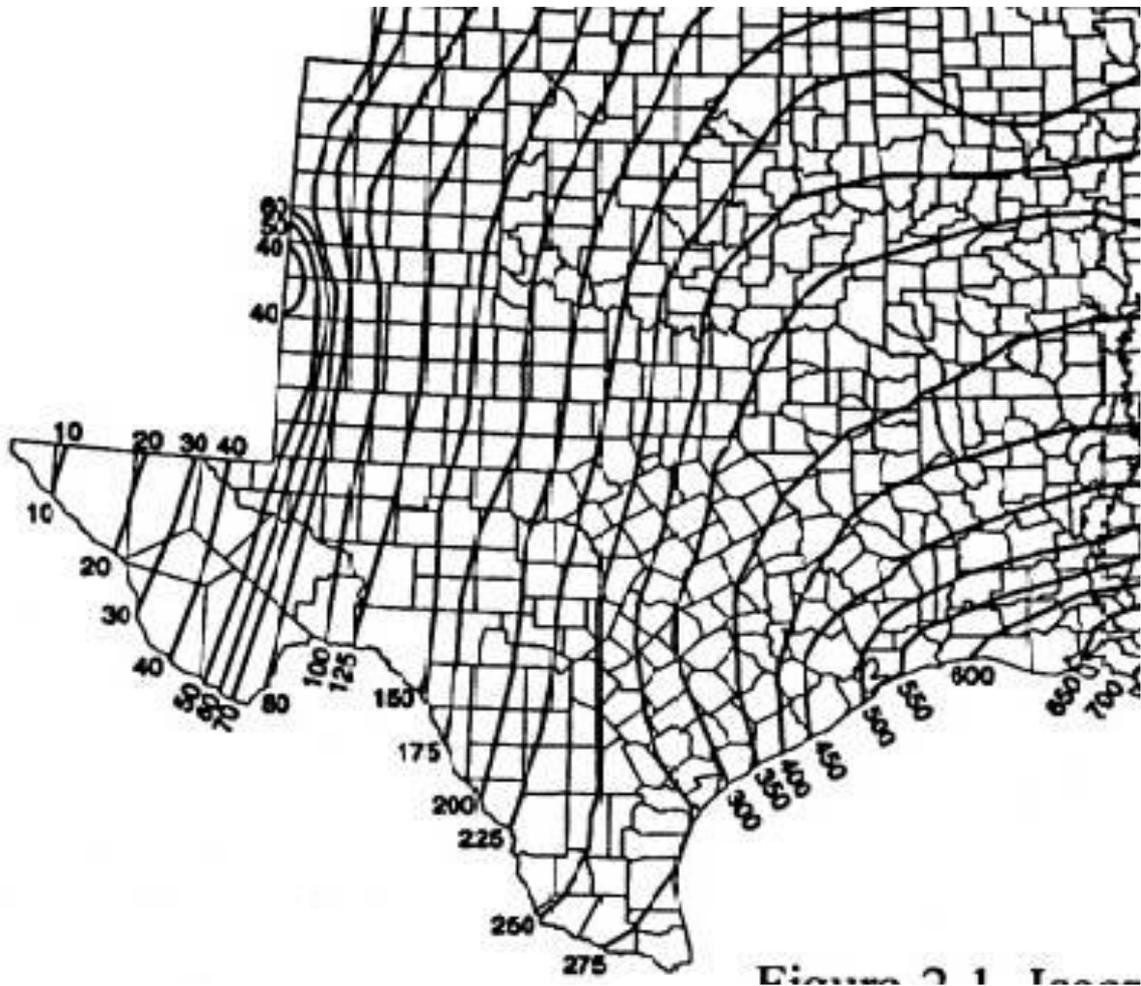
**Appendix B: Storm Erosivity (EI) Zones in Texas**



**Figure B.** EI Distribution Zones

*Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service*

**Appendix C: Isoerodent Map**



**Figure C.** Isoerodent Map of Texas. Units are hundreds  $\text{ft} \cdot \text{tonf} \cdot \text{in} \cdot (\text{ac} \cdot \text{h} \cdot \text{yr})^{-1}$

*Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service*

**Appendix D: Erosivity Indices for EI Zones in Texas**

**Table D.** EI as percentage of average annual computed selected geographic areas (EI number) by date period (month/day).

**Date Periods\* (Month/Day)**

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

\*Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service.

**Agent Authorization Form**  
For Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

I \_\_\_\_\_ Philip Robinson \_\_\_\_\_,  
Print Name  
Owner \_\_\_\_\_,  
Title - Owner/President/Other  
of \_\_\_\_\_ Matthews-Barnes Brothers Investments II, LP \_\_\_\_\_,  
Corporation/Partnership/Entity Name  
have authorized \_\_\_\_\_ Charles Hager V, P.E. \_\_\_\_\_  
Print Name of Agent/Engineer  
of \_\_\_\_\_ LJA Engineering \_\_\_\_\_  
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

[Signature]  
Applicant's Signature

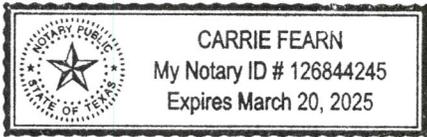
6/12/2023  
Date

THE STATE OF Texas §  
County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Philip Robinson known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 12 day of June, 2023.

[Signature]  
NOTARY PUBLIC  
Carrie Fearn  
Typed or Printed Name of Notary



MY COMMISSION EXPIRES: 03/20/2025

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Covert Bee Cave 4-AC

Regulated Entity Location: South of Serene Hills Dr. and SH-71 West

Name of Customer: Matthews-Barnes Brothers Investments II, LP

Contact Person: Philip Robinson

Phone: 512-684-3825

Customer Reference Number (if issued):CN \_\_\_\_\_

Regulated Entity Reference Number (if issued):RN \_\_\_\_\_

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

### Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	4.25 Acres	\$ 4,000
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: \_\_\_\_\_



Date: 6/12/2023

## Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

### **Water Pollution Abatement Plans and Modifications**

#### **Contributing Zone Plans and Modifications**

<i>Project</i>	<i>Project Area in Acres</i>	<i>Fee</i>
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

#### **Organized Sewage Collection Systems and Modifications**

<i>Project</i>	<i>Cost per Linear Foot</i>	<i>Minimum Fee- Maximum Fee</i>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

#### **Underground and Aboveground Storage Tank System Facility Plans and Modifications**

<i>Project</i>	<i>Cost per Tank or Piping System</i>	<i>Minimum Fee- Maximum Fee</i>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

#### **Exception Requests**

<i>Project</i>	<i>Fee</i>
Exception Request	\$500



TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN		RN

## SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input checked="" type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
<b>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</b>			
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
Matthews-Barnes Brothers Investments II, LP			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0801061345	32038490598		
11. Type of Customer:		Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited	
<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual	
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner		<input type="checkbox"/> Operator	
<input type="checkbox"/> Occupational Licensee		<input type="checkbox"/> Responsible Party	
<input checked="" type="checkbox"/> Owner & Operator		<input type="checkbox"/> Voluntary Cleanup Applicant	
<input type="checkbox"/> Other:			
15. Mailing Address:			
Matthews-Barnes Brothers Investments II, LP			
11750 Research Blvd.			
City	Austin	State	TX
ZIP	78759	ZIP + 4	2446
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		philip@covertauto.com	
18. Telephone Number		19. Extension or Code	20. Fax Number (if applicable)
( 512 ) 684-3825			( ) -

## SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<b>The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).</b>	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
Covert Bee Cave 4-AC	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>							
	City		State		ZIP		ZIP + 4
24. County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	South of intersection of SH-71 and Acacia Dr.									
26. Nearest City	Bee Cave				State	TX		Nearest ZIP Code	78669	
27. Latitude (N) In Decimal:	30.314499			28. Longitude (W) In Decimal:	-98.002942					
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds					
30	18	52	97	00	43					
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)					
7542			811192							
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>										
Car Wash										
34. Mailing Address:										
Sweetwater Village Rd										
35. E-Mail Address:										
36. Telephone Number			37. Extension or Code			38. Fax Number <i>(if applicable)</i>				
( 512 ) 684-3825						( ) -				

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

#### SECTION IV: Preparer Information

40. Name:	Charles Hager V, P.E.		41. Title:	Sr. Project Manager	
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
( 303 ) 564-2715		( ) -	chager@lja.com		

#### SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Matthews-Barnes Brothers Investments II, LP.	Job Title:	MANAGER		
Name (In Print):	Philip Robinson	Phone:	(512) 583-3030		
Signature:		Date:	6/12/2023		

# COVERT - BEE CAVE

## PHASE 1 - SITE / NPS PLAN

SUBMITTED FOR APPROVAL BY:  
LJA ENGINEERING, INC.

*Reese Hurley*  
REESE B. HURLEY, P.E. #98211  
LICENSED PROFESSIONAL ENGINEER

03-31-2017  
DATE



*David De Gouthro* V18/19  
TRAVIS COUNTY TRANSPORTATION AND NATURAL RESOURCES

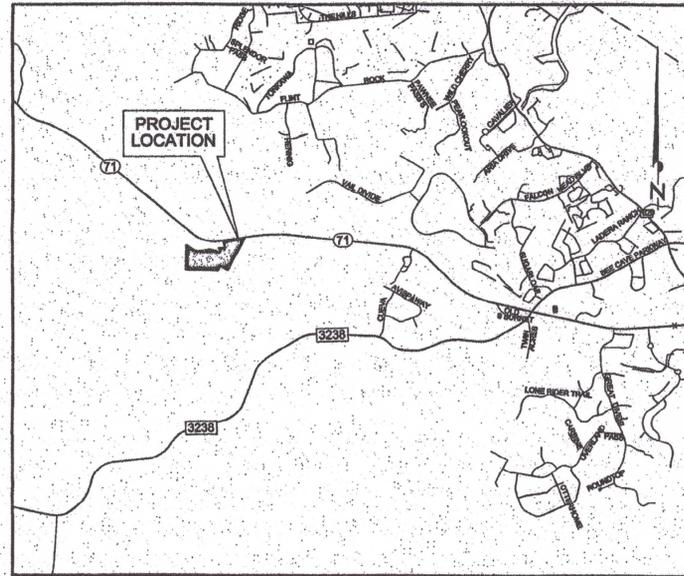
16-11714  
TRAVIS COUNTY TNR BASIC DEVELOPMENT PERMIT NUMBER

*Richard W. ...* P.E. DISTRICT ENGINEER 03/31/17  
LAZY NINE MUNICIPAL UTILITY DISTRICT DATE

*Rich Tass* 8/13/17  
TRAVIS COUNTY EMERGENCY SERVICES DISTRICT NO. 6 DATE

*Mazen Jossain* 01/22/2019

CITY OF BEE CAVE APPLICATION / PERMIT NO. 17-375-SNPS



LOCATION MAP  
(N.T.S.)

SUBMITTAL DATE: JULY 15, 2016

LEGAL DESCRIPTION

LOT 9, BLOCK A, SWEETWATER CROSSING

- 83 EC04 EROSION & SEDIMENT CONTROL & TREE PROTECTION
- 84 DM05 ONSITE DRAINAGE AREA MAP
- 85 SP04 SITE PLAN SHEET 4
- 86 GP08 GRADING PLAN SHEET 8
- 87 ST14 STORMSEWER PLAN & PROFILE SHEET 13
- ~~88 WL04 WATERLINE PLAN SHEET 3~~
- 89 WQ05 DETENTION & WATER QUALITY POND PLAN
- 90 WQ06 DETENTION & WATER QUALITY POND DETAILS

BENCHMARKS

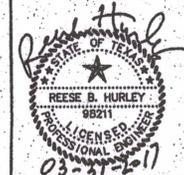
- BM-1: TOP OF A TYPE 1 TXDOT MONUMENT ON THE SOUTH RIGHT-OF-WAY OF HWY-71 AND 276.48' EAST OF THE NORTHWEST PROPERTY CORNER OF THE LT.1&D. TRACT. ELEV. = 1124.89'
- BM-2: COTTON SPINDLE SET IN 28'25"10"8" LIVE OAK # 113 ELEV. = 1146.48'
- BM-3: COTTON SPINDLE SET IN 20' LIVE OAK # 145 ELEV. = 1114.57'

NOTES:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE REVIEWING JURISDICTIONS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. THIS PROJECT IS LOCATED IN THE LITTLE BARTON CREEK WATERSHED AND WITHIN THE 2-MILE ETJ OF THE CITY OF BEE CAVE. THIS PROPERTY IS NOT ZONED, THIS PROJECT IS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
3. NO PORTION OF THE PROPOSED IMPROVEMENTS ARE LOCATED WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) # 48453C0406H & 48453C0416H, TRAVIS COUNTY, TEXAS, DATED SEPTEMBER 28, 2008.
4. THIS PROJECT IS SUBJECT TO AND COMPLIES WITH THE EXECUTED DEVELOPMENT AGREEMENT BETWEEN THE CITY OF BEE CAVE, WS-COS DEVELOPMENT, LLC, WS-COS INVESTMENTS, LLC LAZY NIE M.U.D., AND MATTHEW-BARNES BROTHERS INVESTMENTS.
5. COLORED RENDERING OF BUILDINGS EXTERIOR ELEVATION SHEETS WILL BE INCLUDED IN THE RECORD DRAWINGS.
6. LANDSCAPE IRRIGATION PLAN WILL BE INCLUDED IN THE RECORD DRAWINGS. ALL IRRIGATION SYSTEMS SHALL BE DESIGNED AND SEALED IN ACCORDANCE WITH THE TEXAS LICENSED IRRIGATORS ACT.
7. COORDINATE PRE-CONSTRUCTION MEETING WITH Kenneth Chadwell, TRAVIS COUNTY TNR ENVIRONMENTAL SPECIALIST, USING YOUR ACCOUNT ON MYPERMITNOW.ORG AND FOLLOW-UP WITH AN EMAIL AT kenneth.chadwell@TRAVISCOUNTYTX.GOV AND ENGINEERING INSPECTOR SPECIALIST, JOHNNY ANGLIN - JOHNNY.ANGLIN@TRAVISCOUNTYTX.GOV, FOR THE WORK WITHIN THE RIGHT-OF-WAY (ROW).

DAM CERTIFICATION FOR DETENTION PONDS

I, REESE B. HURLEY, P.E., TEXAS LICENSE NUMBER 98211, CERTIFY THAT THE DESIGN OF THE DETENTION POND DAMS IN THIS SET OF PLANS CAN SAFELY PASS 75-PERCENT OF THE PROBABLE MAXIMUM FLOOD BASED ON THE HYDROLOGIC, HYDRAULIC, STRUCTURAL, AND GEOTECHNICAL ANALYSIS USING STANDARD ACCEPTED ENGINEERING PRACTICES.



Number	Description	Revised (R) Add (A) Void (V) Sheet No.'s	Total # of Sheets in Plan Set	Net Change Imp. Cover (sq. ft.)	Total Site Imp. Cover (sq. ft.) %	City of Bee Cave Approval Date	TRAVIS COUNTY APPROVAL
C1	PHASE 1 SITE PLAN CORRECTION FOR DEALERSHIP/SERVICE BUILDING LOCATION, REVERSE PARKING GARAGE TO SURFACE PARKING, REVERSE MANS GRADING, REVERSE ASSOCIATED UTILITIES, REVERSE PONDS, & OTHER CHANGES	(R)1,6,6,9,11,17,21,24,25, 70-71 (A)28, 31,32,37, 39,49, 73	72	-0.22 AC	55.94%	10/12/19	10/12/19
C2	ADD PHASE 2 SITE PLAN TO PLAN SET: UPDATE OVERALL, SITE PLAN, EROSION, UTILITY SHEETS, ADD STORM LINES, ADD LANDSCAPE SHEETS	(R)2, 7, 14, 15, 16, 21, 22, 25, 29, 41, 44 (A)39-38, 73-75	78	N/A	55.94%	10/16/19	10/16/19
C3	PHASE 3 SITE PLAN CORRECTION FOR REVERSED PHASE 3: PARKING, SIDEWALKS, BUILDING/UTILITY, EROSION, GRADING, ADD LANDSCAPE SHEETS, WW SHEET, & REVERSED LIGHTING PLAN	(R)4, 8, 9, 11, 12, 15, 17, 18, 21, 24, 26, 27, 31, 44, 47, 51, 62, 70, 74, 75, 79, 80	82	-0.05-AC	55.78%	10/16/19	10/16/19
C4	PHASE 4 SITE PLAN ADDITION: PARKING, CARWASH, UTILITIES, GRADING, DETENTION AND WATER QUALITY PONDS.	(R)13, 5, 6, 8, 13, 15, 47, 20, 22, 25, 29, 29, 40, 44-45, 82, (A) 83-92	90	+2.41-AC	53.76%	10/16/19	10/16/19

**OWNER:** WS-COS INVESTMENTS LLC  
3303 QUIET GLEN DRIVE  
KINGWOOD, TEXAS 77345  
CONTACT PERSON: MIKE RAFFERTY

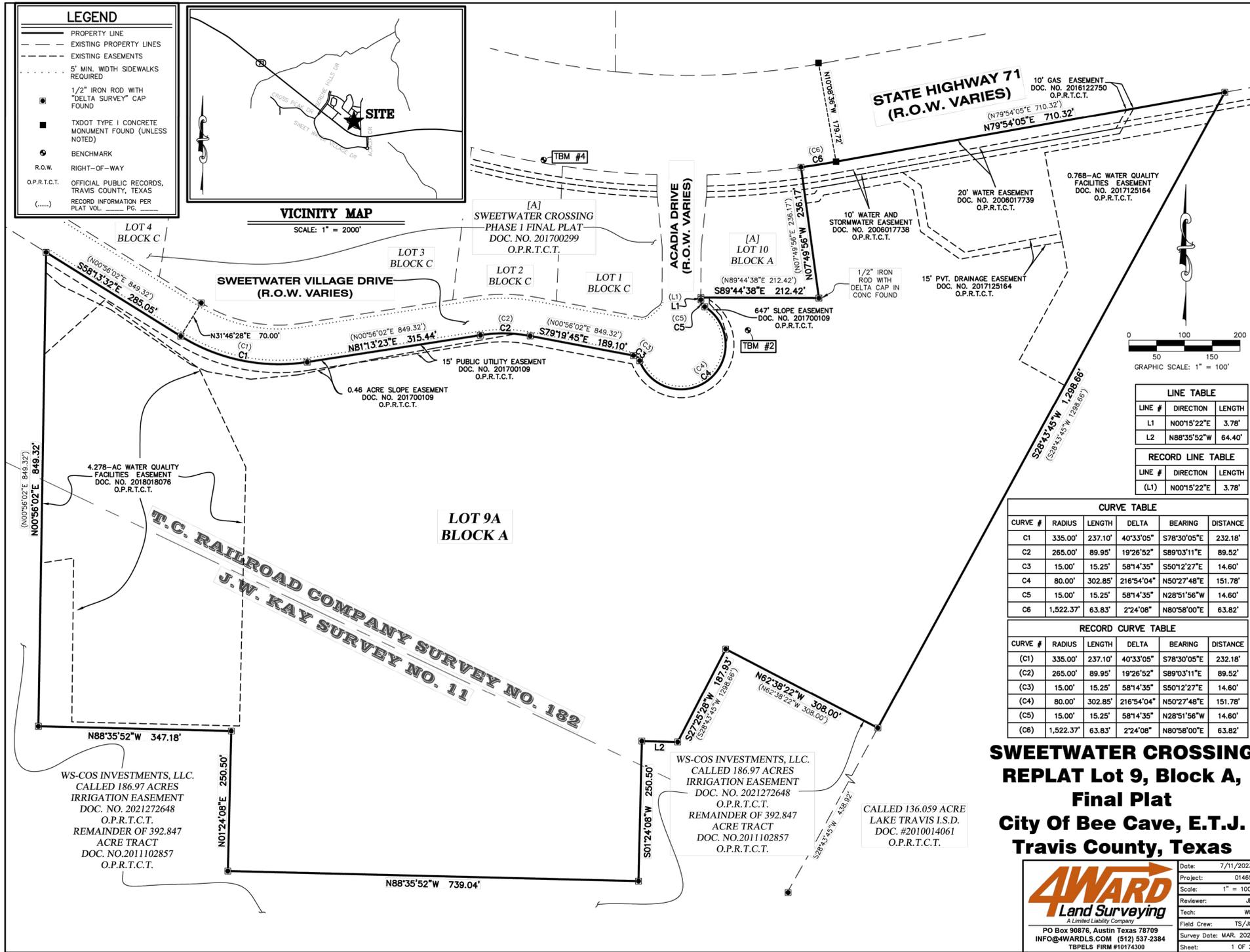
**ENGINEER:** LJA ENGINEERING INC.  
6316 HIGHWAY 290 W., SUITE 150  
AUSTIN, TEXAS 78735  
CONTACT PERSON: REESE HURLEY, P.E.  
PHONE # (512) 439-4700  
FAX # (512) 439-4710

**SURVEYOR:** DELTA SURVEY GROUP INC.  
6213 BRODIE LAKE SUITE 102  
AUSTIN, TEXAS 78746  
PHONE # (512) 282-8200  
FAX # (512) 282-8220

SHEET NO.	DESCRIPTION	REPLACE SHEET
1	CV01 COVER SHEET	
2	FP01 FINAL PLAT	
3	FP02 FINAL PLAT	
4	GN01 GENERAL NOTES	
5	OP01 OVERALL PROJECT LAYOUT	
6	EC00 EROSION CONTROL NOTES & DETAILS TABLE	
7	EC01 EROSION & SEDIMENTATION CONTROL & TREE PROTECTION	
8	EC02 EROSION & SEDIMENTATION CONTROL & TREE PROTECTION	
9	EC03 EROSION & SEDIMENTATION CONTROL & TREE PROTECTION	
10	DM01 EXISTING CONDITIONS DRAINAGE AREA MAP	
11	DM02 DEVELOPED CONDITIONS DRAINAGE AREA MAP	
12	DM03 ONSITE DRAINAGE AREA MAP	
13	DM04 ONSITE DRAINAGE AREA MAP	
14	SP01 SITE PLAN SHEET 1	
15	SP02 SITE PLAN SHEET 2	
16	SP03 SITE PLAN SHEET 3	
17	SP05 SITE PLAN NOTES & DETAILS	
18	GP01 GRADING PLAN SHEET 1	
19	GP02 GRADING PLAN SHEET 2	
20	GP03 GRADING PLAN SHEET 3	
21	GP04 GRADING PLAN SHEET 4	
22	GP05 GRADING PLAN SHEET 5	
23	GP06 GRADING PLAN SHEET 6	
24	GP07 GRADING PLAN SHEET 7	
25	ST00 OVERALL STORMSEWER PLAN	
26	ST01 STORMSEWER PLAN & PROFILES SHEET 1	
27	ST02 STORMSEWER PLAN & PROFILES SHEET 2	
28	ST03 STORMSEWER PLAN & PROFILES SHEET 3	
29	ST04 STORMSEWER PLAN & PROFILES SHEET 4	
30	ST05 STORMSEWER PLAN & PROFILES SHEET 5	
31	ST06 STORMSEWER PLAN & PROFILES SHEET 6	
32	ST07 STORMSEWER PLAN & PROFILES SHEET 7	
33	ST08 STORMSEWER PLAN & PROFILES SHEET 8	
34	ST09 STORMSEWER PLAN & PROFILES SHEET 9	
35	ST10 STORMSEWER PLAN & PROFILES SHEET 10	
36	ST11 STORMSEWER PLAN & PROFILES SHEET 11	
37	ST12 STORMSEWER PLAN & PROFILES SHEET 12	
38	ST13 STORMSEWER PLAN & PROFILES SHEET 13	
39	WL01 WATERLINE PLAN SHEET 1	
40	WL02 WATERLINE PLAN SHEET 2	
41	WL03 WATERLINE PLAN SHEET 3	
42	WW01 WASTEWATER LINE SHEET 1	
43	WW02 WASTEWATER LINE SHEET 2	
44	WW03 WASTEWATER LINE SHEET 3	
45	WW04 WASTEWATER LINE SHEET 4	
46	WQ01 DETENTION & WATER QUALITY POND PLAN	
47	WQ02 DETENTION & WATER QUALITY POND DETAILS	
48	WQ03 DETENTION & WATER QUALITY POND PLAN	
49	WQ04 DETENTION & WATER QUALITY POND DETAILS	
50	IRR01 IRRIGATION PLAN	
51	IRR02 POND A IRRIGATION PUMP STATION	
52	IRR03 POND B IRRIGATION PUMP STATION	
53	DT01 STANDARD DETAILS	
54	DT02 STANDARD DETAILS	
55	DT03 STANDARD DETAILS	
56	DT04 STANDARD DETAILS	
57	WALL PLANS & DETAILS - PLAN VIEW	
58	WALL PLANS & DETAILS - PROFILES 1 - 4	
59	WALL PLANS & DETAILS - PROFILES 5 - 6	
60	WALL PLANS & DETAILS - PROFILES 13 - 16	
61	WALL PLANS & DETAILS - PROFILES 17 - 21	
62	WALL PLANS & DETAILS - POND A SPLITTER BOX PLAN & SECTIONS	
63	WALL PLANS & DETAILS - POND B SPLITTER BOX PLAN & SECTIONS	
64	WALL PLANS & DETAILS - TYPICAL SPLITTER BOX DETAILS	
65	WALL PLANS & DETAILS - TYPICAL RETAINING WALL CROSS-SECTIONS	
66	WALL PLANS & DETAILS - TYPICAL RETAINING WALL DETAILS	
67	L1.1 LANDSCAPE PLAN	
68	L1.2 LANDSCAPE PLAN	
69	L1.3 LANDSCAPE PLAN	
70	L1.4 LANDSCAPE PLAN	
71	L1.5 LANDSCAPE PLAN	
72	L1.6 LANDSCAPE PLAN	
73	L1.7 LANDSCAPE PLAN	
74	L1.8 LANDSCAPE PLAN SOFTSCAPE CALCULATIONS, NOTES, & SPECIFICATIONS	
75	L1.9 LANDSCAPE PLAN	
76	L1.10 LANDSCAPE PLAN	
77	L1.11 LANDSCAPE PLAN NOTES, CALCULATIONS, & SPECIFICATIONS	
78	L1.12 LANDSCAPE PLAN	
79	L1.13 LANDSCAPE PLAN	
80	L1.14 LANDSCAPE PLAN NOTES & CALCULATIONS	
81	LT01 SITE PLAN PHOTOMETRICS	
82	RE01 RESTORATION & STABILIZATION PLAN	

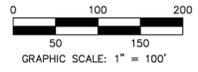
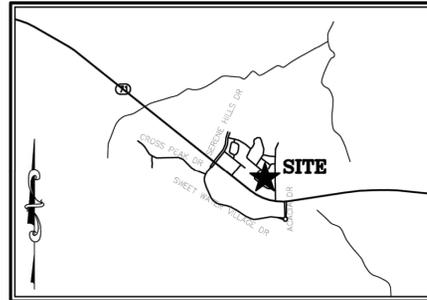
COVERT - BEE CAVE  
PHASE 1 - SITEMPS PLAN  
A228-0401

**LJA Engineering, Inc.**  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4716  
FRN - F-1386



**LEGEND**

- PROPERTY LINE
- - - EXISTING PROPERTY LINES
- - - EXISTING EASEMENTS
- ..... 5' MIN. WIDTH SIDEWALKS REQUIRED
- 1/2" IRON ROD WITH "DELTA SURVEY" CAP FOUND
- TXDOT TYPE I CONCRETE MONUMENT FOUND (UNLESS NOTED)
- BENCHMARK
- R.O.W. RIGHT-OF-WAY
- O.P.R.T.C.T. OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS
- (.....) RECORD INFORMATION PER PLAT VOL. PG.



**LINE TABLE**

LINE #	DIRECTION	LENGTH
L1	N00°15'22"E	3.78'
L2	N88°35'52"W	64.40'

**RECORD LINE TABLE**

LINE #	DIRECTION	LENGTH
(L1)	N00°15'22"E	3.78'

**CURVE TABLE**

CURVE #	RADIUS	LENGTH	DELTA	BEARING	DISTANCE
C1	335.00'	237.10'	40°33'05"	S78°30'05"E	232.18'
C2	265.00'	89.95'	19°26'52"	S89°03'11"E	89.52'
C3	15.00'	15.25'	58°14'35"	S50°12'27"E	14.60'
C4	80.00'	302.85'	216°54'04"	N50°27'48"E	151.78'
C5	15.00'	15.25'	58°14'35"	N28°51'56"W	14.60'
C6	1,522.37'	63.83'	2°24'08"	N80°58'00"E	63.82'

**RECORD CURVE TABLE**

CURVE #	RADIUS	LENGTH	DELTA	BEARING	DISTANCE
(C1)	335.00'	237.10'	40°33'05"	S78°30'05"E	232.18'
(C2)	265.00'	89.95'	19°26'52"	S89°03'11"E	89.52'
(C3)	15.00'	15.25'	58°14'35"	S50°12'27"E	14.60'
(C4)	80.00'	302.85'	216°54'04"	N50°27'48"E	151.78'
(C5)	15.00'	15.25'	58°14'35"	N28°51'56"W	14.60'
(C6)	1,522.37'	63.83'	2°24'08"	N80°58'00"E	63.82'

**SWEETWATER CROSSING  
REPLAT Lot 9, Block A,  
Final Plat  
City Of Bee Cave, E.T.J.  
Travis County, Texas**

**4WARD**  
Land Surveying  
A Limited Liability Company  
PO Box 90876, Austin, Texas 78709  
INFO@4WARDLS.COM (512) 537-2384  
TBPELS FIRM #10174300

Date: 7/11/2023  
Project: 01465  
Scale: 1" = 100'  
Reviewer: JB  
Tech: WC  
Field Crew: TS/JC  
Survey Date: MAR. 2021  
Sheet: 1 OF 2

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



COVERT BEE CAVE  
#####

REVISIONS

NO.	DATE	DESCRIPTION
C4	08-17-2022	ADG ADDITION OF NEW FINAL PLAT

DATE: 07/11/2023  
DESIGNED BY: JED  
DRAWN BY: JED  
CHECKED BY: CRH  
DWG NAME: A338-401-FP01-C4.dwg



**LJA Engineering, Inc.**  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

JOB NUMBER: A338-401  
FP01  
SHEET NO. 02  
OF 90 SHEETS

1\A\238 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401-FP01-C4.dwg  
User: agartinger Jun 11 23 - 13:23  
Plot Date/Time: Jun 11 23 - 13:24:53

STATE OF TEXAS §  
COUNTY OF TRAVIS §

KNOW ALL MEN BY THESE PRESENTS THAT MATHEWS-BARNES BROTHERS INVESTMENTS II, LP ACTING HEREIN AND THROUGH ROX B. COVERT AND DANAY C. COVERT AUTHORIZED SIGNATORY; OWNER OF SWEETWATER CROSSING, LOT 9, BLOCK A FINAL PLAT, A SUBDIVISION RECORDED IN DOCUMENT NO. 201700109 OF THE OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS, CONVEYED PER DOC. NO. 2021137782 OF THE OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS, AND A 4.25 ACRE TRACT OF LAND LOCATED IN THE T. C. RAILROAD COMPANY SURVEY NO. 182, AND THE J. W. KAY SURVEY NO. 11, IN TRAVIS COUNTY, TEXAS CONVEYED PER DOC. NO. 2022001723 O.P.R.T.C.T., PURSUANT TO CHAPTER 232 OF THE LOCAL GOVERNMENT CODE OF TEXAS, IN ACCORDANCE WITH THIS PLAT, TO BE KNOWN AS

"SWEETWATER CROSSING REPLAT OF LOT 9, BLOCK A FINAL PLAT"

SUBJECT TO THE COVENANTS AND RESTRICTIONS SHOWN HEREON, AND HEREBY DEDICATES TO THE PUBLIC, THE USE OF ALL THE STREETS AND EASEMENTS SHOWN HEREON.

WITNESS MY HAND THIS \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ A.D.

MATHEWS-BARNES BROTHERS INVESTMENTS II L.P.

BY:  
NAME: ROX B. COVERT, AUTHORIZED SIGNATORY  
11750 RESEARCH BOULEVARD  
AUSTIN, TEXAS, 78759-2446

BY:  
NAME: DANAY C. COVERT, AUTHORIZED SIGNATORY  
11750 RESEARCH BOULEVARD  
AUSTIN, TEXAS, 78759-2446

STATE OF TEXAS §  
COUNTY OF TRAVIS §

BEFORE ME, THE UNDERSIGNED AUTHORITY, PERSONALLY APPEARED ROX B. COVERT, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES: \_\_\_\_\_ 20\_\_\_\_ A.D.

STATE OF TEXAS §  
COUNTY OF TRAVIS §

BEFORE ME, THE UNDERSIGNED AUTHORITY, PERSONALLY APPEARED DANAY C. COVERT, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES: \_\_\_\_\_ 20\_\_\_\_ A.D.

STATE OF TEXAS  
COUNTY OF TRAVIS

KNOW ALL MEN BY THESE PRESENTS:

I, JASON WARD, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND DO HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECT AND WAS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE ON THE GROUND UNDER MY SUPERVISION. THIS PLAT COMPLIES WITH CHAPTER 482, TRAVIS COUNTY SUBDIVISION REGULATIONS.

JASON WARD DATE  
REGISTERED PROFESSIONAL LAND SURVEYOR  
No.5811 STATE OF TEXAS  
4WARD LAND SURVEYING  
4120 FREDRICH LANE  
AUSTIN, TEXAS 78744

NO PORTION OF THIS SUBDIVISION LIES WITHIN THE DESIGNATED 100 YEAR FLOOD PLAIN AS DEFINED BY F.E.M.A. MAP 48453C0385H DATED SEPTEMBER 26, 2008.

I, CHARLES HAGER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS, TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY CERTIFY THAT THIS PLAT IS FEASIBLE FROM AN ENGINEERING STANDPOINT, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, AND THAT THIS PLAT COMPLIES WITH CHAPTER 482, TRAVIS COUNTY SUBDIVISION REGULATIONS.

CHARLES HAGER V, P.E. DATE 7/11/2023  
LJA ENGINEERING  
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100,  
AUSTIN, TEXAS 78735



THIS SUBDIVISION IS LOCATED IN THE CITY OF BEE CAVE EXTRA-TERRITORIAL JURISDICTION.

LCRA PERMIT PLAT NOTE

ALL PROPERTY HEREIN IS SUBJECT TO THE LOWER COLORADO RIVER AUTHORITY'S HIGHLAND LAKES WATERSHED ORDINANCE. WRITTEN NOTIFICATION AND/OR PERMITS ARE REQUIRED PRIOR TO COMMENCING ANY DEVELOPMENT ACTIVITIES. CONTACT LCRA MANAGEMENT AT 1-800-766-5272, EXTENSION 2324 FOR MORE INFORMATION.

NOTES:

- 1. OWNER OF THIS SUBDIVISION, AND HIS OR HER SUCCESSORS AND ASSIGNS, ASSUMES RESPONSIBILITY FOR PLANS FOR CONSTRUCTION OF SUBDIVISION IMPROVEMENTS WHICH COMPLY WITH APPLICABLE CODES AND REQUIREMENTS TO CHAPTER 482, TRAVIS COUNTY. THE OWNER UNDERSTANDS AND ACKNOWLEDGES THAT PLAT VACATION OR REPLATTING MAY BE REQUIRED, AT THE OWNER'S SOLE EXPENSE, IF PLANS TO CONSTRUCT THIS SUBDIVISION DO NOT COMPLY WITH SUCH CODES AND REQUIREMENTS.
- 2. FOR A MINIMUM TRAVEL DISTANCE OF 25 FEET FROM THE ROADWAY EDGE, DRIVEWAY GRADES MAY EXCEED 14% ONLY WITH THE SPECIFIC WRITTEN APPROVAL OF THE SURFACE AND GEOMETRIC DESIGN PROPOSALS BY THE TRAVIS COUNTY TRANSPORTATION AND NATURAL RESOURCES.
- 3. WASTEWATER SYSTEMS SERVINGS THIS SUBDIVISION SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH TRAVIS COUNTY PLANS AND SPECIFICATIONS. PLANS AND SPECIFICATION SHALL BE SUBMITTED TO TCEQ FOR REVIEW.
- 4. NO PORTION OF THIS TRACT IS LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
- 5. NO PORTION OF THIS SUBDIVISION LIES WITHIN THE DESIGNATED 100 YEAR FLOOD PLAIN AS DEFINED BY F.E.M.A. MAP 48453C0385H DATED SEPTEMBER 26, 2008.
- 6. THIS SUBDIVISION IS SUBJECT TO THE COVENANTS AND RESTRICTIONS RECORDED AS DOCUMENT NO. 2017032085 OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS
- 7. DRIVEWAYS SHALL NOT BE CONSTRUCTED CLOSER THAN 50 FEET OR 60% OF THE LOT'S FRONTAGE TO THE EDGE OF PAVEMENT OF AN INTERSECTING LOCAL OR COLLECTOR STREET.
- 8. A TRAVIS COUNTY DEVELOPMENT PERMIT IS REQUIRED PRIOR TO ANY SITE DEVELOPMENT.
- 9. DRAINAGE AND LATERAL SUPPORT EASEMENTS TO THE LIMITS SHOWN ON THIS PLAT ARE HEREBY DEDICATED TO THE PUBLIC FOR THE CONSTRUCTION, MAINTENANCE AND THE RIGHT TO PLACE EARTHEN FILL FOR DRAINAGE AND LATERAL SUPPORT FOR PUBLIC ROADWAYS ON THIS PLAT. PROPERTY OWNERS MAY USE THEIR PROPERTY WITHIN THESE EASEMENTS ONLY IN THOSE WAYS THAT ARE CONSISTENT WITH THE CONSTRUCTION INSTALLATION, AND MAINTENANCE OF THE DRAINAGE AND LATERAL SUPPORT EASEMENT DEDICATED HEREIN. PROPERTY OWNERS MAY DO NOTHING THAT WOULD IMPAIR, DAMAGE OR DESTROY THE DRAINAGE AND LATERAL SUPPORT EASEMENTS. TRAVIS COUNTY AND ITS SUCCESSOR AND ASSIGNS HAVE THE RIGHT TO USE SO MUCH OF THE SURFACE OF THE PROPERTY WITHIN THE EASEMENTS AS MAY BE REASONABLY NECESSARY TO CONSTRUCT, INSTALL AND MAINTAIN DRAINAGE AND LATERAL SUPPORT FACILITIES WITHIN THE EASEMENTS.
- 10. THIS SUBDIVISION IS LOCATED WITHIN THE BOUNDARIES OF THE LAZY NINE MUNICIPAL DISTRICT 1A. WATER AND WASTEWATER SERVICE TO THIS SUBDIVISION WILL BE PROVIDED BY THE DISTRICT IN ACCORDANCE WITH ITS RATE ORDER, AS AMENDED. ALL CONSTRUCTION PLANS FOR WATER, WASTEWATER AND STORM DRAINAGE IMPROVEMENTS MUST BE PRESENTED TO THE DISTRICT AND APPROVED BY THE DISTRICT'S ENGINEER, PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE DISTRICT MAY INSPECT ALL WATER, WASTEWATER, AND STORM DRAINAGE IMPROVEMENTS.
- 11. NO LOT SHALL BE OCCUPIED UNTIL CONNECTED TO AN APPROVED PUBLIC SEWER SYSTEM.
- 12. NO LOT SHALL BE OCCUPIED UNTIL WATER IS AVAILABLE FOR EACH LOT.
- 13. ALL LOTS IN THIS SUBDIVISION ARE RESTRICTED TO USES OTHER THAN RESIDENTIAL.
- 14. ALL NOTES FROM ORIGINAL SUBDIVISION "SWEETWATER CROSSING, LOT 9, BLOCK A, FINAL PLAT" (DOC. NO. 201700299 O.P.R.T.C.T.) SHALL APPLY TO THIS REPLAT AND RESTRICTIONS.
- 15. WATER AND WASTEWATER IS PROVIDED BY LAZY NINE MUD NO. 1-A.
- 16. THIS SUBDIVISION IS SUBJECT TO A PHASING AGREEMENT RECORDED AS DOCUMENT NO. 201706889, OF THE OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS.
- 17. NO OBJECTS, INCLUDING BUT NOT LIMITED TO, BUILDINGS, FENCES, OR LANDSCAPING SHALL BE ALLOWED IN A DRAINAGE EASEMENT EXCEPT AS APPROVED BY TRAVIS COUNTY (AND OTHER APPROPRIATE JURISDICTION).
- 18. ALL DRAINAGE EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE OWNER AND/OR HIS/HERS ASSIGNS.
- 19. PROPERTY OWNER AND/OR HIS/HERS ASSIGNS SHALL PROVIDE FOR ACCESS TO THE DRAINAGE EASEMENT AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY TRAVIS COUNTY FOR INSPECTION OR MAINTENANCE OF SAID EASEMENT.
- 20. A TRAVIS COUNTY DRIVEWAY PERMIT WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY DRIVEWAY CONNECTING TO SWEETWATER VILLAGE DRIVE.
- 21. DRAINAGE PLANS SHALL BE SUBMITTED TO TRAVIS COUNTY AND ANY OTHER APPROPRIATE JURISDICTION FOR REVIEW PRIOR TO SITE DEVELOPMENT. RAINFALL RUN-OFF SHALL BE HELD TO THE AMOUNT EXISTING AT UNDEVELOPED STATUS BY POND OR OTHER APPROVED METHODS.
- 22. ELECTRIC SERVICE IS PROVIDED BY AUSTIN ENERGY.
- 23. THE PURPOSE OF THIS RESUBDIVISION PLAT IS TO ADD 4.25-ACRES TO THE ORIGINAL PLAT AND LOT 9A BLOCK A ACREAGE.
- 24. THIS PLAT IS SUBJECT TO TRAVIS COUNTY 2016 WATER QUALITY RULES.
- 25. AS DEPICTED ON THE PLAT, ALL WATER QUALITY EASEMENT AREAS ARE SUBJECT TO PERIODIC INSPECTION AND MONITORING BY TRAVIS COUNTY FOR THE PURPOSE OF ENSURING WATER QUALITY COMPLIANCE, AS APPLICABLE, ACCORDING TO SEC. 16.014 OF THE TEXAS WATER CODE.
- 26. NO CUT OR FILL ON ANY LOT MAY EXCEED EIGHT FEET, EXCLUDING DRIVEWAYS, A BUILDING STRUCTURE'S FOOTPRINT, OR A PARKING AREA FOOTPRINT, IN ACCORDANCE WITH THE TRAVIS COUNTY CODE.
- 27. AS DEPICTED ON THE PLAT, THE SETBACK AREA IDENTIFIED FOR EACH WATERWAY IS A PROTECTIVE EASEMENT THAT MUST REMAIN UNDEVELOPED AND ACTIVITIES MUST BE LIMITED WITHIN THE EASEMENT. THE PROTECTIVE EASEMENT MUST REMAIN FREE OF CONSTRUCTION, DEVELOPMENT, AND OTHER ALTERATIONS EXCEPT WHEN SPECIFICALLY APPROVED IN A TRAVIS COUNTY DEVELOPMENT PERMIT.
- 28. BEFORE BEGINNING CONSTRUCTION ACTIVITIES ON A SUBDIVISION LOT, THE OWNER MUST OBTAIN A TRAVIS COUNTY DEVELOPMENT PERMIT AND, WHEN APPLICABLE, OBTAIN AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN (SWP3). THE SWP3 REQUIRES IMPLEMENTATION OF TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES, INCLUDING EROSION AND SEDIMENT CONTROLS, FOR PROTECTION OF STORM WATER RUNOFF QUALITY, IN ACCORDANCE WITH THE TRAVIS COUNTY CODE.
- 29. THE OWNER IS RESPONSIBLE FOR MAINTAINING AND OPERATING ALL PERMANENT WATER QUALITY CONTROLS IN COMPLIANCE WITH ALL APPLICABLE STANDARDS AND REQUIREMENTS OF THE TRAVIS COUNTY CODE.
- 30. AN ACTIVITY THAT MAY ADVERSELY AFFECT A TREE OF EIGHT INCHES OR MORE IN TRUNK DIAMETER (MEASURED AT FOUR FEET HEIGHT ABOVE THE GROUND) IN A RIGHT-OF-WAY ACCEPTED FOR MAINTENANCE BY TRAVIS COUNTY MUST COMPLY WITH ALL STANDARDS AND REQUIREMENTS IN THE TRAVIS COUNTY CODE.

IN APPROVING THIS PLAT, THE COMMISSIONERS COURT OF TRAVIS COUNTY, TEXAS, ASSUMES NO OBLIGATION TO BUILD STREETS, ROADS, AND OTHER PUBLIC THOROUGHFARES SHOWN ON THIS PLAT OR ANY BRIDGES OR CULVERTS IN CONNECTION THEREWITH. THE BUILDING OF ALL STREETS, ROADS, OR OTHER PUBLIC THOROUGHFARES, SHOWN ON THIS PLAT AND ALL BRIDGES AND CULVERTS NECESSARY TO BE CONSTRUCTED OR PLACED IN SUCH STREETS, ROADS, OR OTHER PUBLIC THOROUGHFARES OR IN CONNECTION THEREWITH, IS THE RESPONSIBILITY OF THE OWNER AND/ OR DEVELOPER OF THE TRACT OF LAND COVERED BY THIS PLAT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS, PRESCRIBED BY THE COMMISSIONER'S COURT OF TRAVIS COUNTY, TEXAS.

THE OWNER(S) OF THE SUBDIVISION SHALL CONSTRUCT THE SUBDIVISION'S STREET AND DRAINAGE IMPROVEMENTS (THE "IMPROVEMENTS") TO COUNTY STANDARDS IN ORDER FOR THE COUNTY TO ACCEPT THE PUBLIC IMPROVEMENTS FOR MAINTENANCE OR TO RELEASE FISCAL SECURITY POSTED TO SECURE PRIVATE IMPROVEMENTS. TO SECURE THIS OBLIGATION THE OWNER(S) MUST POST FISCAL SECURITY WITH THE COUNTY IN THE ESTIMATED COST OF THE IMPROVEMENTS. THE OWNER(S) OBLIGATION TO CONSTRUCT THE IMPROVEMENTS TO THE COUNTY STANDARDS AND TO POST THE FISCAL SECURITY TO SECURE SUCH CONSTRUCTION IS A CONTINUING OBLIGATION BINDING ON THE OWNERS AND THEIR SUCCESSORS AND ASSIGNS UNTIL THE PUBLIC IMPROVEMENTS HAVE BEEN ACCEPTED FOR MAINTENANCE BY THE COUNTY, OR PRIVATE IMPROVEMENTS HAVE BEEN CONSTRUCTED AND ARE PERFORMING TO COUNTY STANDARDS.

THE AUTHORIZATION OF THIS PLAT BY THE COMMISSIONERS COURT FOR FILING OR THE SUBSEQUENT ACCEPTANCE FOR MAINTENANCE BY TRAVIS COUNTY, TEXAS, OF ROADS AND STREETS IN THE SUBDIVISION DOES NOT OBLIGATE THE COUNTY TO INSTALL STREET NAME SIGNS, OR ERECT TRAFFIC CONTROL SIGNS, SUCH AS SPEED LIMIT, STOP SIGNS, AND YIELD SIGNS, WHICH IS CONSIDERED TO BE PART OF THE DEVELOPERS CONSTRUCTION

STATE OF TEXAS:  
COUNTY OF TRAVIS:

I, DYANA LIMON-MERCADO, CLERK OF THE COUNTY COURT, OF TRAVIS COUNTY, TEXAS, DO HEREBY CERTIFY THAT ON THE \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ A.D., THE COMMISSIONERS' COURT OF TRAVIS COUNTY, TEXAS, PASSED AN ORDER AUTHORIZING THE FILING FOR RECORD OF THIS PLAT AND THAT SAID ORDER WAS DULY ENTERED IN THE MINUTES OF SAID COURT.

WITNESS MY HAND AND SEAL OF OFFICE OF THE COUNTY COURT OF SAID COUNTY, THE \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ A.D.

DYANA LIMON-MERCADO, COUNTY CLERK  
TRAVIS COUNTY, TEXAS

DEPUTY

STATE OF TEXAS §  
COUNTY OF TRAVIS §

I, DYANA LIMON-MERCADO, CLERK OF TRAVIS COUNTY, TEXAS DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING AND ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ A.D., AT \_\_\_\_\_ O'CLOCK \_\_\_\_ M., DULY RECORDED ON THE \_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ A.D., AT \_\_\_\_\_ O'CLOCK \_\_\_\_ M., PLAT RECORDS OF SAID COUNTY AND STATE IN DOCUMENT NO. \_\_\_\_\_ OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY.

WITNESS MY HAND AND SEAL OF OFFICE OF THE COUNTY CLERK, THIS \_\_\_\_ DAY OF \_\_\_\_ 20\_\_\_\_ A.D.

DYANA LIMON-MERCADO, COUNTY CLERK,  
TRAVIS COUNTY, TEXAS.

DEPUTY

LOT SUMMARY TABLE

COMMERCIAL LOTS	36.4627 ACRES (1,588,315.212 SQ. FT.)
RIGHT-OF-WAY	0.0000 ACRES (0.00 SQ. FT.)
TOTAL	36.4627 ACRES (1,588,315.212 SQ. FT.)

BEARING BASIS:

ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE, (4203), NAD83/CORS, PROJECT CONTROL POINTS WERE ESTABLISHED USING THE "SMARTNET" RTK NETWORK

BENCHMARK LIST

- TBM #2- COTTON SPINDLE SET IN 28'25"10"8" LIVE OAK # 113 ELEV.=1146.48'
- TBM #4- COTTON SPINDLE SET IN 15" LIVE OAK # 193 ELEV.=1140.38'

SWEETWATER CROSSING  
REPLAT Lot 9, Block A,  
Final Plat  
City Of Bee Cave, E.T.J.  
Travis County, Texas



PO Box 90876, Austin Texas 78709  
INFO@4WARDLS.COM (512) 537-2384  
TBPELS FIRM #10174300

Date:	7/11/2023
Project:	01465
Scale:	1" = 100'
Reviewer:	JB
Tech:	WC
Field Crew:	TS/JC
Survey Date:	MAR. 2021
Sheet:	2 OF 2

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



Know what's below.  
Call before you dig.

JOB NUMBER:  
A338-401

FP01

SHEET NO.

03

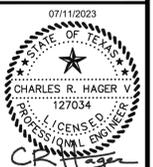
OF 90 SHEETS

COVERT BEE CAVE  
#####

#####  
FINAL PLAT SHEET 2

NO.	DATE	BY	DESCRIPTION
C4	08-17-2022	ADG	ADDITION OF NEW FINAL PLAT

DATE:	07/11/2023
DESIGNED BY:###	
DRAWN BY:###	
CHECKED BY:###	
DWG NAME:	A338-401-FINAL-PLAT-04-08-2022



LJA Engineering, Inc.  
7500 Rialto Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F-1386

## EXHIBIT 82.301B TRAVIS COUNTY STANDARD CONSTRUCTION NOTES FOR SITE DEVELOPMENT

- Each driveway must be constructed in accordance with Travis County Code Section 82.302(g), and each drainage structure or system must be constructed in accordance with the City of Austin Drainage Criteria Manual, unless other design criteria are approved by Travis County.
- Before beginning any construction, the owner must obtain a Travis County development permit and post the development permit, the TCEQ Site Notice, and any other required permits at the job site.
- Construction may not take place within Travis County right-of-way until after the owner has submitted a traffic control plan to Travis County and obtained written approval of the traffic control plan from Travis County REVEGETATION.
- The contractor and primary operator shall follow the sequence of construction and the SWP3 in these approved plans. The contractor and primary operator shall receive specific instructions regarding specific milestones in the sequence of the construction of the site development corresponding to the priority inspections specified in Construction Sequencing notes in these approved plans. Development outside the limits of construction specified in the approved permit and construction plans is prohibited.
- Before beginning any construction, all Storm Water Pollution Prevention Plan (SWP3) requirements shall be met, and the first phase of the temporary erosion control (ESC) plan installed with a SWP3 inspection Report uploaded to mypermwarn.org. All SWP3 and ESC Plan measures and primary operator SWP3 inspections must be performed by the primary operator in accordance with the approved plans and SWP3 and ESC Plan Notes throughout the construction process.
- Before starting construction, the owner or contractor or their designated representatives shall submit a request via the mypermwarn.org customer portal for Travis County to request and schedule a mandatory Preconstruction Conference and ESC Plan Meeting. The contractor shall provide the TCEQ Planning and Engineering Division staff or TNR Storm Water Management Program staff can be contacted by telephone at 512-854-9383.
- The contractor shall keep Travis County TNR assigned inspection staff current on the status of the site development and utility construction. The contractor shall notify Travis County and request priority inspections through the mypermwarn.org customer portal for Travis County in accordance with requirements set forth through 6/20/2016, Item #24 Page 201.

- Contour data source:
- Fill material must be managed and disposed of in accordance with all requirements specified in the approved plans, SWP3, and the Travis County Code. The contractor shall stockpile fill and construction materials only in the areas designated on the approved plans and not within the 100-year flood plain, waterway setback, Critical Environmental Feature setback, or outside the limits of construction. Disposal of solid waste materials, as defined by State law (e.g., litter, tires, decomposable wastes, etc.) is prohibited in permanent fill sites.
- Before disposing any excess fill material off-site, the contractor or primary operator must provide the County Inspector documentation that demonstrates that all required permits for the proposed disposal site location, including Travis County, TCEQ Notice, and other applicable development permits, have been obtained. The owner or primary operator must revise the SWP3 and ESC Plan if handling or placement of excess fill material requires approval from the existing SWP3. If the fill disposal location is outside Travis County or does not require a development permit, the contractor or primary operator must provide the County Inspector the site address, contact information for the property owner of the fill.
- The design engineer is responsible for the adequacy of the construction plans. In reviewing the construction plans, Travis County will rely upon the adequacy of the work of the design engineer.
- In the event of any conflicts between the content in the SWP3 Site Notebook and the content in the construction plans approved by Travis County, the construction plans shall take precedence.
- A minimum of two survey benchmarks shall be set, including description, location, and elevation; the benchmarks should be tied to a Travis County control benchmark when possible.
- Any existing pavement, curbs, sidewalks, or drainage structures within County right-of-way which are damaged, removed, or silted, will be repaired by the contractor at owner or contractor's expense before approval and acceptance of the construction by Travis County.

- Call the Texas Excavation Safety System at 81-1 at least 2 business days before beginning excavation activities.
- All storm sewer pipes shall be Class III RCP, unless otherwise noted.
- Travis County is required to obtain a utility installation permit in accordance with Travis County Code Section 82.301(a)(3) before any construction of utilities within any Travis County right-of-way.
- This project is located on Flood Insurance Rate Map #4453 CO \_\_\_\_\_ E. (Attachments added through 6/20/16, Item #24 Page 202 of 203)
- Temporary stabilization must be performed in all disturbed areas that have ceased construction activities for 14 days or longer, in accordance with the standards described in the SWP3 and ESC Plan Sheet Notes.
- Permanent site stabilization/vegetation must be performed immediately in all site areas which are at final plan grade and in site areas specified in the approved plans for phased re-vegetation, in accordance with the standards described in the SWP3 and ESC Plan Sheet Notes.
- All trees within the right-of-way and drainage easements shall be saved or removed in accordance with the approved construction plans. Travis County tree preservation standards in Travis County Code Section 82.73, including installation and maintenance of all specified tree protection measures, must be followed during construction.
- An Engineer's Concurrence Letter in accordance with Travis County Code Section 82.953 must be submitted via the mypermwarn.org customer portal for Travis County when construction is substantially complete. The Engineer's Concurrence Letter must be submitted before the contractor or primary operator requests a final inspection by Travis County.
- Site improvements must be constructed in conformance with the engineer's construction plans approved by Travis County. Non-conformance with the approved plans will delay final inspection approval by the County until compliance is achieved or any required plan revisions are approved.
- Final Site Stabilization. All areas disturbed by the construction must be permanently revegetated and all temporary sediment controls and accumulated sedimentation must be removed before the County will issue a Certificate of Compliance for final site stabilization as part of final inspection and project completion. Developers Contract, as described in the SWP3 and ESC Notes Sheet may be executed with Travis County for conditional acceptance of a project for which has ESC Fiscal Security posted and for which all items are complete.

## EXHIBIT 82.950 Pre-Construction Conference Planning and Agenda for SWP3 and ESC Plan

- Designated County Inspector(s)
- Design engineer for the approved plans and SWP3, or their representative
- Contractor's Primary Operator(s)
- Primary Operator's qualified inspector responsible for preparing the SWP3 Inspection Reports
- Other stakeholders, as appropriate: municipalities, utilities, etc.

The SWP3 pre-construction conference may be a stand-alone meeting or a part of a larger pre-construction conference, but must include an on-site inspection approval of the first phase of the project's ESC Plan by the County Inspector before construction begins. The County Inspector will discuss the following applicable items in the approved plans and the SWP3 with the participants:

- The SWP3 Site Notebook for the project, including review of completeness, signatures, consistency with the approved construction and ESC plans, and the requirements for maintaining the SWP3 Site Notebook during the construction process.
- The sequence of construction and ESC Plan implementation; sediment basin construction scope prior to full site grading; non-structural erosion source controls; start dates and schedule of events.
- Sediment controls: phasing of perimeter and interior sediment controls during construction; structural erosion source controls such as drainage diversions; ESC maintenance requirements.
- Adequacy of the first ESC phase and future ESC phases to address specific site conditions, and adjustment and revision of the ESC Plan and SWP3 controls during construction.
- Temporary and permanent stabilization and revegetation requirements, including schedule, critical site improvements and priority re-vegetation areas.
- On and off-site temporary and permanent spoil and fill disposal areas, haul roads, staging areas, and stabilized construction entrances and exits.
- Permanent water quality controls construction and County inspections, and related grading and drainage construction.
- Supervision of the SWP3 implementation by the primary operator's designated project manager, including roles, responsibilities, and coordination when more than one operator is responsible for implementation.
- Inspection and preparation of the weekly SWP3 inspection Reports by the primary operator's qualified inspector; report submitted by the primary operator, and SWP3 monitoring inspections conducted by the County Inspector.
- Observation and documentation of existing site conditions adjacent to the limits of construction before construction, including waterways and potential outfall discharge routes, rights-of-way and easements, buffer zones, and critical environmental features.
- Specific site conditions and plan provisions, such as protection of waterways, critical environmental features, trees to be saved and future habitat setting on subdivisions.
- Final plan location, location and rainfall information source to be used during construction and reporting.
- Final inspection and acceptance requirements, including the engineer's concurrence letter, completion of revegetation coverage before the Notice of Termination is submitted by the primary operator, stabilization of residential subdivisions, removal of temporary sediment controls, the Certificate of Compliance and release of ESC fiscal surety.
- Exchange of telephone numbers and contact information for the primary participants. The design engineer shall prepare a meeting agenda, key decisions, key actions, and follow up from the preconstruction conference to all participants within three business days after completion of the conference.

## EXHIBIT 82.301E. SEQUENCE OF CONSTRUCTION AND PRIORITY INSPECTIONS - SITE DEVELOPMENT

- ESC Installation. Install all temporary erosion and sediment controls (ESC) and tree protection measures in accordance with the approved ESC Plan sheets and the SWP3.
  - Have a qualified inspector (as specified in Section 82.934(c)(3) of the Travis County Code) inspect the temporary erosion and sediment controls and prepare a certified SWP3 Inspection Report regarding whether the temporary erosion and sediment controls were installed in conformance with the approved plans;
  - Request the qualified inspector's certified SWP3 Inspection Report to the mypermwarn.org customer portal for Travis County and obtain written approval of the traffic control plan from Travis County REVEGETATION.
  - Upload a mandatory pre-construction meeting with Travis County through the mypermwarn.org customer portal for Travis County giving at least 3 business days notification.
- Pre-construction Meeting and ESC Plan Inspection. Hold a mandatory pre-construction meeting that addresses the items in EXHIBIT 82.950 and the ESC Pre-Construction Inspection by the County and obtain County's approval to start construction. (PRIORITY INSPECTION)
- Inspect for Compliance with SWP3 and ESC Plan. Maintain and inspect the SWP3 controls and prepare and upload a weekly certified SWP3 Inspection Report that includes the contents listed in EXHIBIT 82.951 to the mypermwarn.org customer portal for Travis County. Page 272 of 325
- Construct Sediment Basin(s). Construct any storm water pond(s) first, whenever applicable, to be functional as construction sediment basin(s) before grading and excavating the entire site, as follows: a. Clear, grub, and excavate only the site areas and cut and fill quantities necessary to construct the pond(s) in accordance with these approved plans and the minimum standards described in the SWP3 and ESC Plan Sheet Notes for the temporary sediment basin embankments, walls, inlets, outfalls, drainage conveyance measures, sediment controls, and stabilization. b. Request County inspection and obtain County's written approval of the temporary sediment basin(s) before proceeding further in the sequence of construction. (PRIORITY INSPECTION)
- Construct Site Improvements. Begin the primary site clearing, excavation, and construction activities and continue the SWP3 and ESC Plan implementation and maintenance per the approved plans.
- Construct Driveway Approach and Right-of-Way Improvements. Install driveway approach and drainage and road improvements in the County right-of-way per approved plans, when applicable. Request a County Pre-Pour Inspection of the driveway through the mypermwarn.org customer portal for Travis County giving at least 3 business days notification. (PRIORITY INSPECTION).
- Perform temporary stabilization in all disturbed areas that have ceased construction activities for 14 days or longer.
- Perform permanent site stabilization/vegetation immediately in all site areas at final plan grade and in all site areas specified for phased re-vegetation.
- Complete Permanent Water Quality Controls. Begin completion of permanent water quality control(s) and install the underdrain per approved plans, when applicable. a. Remove construction sediment, re-establish the basin subgrade, and install underdrain piping. b. Request County inspection and obtain County's written approval of the underdrain piping installation and associated construction materials (aggregate, filter media, etc.) before covering the underdrain and proceeding with construction of the control. (PRIORITY INSPECTION).

- Complete construction site improvements and final stabilization per the approved plans.
- Provide Engineer's Concurrence Letter through the mypermwarn.org customer portal for Travis County when construction is substantially complete and request a final inspection by Travis County. (PRIORITY INSPECTION) Page 273 of 325
- Obtain a Certificate of Compliance when all final inspection punch list items, including final site stabilization and removal of temporary sediment controls, if necessary, provide a Developers Contract to the County to request conditional acceptance for use or occupancy of the site with all items completed except re-vegetation growth coverage. Request a re-inspection when re-vegetation coverage is complete. (PRIORITY INSPECTION)

## EXHIBIT 82.951 SWP3 Inspection Areas and Report Contents

- Disturbed areas and the approved limits of construction.
- Perimeter and interior sediment controls.
- Areas undergoing temporary stabilization or permanent vegetation establishment.
- Temporary and permanent fill and spoil storage or disposal areas.
- Storage areas for materials and equipment that are exposed to rainfall.
- Outfall locations and the areas immediately downstream.
- Structural controls, including sediment ponds, sediment traps, and drainage diversions.
- Haul roads and locations where vehicles enter or exit the site, and adjacent roadways for evidence of off-site sediment tracking.
- Waterway crossings and areas adjacent to waterways and critical environmental features.
- Concrete wash out areas and all areas requiring control measures for non-storm water discharges, including dust, solid waste, de-watering, material spills, vehicle maintenance and washing, and wash water discharges.
- Locations of all control measures that require maintenance, including any control measure identified in the previous SWP3 Inspection Report which required maintenance or revision by the owner or primary operator.
- Locations of any discharge of sediment or other pollutants from the site and any disturbance beyond the approved limits of construction. Page 325 of 325
- Locations of control measures that failed to operate as designed or proved inadequate for a particular location.
- Locations where an additional ESC or control measure is needed.

The SWP3 Inspection Report must include:

- Findings as to whether the following structural and non-structural controls required for the site areas listed above are functioning in compliance with the approved SWP3 and ESC Plan.

- Erosion source controls, including the approved sequence of construction and grading plan limits, drainage diversion measures, temporary and permanent fill disposal and stockpile management, and the sequence of construction requirements for the sediment controls.
- Sediment controls, including perimeter and interior controls, sediment traps and basins, and the sequence of construction requirements for the sediment controls.
- Permanent erosion and soil stabilization controls, based on the sequence of construction and critical site improvements, and the cessation of construction activities, including temporary stabilization measures for areas inactive for longer than 14 days, and permanent stabilization measures for areas at final grade.
- Other applicable controls and pollution prevention measures.

- Rainfall documentation:
  - For projects that comprise ten acres or more, the documentation must include rainfall dates and amounts in accordance with Section 82.934(e); and
  - For projects that comprise less than ten acres, the documentation must include accurate rainfall data from a location closest to the site.
- Corrective actions required for any non-compliant items and the schedule for bringing these items into compliance.
- The SWP3 Inspection Report contents must contain the inspection findings for the required areas and control measures listed here and certify whether the site is in compliance with the approved SWP3 and ESC Plan. Either at the time of each SWP3 inspection, or no later than the date of the inspection, the owner's qualified inspector shall prepare and sign a SWP3 Inspection Report. The owner or primary operator shall upload each SWP3 or ESC Plan Inspection Report to the mypermwarn.org customer portal for Travis County. An alternate method of report submission may be used if approved by the County Inspector.

### TCEQ NOTES:

- ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTIONAL SANITATION FOUNDATION (ANSI/SIF) STANDARD 81 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
- THE NATIONAL PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST ALSO BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 20 OR LESS.
- NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.
- WATER TRANSMISSION AND DISTRIBUTION LINES MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE.
- HYDROSTATIC LEAKAGE RATES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY AWWA FORMULAS.
- ALL WATER LINES SHALL BE HYDROSTATIC LEAK TESTED IN CONFORMANCE WITH AWWA C800-93 FOR DUCTILE IRON PIPE AND AWWA C105-94 FOR PVC PIPE.
- ALL WATER LINES SHALL BE DISINFECTED IN CONFORMANCE WITH AWWA C651-92.

## TRAVIS COUNTY EMERGENCY SERVICES DISTRICT NO. 6 FIRE DEPARTMENT - SITE PLAN NOTES

- DESIGNS FOR SITE IMPROVEMENTS SHALL MEET THE CURRENT DESIGN CRITERIA AS REQUIRED BY TCEQ NO. 6.
- ALL MARKS (SITE BOUNDING, FIRE ALARM, FIRE SPRINKLER) SHALL BE SUBMITTED TO LTRF FOR REVIEW. TWO FULL-SIZE SETS ARE REQUIRED. A REVIEW LETTER WILL BE GENERATED. REVIEWS WILL NOT BE PERFORMED UNTIL THE APPLICABLE REVIEW FEES ARE RECEIVED.
- UPON PLAN APPROVAL, A PERMIT WILL BE ISSUED. THE PERMIT MUST BE CONSPICUOUSLY POSTED.
- AN ALL-WEATHER DRIVING SURFACE (FIRE APPARATUS ACCESS) MUST BE INSTALLED IN LOCATIONS SHOWN ON THE SITE PLAN. PRIOR TO ANY BUILDING CONSTRUCTION BEYOND THE FOUNDATION.
- ALL PERVIOUS DECORATIVE PAVINGS SHALL BE ENGINEERED AND INSTALLED FOR 80,000 POUNDS LIVE/HEAVY LOAD. ANY PERVIOUS DECORATIVE PAVING WITHIN 100 FEET OF ANY BUILDING MUST BE APPROVED BY THE FIRE DEPARTMENT.
- VERTICAL CLEARANCE REQUIRED FOR FIRE APPARATUS IS THIRTEEN FEET, SIX INCHES FOR THE FULL 25 FEET WIDTH OF ACCESS DRIVES AND ROUTES FOR INTERNAL CIRCULATION. DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH APPROVED PROVISIONS FOR THE TURNING AROUND OF FIRE APPARATUS, PER FIGURE 8.4 OF THIS MANUAL.
- THE MAXIMUM ALLOWABLE DRIVEWAY, DRIVE ASLE OR FIRE LANE GRADE IS FIFTEEN PERCENT.
- THE MARKINGS OF FIRE LANES MUST BE RED WITH WHITE STENCILING OR WHITE WITH RED STENCILING READING "FIRE LANE - TOW AWAY ZONE" IN LETTERING NO LESS THAN 1 1/2 INCHES IN HEIGHT. THE STENCILING SHALL BE AT INTERVALS OF 35 FEET OR LESS. ALTERNATIVE MARKING OF FIRE LANES MAY BE APPROVED BY THE FIRE CHIEF, OR HIS/HER DESIGNATED AGENT, PROVIDED FIRE LANES ARE CLEARLY IDENTIFIED AT BOTH ENDS AND MARKINGS MUST FACE THE DRIVEWAY OR STREET WITH THREE TO SIX-FOOT SETBACKS FROM THE CURB FINISHES. NO OBSTRUCTION IS ALLOWED WITHIN THREE FEET OF ANY HYDRANT, AND THE FOUR AND ONE-HALF INCH OPENING MUST BE TOTALLY UNOBSTRUCTED FROM THE STREET DRIVEWAY.
- CONTRACTOR SHALL INSTALL BLUE REFLECTIVE MARKERS IN THE PAVEMENT PER TCEQ NO. 6 SPECIFICATIONS. NO IMPROVEMENTS MAY BE OCCUPIED UNTIL THE MARKERS ARE INSTALLED.
- FIRE HYDRANTS SHALL HAVE NATIONAL PIPE THREADS.
- HYDRANTS MUST BE INSTALLED WITH THE CENTER OF THE FOUR AND ONE-HALF INCH STEAMER OPENING AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE FOUR AND ONE-HALF INCH STEAMER OPENING MUST FACE THE DRIVEWAY OR STREET WITH THREE TO SIX-FOOT SETBACKS FROM THE CURB FINISHES. NO OBSTRUCTION IS ALLOWED WITHIN THREE FEET OF ANY HYDRANT, AND THE FOUR AND ONE-HALF INCH OPENING MUST BE TOTALLY UNOBSTRUCTED FROM THE STREET DRIVEWAY.
- CONTRACTOR SHALL INSTALL BLUE REFLECTIVE MARKERS IN THE PAVEMENT PER TCEQ NO. 6 SPECIFICATIONS. NO IMPROVEMENTS MAY BE OCCUPIED UNTIL THE MARKERS ARE INSTALLED.
- THE REGULAR PAVEMENT SHALL HAVE NATIONAL PIPE THREADS.
- A CERTIFIED OR WITNESSED PRESSURE TEST IS REQUIRED FOR ALL WATER MODELS. REQUIRED HYDRANT FLOW TESTS OR SPRINKLER SYSTEM DESIGNS.
- HYDRANTS SHALL BE PAINTED SILVER AND THE BONNET AND CAPS SHALL BE PAINTED THE DESIGNATED COLOR PER THE GALLONS PER MINUTE (GPM) AS FOLLOWS:

CLASS AA	LIGHT BLUE	1500 OR HIGHER GPM
CLASS A	ORANGE	400 - 1499 GPM
CLASS B	RED	LESS THAN 500 GPM
CLASS D	BLACK	OUT OF SERVICE
- COMMERCIAL DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF ONE AND ONE HALF CUBIC YARDS OR GREATER SHALL NOT BE STORED OR PLACED WITHIN THE RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT.
- KEY BOXES / "KEY SWITCHES" (KNOX-BOX® / RAPID ENTRY SYSTEM) SHALL BE INSTALLED IN THE LOCATIONS(S) SHOWN ON THE SITE BUILDING PLANS AS APPROVED BY THE TCEQ NO. 6. CONTRACT LTRF FOR ORDERING INFORMATION. NO IMPROVEMENTS MAY BE OCCUPIED UNTIL THE KEY BOX/KEY SWITCH IS INSTALLED.

### SPECIAL NOTES:

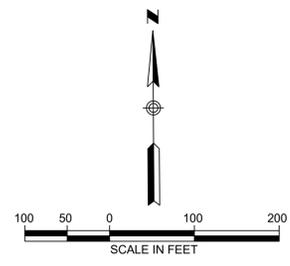
- PAVEMENT CONSTRUCTION SPECIFICATIONS:
  - PAVEMENT SHOULD BE CONSTRUCTED AND TESTED TO MEET THE FOLLOWING REQUIREMENTS:
    - HOT MIX ASPHALTIC CONCRETE SURFACE - ALL MATERIALS AND PLACEMENT OF ASPHALT SHALL CONFORM TO ALL SPECIFICATIONS AND TEST METHODS OUTLINED IN CITY OF AUSTIN STANDARD SPECIFICATIONS ITEMS NO. 301, NO. 302S, AND NO. 304S. ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 91% AND A MAXIMUM OF 96% IN ACCORDANCE WITH TXDOT TEST METHOD TEX-207-F/TEX-227-F.
    - CRUSHED LIMESTONE BASE - THE CRUSHED LIMESTONE BASE SHALL CONFORM TO THE CITY OF AUSTIN STANDARD SPECIFICATION ITEM 210S AND SHALL BE OBTAINED FROM AN APPROVED SOURCE AND SHALL BE FREE OF ALL DELETERIOUS MATERIALS. THE CRUSHED STONE BASE SHALL BE COMPACTED TO A DENSITY TO AT LEAST 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-113-E. SOIL MOISTURE SHOULD BE WITHIN 3% OF OPTIMUM. THE BASE MATERIAL SHOULD EXTEND AT LEAST 18 INCHES BEHIND THE CURB LINE.
    - SUBGRADED SUBGRADE - SUBGRADE SHOULD BE PREPARED BY REMOVING ALL FILL MATERIAL AND THE TOP 8 INCHES OF BROWN SILTY CLAY, ROOTS, AND ORGANIC MATERIALS. IN THE AREA OF BORINGS B-7, B-12, AND B-13, A MINIMUM OF THE TOP 12 INCHES OF BROWN SILTY CLAY, SHOULD BE REMOVED AND REPLACED WITH ADDITIONAL BASE. IN THESE AREAS THERE SHOULD BE A MINIMUM OF 8 INCHES OF ADDITIONAL BASE. THE EXPOSED SUBGRADE SHOULD BE PREPARED BY COMPACTING THE UPPER 8 INCHES TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-113-E OR 114-E. SOIL MOISTURE SHOULD BE WITHIN 3% OPTIMUM. FILL MATERIAL, IF NEEDED TO CONSTRUCT THE SUBGRADE, SHOULD BE A CLEAN SOIL FREE OF ORGANIC MATERIALS, DEBRIS, AND ROCK GREATER THAN 4 INCHES.
    - THE STREET PAVEMENT SHALL BE SLOPED OR CROWNED FOR GOOD DRAINAGE.
    - TESTING - ALL SUBGRADE PREPARATION AND BASE COMPACTATION SHOULD BE INSPECTED AND TESTED BY AN ENGINEERING/TESTING LABORATORY. THE MINIMUM TESTING FREQUENCY IS ONE TEST PER 500 LINEAR FEET OR MINIMUM OF THREE TESTS PER SITE VISIT. THE STREET SUBGRADE EXCAVATION SHOULD BE INSPECTED BY THE ENGINEER TO VERIFY EXTENT AND DEPTH OF REMOVAL OF THE EXPANSIVE CLAY SOILS.
    - FREET STREET EMBANKMENTS - STREET EMBANKMENTS SHOULD BE SLOPED AWAY FROM THE STREET WHERE POSSIBLE AND NO STEEPER THAN 4 (HORIZONTAL) TO 1 (VERTICAL). EMBANKMENTS SHOULD BE COMPACTED TO 95% OF THE OPTIMUM DRY WEIGHT IN ACCORDANCE WITH TXDOT TEST METHOD TEX 114-E AND MOISTURE SHOULD BE WITHIN 3% OPTIMUM.

- HOT MIX ASPHALTIC CONCRETE SURFACE - ALL MATERIALS AND PLACEMENT OF ASPHALT SHALL CONFORM TO ALL SPECIFICATIONS AND TEST METHODS OUTLINED IN CITY OF AUSTIN STANDARD SPECIFICATIONS ITEMS NO. 301, NO. 302S, AND NO. 304S. ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 91% AND A MAXIMUM OF 96% IN ACCORDANCE WITH TXDOT TEST METHOD TEX-207-F/TEX-227-F.
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- SUBGRADED SUBGRADE - SUBGRADE SHOULD BE PREPARED BY REMOVING ALL FILL MATERIAL AND THE TOP 8 INCHES OF BROWN SILTY CLAY, ROOTS, AND ORGANIC MATERIALS. IN THE AREA OF BORINGS B-7, B-12, AND B-13, A MINIMUM OF THE TOP 12 INCHES OF BROWN SILTY CLAY, SHOULD BE REMOVED AND REPLACED WITH ADDITIONAL BASE. IN THESE AREAS THERE SHOULD BE A MINIMUM OF 8 INCHES OF ADDITIONAL BASE. THE EXPOSED SUBGRADE SHOULD BE PREPARED BY COMPACTING THE UPPER 8 INCHES TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-113-E OR 114-E. SOIL MOISTURE SHOULD BE WITHIN 3% OPTIMUM. FILL MATERIAL, IF NEEDED TO CONSTRUCT THE SUBGRADE, SHOULD BE A CLEAN SOIL FREE OF ORGANIC MATERIALS, DEBRIS, AND ROCK GREATER THAN 4 INCHES.
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- PAVEMENT CONSTRUCTION: CONSTRUCTION OF ROADWAYS SHOULD PROCEED IN ACCORDANCE WITH THE CITY OF AUSTIN SPECIFICATIONS:
  - ITEM NO. 105S, CLEARING AND GRUBBING.
  - ITEM NO. 132S, EMBANKMENT (EROSION EMBANKMENT SECTION).
  - ITEM NO. 201S, SUBGRADE PREPARATION.
  - ITEM NO. 210S, FLEXIBLE BASE.
  - ITEM NO. 236S, FOOTING.
  - ITEM NO. 340, HOT MIX CONCRETE PAVEMENT.
- PAVEMENT WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.
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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
OVERALL PROJECT LAYOUT



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—W—	—W—	WATER LINE
⊗	⊗	WATER VALVE
⊕	⊕	FIRE HYDRANT
⊙	⊙	WASTEWATER MANHOLE
⊙	⊙	STORMSEWER MANHOLE
⊙	⊙	1/2" REBAR FOUND (OR AS NOTED)
⊙	⊙	1/2" REBAR WITH CAP FOUND
⊙	⊙	1/2" REBAR WITH CHAPARRAL CAP SET
⊙	⊙	COTTON SPINDLE WITH CHAPARRAL WASHER SET
⊙	⊙	WATER METER
⊙	⊙	UTILITY POLE
⊙	⊙	OVERHEAD UTILITIES
⊙	⊙	ELEC. UTILITY
⊙	⊙	ELEC. MANHOLE
⊙	⊙	LIGHT POLE
⊙	⊙	TELEPHONE UTILITY
⊙	⊙	UNDERGROUND FIBER OPTIC MARKER
⊙	⊙	TELEPHONE MANHOLE
⊙	⊙	UNDERGROUND GAS MARKER
⊙	⊙	CHAIN LINK FENCE

**BENCHMARK LIST**

BM-1: TOP OF A TYPE I TXDOT MONUMENT ON THE SOUTH RIGHT-OF-WAY OF HWY-71 AND 276.48' EAST OF THE NORTHWEST PROPERTY CORNER OF THE L.T.I.S.D. TRACT.  
ELEV. = 1124.86'

BM-2: COTTON SPINDLE SET IN 28°25'10"8" LIVE OAK # 113  
ELEV. = 1146.48'

BM-3: COTTON SPINDLE SET IN 20" LIVE OAK # 145  
ELEV. = 1114.57'

**NOTE:**  
ALL MASS GRADING, PONDS, PHASE 1 UTILITIES, AND IRRIGATION ARE TO BE INSTALLED IN PHASE 1.

**C1**  
ADD PHASING NOTE; REVISED GRADING & WQ / DET POND DESIGNS; MINOR PHASE 1 SITE PLAN REVISIONS, SWAP FUTURE PHASE 2 & 3; FUTURE SITE PLAN REVISED, RESULTING IN STORM, WATER & WW REVISIONS; INCREASED LOC BY 0.63 AC. FOR REVISED MASS GRADING; DECREASE IN IMPERVIOUS COVER BY 0.12 AC. AS A RESULT OF SITE PLAN CHANGES

**C2**  
ADD PHASE 2 SITE PLANS TO PLAN SET

**C4**  
ADD 4-AC PARKING LOT & ASSOCIATED IMPROVEMENTS

**REVISIONS**

NO.	DATE	DESCRIPTION
01	09/12/2022	ADD PHASE 2 SITE PLANS TO PLANS
02	09/12/2022	ADD PHASE 3 SITE PLANS TO PLANS
03	09/12/2022	ADD 4-AC PARKING LOT



**LJA Engineering, Inc.**  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

**JJA Engineering, Inc.**  
7500 Riata Boulevard  
Building II, Suite 100  
Austin, Texas 78735

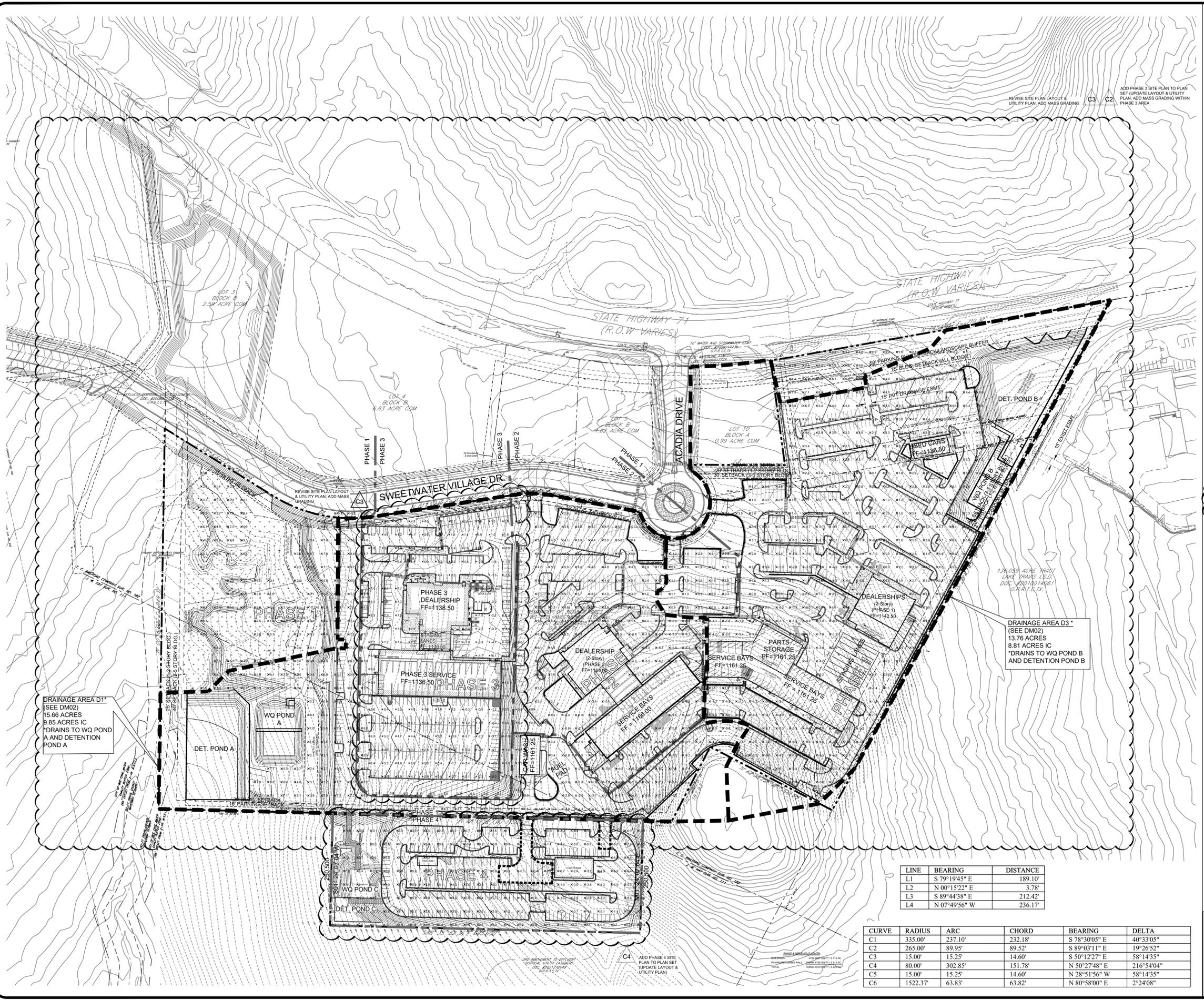
JOB NUMBER:  
A338-401  
OP01  
SHEET NO.  
**5**  
OF 90 SHEETS



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

LINE	BEARING	DISTANCE
L1	S 79°19'45" E	189.10'
L2	N 00°15'22" E	3.78'
L3	S 89°44'38" E	212.42'
L4	N 07°49'56" W	236.17'

CURVE	RADIUS	ARC	CHORD	BEARING	DELTA
C1	335.00'	237.10'	232.18'	S 78°30'05" E	40°33'05"
C2	265.00'	89.95'	89.52'	S 89°03'11" E	19°26'52"
C3	15.00'	15.25'	14.60'	S 50°12'27" E	58°14'35"
C4	80.00'	302.85'	151.78'	N 50°27'48" E	216°54'04"
C5	15.00'	15.25'	14.60'	N 28°51'56" W	58°14'35"
C6	1522.37'	63.83'	63.82'	N 80°58'00" E	2°24'08"

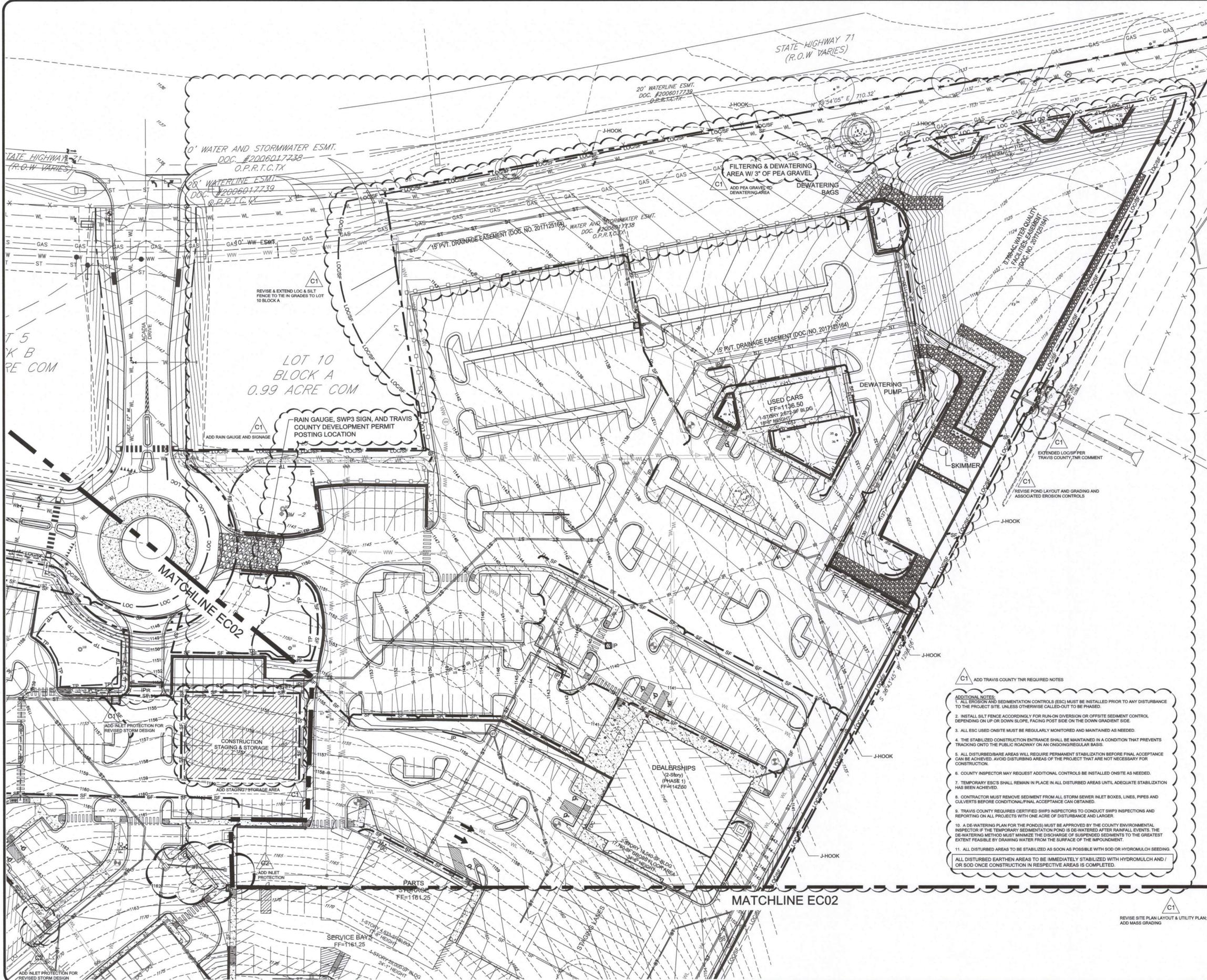


**DRAINAGE AREA D1\***  
(SEE DM02)  
15.66 ACRES  
9.85 ACRES IC  
\*DRAINS TO WQ POND A AND DETENTION POND A

**DRAINAGE AREA D3\***  
(SEE DM02)  
13.76 ACRES IC  
\*DRAINS TO WQ POND B AND DETENTION POND B

13.A338 - Covert Bee Cave Plans A338-401-01-0101 - C4.dwg  
 User: rmanoak  
 Last Modified: Aug 17, 2022 11:07  
 Plot Date/Time: Sep 12, 2022 14:44:24



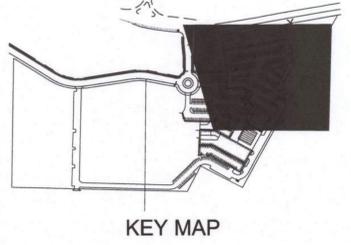


**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
RB		ROCK BERM
SCE		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

- NOTES:**
- CONTRACTOR SHALL PROVIDE INLET PROTECTION AS EACH PROPOSED INLET IS INSTALLED.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT LIMBS AND ROOT SYSTEMS OF ALL TREES OUTSIDE LIMITS BY NOT PARKING UNDER TREES, NOT DRIVING EQUIPMENT OVER ROOT ZONES AND NOT STORING MATERIALS UNDER TREES. PROTECTION OF VEGETATION TO REMAIN SHALL INCLUDE NOT ONLY HARDWOODS, BUT CEDARS AND UNDERBRUSH.
  - ALL VEGETATION WITHIN LIMITS OF CONSTRUCTION AND NOT LOCATED WITHIN AREAS OF CUT/FILL SHALL BE PROTECTED TO THE EXTENT FEASIBLE.
  - TREES TO REMAIN THAT ARE LOCATED INSIDE THE SILT FENCE AND/OR ORANGE MESH FENCE SHALL HAVE TREE PROTECTION FENCING.
  - TEMPORARY STORAGE AND STOCKPILE AREAS SHALL BE USED DURING TIME OF CONSTRUCTION BUT SHALL BE RESTORED AND REVEGETATED.
  - ALL STORM DRAIN LINES ARE TO BE AT A MINIMUM OF FIVE FEET FROM CENTERLINE OF PIPE TO FACE OF TREE. ANY STORM DRAIN LINES TO BE PLACED WITHIN A TREE'S DRIP LINE MUST BE SAWCUT PRIOR TO TRENCHING.
  - PRIOR TO EXCAVATION WITHIN TREE DRIFLINES, OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING, AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH FOUR (4) INCHES OF ORGANIC MULCH TO BE PRODUCED ON SITE, TO MINIMIZE SOIL COMPACTION.
  - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY AS NECESSARY DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
  - WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SITE EROSION CONTROLS, SEDIMENT REMOVAL SHALL BE PROVIDED AS NOTED ON THE PLANS. REPAIR TO SILT FENCE AND ORANGE MESH FENCING/CHAINLINK FENCING SHALL BE PROVIDED TO INSURE: 1) ORANGE MESH FENCE / SILT FENCE REMAINS IN PLACE AND STANDING AT ALL TIMES. 2) SILT FENCING TO BE REPLACED / REPAIRED DUE TO CONTRACTOR DAMAGE OR ANY DAMAGE DUE TO STORM WATER DURING RAIN EVENTS.
  - DEWATERING OF THE TEMPORARY POND WILL BE PROVIDED TO ENSURE THERE IS ADEQUATE STORAGE FOR THE FOLLOWING RAIN EVENT. CONTRACTOR SHALL PROVIDE ADEQUATE FILTRATION DURING PUMPING TO ENSURE SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
  - THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD / MODIFY EROSION / SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
  - CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.3(D), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
  - SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.3.(G).
  - ROUGH SITE GRADING WILL BE CONSTRUCTED IN PHASE ONE AND SHALL IGNORE PHASING LINES. THE REMAINING IMPROVEMENTS FOR PHASE ONE SHALL ADHERE TO THE PHASING LINES. EROSION CONTROLS MEASURES AND SEEDING MUST BE INSTALLED ACROSS THE ENTIRE LIMITS OF CONSTRUCTION TO AVOID EROSION.
  - CONCRETE WASHOUT LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTED ON THE SITE MAP AT THAT TIME.
  - POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ON SITE.
  - MUD AND OR DIRT TRACKED INTO THE ROADWAY MUST BE IMMEDIATELY REMOVED UPON DISCOVERY.
  - EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY THE CITY OF AUSTIN PRIOR TO TRANSPORTATION.
  - LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ON SITE.
  - INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
  - EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY THE CITY OF AUSTIN PRIOR TO TRANSPORTATION.
  - INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
  - SEE SHEET REB1 FOR SITE STABILIZATION AND RESTORATION PLAN. C1

- ADDITIONAL NOTES:**
- ALL EROSION AND SEDIMENTATION CONTROLS (ESC) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE TO THE PROJECT SITE, UNLESS OTHERWISE CALLED-OUT TO BE PHASED.
  - INSTALL SILT FENCE ACCORDINGLY FOR RUN ON DIVERSION OR OFFSITE SEDIMENT CONTROL DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
  - ALL ESC USED ON SITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
  - THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
  - ALL DISTURBED/BARE AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED. AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
  - COUNTY INSPECTOR MAY REQUEST ADDITIONAL CONTROLS BE INSTALLED ON SITE AS NEEDED.
  - TEMPORARY ESC'S SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN ACHIEVED.
  - CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
  - TRAVIS COUNTY REQUIRES CERTIFIED SWP3 INSPECTORS TO CONDUCT SWP3 INSPECTIONS AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
  - A DEWATERING PLAN FOR THE POND(S) MUST BE APPROVED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DEWATERED AFTER RAINFALL EVENTS. THE DEWATERING METHOD MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS TO THE GREATEST EXTENT FEASIBLE BY DRAWING WATER FROM THE SURFACE OF THE IMPOUNDMENT.
  - ALL DISTURBED AREAS TO BE STABILIZED AS SOON AS POSSIBLE WITH SOC OR HYDROMULCH SEEDING.
  - ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOC ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

**811**  
Know what's below.  
Call before you dig.

**COVER BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
EROSION & SEDIMENTATION CONTROL & TREE PROTECTION**

NO.	DATE	DESCRIPTION	BY	DATE
C1	06/17/2019	REVISE EROSION PLAN AS A RESULT OF REVISED SITE PLAN LAYOUT / UTILITY PLAN / MASS GRADING. ADD NOTES	CRH	9/7/2018
C2		ADD INLET PROTECTIONS AND PHASE 2 SITE PLANS TO PLANS	CRH	9/30/2019

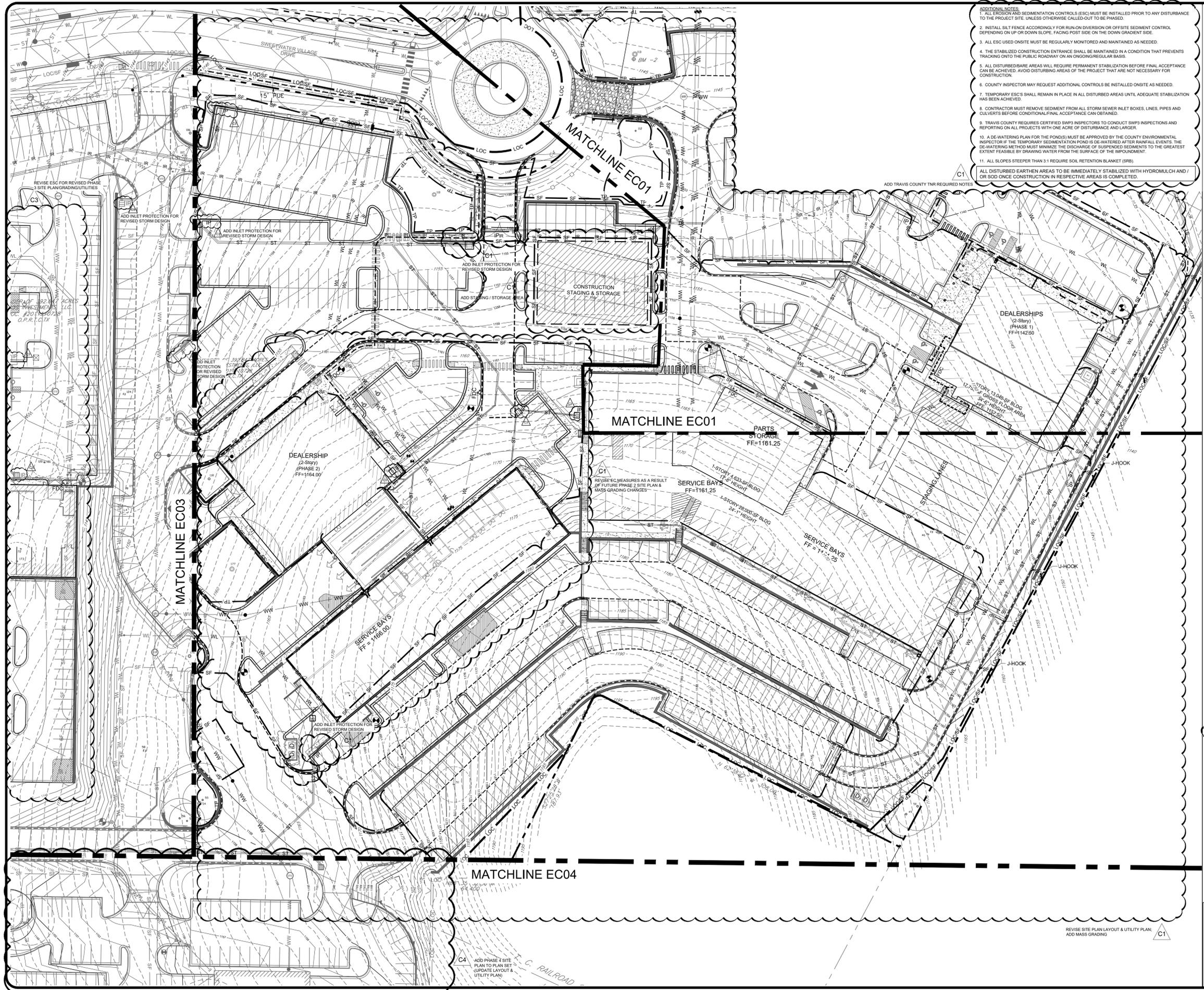
DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DRAWING NUMBER: 442-EC01

**CRH**  
Charles R. Hager  
Professional Engineer  
License No. 127034  
12/03/14

**LJA Engineering, Inc.**  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4746  
FRN-F-1386

JOB NUMBER: A338-401  
SHEET NO. **7** OF 90 SHEETS  
EC01

1/4/2019 - Cover Bee Cave Phase 2 Revision Plans A338-401-F-EC01.dwg  
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Plot Date: 09/19/18



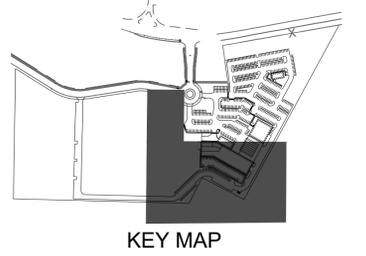
- ADDITIONAL NOTES:**
1. ALL EROSION AND SEDIMENTATION CONTROLS (ESC) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE TO THE PROJECT SITE. UNLESS OTHERWISE CALLED-OUT TO BE PHASED.
  2. INSTALL SILT FENCE ACCORDINGLY FOR RUN-ON DIVERSION OR OFFSITE SEDIMENT CONTROL DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
  3. ALL ESC USED ONSITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
  4. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
  5. ALL DISTURBED AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED. AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
  6. COUNTY INSPECTOR MAY REQUEST ADDITIONAL CONTROLS BE INSTALLED ONSITE AS NEEDED.
  7. TEMPORARY ESC'S SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN ACHIEVED.
  8. CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
  9. TRAVIS COUNTY REQUIRES CERTIFIED SWPS INSPECTORS TO CONDUCT SWPS INSPECTIONS AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
  10. A DEWATERING PLAN FOR THE POND(S) MUST BE APPROVED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DEWATERING METHOD MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS TO THE GREATEST EXTENT FEASIBLE BY DRAINING WATER FROM THE SURFACE OF THE IMPROVEMENT.
  11. ALL SLOPES STEEPER THAN 3:1 REQUIRE SOIL RETENTION BLANKET (SRB).
- ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOD ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.

40 20 0 40 80  
SCALE IN FEET

**LEGEND**

PROPOSED	EXISTING	
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
RB		ROCK BERM
SCE		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN
		TREE TO BE REMOVED
800	-800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

- NOTES:**
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  3. ALL VEGETATION WITHIN LIMITS OF CONSTRUCTION AND NOT LOCATED WITHIN AREAS OF CUT/FILL SHALL BE PROTECTED TO THE EXTENT FEASIBLE.
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  7. PRIOR TO EXCAVATION WITHIN TREE DRIP LINES, OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  8. IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING, AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH FOUR (4) INCHES OF ORGANIC MULCH TO BE PRODUCED ON SITE, TO MINIMIZE SOIL COMPACTION.
  9. PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  10. WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY AS NECESSARY DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
  11. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEAKING OF LIME INTO THE SOIL.
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  14. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
  15. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
  16. SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.2(G).
  17. ROUGH SITE GRADING WILL BE CONSTRUCTED IN PHASE ONE AND SHALL IGNORE PHASING LINES. THE REMAINING IMPROVEMENTS FOR PHASE ONE SHALL ADHERE TO THE PHASING LINES. EROSION CONTROLS MEASURES AND SEEDING MUST BE INSTALLED ACROSS THE ENTIRE LIMITS OF CONSTRUCTION TO AVOID EROSION.
  18. CONCRETE WASHOUT LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTED ON THE SITE MAP AT THAT TIME.
  19. POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ONSITE.
  20. MUD AND OR DIRT TRACKED INTO THE ROADWAY MUST BE IMMEDIATELY REMOVED UPON DISCOVERY.
  21. EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY COUNTY INSPECTOR.
  22. LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ONSITE.
  23. INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
  24. PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
  25. SEE SHEET REV1 FOR SITE STABILIZATION AND RESTORATION PLAN.



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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
EROSION & SEDIMENTATION CONTROL & TREE PROTECTION**

NO.	REVISION	DESCRIPTION	DATE	BY
C1		REVISE EROSION PLAN AS A RESULT OF REVISED SITE PLAN	09/12/2022	CRH
C2		LAYOUT/UTILITY PLAN MASS GRADING, ADD NOTES	09/12/2022	CRH
C3		ADD INLET PROTECTIONS AND PHASE 2 SITE PLANS TO PLANS	09/12/2022	CRH
C4		REVISE EROSION PLAN AS A RESULT OF FUTURE PHASE 3 SITE PLAN & MASS GRADING CHANGES	09/12/2022	CRH
		ADDED PHASE 1 SITE PLAN TO SHEETS	09/12/2022	RJS

DESIGNED BY: JES  
DRAWN BY: JTS  
CHECKED BY: SDM  
DWG NAME: 031501.DWG

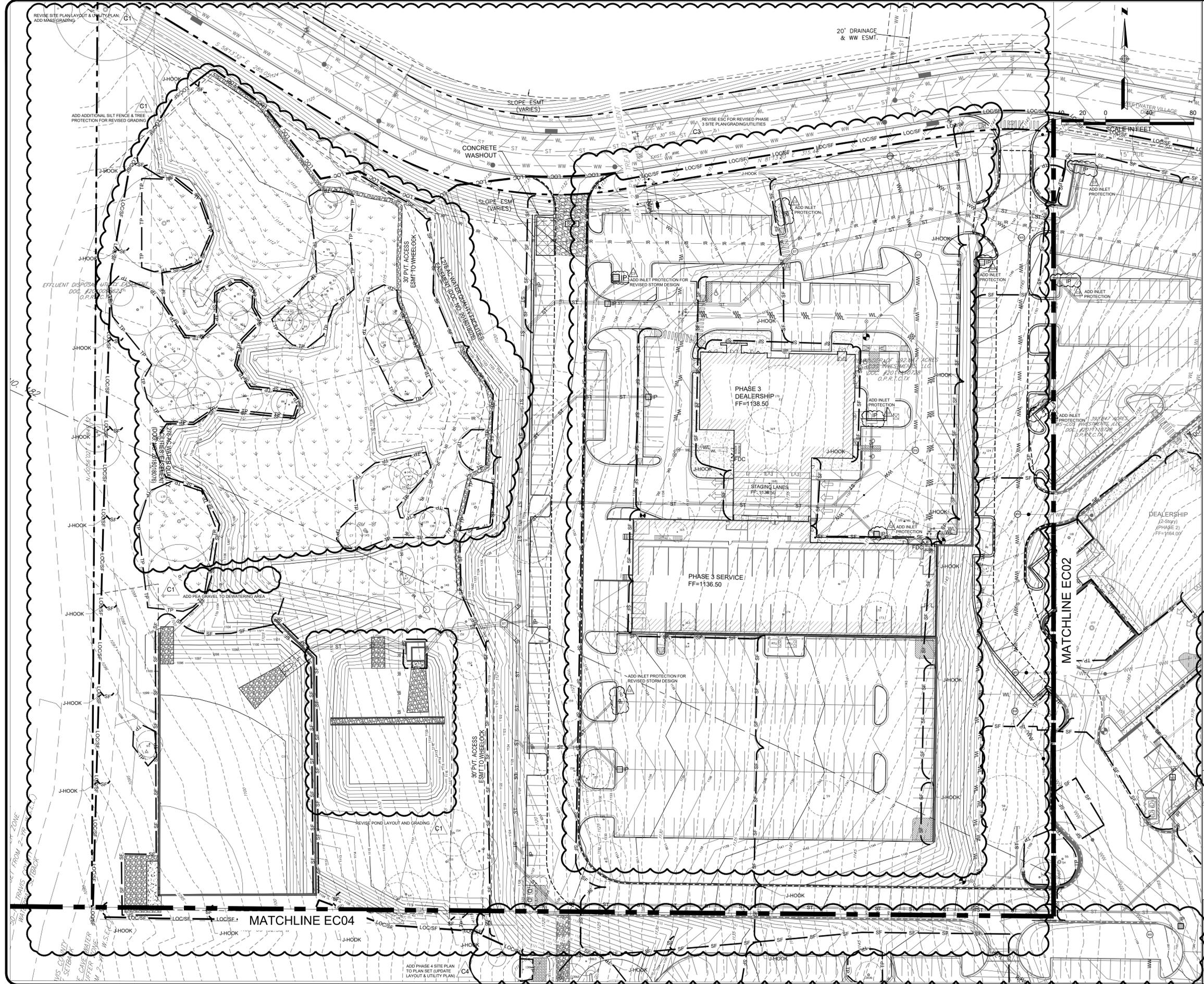
09/12/2022

**CHARLES R. HAGER**  
127034  
PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
7500 Riata Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F-1386

JOB NUMBER: A338-401  
EC02  
SHEET NO. 8 OF 90 SHEETS

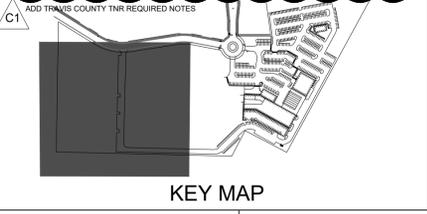
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Plot Date/Time: Sep 22, 2022 1:43:29 PM



**LEGEND**

PROPOSED	EXISTING	LIMITS OF CONSTRUCTION
LOC	LOC	SILT FENCE
SF	SF	LIMITS OF CONST./SILT FENCE
LOC/SF	LOC/SF	TREE PROTECTION
TP	TP	INLET PROTECTION
IP	IP	ROCK BERM
RB	RB	STABILIZED CONSTRUCTION ENTRANCE
SCE	SCE	CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

- NOTES:**
- CONTRACTOR SHALL PROVIDE INLET PROTECTION, AS EACH PROPOSED INLET IS INSTALLED.
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  - ALL VEGETATION WITHIN LIMITS OF CONSTRUCTION AND NOT LOCATED WITHIN AREAS OF CUT/FILL SHALL BE PROTECTED TO THE EXTENT FEASIBLE.
  - TREES TO REMAIN THAT ARE LOCATED INSIDE THE SILT FENCE AND/OR ORANGE MESH FENCE SHALL HAVE TREE PROTECTION FENCING.
  - TEMPORARY STORAGE AND STOCKPILE AREAS SHALL BE USED DURING TIME OF CONSTRUCTION BUT SHALL BE RESTORED AND REVEGETATED.
  - ALL STORM DRAIN LINES ARE TO BE AT A MINIMUM OF FIVE FEET FROM CENTERLINE OF PIPE TO FACE OF TREE. ANY STORM DRAIN LINES TO BE PLACED WITHIN A TREE'S DRIP LINE MUST BE SAWCUT PRIOR TO TRENCHING.
  - PRIOR TO EXCAVATION WITHIN TREE DRIP LINES, OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING, AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH FOUR (4) INCHES OF ORGANIC MULCH TO BE PRODUCED ON SITE, TO MINIMIZE SOIL COMPACTION.
  - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY AS NECESSARY DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
  - WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SITE'S EROSION CONTROL. SEDIMENT REMOVAL SHALL BE PROVIDED AS NOTED ON THE PLANS. REPAIR TO SILT FENCE AND ORANGE MESH FENCING/CHAINLINK FENCING SHALL BE PROVIDED TO INSURE: 1) ORANGE MESH FENCE / SILT FENCE REMAINS IN PLACE AND STANDING AT ALL TIMES. 2) SILT FENCE TO BE REPLACED / REPAIRED DUE TO CONTRACTOR DAMAGE OR ANY DAMAGE DUE TO STORM WATER DURING RAIN EVENTS.
  - DEWATERING OF THE TEMPORARY POND WILL BE PROVIDED TO ENSURE THERE IS ADEQUATE STORAGE FOR THE FOLLOWING RAIN EVENT. CONTRACTOR SHALL PROVIDE ADEQUATE FILTRATION DURING PUMPING TO ENSURE SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
  - THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/ SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
  - CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.2(5), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
  - SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.2(5).
  - ROUGH SITE GRADING WILL BE CONSTRUCTED IN PHASE ONE AND SHALL IGNORE PHASING LINES. THE REMAINING IMPROVEMENTS FOR PHASE ONE SHALL ADHERE TO THE PHASING LINES. EROSION CONTROL MEASURES AND SEEDING MUST BE INSTALLED ACROSS THE ENTIRE LIMITS OF CONSTRUCTION TO AVOID EROSION.
  - CONCRETE WASHOUT LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTED ON THE SITE MAP AT THAT TIME.
  - POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ON SITE.
  - MUD AND OR DIRT TRACKED INTO THE ROADWAY MUST BE IMMEDIATELY REMOVED UPON DISCOVERY.
  - EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY COUNTY INSPECTOR.
  - LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ON SITE.
  - INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
  - INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
  - SEE SHEET EC01 FOR SITE STABILIZATION AND RESTORATION PLAN.
- ADDITIONAL NOTES:**
- ALL EROSION AND SEDIMENTATION CONTROLS (ESCS) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE TO THE PROJECT SITE, UNLESS OTHERWISE CALLED OUT TO BE PHASED.
  - INSTALL SILT FENCE ACCORDINGLY FOR RUN-ON DIVERSION OR OFFSITE SEDIMENT CONTROL, DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
  - ALL ESCS USED ON SITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
  - THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
  - ALL DISTURBED AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED. AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
  - COUNTY INSPECTOR MAY REQUEST ADDITIONAL CONTROLS BE INSTALLED ON SITE AS NEEDED.
  - TEMPORARY ESCS SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN ACHIEVED.
  - CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
  - TRAVIS COUNTY REQUIRES CERTIFIED SWP3 INSPECTORS TO CONDUCT SWP3 INSPECTIONS AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
  - A DE-WATERING PLAN FOR THE POND(S) MUST BE PROVIDED BY THE COUNTY ENVIRONMENTAL INSPECTOR. IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS, THE DE-WATERING METHOD MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS TO THE GREATEST EXTENT FEASIBLE BY DRAINING WATER FROM THE SURFACE OF THE IMPROVEMENT.
  - ALL SLOPES STEEPER THAN 3:1 REQUIRE SOIL RETENTION BLANKET (SRB).
  - ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOD ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

**811**  
Know what's below. Call before you dig.

**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
EROSION & SEDIMENTATION CONTROL & TREE PROTECTION**

NO.	REVISIONS	DESCRIPTION	DATE	BY
C1	REVISE EROSION PLAN AS RESULT OF REVISED SITE PLAN	CRH	9/17/2018	
C2	LAYOUT / UTILITY PLAN / MASS GRADING, ADD NOTES	CRH	8/30/2019	
C3	ADD INLET PROTECTIONS AND PHASE 2 SITE PLANS TO PLANS	CRH	6/29/2021	
C4	REVISE EROSION PLAN AS RESULT OF REVISED SITE PLAN	RJS	08/17/2022	

DATE: 09/12/2022  
DESIGNED BY: KES  
DRAWN BY: JTS  
CHECKED BY: SDM  
DWG NAME: 180425-18-001-0000-0000

09/12/2022  
**CHARLES R. HAGER**  
127034  
PROFESSIONAL ENGINEER  
LICENSED IN THE STATE OF TEXAS

**LJA Engineering, Inc.**  
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FRN-F-1386

JOB NUMBER: A338-401  
EC03  
SHEET NO. 9 OF 90 SHEETS

180425-18-001-0000-0000-0000-0000  
User: rmanoak  
Last Modified: Aug 17, 2022 - 11:18  
Plot Date/Time: Sep 12, 2022 - 14:53:45

**Existing Conditions - Time of Concentration Calculations (As Calculated / Modeled in Pond Pack)**

Drainage Area	L(ft)	Slope	SHEET 2-Year P	n	Tc (Min.)	SCF		Tc (Min.)	Open Channel L(ft)	Tc (Min.)	Street L(ft)	Tc (Min.)	Total Tc (Min.)
						L(ft)	Slope						
E1	100	11.00%	3.44	0.15	4.78	1195	8.41%	4.254	-	-	-	-	9.03
E2	100	12.50%	3.44	0.15	4.56	383	8.90%	1.50	-	-	-	-	11.52
						182	3.50%	0.72	-	-	-	-	
						285	5.00%	1.44	-	-	-	-	
						640	5.20%	1.86	-	-	-	-	
						140	3.75%	1.44	-	-	-	-	
E3	100	6.50%	3.44	0.15	5.90	525	10.24%	1.69	-	-	-	-	9.64
						473	5.71%	2.05	-	-	-	-	
E4	100	13.50%	3.44	0.15	4.40	340	10.29%	1.09	-	-	-	-	8.01
						515	4.47%	2.51	-	-	-	-	

**SCS TR-55  
Drainage Area Calculations  
Covert - Bee Cave**  
Type III 24hr Rainfall Distribution  
IDF Curves Based on City of Austin Criteria Manual (2yr = 3.44 in.)

**Existing Conditions Drainage Calculations (Per Pond Pack Existing Model)**

AREA NAME	AREA AC.	IC AC.	Type D (Fair) (AC.)	Composite CN	Tc Min.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS	Study Point
E1	7.847	0.000	7.847	82	9.03	12.75	29.48	39.50	56.13	#1
E2	11.105	0.000	11.105	82	11.52	17.41	40.57	54.24	76.91	#2
E3	9.887	0.000	9.887	82	9.64	15.98	36.95	49.30	69.75	#3
E4	5.078	0.000	5.078	82	8.01	8.38	19.61	26.24	37.24	#4

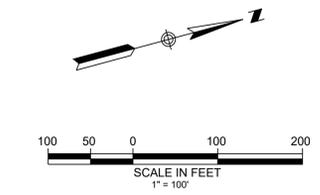
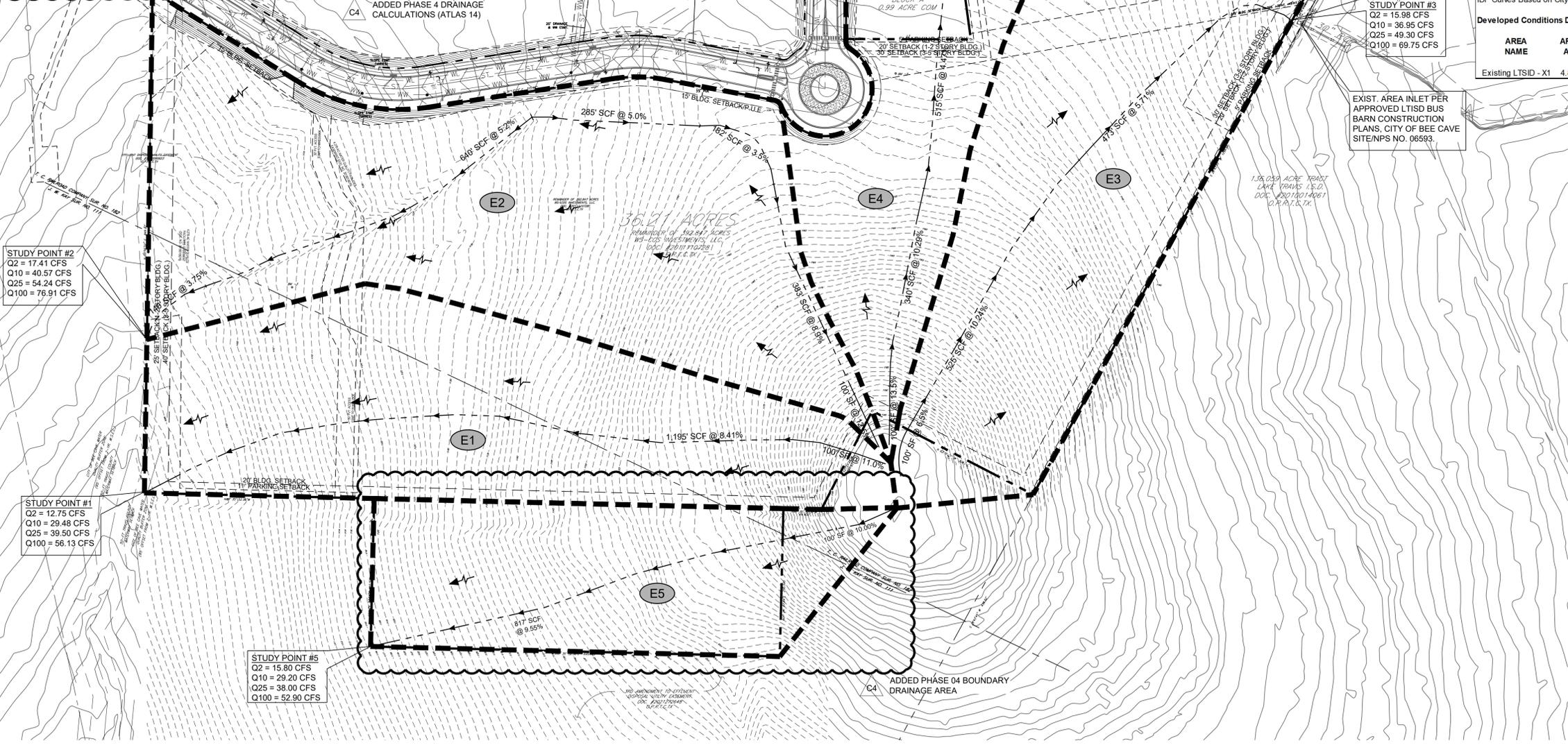
**Drainage Area Calculations  
Covert - Bee Cave - Phase 4  
NOAA ATLAS 14 HEC-HMS 24hr Rainfall Distribution Precipitation Data for Zone 1, City of Austin, Texas**

**Existing Conditions Drainage Calculations (Per HEC HMS Existing Model)**

AREA NAME	AREA AC.	AREA M <sup>2</sup>	IC AC.	Type D (Fair) (AC.)	Composite CN	Tc Min.	Tc Lag	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS	Study Point
E5	4.557	0.00712	0.000	4.557	82	7.70	4.62	15.80	29.20	38.00	52.90	#5

**Existing Conditions - Time of Concentration Calculations**

Drainage Area	L(ft)	Slope	SHEET 2-Year P	n	Tc (Min.)	SCF		Tc (Min.)	Open Channel L(ft)	Tc (Min.)	Street L(ft)	Tc (Min.)	Total Tc (Min.)
						L(ft)	Slope						
E5	100	10.00%	3.44	0.15	5.00	817	9.55%	2.70	-	-	-	-	7.70



**LEGEND**

- 10 2.59 ACRES
- DRAINAGE AREA
- PROPERTY LINE
- TC PATH
- SF
- SCF
- Q25 = 16.64 cfs
- Q100 = 23.62 cfs
- Q25
- Q100
- FLOW DIRECTION ARROW

**SCS TR-55  
Drainage Area Calculations  
Covert - Bee Cave**  
Type III 24hr Rainfall Distribution  
IDF Curves Based on City of Austin Criteria Manual (2yr = 3.44 in.)

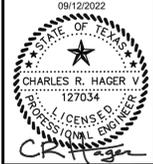
**Developed Conditions Drainage Calculations**

AREA NAME	AREA AC.	IC AC.	Type D-Fair (AC.)	Composite CN	Tc Hr.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS
Existing LTISD - X1	4.820	0.000	4.820	72	18.300	3.92	11.83	16.90	25.59

REFERENCE: Lake Travis ISD Educational Facilities, Phase 1 Transportation and Distribution Center (City of Bee Cave Site Development)

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	DATE
1	08/17/2022	ADDED PHASE 04 SITE LAYOUT AND EXISTING DRAINAGE AREA	RJS	



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FRN-F-1386

JOB NUMBER: A338-401

SHEET NO. **10** OF 90 SHEETS

**811**  
Know what's below.  
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I:\A338 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-01-P-001\_C4.dwg  
 User: rmanok  
 Last Modified: Aug 17, 2022 1:34:46 PM  
 Plot Date/Time: Sep 22, 2022 1:44:57 PM

Developed Conditions - Time of Concentration Calculations (As Calculated / Modeled in Pond Pack)

Drainage Area	L(ft)	SHEET	Slope	2-Year P	n	Tc (Min.)	SCF	Slope	Tc (Min.)	Open Channel	Tc (Min.)	Street	Tc (Min.)	Total Tc (Min.)
D1														5.00
D2	100		6.00%	3.44	0.15	6.09	350	4.79%	1.65					7.74
D3														5.00
D4														5.00

SCS TR-55  
Drainage Area Calculations  
Covert Bee Cave  
Type III 24hr Rainfall Distribution  
IDF Curves Based on City of Austin Criteria Manual (2yr = 3.44 in.)

Developed Conditions Drainage Calculations (Per Pond Pack Developed Model)

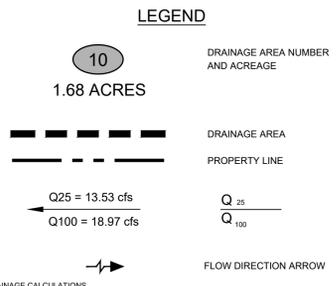
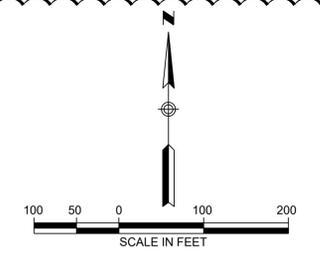
AREA NAME	AREA AC.	IC Ac.	Pasture Type D-Fair (AC.)	Composite CN	Tc Min.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS	
STUDY POINT #1 - Detained	D1	15.655	9.845	5.810	93	5.000	40.45	76.63	97.30	131.42
STUDY POINT #2 - Not Detained	D2	3.849	0.000	3.849	82	7.740	6.40	14.96	20.01	28.39
STUDY POINT #3 - Detained	D3	13.763	8.809	4.954	93	5.000	35.73	67.51	85.66	115.63
STUDY POINT #4 - Not Detained	D4	0.651	0.000	0.651	82	5.000	1.08	2.52	3.37	4.79

Drainage Area Calculations  
Covert Bee Cave - Phase 4  
NOAA ATLAS 14 HEC-HMS 24hr Rainfall Distribution Precipitation Data for Zone 1, City of Austin, Texas  
Developed Conditions Drainage Calculations (Per HEC HMS Developed Model)

AREA NAME	AREA AC.	AREA MI <sup>2</sup>	IC Ac.	Pasture Type D-Fair (AC.)	Composite CN	Tc Min.	Tc Lag Min.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS
D5	2.873	0.00449	2.414	0.459	95	5.00	3.00	15.70	24.30	29.80	39.50
D5-OS	1.799	0.00281	0.000	1.799	82	5.00	3.00	6.40	12.20	16.20	22.60
STUDY POINT #5						14.00		27.60	36.10	50.10	

DETENTION POND C SUMMARY

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	15.70	12.04	9.20	12.09	1,120.10
10YR	24.30	12.04	17.30	12.08	1,121.00
25YR	29.80	12.04	22.20	12.07	1,121.50
100YR	39.50	12.04	30.20	12.07	1,122.20



OVERALL DRAINAGE SUMMARY AT STUDY POINT #1

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED DETAILED COND. (CFS)
2YR	12.75	12.69
10YR	29.48	27.67
25YR	39.50	36.97
100YR	56.13	51.42

OVERALL DRAINAGE SUMMARY AT STUDY POINT #2

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED COND. (CFS)
2YR	17.41	6.40
10YR	40.57	14.96
25YR	54.24	20.01
100YR	76.91	28.39

OVERALL DRAINAGE SUMMARY AT STUDY POINT #3

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED DETAILED COND. (CFS)
2YR	15.98	3.20
10YR	36.95	6.42
25YR	49.30	10.52
100YR	69.75	18.83

OVERALL DRAINAGE SUMMARY AT STUDY POINT #4

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED COND. (CFS)
2YR	8.38	1.08
10YR	19.61	2.52
25YR	26.24	3.37
100YR	37.24	4.79

OVERALL DRAINAGE SUMMARY AT STUDY POINT #5

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED COND. (CFS)
2YR	15.80	14.00
10YR	29.20	27.60
25YR	38.00	36.10
100YR	52.90	50.10

DETENTION POND A SUMMARY

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	40.45	12.10	12.69	12.40	1,096.23
10YR	76.63	12.10	27.67	12.35	1,097.90
25YR	97.30	12.10	36.97	12.35	1,098.74
100YR	131.42	12.10	51.42	12.35	1,100.19

DETENTION POND B SUMMARY

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	35.73	12.10	3.20	13.15	1,119.06
10YR	67.51	12.10	6.42	13.05	1,121.69
25YR	85.66	12.10	10.52	12.75	1,122.91
100YR	115.63	12.10	18.83	12.60	1,124.78

1. THE EXISTING LUISID X1 DRAINAGE AREA IS SHOWN ON THE LUISID TRANSPORTATION & DISTRIBUTION CENTER PROJECT (CITY OF BEE CAVE SITE DEVELOPMENT PERMIT NUMBER 06598) PLANS AS BEING 4.82-ACRES. THIS AREA WAS DERIVED BY DELINEATING THE STUDY POINT USING LIDAR TOPOGRAPHY. FOR PURPOSES OF THE PROPOSED LJA ANALYSIS, LJA USED FIELD-GATHERED TOPOGRAPHY THAT PRODUCED A DRAINAGE AREA OF 13.763-ACRES. IN ORDER TO DETAIN SITE FLOWS BELOW EXISTING CONDITIONS, LJA ASSUMED THE EXISTING FLOWS TO BE THOSE REPORTED IN THE LUISID TRANSPORTATION & DISTRIBUTION CENTER PROJECT PLANS. AS SHOWN ON THE PLANS, THE EXISTING AND PROPOSED FLOWS ARE CONVEYED BY THE EXISTING SYSTEM WITH THE HGL'S FOR THE 100-YR AND 25-YR STORM EVENTS INSIDE THE EXISTING PIPE.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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REVISIONS

NO.	DATE	DESCRIPTION
C1	01/09/2022	REVISE SITE PLAN LAYOUT & UTILITY PLAN. ADD MASS GRADING.
C2	09/06/2020	REVISE POND DESIGN. UPDATE CALCULATIONS.
C3	09/20/2021	UPDATE MAP TO INCLUDE REVISED PHASE 3 SITE PLANS, GRADING AND UTILITIES.
C4	01/17/2022	UPDATE MAP TO INCLUDE REVISED PHASE 4 SITE PLANS, GRADING AND UTILITIES. ADDITION OF PHASE 4 DRAINAGE TABLES.

DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DATE: 09/12/2022

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7500 Rialto Boulevard  
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FRN-F-1386

JOB NUMBER: A338-401

DM02

SHEET NO. 11 OF 90 SHEETS

I:\A338 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401-FR-002 - C4.rvt  
 User: rmanok  
 Last Modified: Aug 17, 2022 1:35:44 PM  
 Plot Date/Time: Sep 12, 2022 1:42:08 PM

COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
ONSITE DRAINAGE AREA MAP

NO.	DATE	DESCRIPTION
C1	09/12/2022	REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING
C2	09/12/2022	REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING
C3	09/12/2022	REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING
C4	09/12/2022	ADDED PHASE 04 SITE LAYOUT AND DRAINAGE BASINS

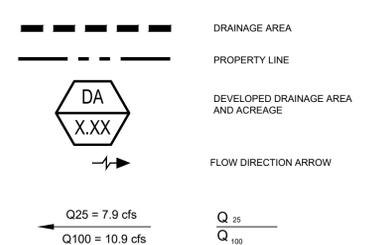
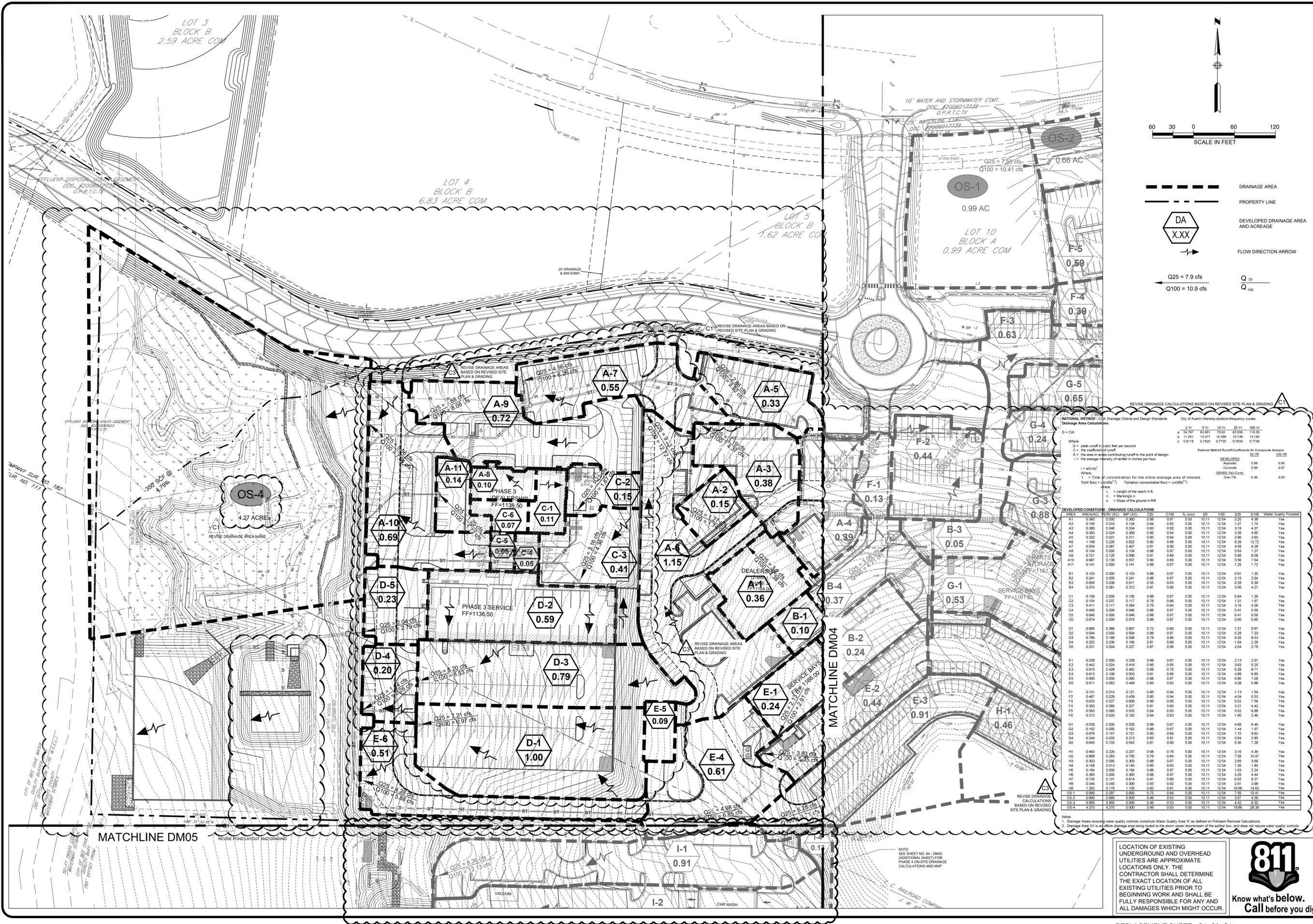
DATE	DESIGNED BY	DRAWN BY	CHECKED BY	DWG NAME
09/12/2022	JTS	JTS	JTS	ONSITE DRAINAGE AREA MAP



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7500 Riata Boulevard  
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Austin, Texas 78735  
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JOB NUMBER: A338-401  
SHEET NO. 12 OF 90 SHEETS

REPLACEMENT SHEET - C1, C3, C4



REVISIONS

NO. DATE DESCRIPTION

C1 09/12/2022 REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING

C2 09/12/2022 REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING

C3 09/12/2022 REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING

C4 09/12/2022 ADDED PHASE 04 SITE LAYOUT AND DRAINAGE BASINS

RATIONAL METHOD - CCA Drainage Criteria and Design Standards

City of Austin Intensity-Duration-Frequency Curves

Q = CIA	2 Yr	5 Yr	10 Yr	25 Yr	100 Yr
a	54.767	62.851	70.82	83.928	113.30
b	11.051	10.411	10.366	10.146	13.185
c	0.8116	0.7820	0.7725	0.7634	0.7736

Where:  
Q = peak runoff in cubic feet per second  
C = the coefficient of runoff  
A = the area in acres contributing runoff to the point of design  
i = the average intensity of rainfall in inches per hour

1 = 100%  
2 = 50%  
3 = 20%  
4 = 10%  
5 = 5%  
6 = 2.5%  
7 = 1.5%  
8 = 1.0%  
9 = 0.5%  
10 = 0.25%

DEVELOPED CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA (AC)	PERCENT IMPERVIOUS	CSS	C100	10 MIN	Q5	100	Q25	Q100	Water Quality Provided	
A1	0.360	0.000	0.90	0.97	5.00	10.11	12.54	3.20	4.38	Yes	
A2	0.150	0.016	0.134	0.84	0.92	5.00	10.11	12.54	1.27	1.74	Yes
A3	0.380	0.046	0.334	0.63	0.92	5.00	10.11	12.54	3.19	4.37	Yes
A4	0.363	0.024	0.339	0.85	0.94	5.00	10.11	12.54	3.39	4.05	Yes
A5	0.322	0.021	0.311	0.85	0.94	5.00	10.11	12.54	2.85	3.92	Yes
A6	1.148	0.226	0.822	0.80	0.88	5.00	10.11	12.54	9.26	12.72	Yes
A7	0.504	0.087	0.467	0.81	0.90	5.00	10.11	12.54	4.96	6.26	Yes
A8	0.304	0.000	0.104	0.88	0.97	5.00	10.11	12.54	0.93	1.27	Yes
A9	0.721	0.125	0.596	0.81	0.89	5.00	10.11	12.54	5.89	8.09	Yes
A10	0.887	0.163	0.557	0.80	0.89	5.00	10.11	12.54	5.56	7.64	Yes
A11	0.141	0.000	0.141	0.88	0.97	5.00	10.11	12.54	1.25	1.72	Yes
B1	0.103	0.000	0.103	0.88	0.97	5.00	10.11	12.54	0.91	1.25	Yes
B2	0.241	0.000	0.241	0.88	0.97	5.00	10.11	12.54	2.15	2.94	Yes
B3	0.000	0.000	0.000	0.88	0.97	5.00	10.11	12.54	0.00	0.00	Yes
B4	0.374	0.061	0.312	0.81	0.90	5.00	10.11	12.54	3.06	4.21	Yes
C1	0.106	0.000	0.106	0.88	0.97	5.00	10.11	12.54	0.94	1.29	Yes
C2	0.154	0.037	0.117	0.78	0.86	5.00	10.11	12.54	1.21	1.67	Yes
C3	0.411	0.117	0.294	0.76	0.84	5.00	10.11	12.54	3.16	3.96	Yes
C4	0.046	0.000	0.046	0.88	0.97	5.00	10.11	12.54	0.41	0.56	Yes
C5	0.046	0.000	0.046	0.88	0.97	5.00	10.11	12.54	0.41	0.56	Yes
C6	0.074	0.000	0.074	0.88	0.97	5.00	10.11	12.54	0.66	0.90	Yes
D1	0.995	0.388	0.607	0.72	0.80	5.00	10.11	12.54	7.31	9.97	Yes
D2	0.994	0.000	0.994	0.88	0.97	5.00	10.11	12.54	5.29	7.23	Yes
D3	0.386	0.188	0.198	0.86	0.97	5.00	10.11	12.54	3.20	4.33	Yes
D4	0.202	0.036	0.166	0.81	0.89	5.00	10.11	12.54	1.64	2.25	Yes
D5	0.231	0.004	0.227	0.87	0.96	5.00	10.11	12.54	2.04	2.79	Yes
E1	0.239	0.000	0.239	0.88	0.97	5.00	10.11	12.54	2.13	2.91	Yes
E2	0.442	0.024	0.418	0.86	0.95	5.00	10.11	12.54	3.83	5.25	Yes
E3	0.910	0.428	0.482	0.86	0.76	5.00	10.11	12.54	6.28	8.71	Yes
E4	0.802	0.109	0.693	0.81	0.89	5.00	10.11	12.54	4.85	6.85	Yes
E5	0.000	0.000	0.000	0.88	0.97	5.00	10.11	12.54	0.00	1.09	Yes
E6	0.344	0.000	0.344	0.88	0.97	5.00	10.11	12.54	3.21	4.42	Yes
F1	0.151	0.010	0.121	0.85	0.94	5.00	10.11	12.54	1.13	1.54	Yes
F2	0.467	0.029	0.438	0.85	0.94	5.00	10.11	12.54	4.04	5.53	Yes
F3	0.633	0.027	0.606	0.86	0.95	5.00	10.11	12.54	5.52	7.56	Yes
F4	0.386	0.188	0.198	0.86	0.97	5.00	10.11	12.54	3.21	4.42	Yes
F5	0.593	0.060	0.533	0.84	0.93	5.00	10.11	12.54	5.02	6.88	Yes
F6	0.272	0.020	0.252	0.84	0.93	5.00	10.11	12.54	1.80	2.46	Yes
G1	0.526	0.000	0.526	0.88	0.97	5.00	10.11	12.54	4.68	6.40	Yes
G2	0.162	0.000	0.162	0.88	0.97	5.00	10.11	12.54	1.44	1.97	Yes
G3	0.878	0.157	0.721	0.80	0.89	5.00	10.11	12.54	7.15	9.82	Yes
G4	0.202	0.032	0.170	0.83	0.91	5.00	10.11	12.54	2.34	3.20	Yes
G5	0.645	0.103	0.542	0.81	0.90	5.00	10.11	12.54	5.30	7.28	Yes
H1	0.463	0.226	0.237	0.68	0.76	5.00	10.11	12.54	3.16	4.39	Yes
H2	0.989	0.283	0.706	0.76	0.84	5.00	10.11	12.54	7.59	10.47	Yes
H3	0.303	0.109	0.192	0.88	0.97	5.00	10.11	12.54	2.89	3.98	Yes
H4	0.198	0.013	0.185	0.85	0.93	5.00	10.11	12.54	1.35	1.85	Yes
H5	0.184	0.000	0.184	0.88	0.97	5.00	10.11	12.54	1.63	2.24	Yes
H6	0.365	0.189	0.176	0.85	0.97	5.00	10.11	12.54	3.03	4.44	Yes
H7	0.735	0.121	0.614	0.81	0.90	5.00	10.11	12.54	6.02	8.27	Yes
H8	0.346	0.188	0.158	0.83	0.92	5.00	10.11	12.54	3.11	4.38	Yes
H9	1.283	0.178	1.105	0.82	0.91	5.00	10.11	12.54	10.06	14.03	Yes
I1	0.990	0.297	0.693	0.75	0.84	5.00	10.11	12.54	7.55	10.41	Yes
I2	0.600	0.000	0.600	0.46	0.53	5.00	10.11	12.54	3.07	4.39	Yes
I3	0.990	0.990	0.000	0.46	0.53	5.00	10.11	12.54	4.42	6.32	Yes
I4	4.270	0.000	0.000	0.46	0.53	5.00	10.11	12.54	19.86	28.39	Yes

NOTE:  
SEE SHEET NO. 04 - DM05 (ADDITIONAL SHEET) FOR PHASE 04 ON-SITE DRAINAGE CALCULATIONS AND MAP

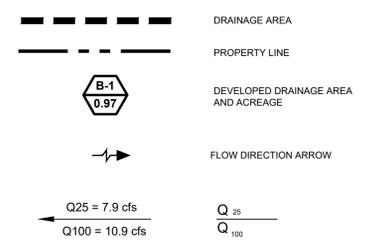
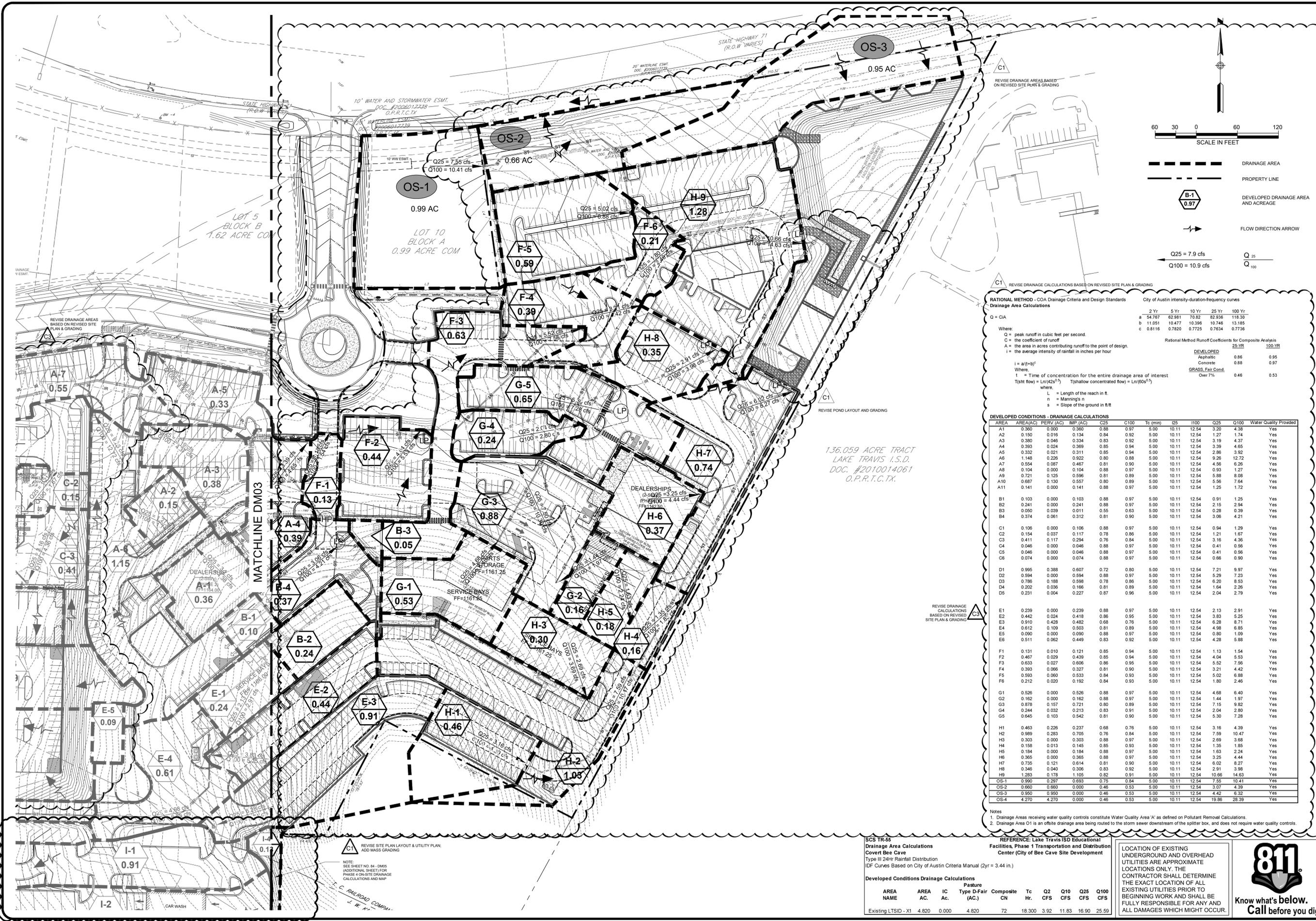
1. Drainage Areas receiving water quality controls constitute Water Quality Area 'A' as defined on Pollutant Removal Calculations.  
2. Drainage Area 01 is an off-site drainage area being routed to the storm sewer downstream of the splitter box, and does not require water quality controls.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



13A238 - Covert Bee Cave - Revise Phase 4 - Revision Plans 13A238-01-FR-003 - C4.dwg  
User: rmanok  
Last Modified: Sep 12, 2022 - 14:39  
Plot Date/Time: Sep 12, 2022 - 14:39:32

COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
ONSITE DRAINAGE AREA MAP



**RATIONAL METHOD - COA Drainage Criteria and Design Standards**  
City of Austin intensity-duration-frequency curves

Q = CIA  
Where:  
Q = peak runoff in cubic feet per second.  
C = the coefficient of runoff  
A = the area in acres contributing runoff to the point of design.  
i = the average intensity of rainfall in inches per hour

$i = a/(t+b)^c$   
Where:  
t = time of concentration for the entire drainage area of interest  
(Tight flow) =  $Lv(424)^{-0.5}$  (Shallow concentrated flow) =  $Lv(604)^{-0.5}$   
where:  
L = Length of the reach in ft.  
n = Manning's n  
s = Slope of the ground in ft/ft

**Rational Method Runoff Coefficients for Composite Analysis**

	25-YR	100-YR
Asphaltic	0.86	0.95
Concrete	0.88	0.97
GRASS, Fair Cond.	0.46	0.53

**DEVELOPED CONDITIONS - DRAINAGE CALCULATIONS**

AREA	AREA (AC)	PERV. (AC)	IMP. (AC)	C25	C100	Tc (min)	Q25	Q100	Water Quality Provided		
A1	0.350	0.000	0.350	0.88	0.97	5.00	10.11	12.54	3.20	4.38	Yes
A2	0.150	0.016	0.134	0.84	0.92	5.00	10.11	12.54	1.27	1.47	Yes
A3	0.380	0.046	0.334	0.83	0.92	5.00	10.11	12.54	3.19	4.34	Yes
A4	0.395	0.024	0.369	0.85	0.94	5.00	10.11	12.54	3.39	4.65	Yes
A5	0.332	0.021	0.311	0.85	0.94	5.00	10.11	12.54	2.86	3.92	Yes
A6	1.148	0.226	0.922	0.80	0.88	5.00	10.11	12.54	9.26	12.72	Yes
A7	0.554	0.087	0.467	0.81	0.90	5.00	10.11	12.54	4.96	6.26	Yes
A8	0.104	0.000	0.104	0.88	0.97	5.00	10.11	12.54	0.93	1.27	Yes
A9	0.721	0.125	0.596	0.81	0.89	5.00	10.11	12.54	5.88	8.08	Yes
A10	0.687	0.130	0.557	0.80	0.89	5.00	10.11	12.54	5.56	7.64	Yes
A11	0.141	0.000	0.141	0.88	0.97	5.00	10.11	12.54	1.25	1.72	Yes
B1	0.103	0.000	0.103	0.88	0.97	5.00	10.11	12.54	0.91	1.25	Yes
B2	0.241	0.000	0.241	0.88	0.97	5.00	10.11	12.54	2.15	2.94	Yes
B3	0.050	0.039	0.011	0.55	0.63	5.00	10.11	12.54	0.28	0.39	Yes
B4	0.374	0.061	0.312	0.81	0.90	5.00	10.11	12.54	3.06	4.21	Yes
C1	0.106	0.000	0.106	0.88	0.97	5.00	10.11	12.54	0.94	1.29	Yes
C2	0.154	0.037	0.117	0.78	0.86	5.00	10.11	12.54	1.21	1.67	Yes
C3	0.411	0.117	0.294	0.76	0.84	5.00	10.11	12.54	3.16	4.36	Yes
C4	0.046	0.000	0.046	0.88	0.97	5.00	10.11	12.54	0.41	0.56	Yes
C5	0.046	0.000	0.046	0.88	0.97	5.00	10.11	12.54	0.41	0.56	Yes
C6	0.074	0.000	0.074	0.88	0.97	5.00	10.11	12.54	0.66	0.90	Yes
D1	0.995	0.388	0.607	0.72	0.80	5.00	10.11	12.54	7.21	9.97	Yes
D2	0.594	0.000	0.594	0.88	0.97	5.00	10.11	12.54	5.29	7.23	Yes
D3	0.786	0.188	0.598	0.78	0.86	5.00	10.11	12.54	6.20	8.53	Yes
D4	0.202	0.036	0.166	0.81	0.89	5.00	10.11	12.54	1.64	2.26	Yes
D5	0.231	0.004	0.227	0.87	0.96	5.00	10.11	12.54	2.04	2.79	Yes
E1	0.239	0.000	0.239	0.88	0.97	5.00	10.11	12.54	2.13	2.91	Yes
E2	0.442	0.024	0.418	0.86	0.95	5.00	10.11	12.54	3.83	5.25	Yes
E3	0.910	0.428	0.482	0.68	0.76	5.00	10.11	12.54	6.28	8.71	Yes
E4	0.612	0.109	0.503	0.81	0.89	5.00	10.11	12.54	4.98	6.85	Yes
E5	0.090	0.000	0.090	0.88	0.97	5.00	10.11	12.54	0.80	1.09	Yes
E6	0.511	0.062	0.449	0.83	0.92	5.00	10.11	12.54	4.28	5.88	Yes
F1	0.131	0.010	0.121	0.85	0.94	5.00	10.11	12.54	1.13	1.54	Yes
F2	0.467	0.029	0.438	0.85	0.94	5.00	10.11	12.54	4.04	5.53	Yes
F3	0.633	0.027	0.606	0.86	0.95	5.00	10.11	12.54	5.52	7.56	Yes
F4	0.393	0.066	0.327	0.81	0.90	5.00	10.11	12.54	3.21	4.42	Yes
F5	0.593	0.060	0.533	0.84	0.93	5.00	10.11	12.54	5.02	6.88	Yes
F6	0.212	0.020	0.192	0.84	0.93	5.00	10.11	12.54	1.80	2.46	Yes
G1	0.526	0.000	0.526	0.88	0.97	5.00	10.11	12.54	4.68	6.40	Yes
G2	0.162	0.000	0.162	0.88	0.97	5.00	10.11	12.54	1.44	1.97	Yes
G3	0.878	0.157	0.721	0.80	0.89	5.00	10.11	12.54	7.15	9.82	Yes
G4	0.244	0.032	0.212	0.83	0.91	5.00	10.11	12.54	2.04	2.80	Yes
G5	0.645	0.103	0.542	0.81	0.90	5.00	10.11	12.54	5.30	7.28	Yes
H1	0.463	0.226	0.237	0.68	0.76	5.00	10.11	12.54	3.16	4.39	Yes
H2	0.989	0.283	0.706	0.78	0.84	5.00	10.11	12.54	7.59	10.47	Yes
H3	0.303	0.000	0.303	0.88	0.97	5.00	10.11	12.54	2.89	3.98	Yes
H4	0.158	0.013	0.145	0.85	0.93	5.00	10.11	12.54	1.35	1.85	Yes
H5	0.184	0.000	0.184	0.88	0.97	5.00	10.11	12.54	1.63	2.24	Yes
H6	0.365	0.000	0.365	0.88	0.97	5.00	10.11	12.54	3.25	4.44	Yes
H7	0.735	0.121	0.614	0.81	0.90	5.00	10.11	12.54	6.32	8.27	Yes
H8	0.346	0.040	0.306	0.83	0.92	5.00	10.11	12.54	2.91	3.98	Yes
H9	1.283	0.178	1.105	0.82	0.91	5.00	10.11	12.54	10.66	14.63	Yes
OS-1	0.990	0.297	0.693	0.75	0.84	5.00	10.11	12.54	7.55	10.41	Yes
OS-2	0.660	0.660	0.000	0.46	0.53	5.00	10.11	12.54	3.07	4.39	Yes
OS-3	0.950	0.950	0.000	0.46	0.53	5.00	10.11	12.54	4.42	6.32	Yes
OS-4	4.270	4.270	0.000	0.46	0.53	5.00	10.11	12.54	19.86	28.39	Yes

Notes:  
1. Drainage Areas receiving water quality controls constitute Water Quality Area 'A' as defined on Pollutant Removal Calculations.  
2. Drainage Area O1 is an offsite drainage area being routed to the storm sewer downstream of the splitter box, and does not require water quality controls.

**SCS TR-55 Drainage Area Calculations**  
Covert Bee Cave  
Type III 24-Hr Rainfall Distribution  
(DF Curves Based on City of Austin Criteria Manual (2yr = 3.44 in.))

AREA NAME	AREA AC.	IC AC.	Pasture Type D-Fair (AC.)	Composite CN	Tc Hr.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS
Existing LTSID - X1	4.820	0.000	4.820	72	18.300	3.92	11.83	16.90	25.59

REFERENCE: Lake Travis ISD Educational Facilities, Phase 1 Transportation and Distribution Center (City of Bee Cave Site Development)

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



**REVISIONS**

NO.	DATE	DESCRIPTION
01	09/12/2022	REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING
02	09/12/2022	REVISE DRAINAGE AREAS BASED ON REVISED SITE PLAN & GRADING
03	09/12/2022	ADDED PHASE 04 SITE LAYOUT

DESIGNED BY: JTS  
DRAWN BY: JSDM  
CHECKED BY: JSDM  
DWG NAME: C1.DWG

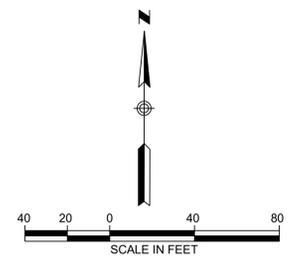
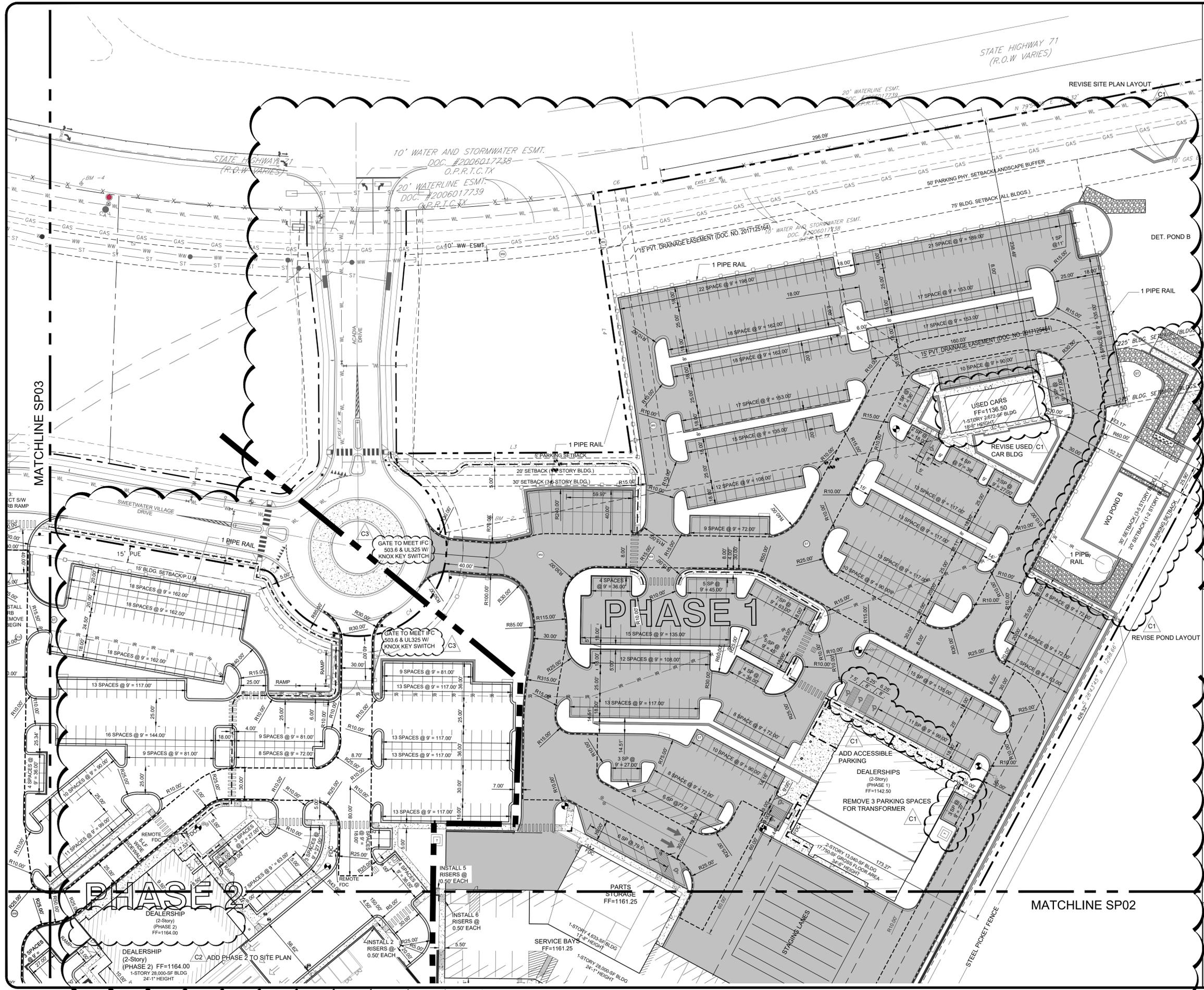
09/12/2022

CHARLES R. HAGER  
127034  
PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
7500 Rialto Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

JOB NUMBER: A338-401  
SHEET NO. 13 OF 90 SHEETS

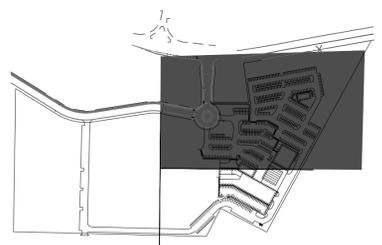
1: A338 - Covert Bee Cave Site Development, Phase 1 - Drainage Areas, Phase 4 - Revision: Plans 13.03.00-01-0003 - C1.dwg  
 User: rmanok  
 Last Modified: Sep 12, 2022 14:39  
 Plot: D:\proj\1303\1303-01-0003 - C1.dwg



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	CONCRETE SIDEWALK
[Symbol]	[Symbol]	DECOMPOSED GRANITE WALKWAY
[Symbol]	[Symbol]	PROPERTY BOUNDARY
[Symbol]	[Symbol]	FIRE LANE
[Symbol]	[Symbol]	ACCESSIBLE ROUTE
[Symbol]	[Symbol]	SIDEWALK RAMP
[Symbol]	[Symbol]	HANDICAPPED PARKING SPACES & SIDEWALK RAMP
[Symbol]	[Symbol]	CROSSWALK
[Symbol]	[Symbol]	STORM SEWER LINE
[Symbol]	[Symbol]	WASTEWATER LINE
[Symbol]	[Symbol]	WATER LINE
[Symbol]	[Symbol]	WATER VALVE
[Symbol]	[Symbol]	FIRE HYDRANT
[Symbol]	[Symbol]	WASTEWATER MANHOLE
[Symbol]	[Symbol]	STORMSEWER MANHOLE
[Symbol]	[Symbol]	1/2" REBAR FOUND (OR AS NOTED)
[Symbol]	[Symbol]	1/2" REBAR WITH CAP FOUND
[Symbol]	[Symbol]	1/2" REBAR WITH CHAPARRAL CAP SET
[Symbol]	[Symbol]	WATER METER
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	OVERHEAD UTILITIES
[Symbol]	[Symbol]	ELEC. UTILITY
[Symbol]	[Symbol]	ELEC. MANHOLE
[Symbol]	[Symbol]	LIGHT POLE
[Symbol]	[Symbol]	TELEPHONE UTILITY
[Symbol]	[Symbol]	UNDERGROUND FIBER OPTIC MARKER
[Symbol]	[Symbol]	TELEPHONE MANHOLE
[Symbol]	[Symbol]	UNDERGROUND GAS MARKER
[Symbol]	[Symbol]	CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

PHASE 1  
SITE PLAN SHEET 1

NO.	DATE	DESCRIPTION
1	9/7/2018	REVISION
2	8/30/2019	REVISION
3	6/29/2021	REVISION

DATE:	6/29/2021
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NUMBER:	SP01

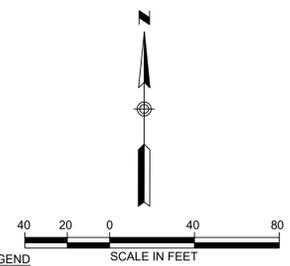
**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 5316 Highway 290 West  
 Suite 150  
 Austin, Texas 78735  
 FRN-F-1386

JOB NUMBER: A338-401

**SP01**

SHEET NO. **14** OF 90 SHEETS

REPLACEMENT SHEET C1 C2 C3



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	CONCRETE SIDEWALK
[Symbol]	[Symbol]	DECOMPOSED GRANITE WALKWAY
[Symbol]	[Symbol]	PROPERTY BOUNDARY
[Symbol]	[Symbol]	FIRE LANE
[Symbol]	[Symbol]	ACCESSIBLE ROUTE
[Symbol]	[Symbol]	SIDEWALK RAMP
[Symbol]	[Symbol]	HANDICAPPED PARKING SPACES & SIDEWALK RAMP
[Symbol]	[Symbol]	CROSSWALK
[Symbol]	[Symbol]	STORM SEWER LINE
[Symbol]	[Symbol]	WASTEWATER LINE
[Symbol]	[Symbol]	WATER LINE
[Symbol]	[Symbol]	WATER VALVE
[Symbol]	[Symbol]	FIRE HYDRANT
[Symbol]	[Symbol]	WASTEWATER MANHOLE
[Symbol]	[Symbol]	STORMSEWER MANHOLE
[Symbol]	[Symbol]	1/2" REBAR FOUND (OR AS NOTED)
[Symbol]	[Symbol]	1/2" REBAR WITH CAP FOUND
[Symbol]	[Symbol]	1/2" REBAR WITH CHAPARRAL CAP SET
[Symbol]	[Symbol]	WATER METER
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	OVERHEAD UTILITIES
[Symbol]	[Symbol]	ELEC. UTILITY
[Symbol]	[Symbol]	ELEC. MANHOLE
[Symbol]	[Symbol]	LIGHT POLE
[Symbol]	[Symbol]	TELEPHONE UTILITY
[Symbol]	[Symbol]	UNDERGROUND FIBER OPTIC MARKER
[Symbol]	[Symbol]	TELEPHONE MANHOLE
[Symbol]	[Symbol]	UNDERGROUND GAS MARKER
[Symbol]	[Symbol]	CHAIN LINK FENCE

**NOTES:**

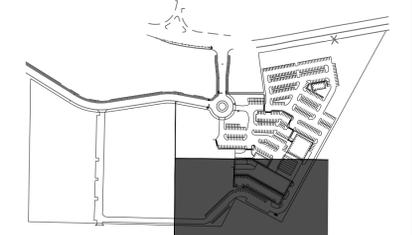
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL RADII ARE 3' UNLESS OTHERWISE NOTED.



Phase 1 Building	Footprint Area (SF)	Number of Stories	Height (FT)	Gross Floor Area (SF)
GMC Buick Dealership	13,200	2	34'-6"	17,750 <sup>1</sup>
Parts Storage	4,633	1	17'-8"	4,633
Service Bays	28,000	1	24'-1"	28,000
Used Cars	2,586	1	18'-6"	2,586

**Notes**

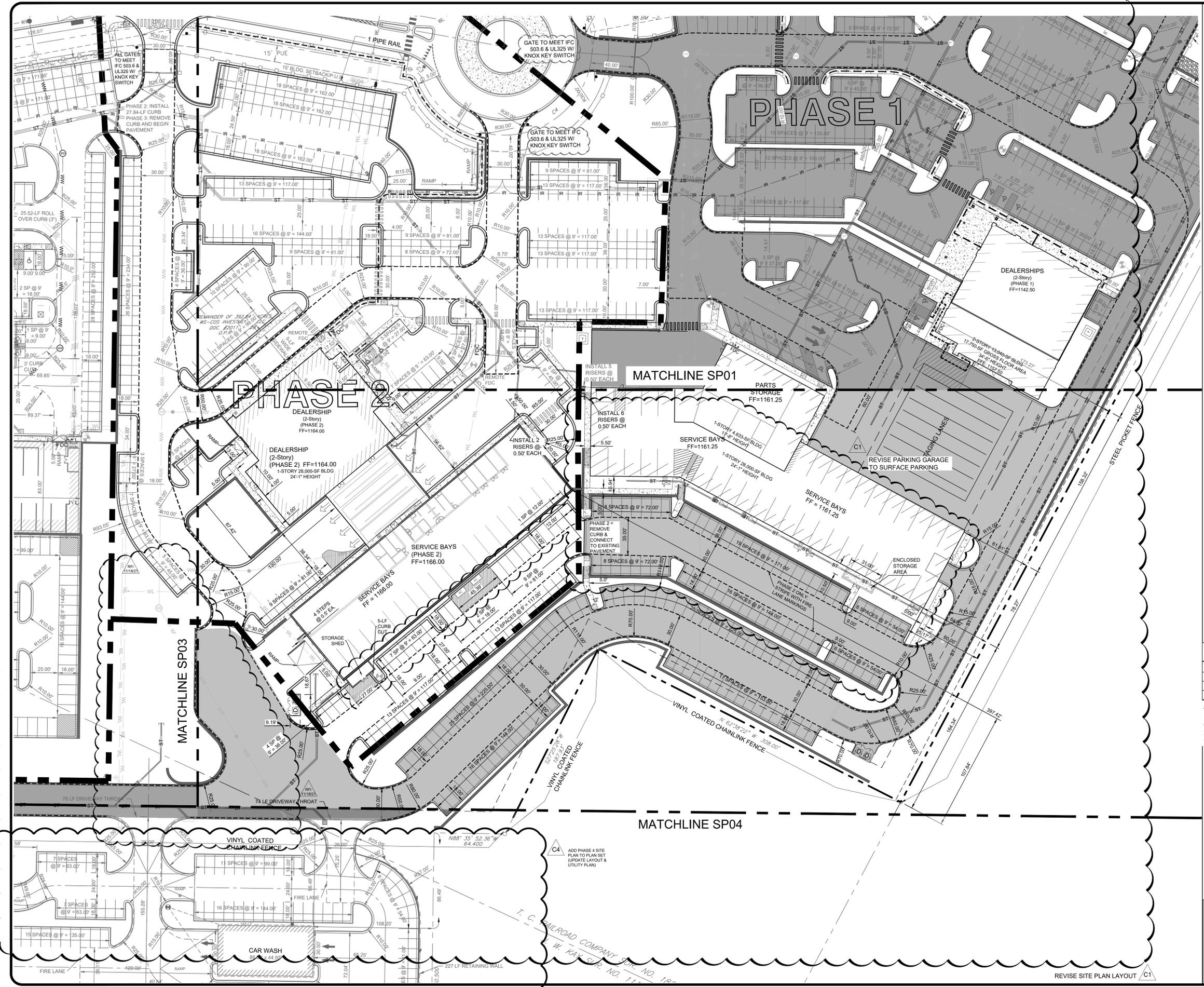
- GMC BUICK Dealership Building Lower Level and Upper Level are 8,800-SF and 8,950-SF, respectively.
- Building Height is measured to maximum height, either "top of parapet" or "top of roof ridge".



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



OF 90 SHEETS



**REVISIONS**

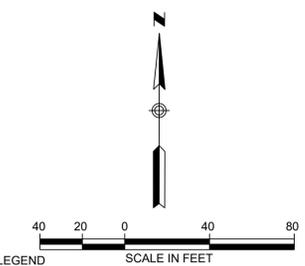
NO.	DATE	DESCRIPTION
C1	09/12/2022	REVISE SITE PLAN LAYOUT PLANNED MASS GRADING
C2	9/17/2019	ADD PHASE 2 SITE PLANS TO PLANS
C3	6/29/2021	ADD PHASE 3 SITE PLANS TO PLANS
C4	08/17/2022	ADD PHASE 4 LAYOUT

DATE: 09/12/2022  
DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DWG NAME: 1338-F-01-1  
CITY: COVINGTON

**LJA Engineering, Inc.**  
7500 Riata Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

JOB NUMBER: A338-401  
SP02  
SHEET NO. 15

1338-F-01-1 - Covert Bee Cave Site Development Phase 4 - Revision Plans A338-401-F-SP01, C4.dwg  
 User: rmanok  
 Last Modified: Sep 12, 2022 11:44:44  
 Plot: D:\Projects\1338-F-01-1.dwg



PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	CONCRETE SIDEWALK
[Symbol]	[Symbol]	DECOMPOSED GRANITE WALKWAY
[Symbol]	[Symbol]	PROPERTY BOUNDARY
[Symbol]	[Symbol]	OPEN SPACES
[Symbol]	[Symbol]	FIRE LANE
[Symbol]	[Symbol]	ACCESSIBLE ROUTE
[Symbol]	[Symbol]	SIDEWALK RAMP
[Symbol]	[Symbol]	HANDICAPPED PARKING SPACES & SIDEWALK RAMP
[Symbol]	[Symbol]	CROSSWALK
[Symbol]	[Symbol]	STORM SEWER LINE
[Symbol]	[Symbol]	WASTEWATER LINE
[Symbol]	[Symbol]	WATER LINE
[Symbol]	[Symbol]	WATER VALVE
[Symbol]	[Symbol]	FIRE HYDRANT
[Symbol]	[Symbol]	WASTEWATER MANHOLE
[Symbol]	[Symbol]	STORMSEWER MANHOLE
[Symbol]	[Symbol]	1/2" REBAR FOUND (OR AS NOTED)
[Symbol]	[Symbol]	1/2" REBAR WITH CAP FOUND
[Symbol]	[Symbol]	1/2" REBAR WITH CHAPARRAL CAP SET
[Symbol]	[Symbol]	WATER METER
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	OVERHEAD UTILITIES
[Symbol]	[Symbol]	ELEC. UTILITY
[Symbol]	[Symbol]	ELEC. MANHOLE
[Symbol]	[Symbol]	LIGHT POLE
[Symbol]	[Symbol]	TELEPHONE UTILITY
[Symbol]	[Symbol]	UNDERGROUND FIBER OPTIC MARKER
[Symbol]	[Symbol]	TELEPHONE MANHOLE
[Symbol]	[Symbol]	UNDERGROUND GAS MARKER
[Symbol]	[Symbol]	CHAIN LINK FENCE

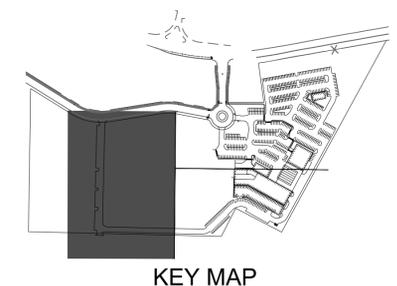
NOTES:  
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.  
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.

PHASE 1 PAVEMENT	
ADD PHASE HATCHING	C1

PHASE 3 PARKING	
STANDARD	323
ACCESSIBLE	4
ACCESSIBLE (VAN)	1
<b>TOTAL</b>	<b>328</b>

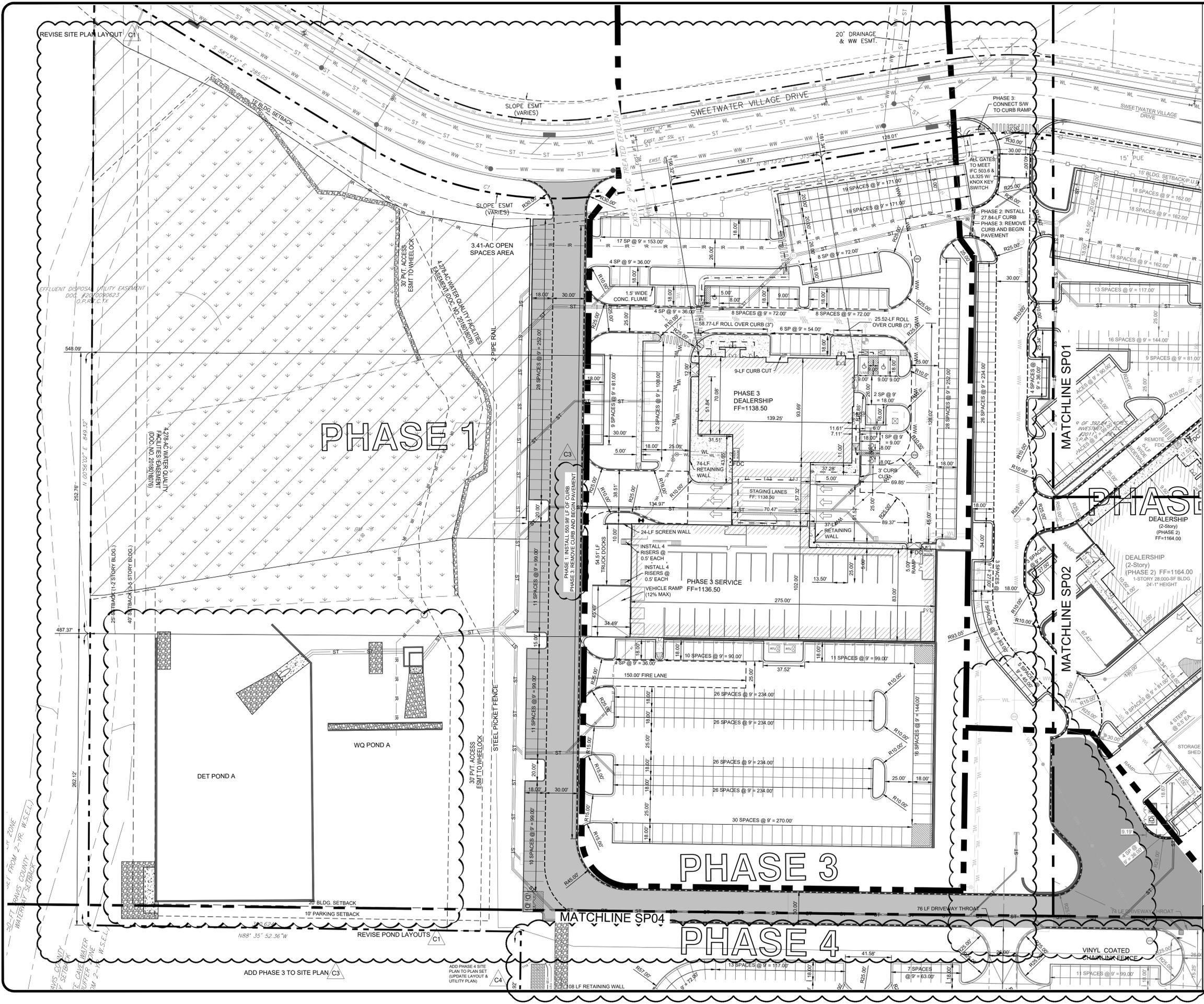
ADD PHASE 3 PARKING CALCS C3



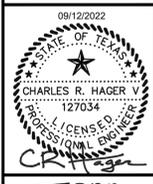
LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



C1 C2 C3 C4 REPLACEMENT SHEET



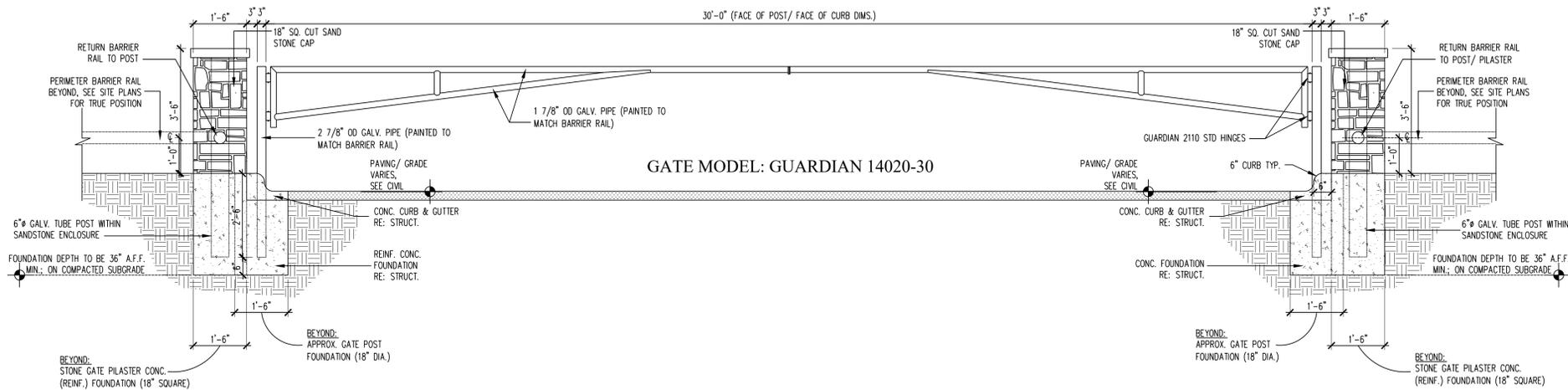
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 Last Modified: Sep 12, 2019 11:44  
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**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

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 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735

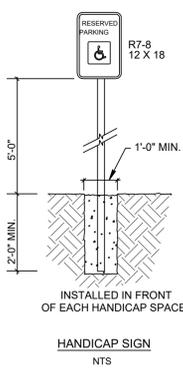
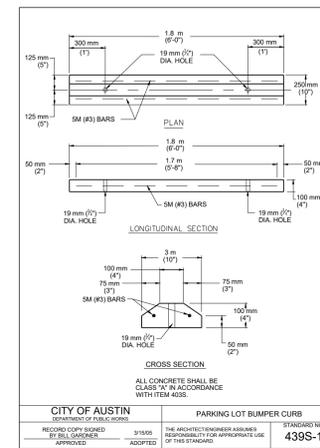
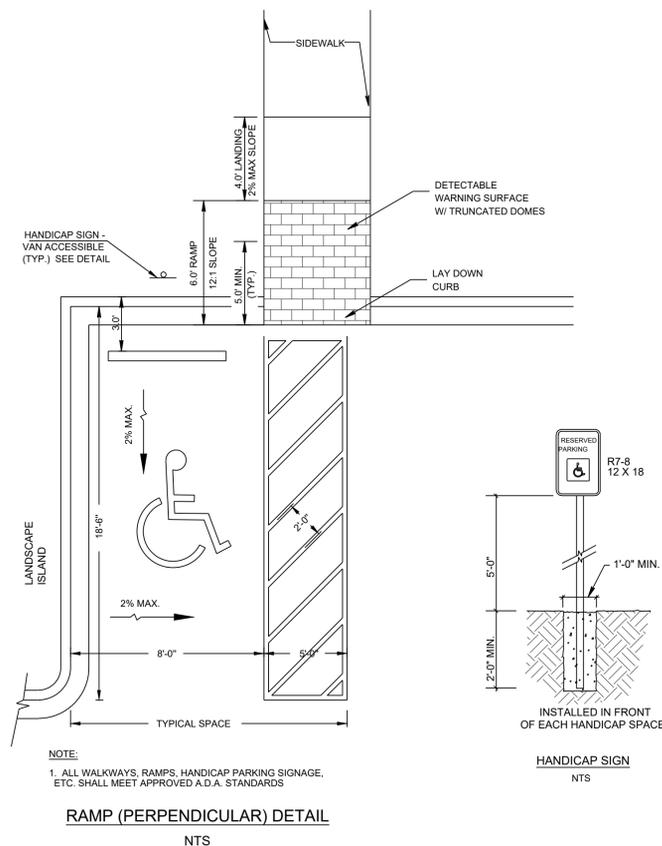
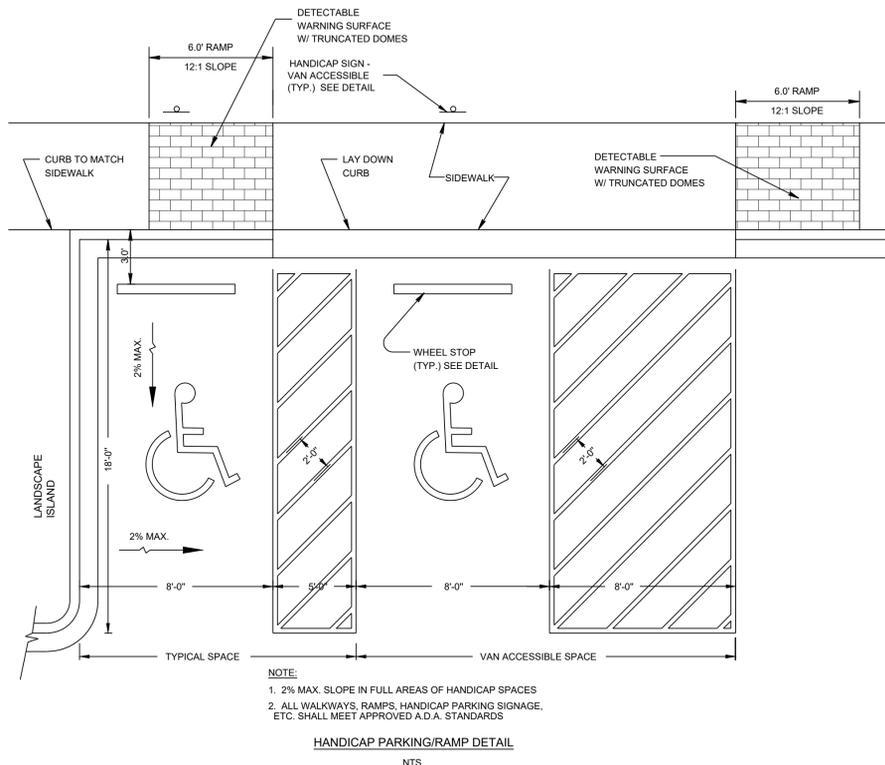
JOB NUMBER:  
A338-401  
 SP03  
 SHEET NO.  
**16**  
 OF 90 SHEETS



**01** SITE ENTRY GATE AND BARRIER DETAIL  
Scale: 1/2" = 1'-0"

COVERT BEE CAVE		
TOTAL SITE AREA: 38.41 AC		
IMPERVIOUS COVER		
	Acres	% OF TOTAL
<b>PHASE 1</b>		
IC - BUILDINGS	0.66	1.73%
IC - PARKING DECK/SERVICE BAYS	1.62	4.23%
IC - PAVEMENT	3.28	8.54%
IC - SIDEWALKS	0.11	0.29%
<b>TOTAL IC</b>	<b>5.68</b>	<b>14.79%</b>
<b>PHASE 2</b>		
IC - BUILDINGS	0.43	1.11%
IC - PARKING DECK/SERVICE BAYS	0.72	1.87%
IC - PAVEMENT	3.85	10.03%
IC - SIDEWALKS	0.07	0.19%
<b>TOTAL IC</b>	<b>5.07</b>	<b>13.20%</b>
<b>PHASE 3</b>		
IC - BUILDINGS	0.50	1.29%
IC - PARKING DECK/SERVICE BAYS	1.47	3.84%
IC - PAVEMENT	5.44	14.17%
IC - SIDEWALKS	0.07	0.19%
<b>TOTAL IC</b>	<b>7.48</b>	<b>19.49%</b>
<b>PHASE 4</b>		
IC - PAVEMENT	2.32	6.05%
IC - BUILDINGS	0.09	0.23%
<b>TOTAL IC</b>	<b>2.41</b>	<b>6.28%</b>
<b>TOTAL IC</b>	<b>20.65</b>	<b>53.76%</b>
<b>OPEN SPACE (10% REQUIRED PER DEVELOPMENT AGREEMENT)</b>		
	Acres	% OF TOTAL
<b>OPEN SPACE (SEE SHEET SP01):</b>	<b>4.70</b>	<b>12.23%</b>

UPDATE IC CALCS FOR CURRENT SITE PLAN LAYOUTS.



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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
SITE PLAN NOTES & DETAILS

NO.	DATE	DESCRIPTION	BY	CRH	CRH	CRH	RJS
C1		REVISE SITE CALCULATIONS FOR REVISED IC					
C2		ADD GATE DETAIL					
C3		REVISE SITE CALCULATIONS FOR REVISED IC					
C4		REVISE SITE CALCULATIONS FOR REVISED IC					

DATE: 09/12/2022  
DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DWG NAME: NOTREPP-08.RWG



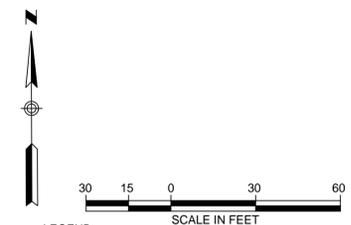
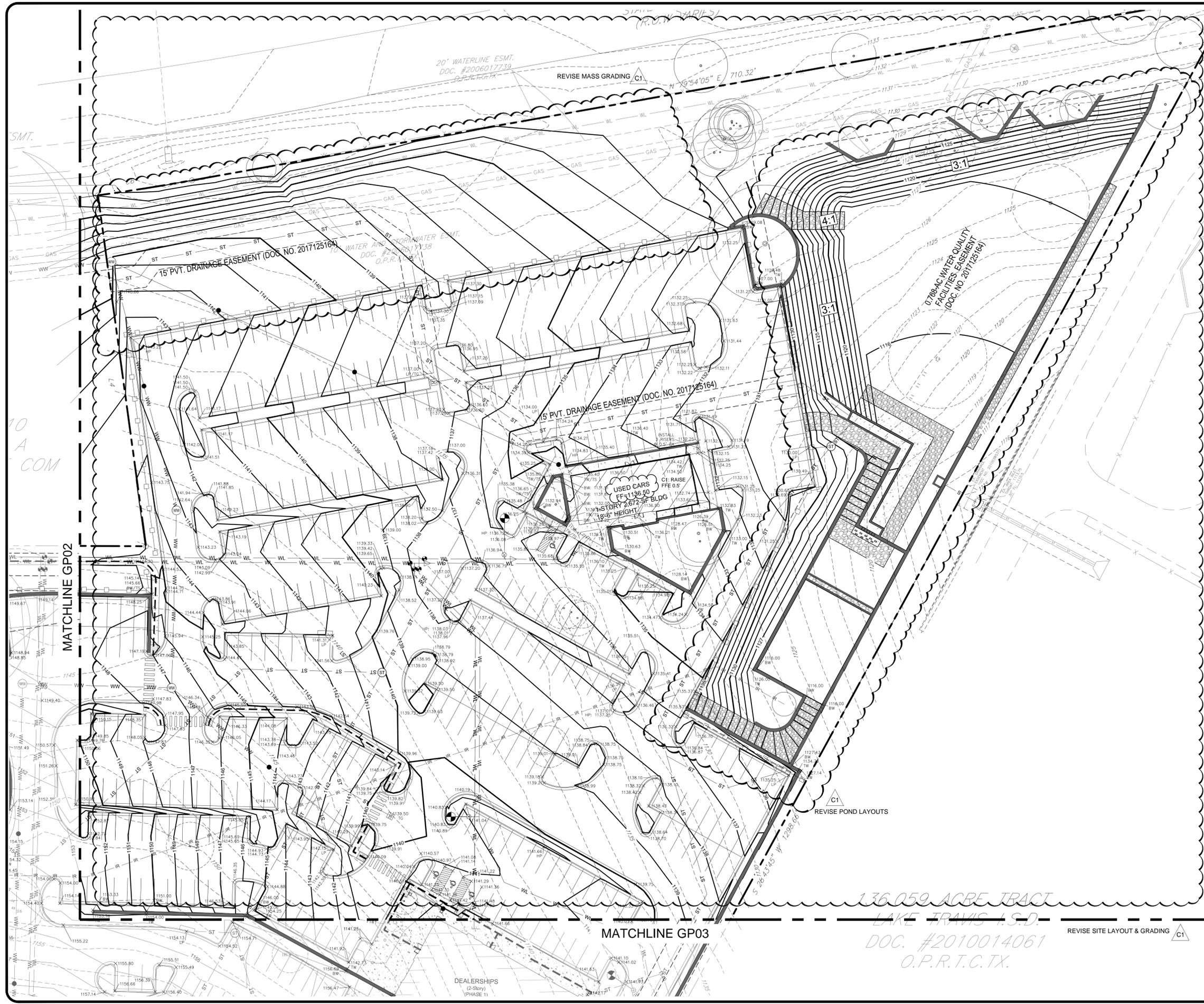
LJA Engineering, Inc.  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

JOB NUMBER:  
A338-401

SP05

SHEET NO.

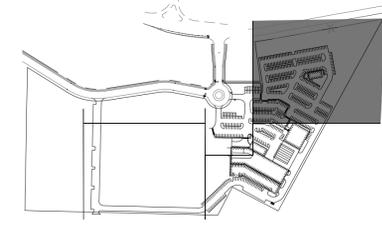
17 OF 90 SHEETS



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(thick solid line)	(dashed line)	PROPOSED RETAINING WALL
(dotted line)	(dotted line)	TOP OF PAVEMENT
(dotted line)	(dotted line)	TOP OF CURB/CONCRETE
(dotted line)	(dotted line)	TOP OF GRATE
(dotted line)	(dotted line)	LOW POINT
(dotted line)	(dotted line)	HIGH POINT
(dotted line)	(dotted line)	FINISHED SLAB
(dotted line)	(dotted line)	TOP OF WALL
(dotted line)	(dotted line)	BOTTOM OF WALL
(dotted line)	(dotted line)	FINISHED GROUND
(circle with dot)	(circle with dot)	TREE TO REMAIN
(circle with cross)	(circle with cross)	TREE TO BE REMOVED
(line with 'ST')	(line with 'ST')	STORM SEWER LINE
(line with 'WW')	(line with 'WW')	WASTEWATER LINE
(line with 'WL')	(line with 'WL')	WATER LINE
(line with 'V')	(line with 'V')	WATER VALVE
(circle with 'H')	(circle with 'H')	FIRE HYDRANT
(circle with 'M')	(circle with 'M')	WASTEWATER MANHOLE
(circle with 'S')	(circle with 'S')	STORMSEWER MANHOLE
(circle with 'R')	(circle with 'R')	1/2" REBAR FOUND (OR AS NOTED)
(circle with 'C')	(circle with 'C')	1/2" REBAR WITH CAP FOUND
(circle with 'W')	(circle with 'W')	1/2" REBAR WITH CHAPARRAL CAP SET
(circle with 'M')	(circle with 'M')	COTTON SPINDLE WITH CHAPARRAL WASHER SET
(circle with 'M')	(circle with 'M')	WATER METER
(circle with 'U')	(circle with 'U')	UTILITY POLE
(circle with 'E')	(circle with 'E')	OVERHEAD UTILITIES
(circle with 'E')	(circle with 'E')	ELEC. UTILITY
(circle with 'E')	(circle with 'E')	ELEC. MANHOLE
(circle with 'L')	(circle with 'L')	LIGHT POLE
(circle with 'T')	(circle with 'T')	TELEPHONE UTILITY
(circle with 'F')	(circle with 'F')	UNDERGROUND FIBER OPTIC MARKER
(circle with 'M')	(circle with 'M')	TELEPHONE MANHOLE
(circle with 'G')	(circle with 'G')	UNDERGROUND GAS MARKER
(circle with 'C')	(circle with 'C')	CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
  4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
  6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
  7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
  8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.



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**811**  
Know what's below.  
Call before you dig.

**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

**REVISIONS**

NO.	DESCRIPTION	DATE	BY	CRH
C1	REVISE BITE PLAN LAYOUT UTIL. PLAN AND MASS GRADING	9-7-18		

DATE:	02/20/2019
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NUMBER:	127034



**LJA Engineering, Inc.**  
Phone 512.439.4700  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
FRN-F-1388

JOB NUMBER:  
A338-401

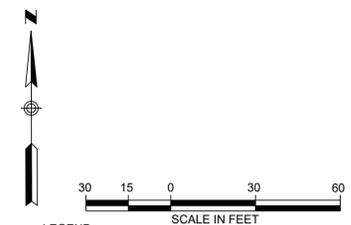
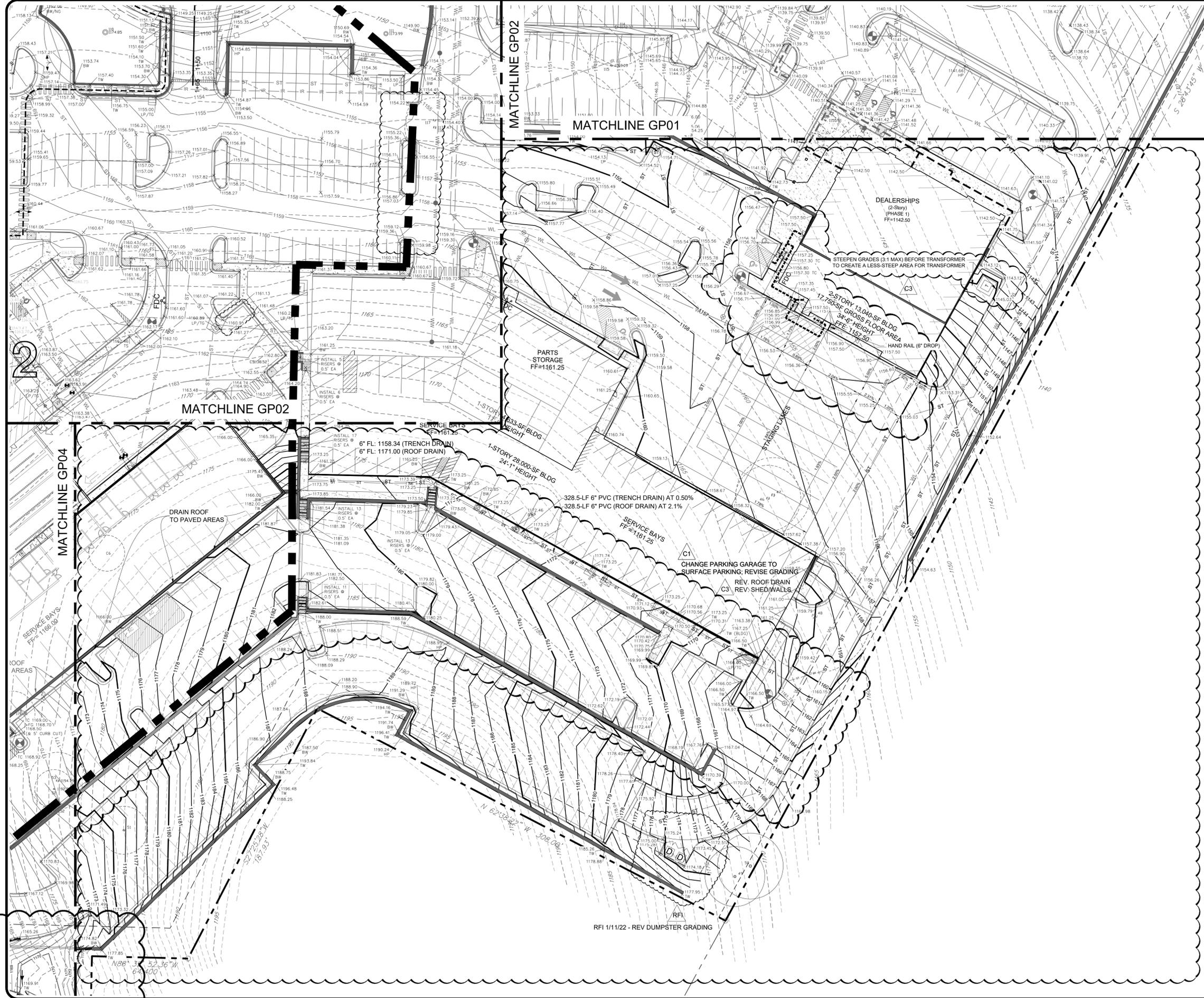
**GP01**

SHEET NO.  
**18**

OF 90 SHEETS

11-4-2018 - Covert Bee Cave Site Development - Phase 1 - Revision 1 - Plans A338-401-F-0201 - C1.dwg  
 User: jts@lja.com  
 Last Modified: Mon, 02/20/2019 10:15:24  
 Plot Date: Mon, 02/20/2019 10:15:24

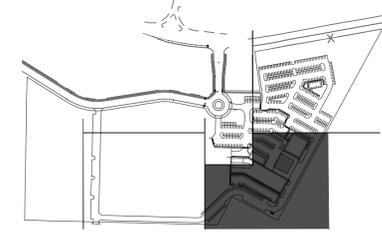




**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(Dashed line)	(Dashed line)	PROPOSED RETAINING WALL
X 100.00		TOP OF PAVEMENT
X 100.00 TC		TOP OF CURB/CONCRETE
X 100.00 TG		TOP OF GRATE
X 100.00 LP		LOW POINT
X 100.00 HP		HIGH POINT
X 100.00 FS		FINISHED SLAB
X 100.00 TW		TOP OF WALL
X 100.00 BW		BOTTOM OF WALL
X 100.00 FG		FINISHED GROUND
(Circle with dot)		TREE TO REMAIN
(Circle with cross)		TREE TO BE REMOVED
ST		STORM SEWER LINE
WW		WASTEWATER LINE
WL		WATER LINE
(Circle with cross)		WATER VALVE
(Circle with cross)		FIRE HYDRANT
(Circle with cross)		WASTEWATER MANHOLE
(Circle with cross)		STORMSEWER MANHOLE
(Circle with cross)		1/2" REBAR FOUND (OR AS NOTED)
(Circle with cross)		1/2" REBAR WITH CAP FOUND
(Circle with cross)		1/2" REBAR WITH CHAPARRAL CAP SET
(Circle with cross)		COTTON SPINDLE WITH CHAPARRAL WASHER SET
(Circle with cross)		WATER METER
(Circle with cross)		UTILITY POLE
(Circle with cross)		OVERHEAD UTILITIES
(Circle with cross)		ELEC. UTILITY
(Circle with cross)		ELEC. MANHOLE
(Circle with cross)		LIGHT POLE
(Circle with cross)		TELEPHONE UTILITY
(Circle with cross)		UNDERGROUND FIBER OPTIC MARKER
(Circle with cross)		TELEPHONE MANHOLE
(Circle with cross)		UNDERGROUND GAS MARKER
(Circle with cross)		CHAIN LINK FENCE

- NOTES:**
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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT

NO.	DATE	DESCRIPTION	BY	DATE
C1	09/12/2022	REVISION		
C2	09/12/2022	REVISION		
C3	09/12/2022	REVISION		
C4	09/12/2022	REVISION		

DATE: 09/12/2022  
 DESIGNED BY: JES  
 DRAWN BY: JTS  
 CHECKED BY: SDJ  
 DWG NAME: COVERT.BEE.CAVE



**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

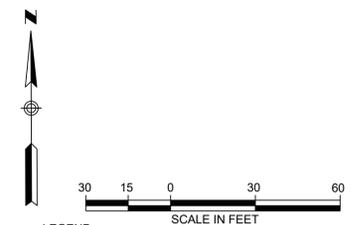
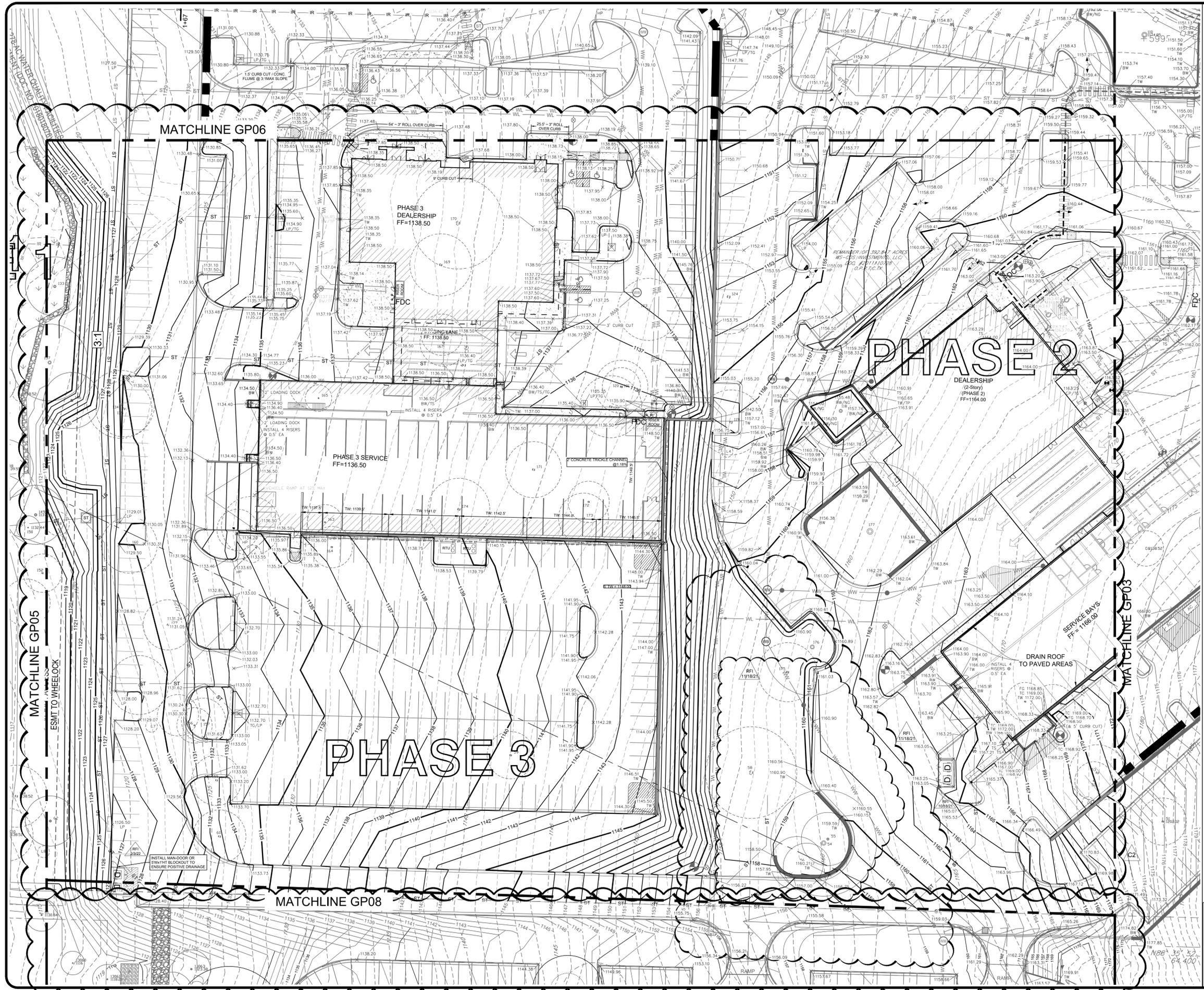
**LJA Engineering, Inc.**  
 7500 Rialto Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735

JOB NUMBER: A338-401  
**GP03**  
 SHEET NO: **20**  
 OF 90 SHEETS

C1 C3 C4 REPLACEMENT SHEET

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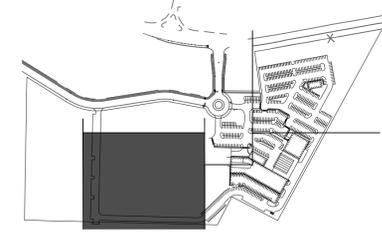
C4 ADDED PHASE 04 LAYOUT



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
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(thick solid line)	(dashed line)	PROPOSED RETAINING WALL
(dotted line)	(dotted line)	TOP OF PAVEMENT
(dotted line)	(dotted line)	TOP OF CURB/CONCRETE
(dotted line)	(dotted line)	TOP OF GRATE
(dotted line)	(dotted line)	LOW POINT
(dotted line)	(dotted line)	HIGH POINT
(dotted line)	(dotted line)	FINISHED SLAB
(dotted line)	(dotted line)	TOP OF WALL
(dotted line)	(dotted line)	BOTTOM OF WALL
(dotted line)	(dotted line)	FINISHED GROUND
(circle with dot)	(circle with dot)	TREE TO REMAIN
(circle with cross)	(circle with cross)	TREE TO BE REMOVED
(circle with 'S')	(circle with 'S')	STORM SEWER LINE
(circle with 'W')	(circle with 'W')	WASTEWATER LINE
(circle with 'L')	(circle with 'L')	WATER LINE
(circle with 'V')	(circle with 'V')	WATER VALVE
(circle with 'F')	(circle with 'F')	FIRE HYDRANT
(circle with 'M')	(circle with 'M')	WASTEWATER MANHOLE
(circle with 'S')	(circle with 'S')	STORMSEWER MANHOLE
(circle with 'R')	(circle with 'R')	1/2" REBAR FOUND (OR AS NOTED)
(circle with 'C')	(circle with 'C')	1/2" REBAR WITH CAP FOUND
(circle with 'P')	(circle with 'P')	1/2" REBAR WITH CHAPARRAL CAP SET
(circle with 'S')	(circle with 'S')	COTTON SPINDLE WITH CHAPARRAL WASHER SET
(circle with 'M')	(circle with 'M')	WATER METER
(circle with 'U')	(circle with 'U')	UTILITY POLE
(circle with 'O')	(circle with 'O')	OVERHEAD UTILITIES
(circle with 'E')	(circle with 'E')	ELEC. UTILITY
(circle with 'M')	(circle with 'M')	ELEC. MANHOLE
(circle with 'L')	(circle with 'L')	LIGHT POLE
(circle with 'T')	(circle with 'T')	TELEPHONE UTILITY
(circle with 'F')	(circle with 'F')	UNDERGROUND FIBER OPTIC MARKER
(circle with 'M')	(circle with 'M')	TELEPHONE MANHOLE
(circle with 'G')	(circle with 'G')	UNDERGROUND GAS MARKER
(circle with 'C')	(circle with 'C')	CHAIN LINK FENCE

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  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
  4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
  6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
  7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
  8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.



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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

**REVISIONS**

NO.	DATE	DESCRIPTION
C1	09/12/2022	REVISE SITE PLAN LAYOUT UTILITY PLAN AND MASS GRADING
C2	9/17/2018	ADD PHASE 2 SITE PLANS TO PLANS
C3	8/30/2019	ADD PHASE 3 SITE PLANS TO PLANS AND REVISION GRADING
C4	6/29/2021	REMOVE CAR WASH FUEL PAD & FIK DAMPSTER
	11/16/2021	ADD PHASE 4 LAYOUT TO PLANS
	08/17/2022	

**DESIGNED BY:** JTS  
**DRAWN BY:** JTS  
**CHECKED BY:** SDM  
**DWG NAME:** C-0001



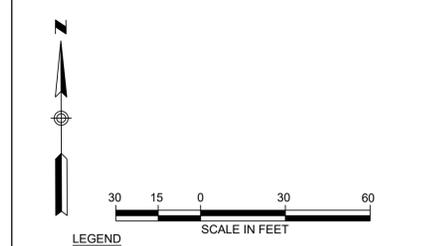
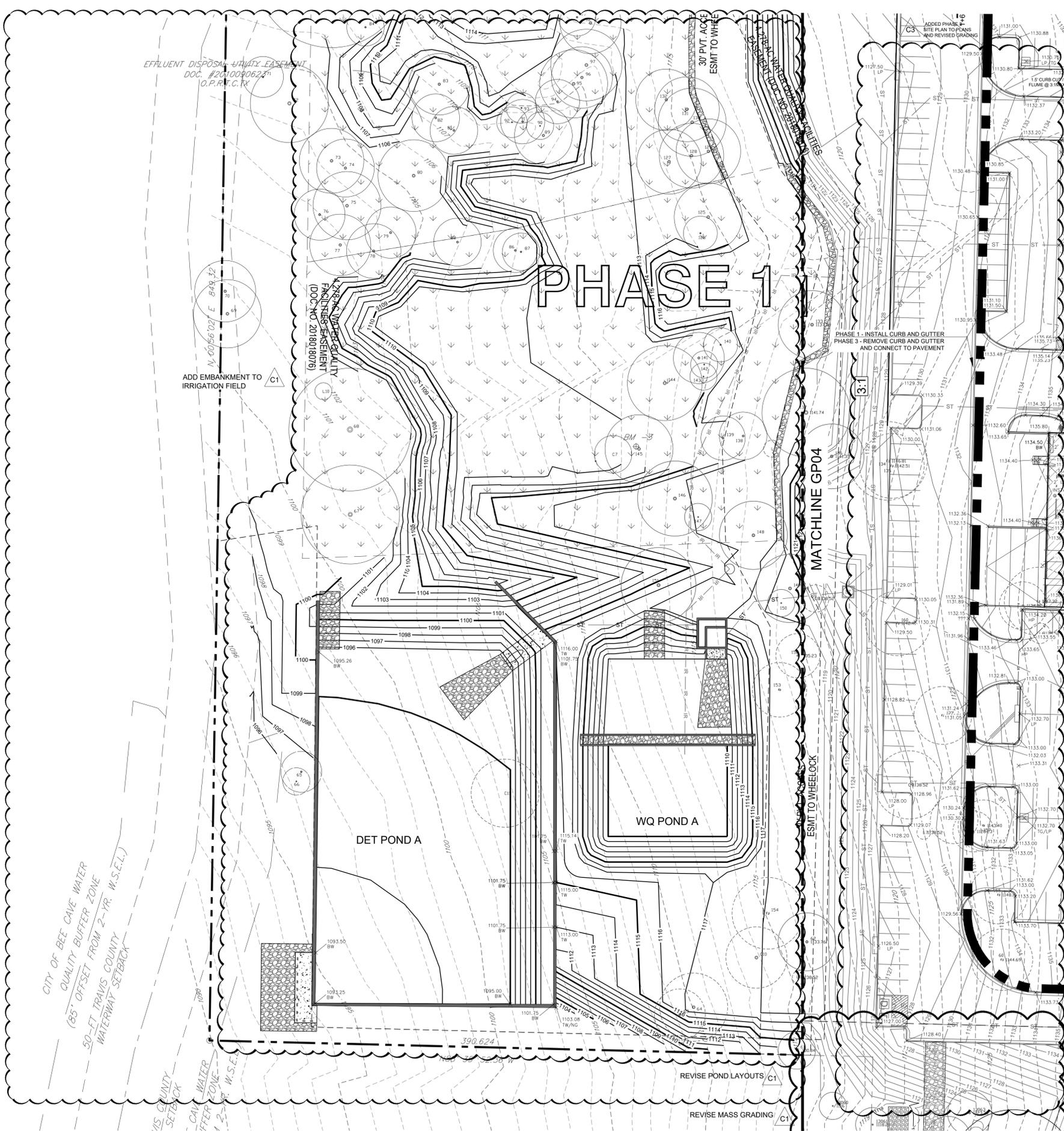
**LJA Engineering, Inc.**  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1386

**JJA Engineering, Inc.**  
7500 Riata Boulevard  
Building II, Suite 100  
Austin, Texas 78735

**JJA Engineering, Inc.**  
JOB NUMBER: A338-401  
GP04  
SHEET NO. 21 OF 90 SHEETS

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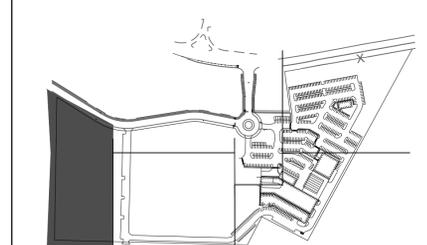
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 Plot Date/Time: Sep 02, 22 12:53



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(thick solid line)	(dashed line)	PROPOSED RETAINING WALL
(x100.00 Tc)		TOP OF PAVEMENT
(x100.00 Tc)		TOP OF CURB/CONCRETE
(x100.00 Tg)		TOP OF GRATE
(x100.00 LP)		LOW POINT
(x100.00 HP)		HIGH POINT
(x100.00 FS)		FINISHED SLAB
(x100.00 TW)		TOP OF WALL
(x100.00 BW)		BOTTOM OF WALL
(x100.00 FG)		FINISHED GROUND
(circle with dot)		TREE TO REMAIN
(circle with cross)		TREE TO BE REMOVED
(line with 'ST')		STORM SEWER LINE
(line with 'WW')		WASTEWATER LINE
(line with 'WL')		WATER LINE
(circle with 'V')		WATER VALVE
(circle with 'F')		FIRE HYDRANT
(circle with 'M')		WASTEWATER MANHOLE
(circle with 'S')		STORMSEWER MANHOLE
(circle with 'R')		1/2" REBAR FOUND (OR AS NOTED)
(circle with 'C')		1/2" REBAR WITH CAP FOUND
(circle with 'W')		1/2" REBAR WITH CHAPARRAL CAP SET
(circle with 'S')		COTTON SPINDLE WITH CHAPARRAL WASHER SET
(circle with 'M')		WATER METER
(circle with 'P')		UTILITY POLE
(circle with 'O')		OVERHEAD UTILITIES
(circle with 'E')		ELEC. UTILITY
(circle with 'M')		ELEC. MANHOLE
(circle with 'L')		LIGHT POLE
(circle with 'T')		TELEPHONE UTILITY
(circle with 'F')		UNDERGROUND FIBER OPTIC MARKER
(circle with 'M')		TELEPHONE MANHOLE
(circle with 'G')		UNDERGROUND GAS MARKER
(circle with 'C')		CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
  4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
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  8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.



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**COVERT BEE CAVE PLANS FOR SITE DEVELOPMENT**

PHASE 1 GRADING PLAN SHEET 5

NO.	DATE	DESCRIPTION	BY
C1	9/17/2018	REVISE SITE PLAN LAYOUT UTILITY PLAN ADD MASS GRADING	CRH
C3	6/28/2021	ADDED PHASE 3 SITE PLAN TO PLANS AND REVISED GRADING	CRH
C4	08/17/2022	ADDED PHASE 4 SITE LAYOUT PLANS	RJS

DATE: 09/12/2022  
 DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM  
 DWG NAME: C-049

09/12/2022  
 CHARLES R. HAGER  
 127034  
 LICENSED PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

JOB NUMBER: A338-401  
 GP05  
 SHEET NO. 22 OF 90 SHEETS

LOT 4  
BLOCK B  
6.83 ACRE COM

LOT 5  
BLOCK B  
1.62 ACRE COM

20' DRAINAGE  
& WW ESMT.

REVISE SITE LAYOUT & GRADING

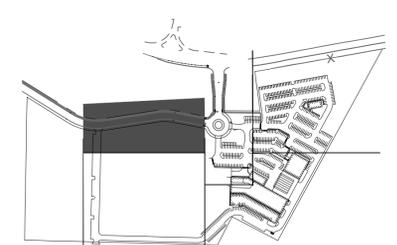


LEGEND

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
---	---	PROPOSED RETAINING WALL
X100.00		TOP OF PAVEMENT
X100.00		TOP OF CURB/CONCRETE
X100.00		TOP OF GRATE
X100.00		LOW POINT
X100.00		HIGH POINT
X100.00		FINISHED SLAB
X100.00		TOP OF WALL
X100.00		BOTTOM OF WALL
X100.00		FINISHED GROUND
	○	TREE TO REMAIN
	○	TREE TO BE REMOVED
WW	WW	STORM SEWER LINE
WL	WL	WASTEWATER LINE
WL	WL	WATER LINE
●	●	WATER VALVE
●	●	FIRE HYDRANT
●	●	WASTEWATER MANHOLE
●	●	STORMSEWER MANHOLE
●	●	1/2" REBAR FOUND (OR AS NOTED)
●	●	1/2" REBAR WITH CAP FOUND
●	●	1/2" REBAR WITH CHAPARRAL CAP SET
●	●	COTTON SPINDLE WITH CHAPARRAL WASHER SET
○	○	WATER METER
○	○	UTILITY POLE
○	○	OVERHEAD UTILITIES
○	○	ELEC. UTILITY
○	○	ELEC. MANHOLE
○	○	LIGHT POLE
○	○	TELEPHONE UTILITY
○	○	UNDERGROUND FIBER OPTIC MARKER
○	○	TELEPHONE MANHOLE
○	○	UNDERGROUND GAS MARKER
○	○	CHAIN LINK FENCE

NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
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KEY MAP

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



Know what's below.  
Call before you dig.

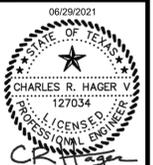
C1 C2 C3 REPLACEMENT SHEET

COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT

PHASE 1  
GRADING PLAN SHEET 6

NO.	DATE	DESCRIPTION
C1	9/7/2018	REVISE SITE PLAN LAYOUT UTILITY PLAN ADD MASS GRADING
C2	8/30/2019	ADD PHASE 2 SITE PLANS TO PLANS
C3	6/29/2021	UPDATE PHASE 3 GRADING

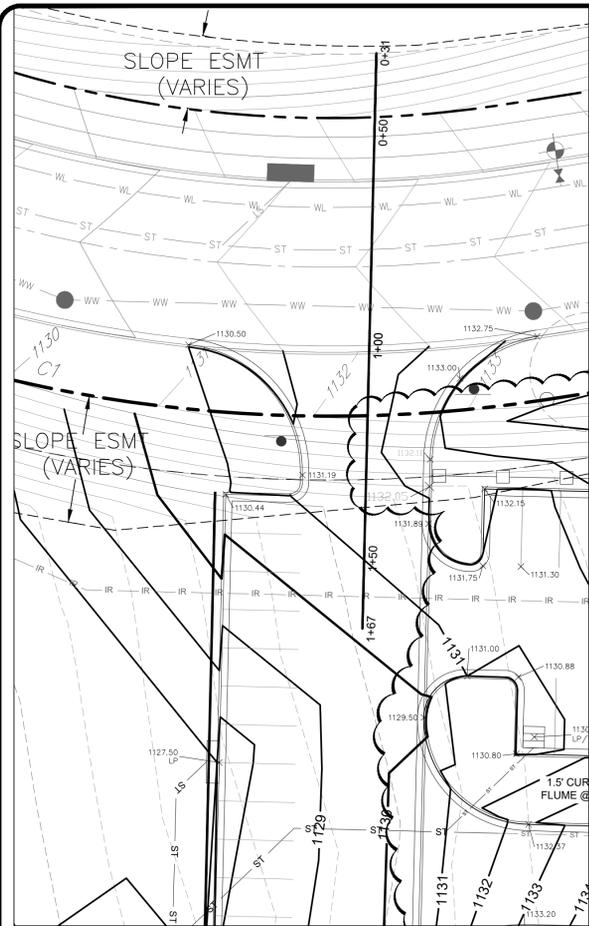
DATE	DESIGNED BY	DRAWN BY	CHECKED BY	DRAWING NAME
06/29/2021	JTS	JTS	SDM	GRADING PLAN SHEET 6



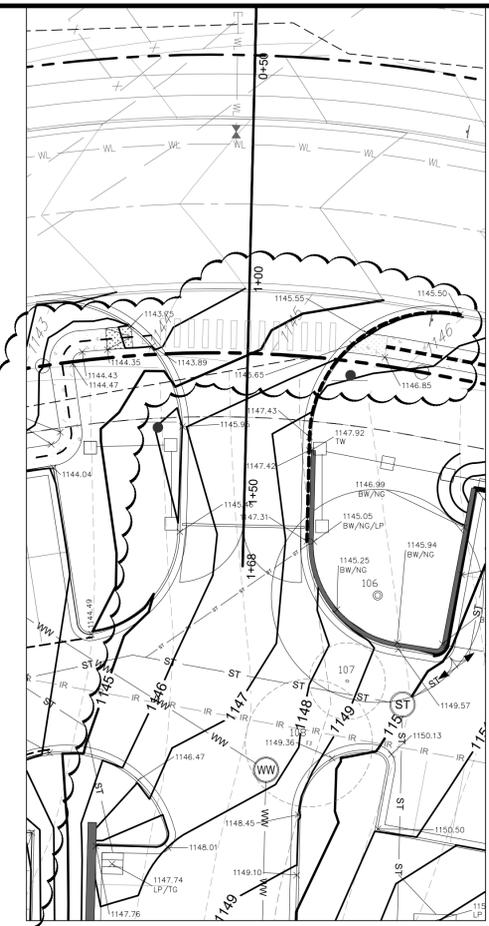
**LJA Engineering, Inc.**  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F-1386

JOB NUMBER:  
A338-401  
GP06  
SHEET NO.  
**23**  
OF 90 SHEETS

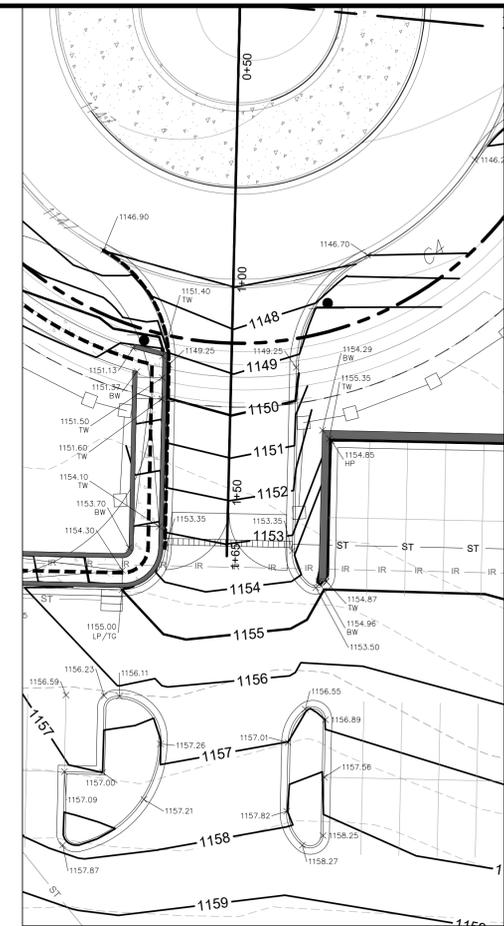
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 Plot Date/Time: Jun 23, 2021 13:46:19



**DRIVEWAY 1 - PHASE 1**  
SCALE: 1" = 20'



**DRIVEWAY 2 - PHASE 2**  
SCALE: 1" = 20'



**DRIVEWAY 3 - PHASE 1**  
SCALE: 1" = 20'

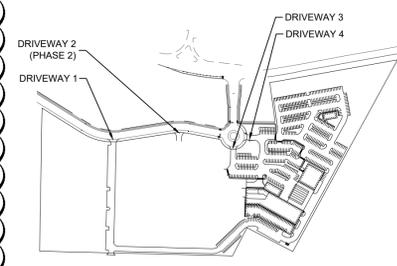
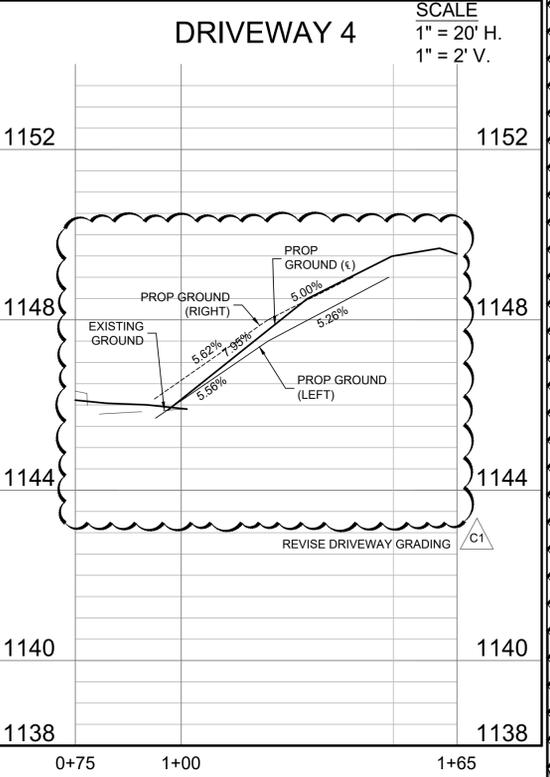
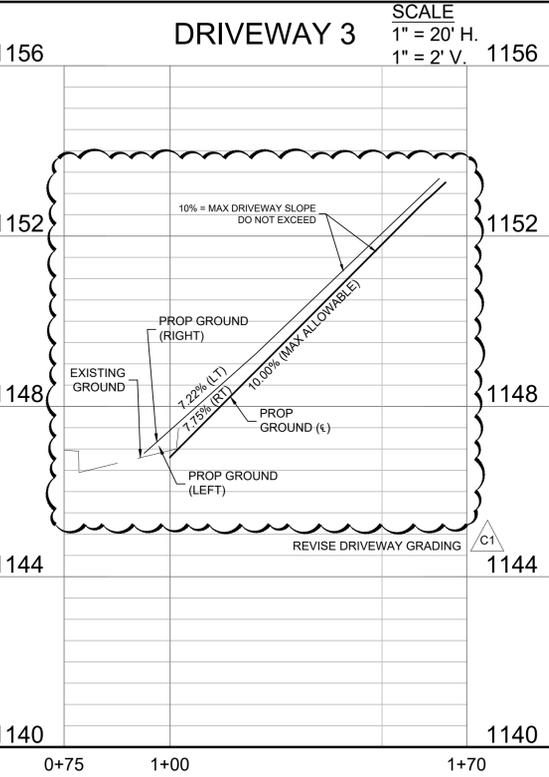
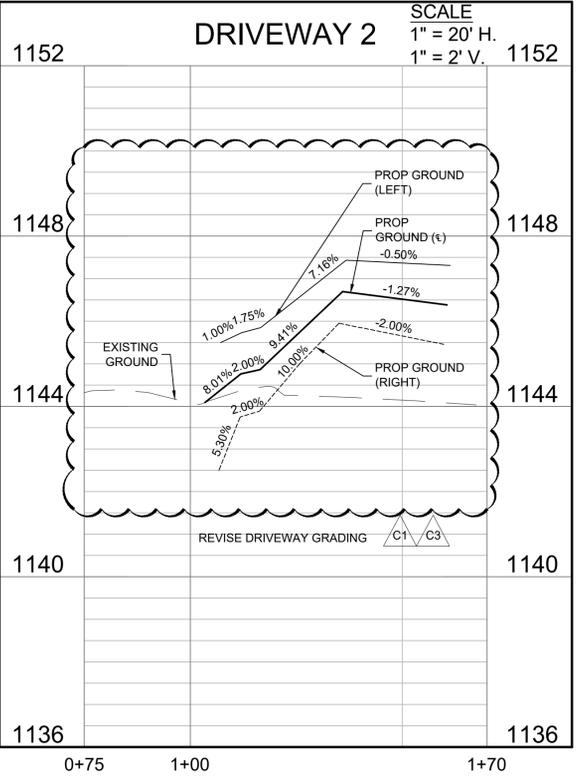
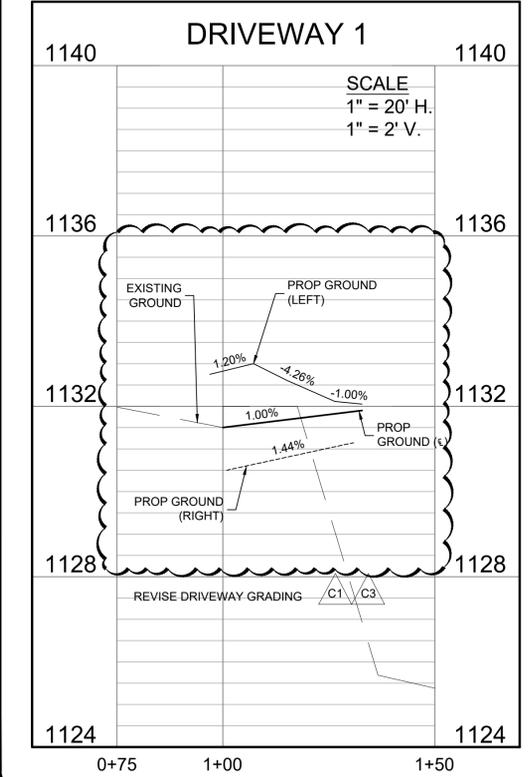


**DRIVEWAY 4 - PHASE 1**  
SCALE: 1" = 20'

**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(thick solid line)	(dashed line)	PROPOSED RETAINING WALL
(dotted line)	(dotted line)	TOP OF PAVEMENT
(dotted line)	(dotted line)	TOP OF CURB/CONCRETE
(dotted line)	(dotted line)	TOP OF GRATE
(dotted line)	(dotted line)	LOW POINT
(dotted line)	(dotted line)	HIGH POINT
(dotted line)	(dotted line)	FINISHED SLAB
(dotted line)	(dotted line)	TOP OF WALL
(dotted line)	(dotted line)	BOTTOM OF WALL
(dotted line)	(dotted line)	FINISHED GROUND
(circle with dot)	(circle with dot)	TREE TO REMAIN
(circle with cross)	(circle with cross)	TREE TO BE REMOVED
(circle with 'S')	(circle with 'S')	STORM SEWER LINE
(circle with 'W')	(circle with 'W')	WASTEWATER LINE
(circle with 'L')	(circle with 'L')	WATER LINE
(circle with 'V')	(circle with 'V')	WATER VALVE
(circle with 'F')	(circle with 'F')	FIRE HYDRANT
(circle with 'M')	(circle with 'M')	WASTEWATER MANHOLE
(circle with 'S')	(circle with 'S')	STORMSEWER MANHOLE
(circle with 'R')	(circle with 'R')	1/2" REBAR FOUND (OR AS NOTED)
(circle with 'C')	(circle with 'C')	1/2" REBAR WITH CAP FOUND
(circle with 'W')	(circle with 'W')	1/2" REBAR WITH CHAPARRAL CAP SET
(circle with 'S')	(circle with 'S')	COTTON SPINDLE WITH CHAPARRAL WASHER SET
(circle with 'M')	(circle with 'M')	WATER METER
(circle with 'P')	(circle with 'P')	UTILITY POLE
(circle with 'U')	(circle with 'U')	OVERHEAD UTILITIES
(circle with 'E')	(circle with 'E')	ELEC. UTILITY
(circle with 'M')	(circle with 'M')	ELEC. MANHOLE
(circle with 'L')	(circle with 'L')	LIGHT POLE
(circle with 'T')	(circle with 'T')	TELEPHONE UTILITY
(circle with 'F')	(circle with 'F')	UNDERGROUND FIBER OPTIC MARKER
(circle with 'M')	(circle with 'M')	TELEPHONE MANHOLE
(circle with 'G')	(circle with 'G')	UNDERGROUND GAS MARKER
(circle with 'L')	(circle with 'L')	CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CRH
C1	9/7/2018	REVISE SITE PLAN LAYOUT/UTILITY PLAN AND ADD GRADES	CRH	8/30/2019
C2	8/30/2019	ADD PHASE 2 SITE PLANS TO PLAN	CRH	11/3/2020
C3	11/3/2020	ADD PHASE 3 TO SITE PLAN, REVISE DWY, 1&2 GRADES	CRH	

DATE:	11/24/2020
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NAME:	GRADING PLAN SHEET 7



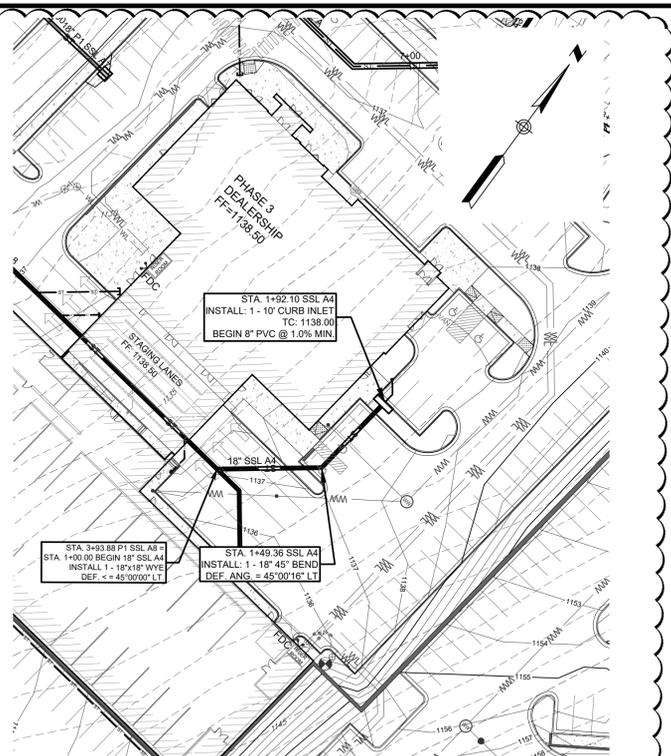
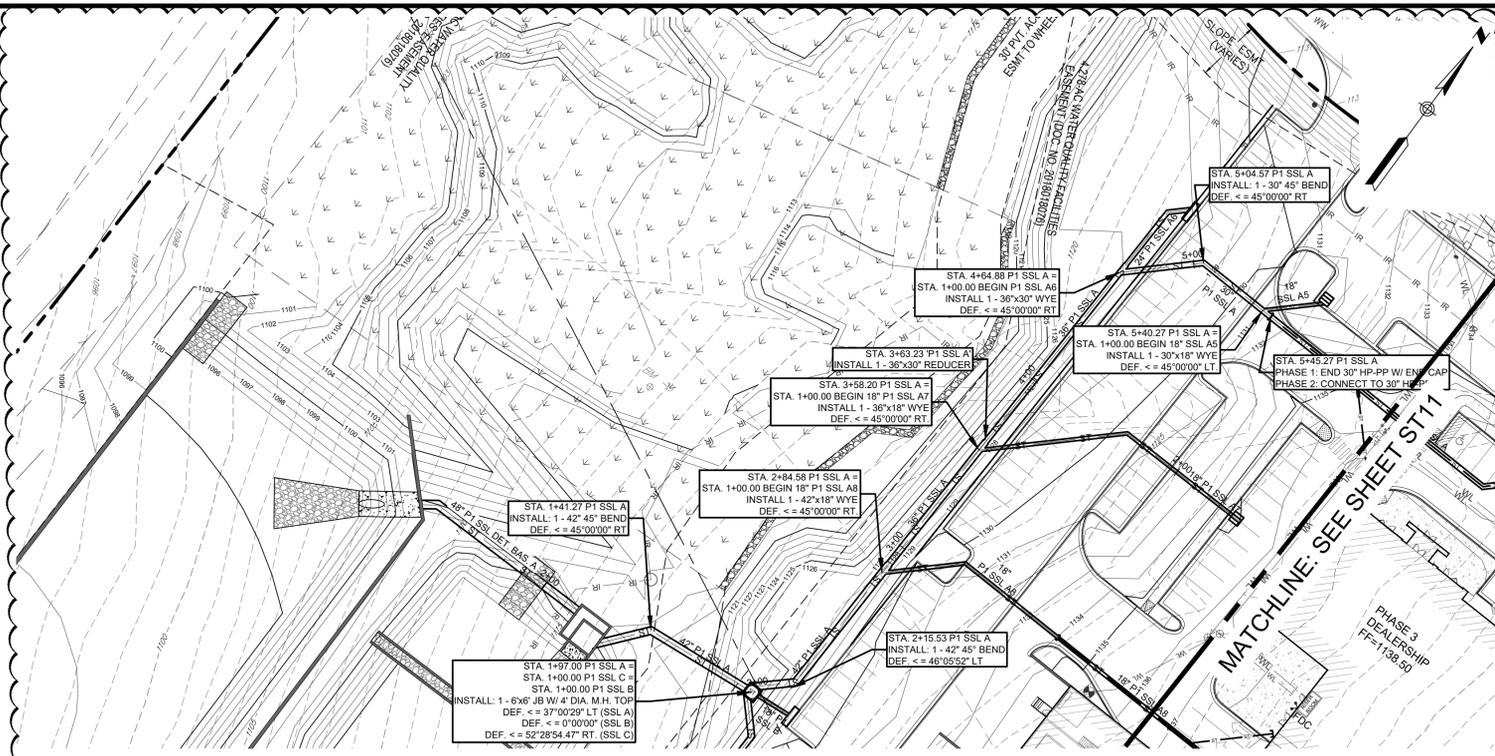
**LJA Engineering, Inc.**  
Phone 512.439.4700  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
FRN-F-1386

JOB NUMBER: A338-401

GP07

SHEET NO. **24** OF 90 SHEETS





**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—	—	STORM SEWER LINE
—	—	WASTEWATER LINE
—	—	WASTEWATER SERVICE
—	—	WATER LINE
—	—	WATER SERVICE
—	—	WATER VALVE
—	—	FIRE HYDRANT
—	—	WASTEWATER MANHOLE
—	—	STORMSEWER MANHOLE
—	—	CURB INLET
—	—	GRATE INLET
—	—	1/2" REBAR FOUND (OR AS NOTED)
—	—	1/2" REBAR WITH CAP FOUND
—	—	1/2" REBAR WITH CHAPARRAL CAP SET
—	—	WATER METER
—	—	UTILITY POLE
—	—	OVERHEAD UTILITIES
—	—	ELEC. UTILITY
—	—	ELEC. MANHOLE
—	—	LIGHT POLE
—	—	TELEPHONE UTILITY
—	—	UNDERGROUND FIBER OPTIC MARKER
—	—	TELEPHONE MANHOLE
—	—	UNDERGROUND GAS MARKER
—	—	CHAIN LINK FENCE

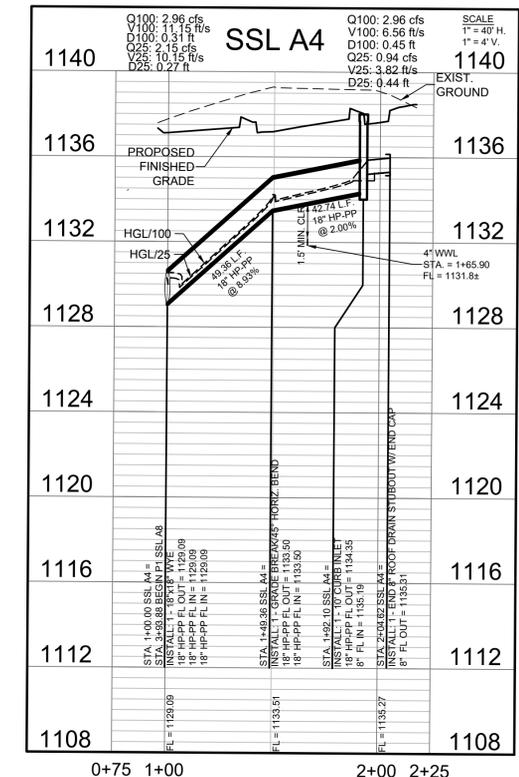
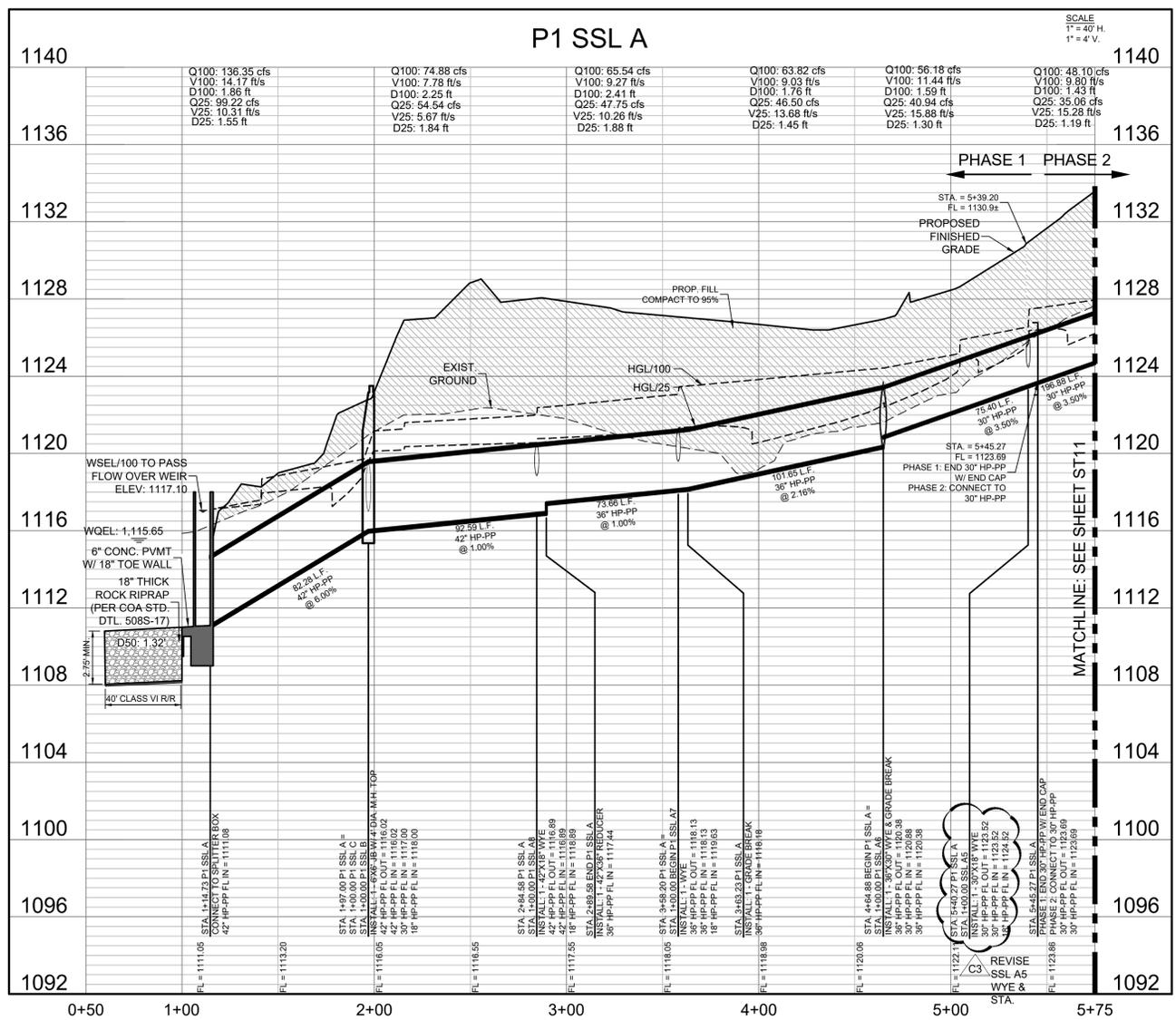
- NOTES:**
- CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
  - CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0" (MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
  - ALL STORM SEWER PIPE SHALL BE HP-PP AS SHOWN ON PROFILE SHEET.
  - ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF AUSTIN SPECIFICATIONS.
  - ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.
  - REFERENCE STRUCTURAL DRAWINGS FOR WALL DESIGN, WALLS AND FOOTINGS DRAWN SCHEMATICALLY.

NO.	DATE	DESCRIPTION	BY
C1	11/24/2020	REVISE SSL A PLAN & PROFILE PER NEW GRADING / FUTURE SITE PLAN	JTS
C3	11/24/2020	REVISE PHASE 3 SITE PLAN / GRADING/UTILITIES. UPDATE HGLS AND ADD SSL A4 PROFILE	SDM



**LJA Engineering, Inc.**  
Phone 512.439.4700  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
FRN-F-1386

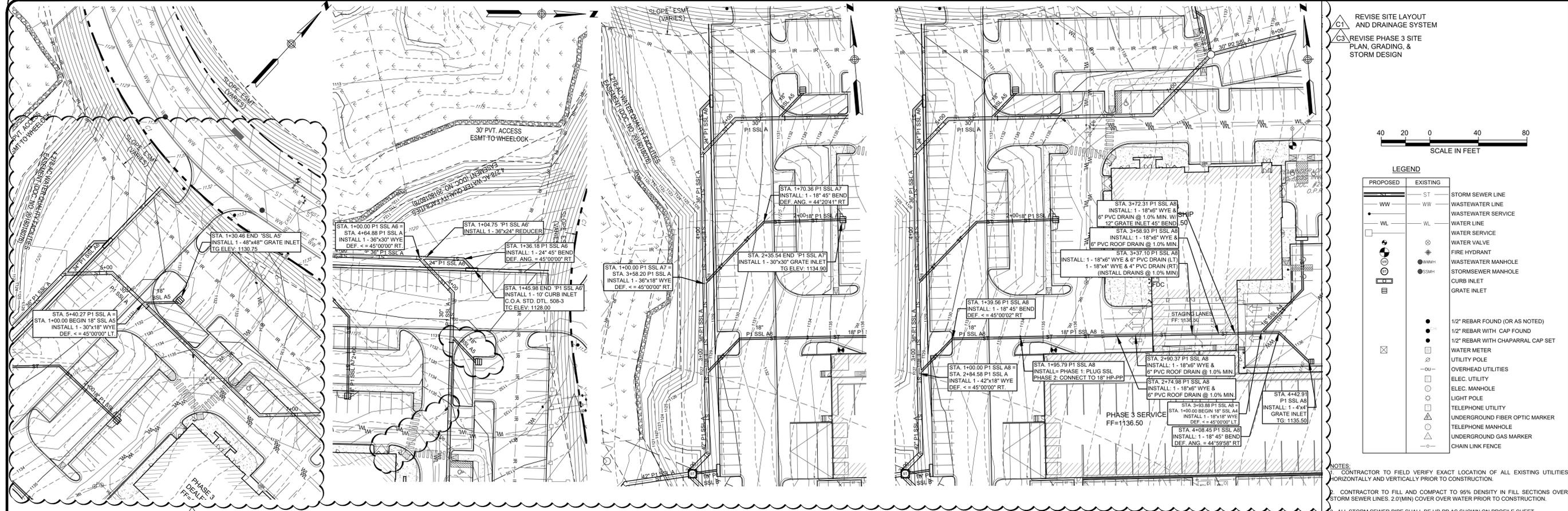
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SHEET NO. 26  
OF 90 SHEETS



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REPLACEMENT SHEET

11-23-2020 - Covert Bee Cave Stormwater Phase 3 Revision Plans A338-401-F-5701-04-C3.rvt  
User: mrendy Nov. 24, 20 - 07:59  
Plot Date/Time: Nov. 24, 20 - 11:03



REVISE SITE LAYOUT AND DRAINAGE SYSTEM  
 REVISE PHASE 3 SITE PLAN, GRADING, & STORM DESIGN



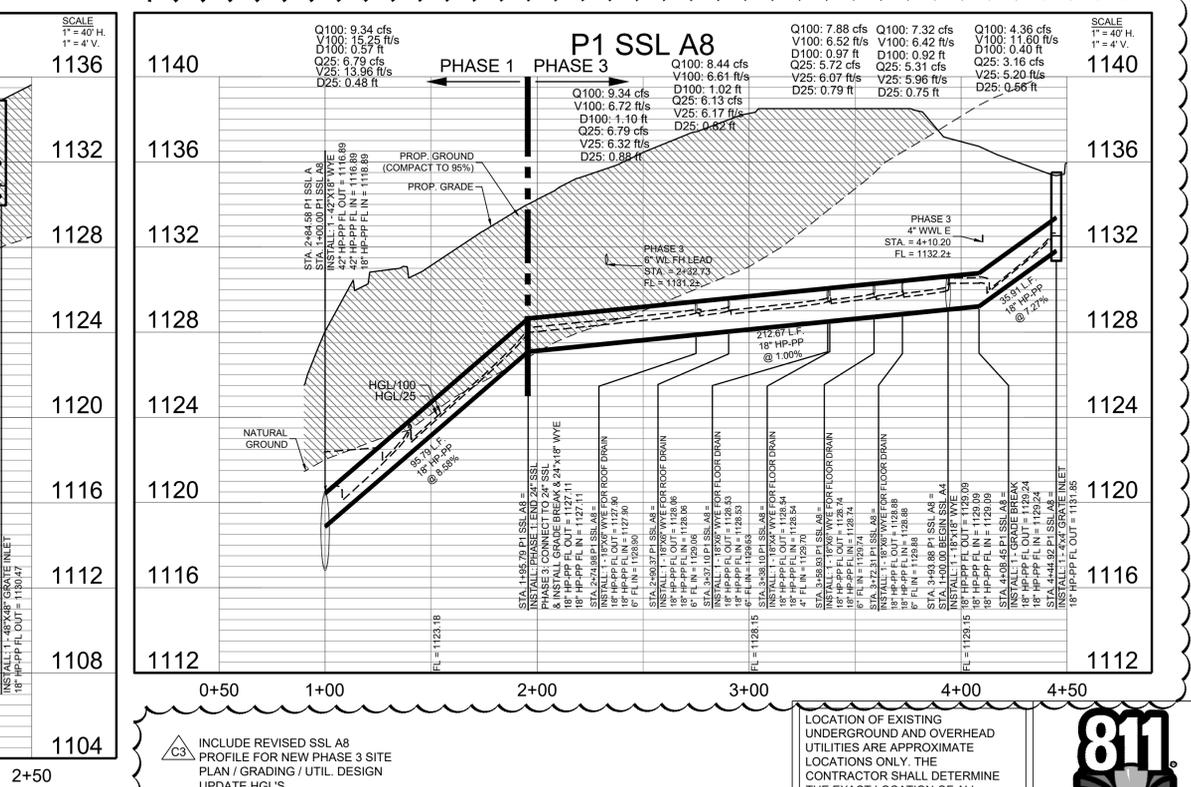
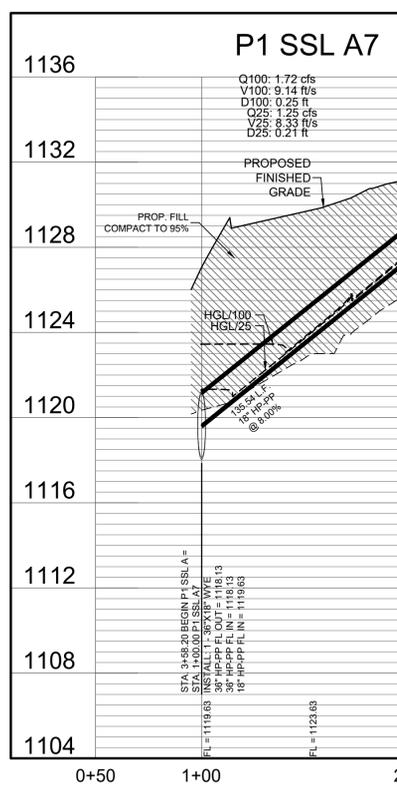
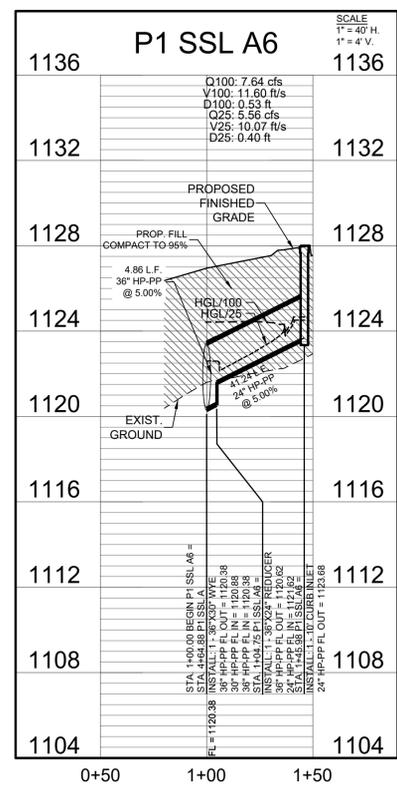
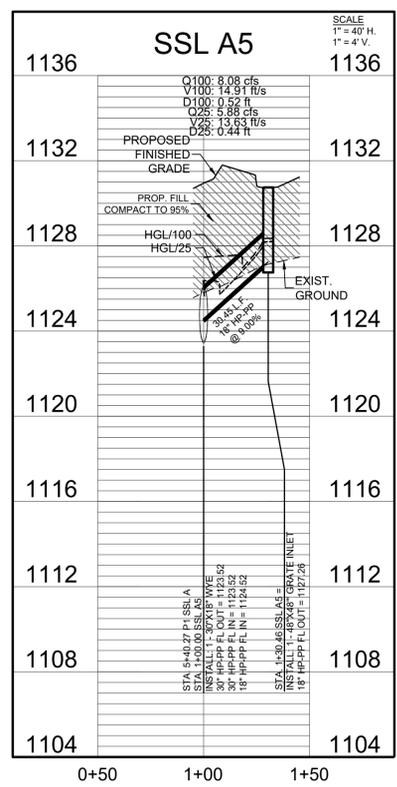
LEGEND

PROPOSED	EXISTING	DESCRIPTION
—	—	STORM SEWER LINE
—	—	WASTEWATER LINE
—	—	WATER SERVICE
—	—	WATER LINE
—	—	WATER VALVE
—	—	FIRE HYDRANT
—	—	WASTEWATER MANHOLE
—	—	STORMSEWER MANHOLE
—	—	CURB INLET
—	—	GRATE INLET
—	—	1/2" REBAR FOUND (OR AS NOTED)
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—	—	OVERHEAD UTILITIES
—	—	ELEC. UTILITY
—	—	ELEC. MANHOLE
—	—	LIGHT POLE
—	—	TELEPHONE UTILITY
—	—	UNDERGROUND FIBER OPTIC MARKER
—	—	TELEPHONE MANHOLE
—	—	UNDERGROUND GAS MARKER
—	—	CHAIN LINK FENCE

- NOTES:
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  - CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
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  - REFERENCE STRUCTURAL DRAWINGS FOR WALL DESIGN, WALLS AND FOOTINGS DRAWN SCHEMATICALLY.

REVISE SITE LAYOUT AND SSL A5

REVISE SITE LAYOUT AND SSL A5



INCLUDE REVISED SSL A8 PROFILE FOR NEW PHASE 3 SITE PLAN / GRADING / UTIL. DESIGN UPDATE HGL'S

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



REPLACEMENT SHEET

**COVERT BEE CAVE**  
**PLANS FOR SITE DEVELOPMENT**  
 PHASE 1  
 STORMSEWER PLAN & PROFILES SHEET 2

NO.	DATE	DESCRIPTION
C1	6/29/2021	REVISE SSL A8 PLAN & PROFILE PER NEW GRADING / FUTURE SITE PLAN
C3	6/29/2021	REVISE PHASE 3 SITE PLAN / GRADING/UTILITIES AND UPDATE HGL'S

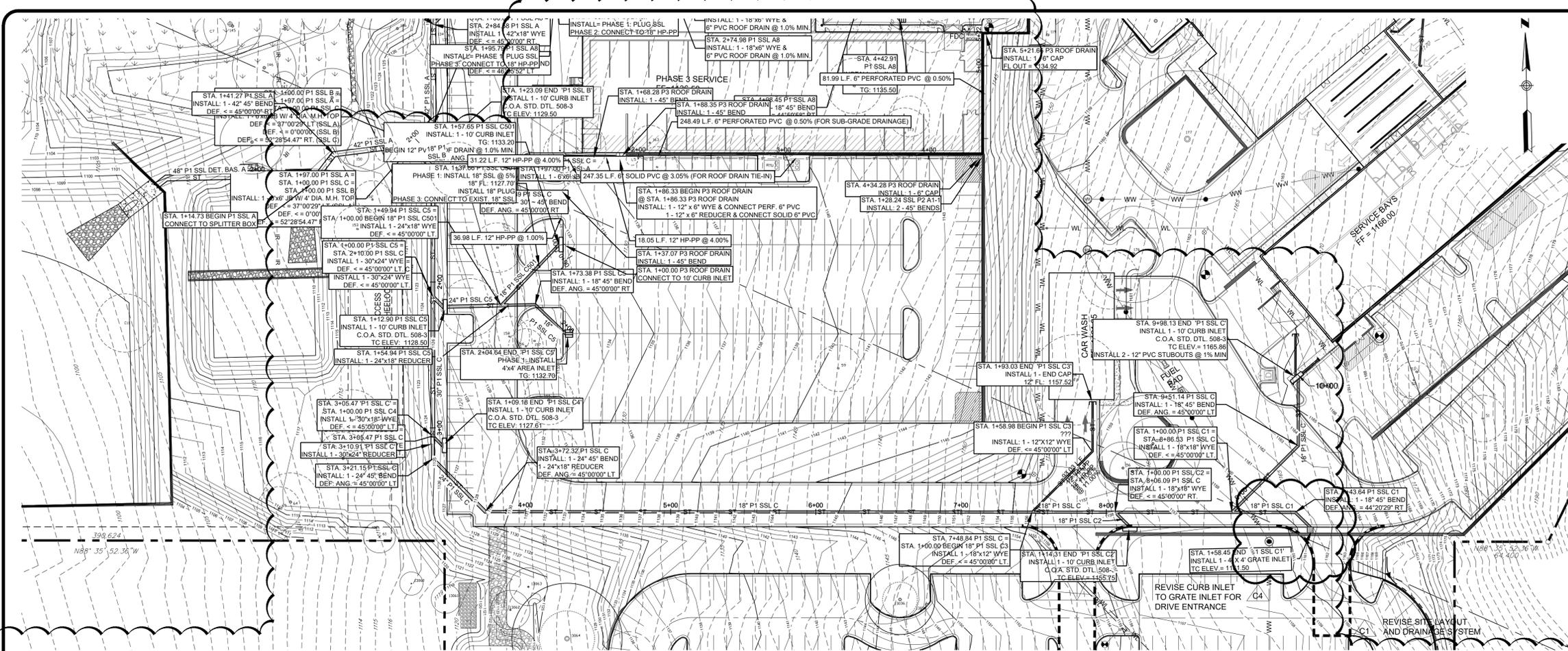
DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM

DATE: 06/29/2021  
 DESIGNED BY: CHARLES R. HAGER  
 127034  
 LICENSED PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
 5316 Highway 290 West  
 Suite 150  
 Austin, Texas 78735  
 Phone 512.438.4700  
 Fax 512.438.4716  
 FRN-F-1386

JOB NUMBER: A338-401  
 SHEET NO. **27** OF 90 SHEETS

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 Nov 24, 2021 1:59:29  
 Plot Date/Time: Jun 23, 2021 1:52:46



SCALE IN FEET  
40 0 40 80

**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—WL—	—WL—	WATER LINE
—WS—	—WS—	WATER SERVICE
—WV—	—WV—	WATER VALVE
—WMH—	—WMH—	WASTEWATER MANHOLE
—SMH—	—SMH—	STORMSEWER MANHOLE
—CI—	—CI—	CURB INLET
—GI—	—GI—	GRATE INLET
—RFB—	—RFB—	12\"/>

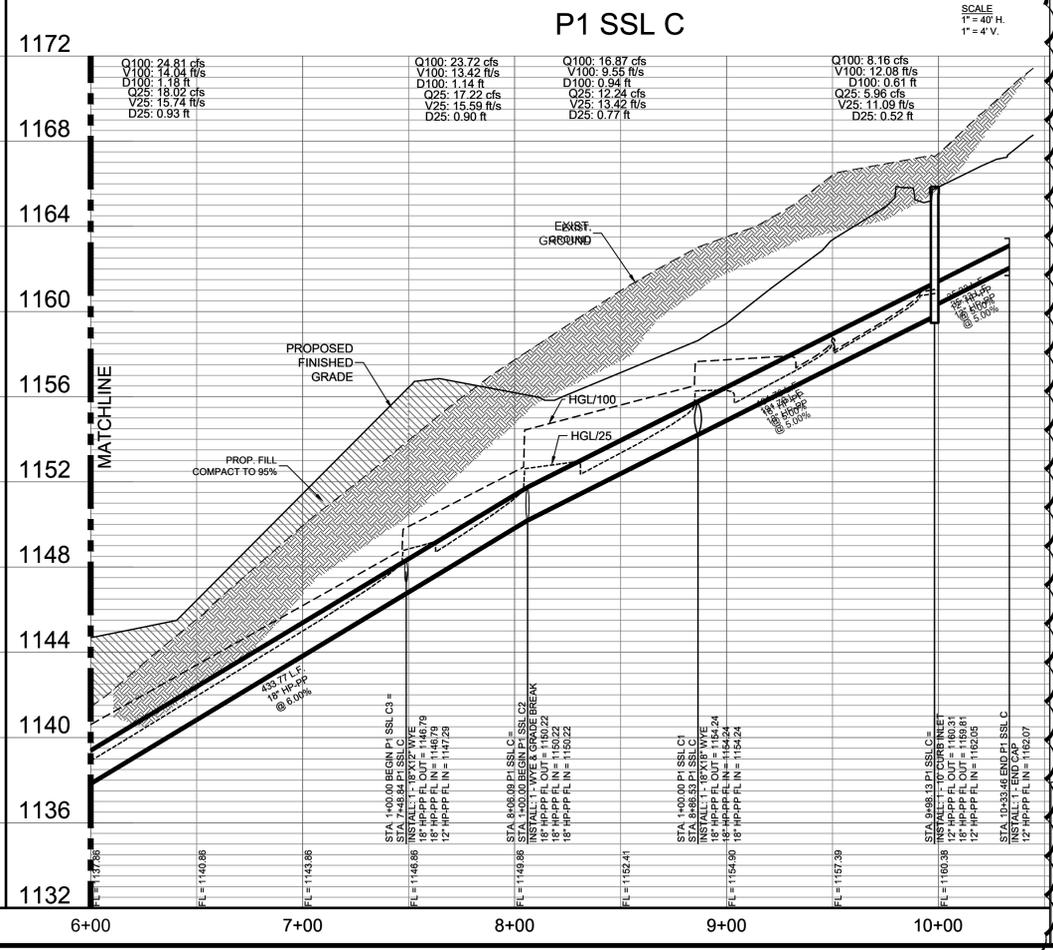
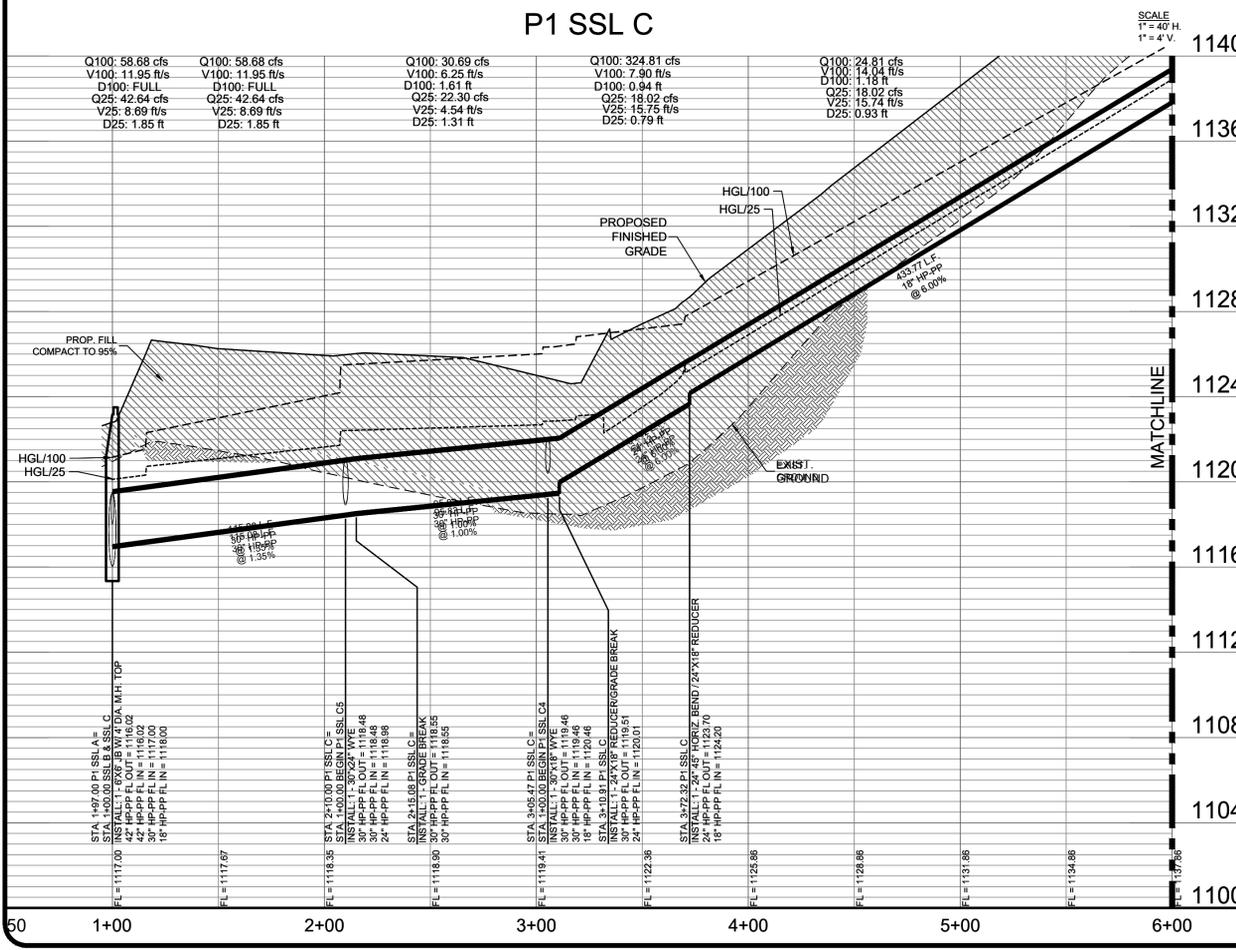
**NOTES:**

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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
STORMSEWER PLAN & PROFILES SHEET 3**

NO.	DATE	DESCRIPTION
C1	09/12/2022	REVISE SSL C - C501 PLAN & PROFILE PER NEW GRADING / FUTURE SITE PLAN
C3	06/29/2021	REVISE PHASE 3 SITE PLAN / GRADING UTILITIES
C4	08/17/2022	ADDED PHASE 4 SITE PLAN / REVISED DRAINAGE LAYOUT

BY	DATE
CRH	06/29/2021
RJS	08/17/2022



REVISE PHASE 3 SITE LAYOUT UPDATE GVDS

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Fax 512.438.4716  
Building II, Suite 100  
Austin, Texas 78735  
FRN-F-1386

DESIGNED BY: JTS  
DRAWN BY: SDM  
CHECKED BY: SDM  
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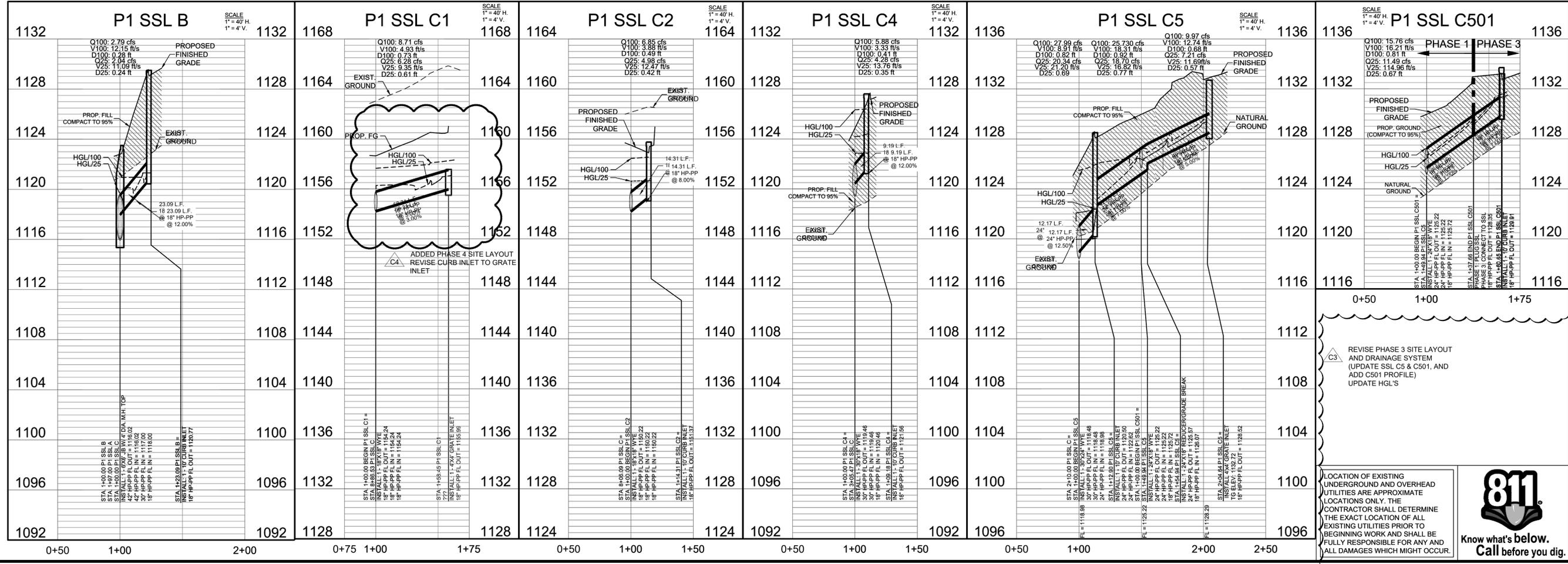
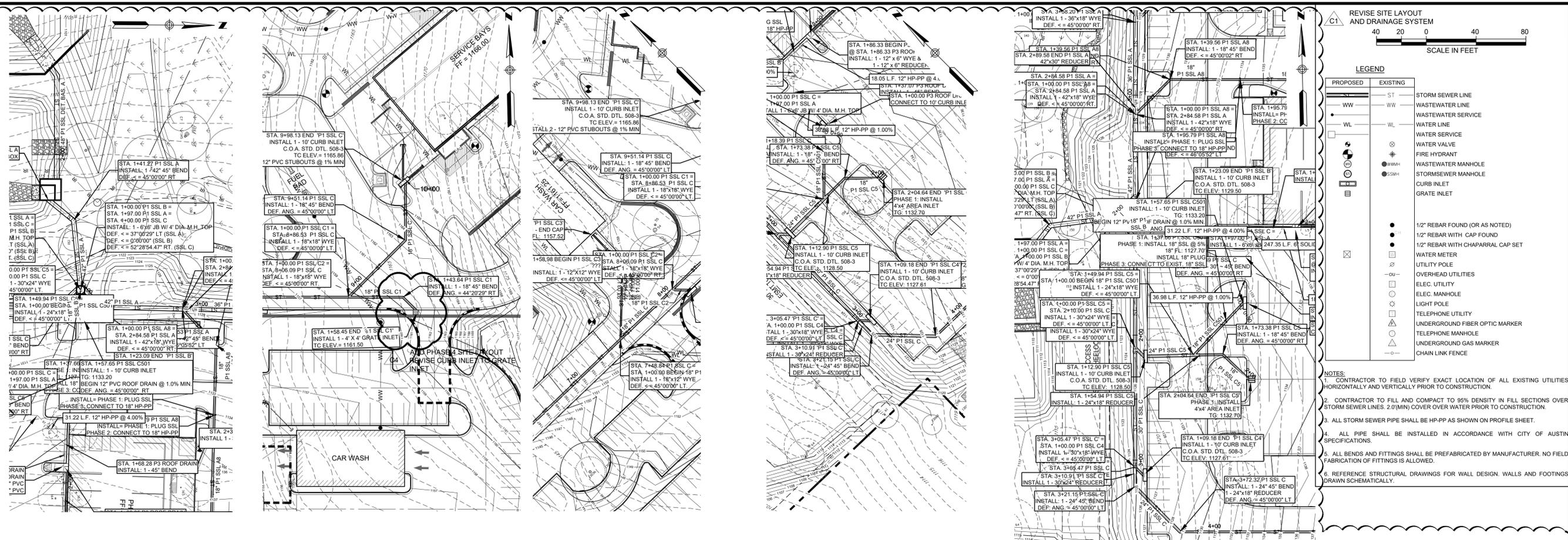
09/12/2022

STATE OF TEXAS  
CHARLES R. HAGER  
127034  
PROFESSIONAL ENGINEER

JOB NUMBER: A338-01  
SHEET NO. **28** OF 90 SHEETS

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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 1  
STORMSEWER PLAN & PROFILES SHEET 4



NO.	DATE	DESCRIPTION
C1	09/12/2022	REVISIONS
C2	05/29/2021	REVISION P1 SSL B, C1 - C5 PLAN & PROFILE PER NEW GRADING / FUTURE SITE PLAN
C3	CRH	REVISION PHASE 3 SITE PLAN / GRADING UTILITIES UPDATE HGL'S
C4	RJS	ADDED PHASE 04 SITE PLAN / REVISED CURB INLET TO GRATE INLET

**LJA Engineering, Inc.**  
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FRN-F-1386

**CHARLES R. HAGER**  
127034  
PROFESSIONAL ENGINEER

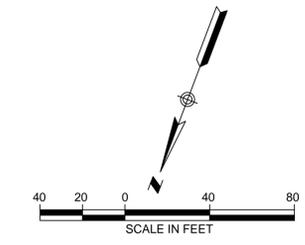
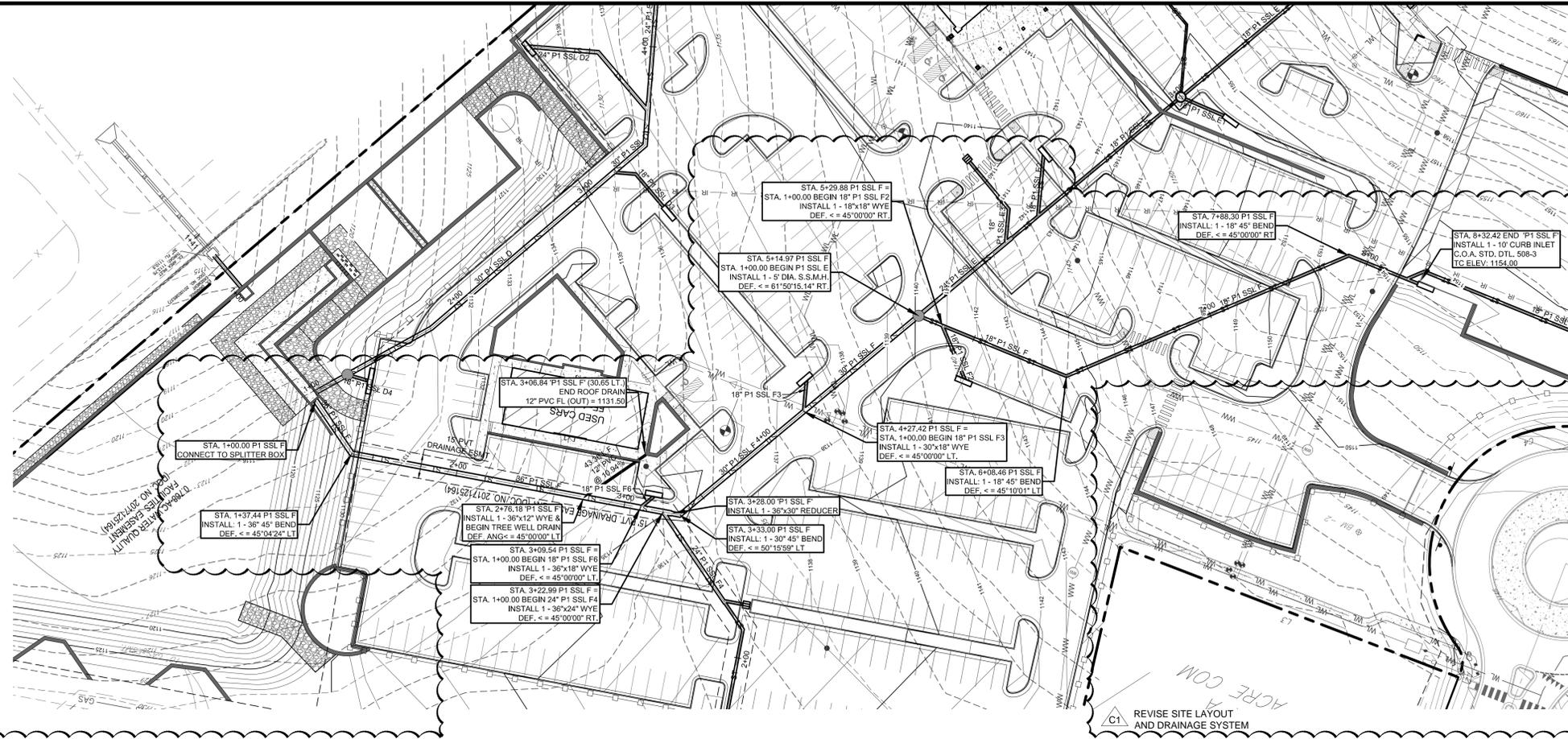
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DATE: 09/12/2022

JOB NUMBER: A338-401  
SHEET NO. 29 OF 90 SHEETS



REPLACEMENT SHEET

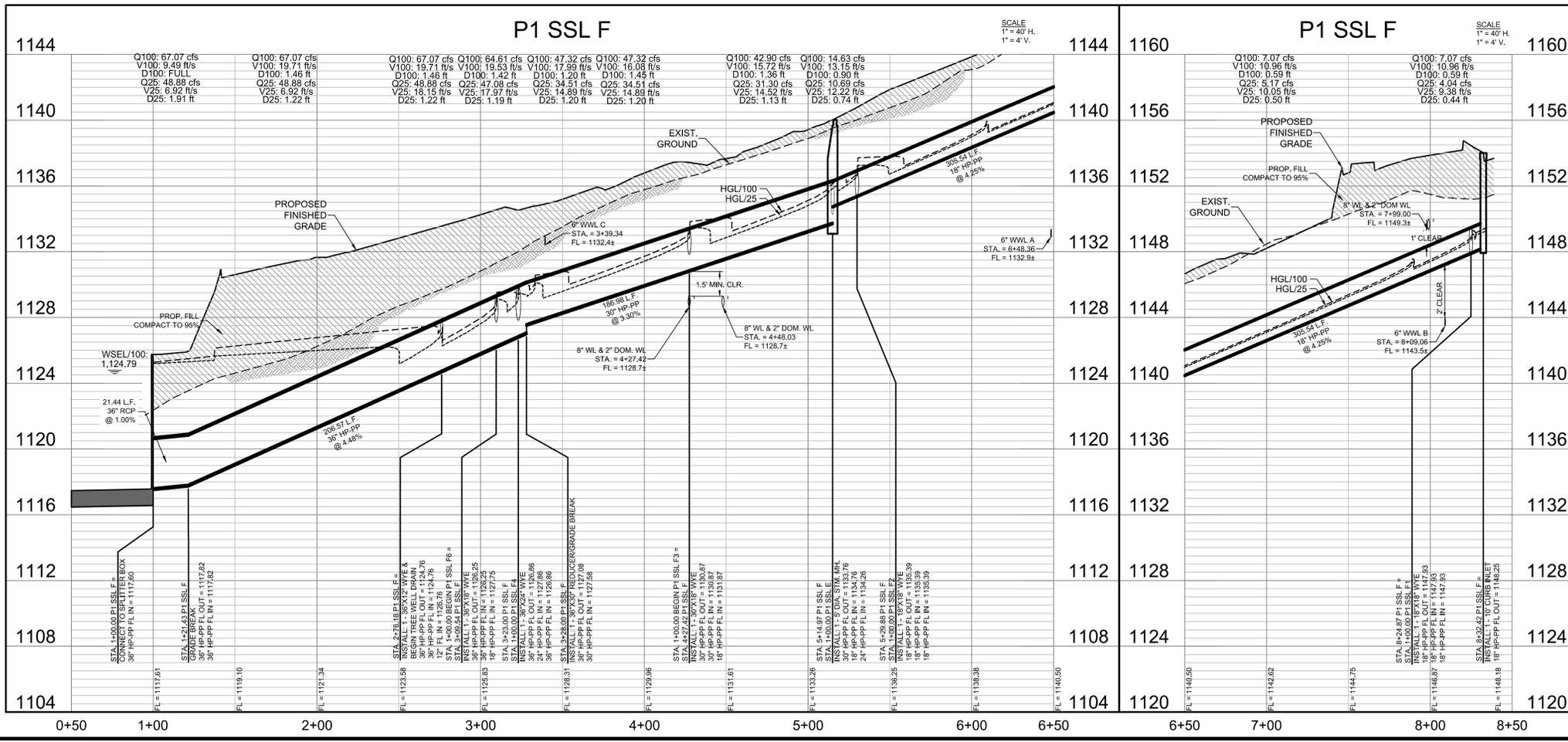
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User: rmanok  
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**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—WL—	—WL—	WASTEWATER SERVICE WATER LINE
—W—	—W—	WATER SERVICE WATER LINE
⊕	⊕	WATER VALVE
⊕	⊕	FIRE HYDRANT
⊕	⊕	WASTEWATER MANHOLE
⊕	⊕	STORMSEWER MANHOLE
⊕	⊕	CURB INLET
⊕	⊕	GRATE INLET
●	●	1/2" REBAR FOUND (OR AS NOTED)
●	●	1/2" REBAR WITH GAP FOUND
⊕	⊕	1/2" REBAR WITH CHAPARRAL CAP SET
⊕	⊕	UTILITY POLE
⊕	⊕	OVERHEAD UTILITIES
⊕	⊕	ELEC. UTILITY
⊕	⊕	ELEC. MANHOLE
⊕	⊕	LIGHT POLE
⊕	⊕	TELEPHONE UTILITY
⊕	⊕	UNDERGROUND FIBER OPTIC MARKER
⊕	⊕	TELEPHONE MANHOLE
⊕	⊕	UNDERGROUND GAS MARKER
⊕	⊕	CHAIN LINK FENCE

- NOTES:**
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**COVERT BEE CAVE**  
**PLANS FOR SITE DEVELOPMENT**  
**PHASE 1**  
**STORMSEWER PLAN & PROFILES SHEET 5**

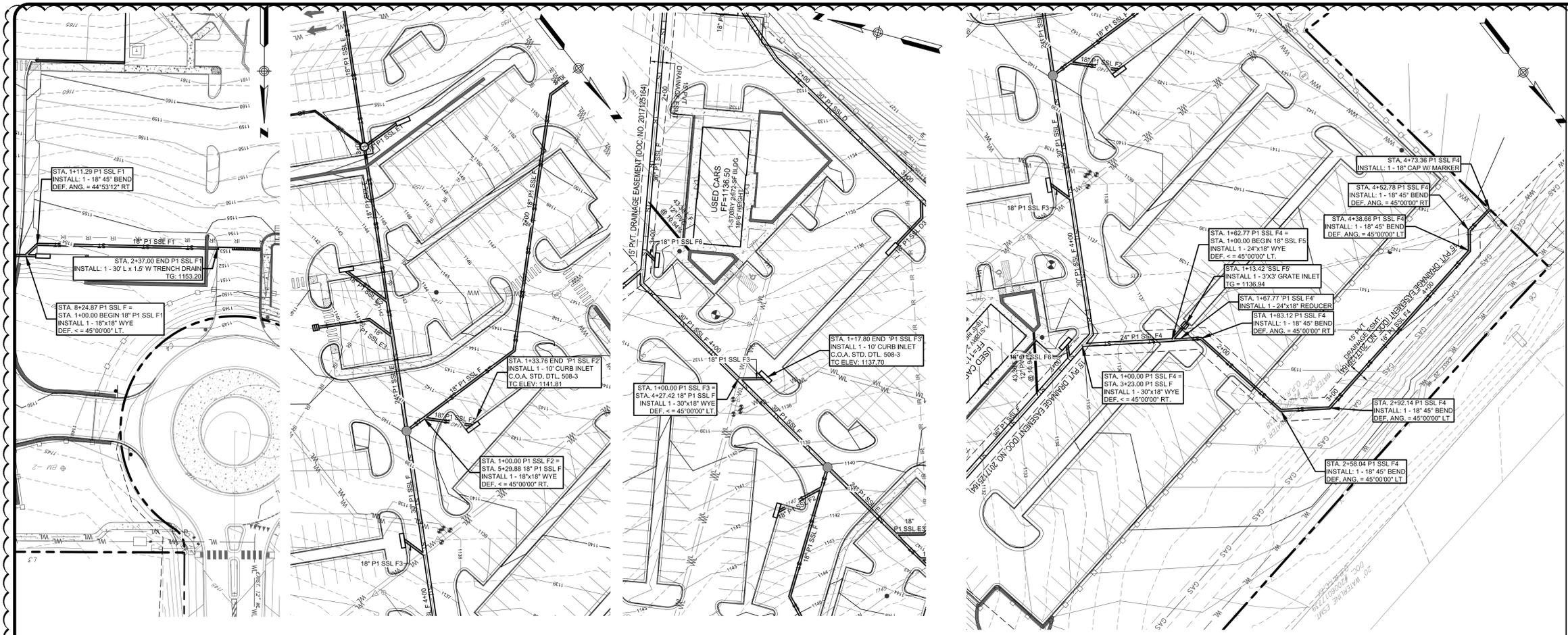
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DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DRAWING NUMBER: 3-20-19

CHARLES R. HAGER  
127034  
REGISTERED PROFESSIONAL ENGINEER

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JOB NUMBER: A338-401  
SHEET NO. 30 OF 90 SHEETS

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User: jhagenc  
Last Modified: Mar 20, 2019 10:09:18 AM  
Plot Date: Mar 20, 2019 10:09:18 AM



REVISE SITE LAYOUT AND DRAINAGE SYSTEM

SCALE IN FEET

LEGEND

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—WL—	—WL—	WASTEWATER SERVICE WATER LINE
—WV—	—WV—	WATER VALVE
—FH—	—FH—	FIRE HYDRANT
—WMH—	—WMH—	WASTEWATER MANHOLE
—SMH—	—SMH—	STORMSEWER MANHOLE
—CI—	—CI—	CURB INLET
—GI—	—GI—	GRATE INLET
—RFB—	—RFB—	1/2" REBAR FOUND (OR AS NOTED)
—RFBW—	—RFBW—	1/2" REBAR WITH GAP FOUND
—RFBWC—	—RFBWC—	1/2" REBAR WITH CHAPARRAL CAP SET
—W—	—W—	WATER METER
—UP—	—UP—	UTILITY POLE
—OU—	—OU—	OVERHEAD UTILITIES
—E—	—E—	ELEC. UTILITY
—EM—	—EM—	ELEC. MANHOLE
—L—	—L—	LIGHT POLE
—TU—	—TU—	TELEPHONE UTILITY
—U—	—U—	UNDERGROUND FIBER OPTIC MARKER
—TM—	—TM—	TELEPHONE MANHOLE
—UGM—	—UGM—	UNDERGROUND GAS MARKER
—CLF—	—CLF—	CHAIN LINK FENCE

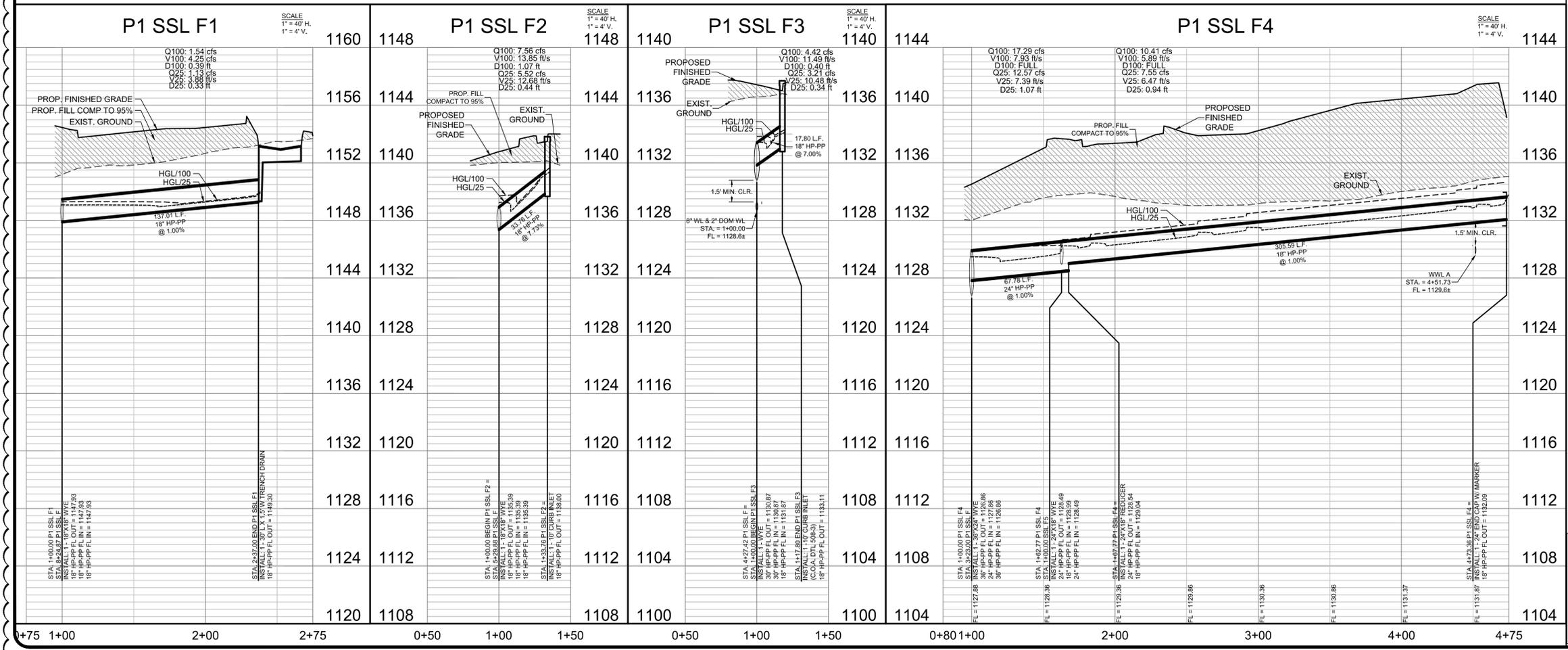
NOTES:

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COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT

PHASE 1  
STORMSEWER PLAN & PROFILES SHEET 6

NO.	REVISIONS	DESCRIPTION	DATE	BY
C1	REVISE SSL F1 - F4 PLAN & PROFILE PER PH 1 AND FUTURE SITE PLAN, POND & GRADING REVISIONS			



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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REPLACEMENT SHEET - C1

DATE: 02/20/2019

DESIGNED BY: JTS

DRAWN BY: JTS

CHECKED BY: JSM

DRAWING NUMBER: 3-20-19

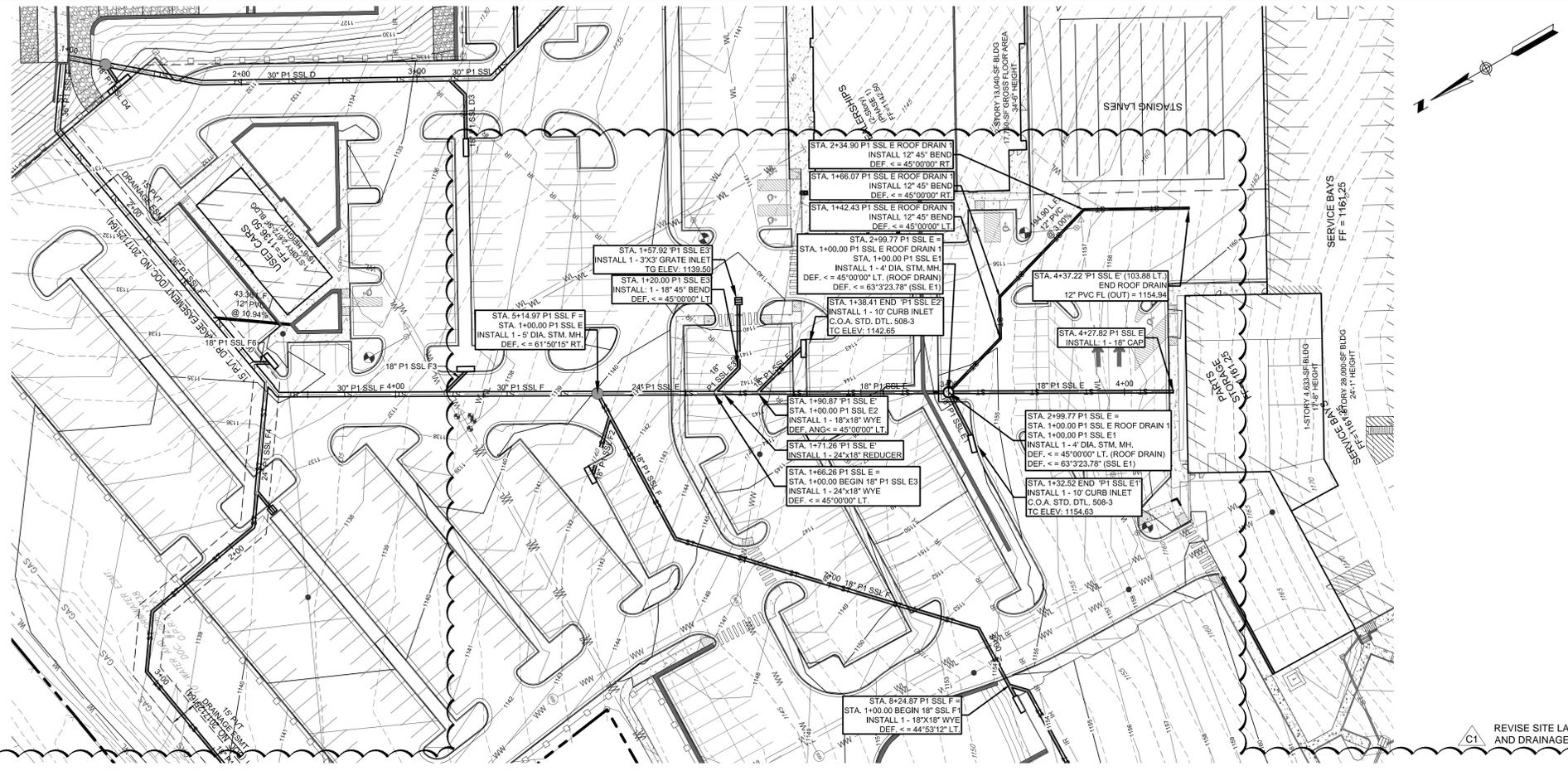
CHARLES R. HAGER  
127034  
REGISTERED PROFESSIONAL ENGINEER

LJA Engineering, Inc.  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.439.4700  
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JOB NUMBER: A338-401

SHEET NO. 31 OF 90 SHEETS

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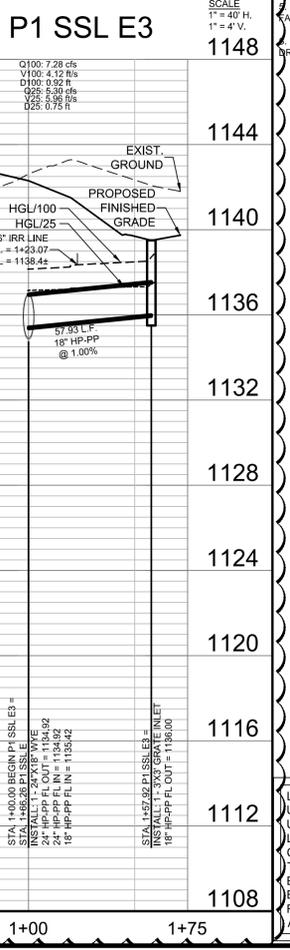
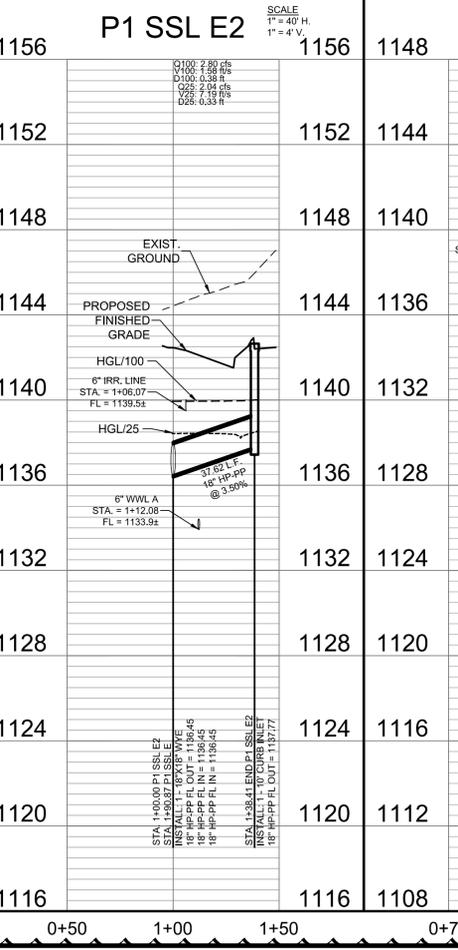
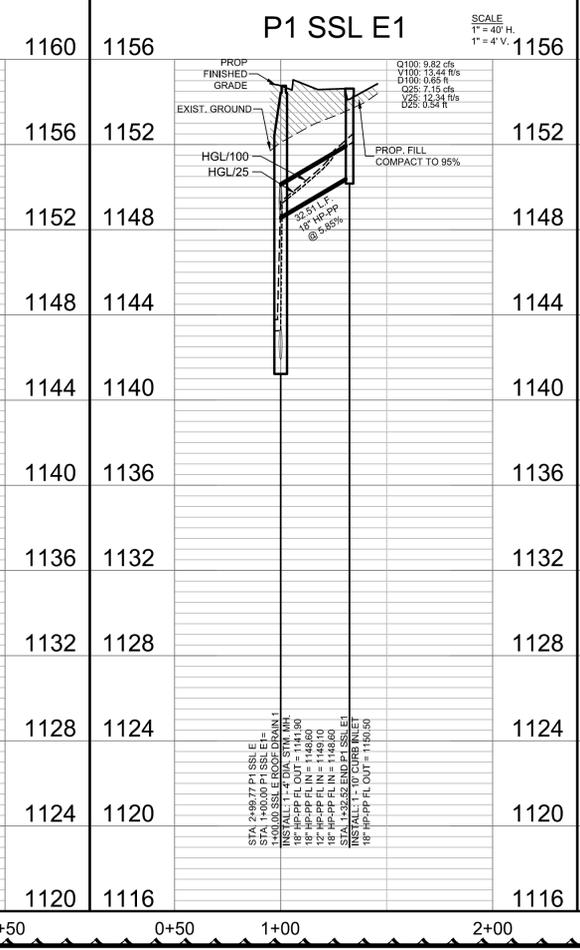
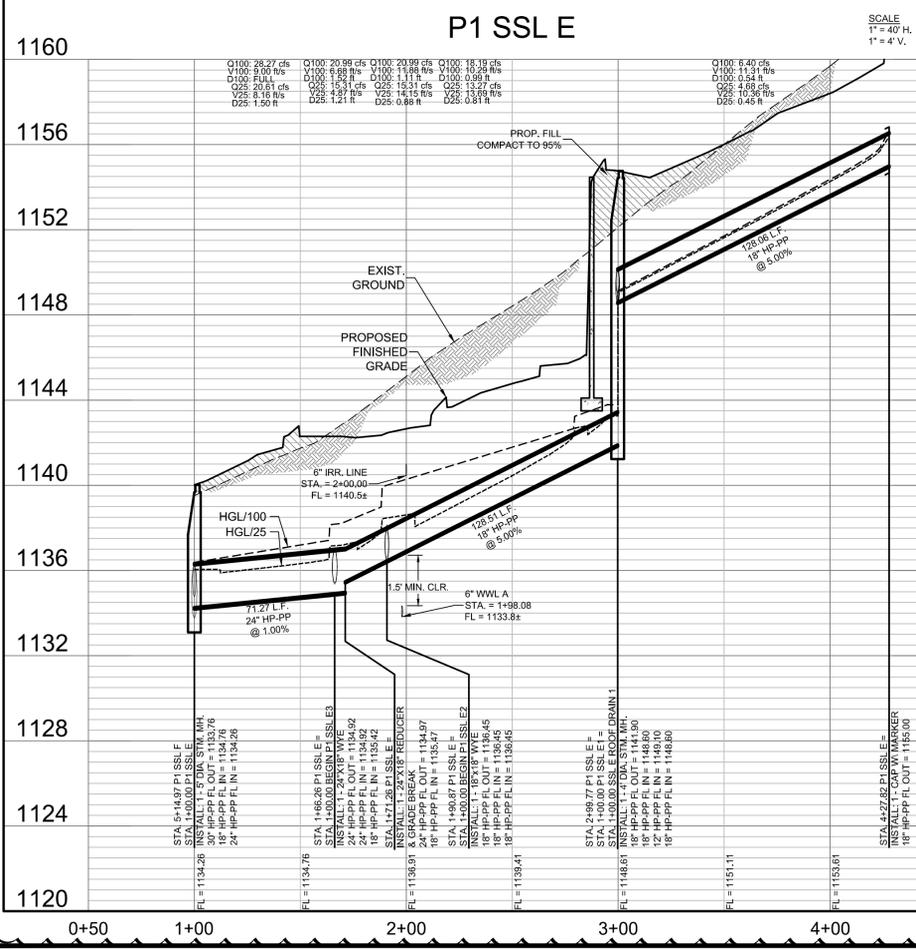


**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER SERVICE
	WL	WATER LINE
	WV	WATER VALVE
	WH	FIRE HYDRANT
	WMH	WASTEWATER MANHOLE
	SMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
		OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

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NO.	REVISIONS	DESCRIPTION	DATE
C1	REVISE SSLE - E3 PLAN & PROFILE PER PH 1 & FUTURE SITE PLAN & GRADING		



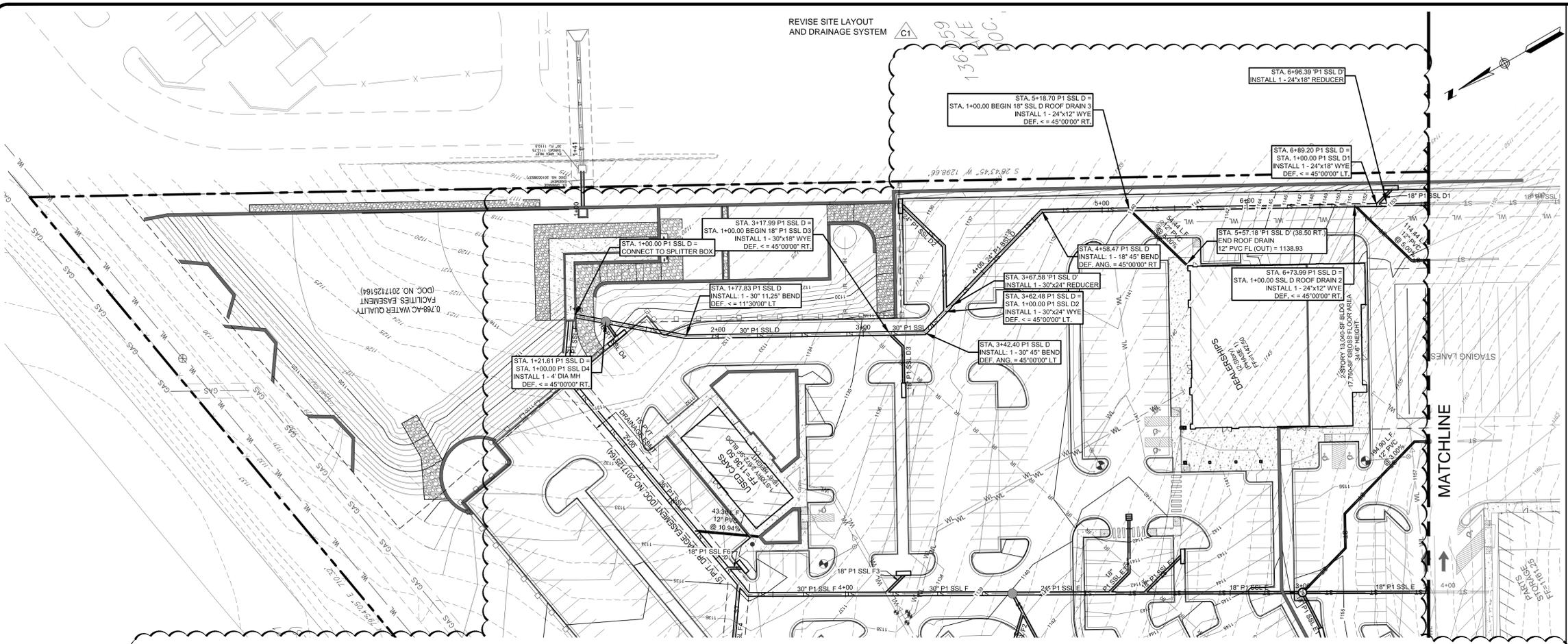
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5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1388

DATE:	02/20/2019
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NUMBER:	3-20-19
JOB NUMBER:	A338-401
SHEET NO.:	32
ST07	
OF 90 SHEETS	

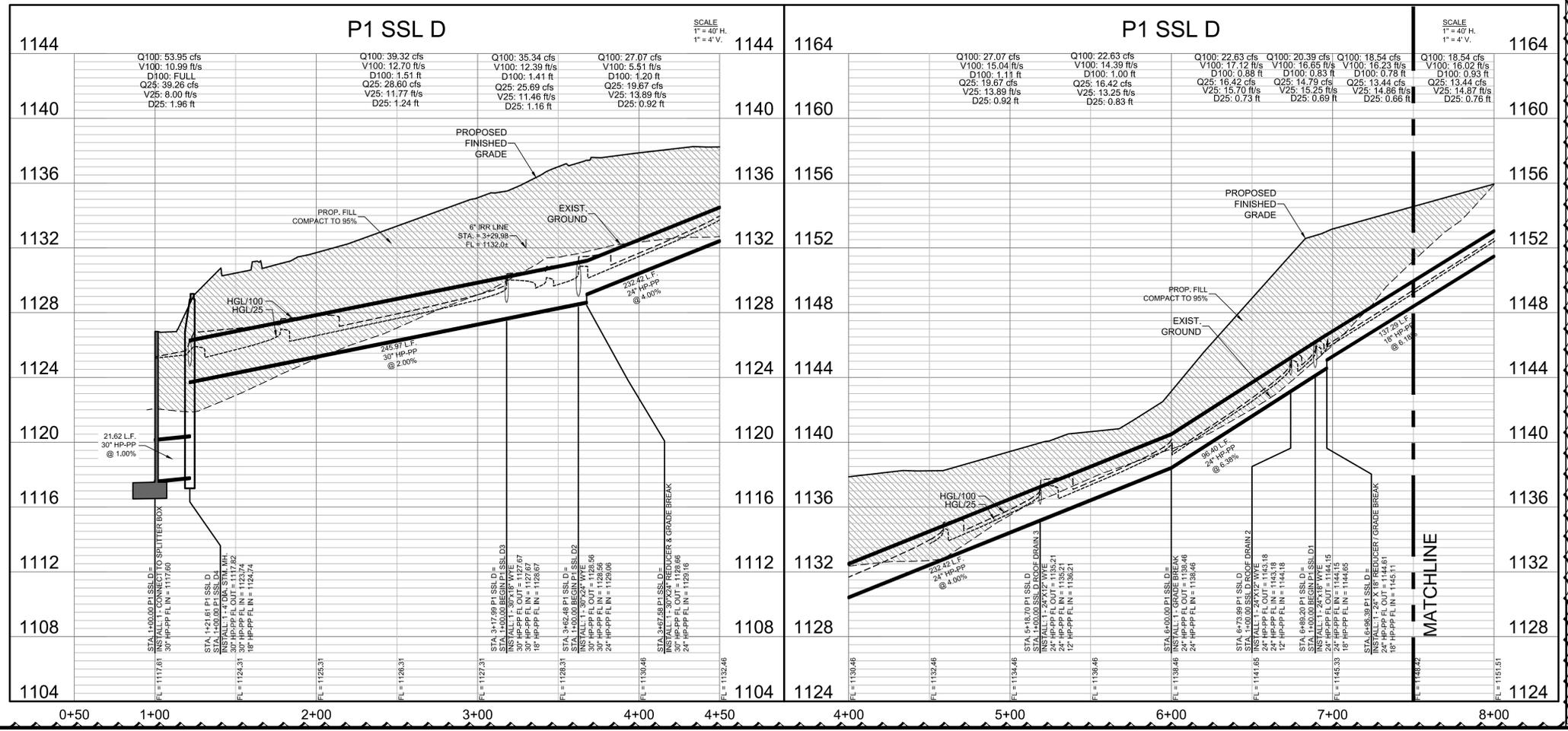
REVISE SITE LAYOUT AND DRAINAGE SYSTEM



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WASTEWATER SERVICE WATER LINE
	WL	WATER SERVICE WATER VALVE
		FIRE HYDRANT
		WASTEWATER MANHOLE
		STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
		OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

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**COVERT BEE CAVE**  
**PLANS FOR SITE DEVELOPMENT**  
**PHASE 1**  
**STORMSEWER PLAN & PROFILES SHEET 8**

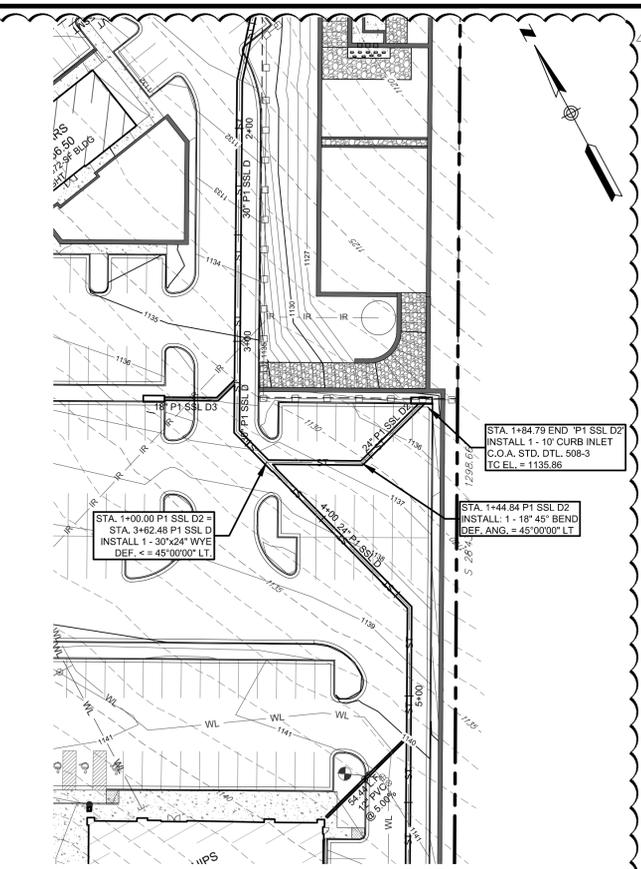
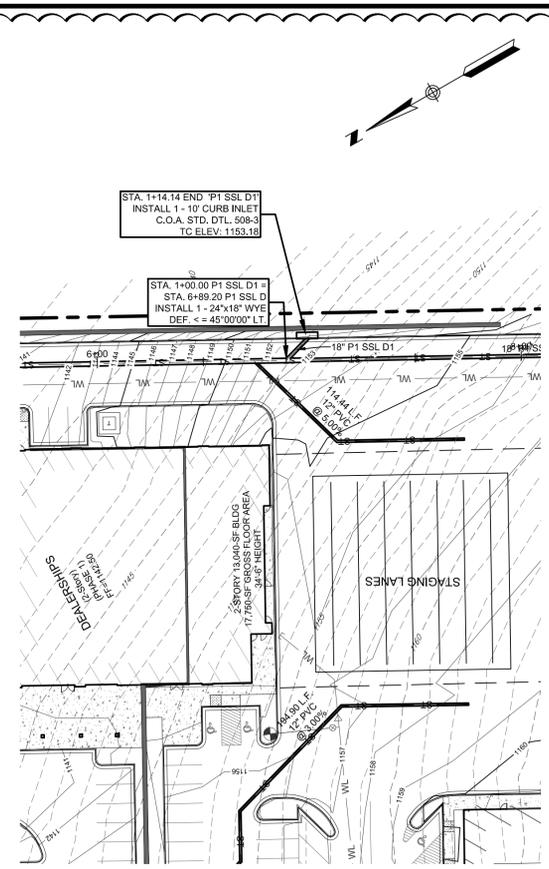
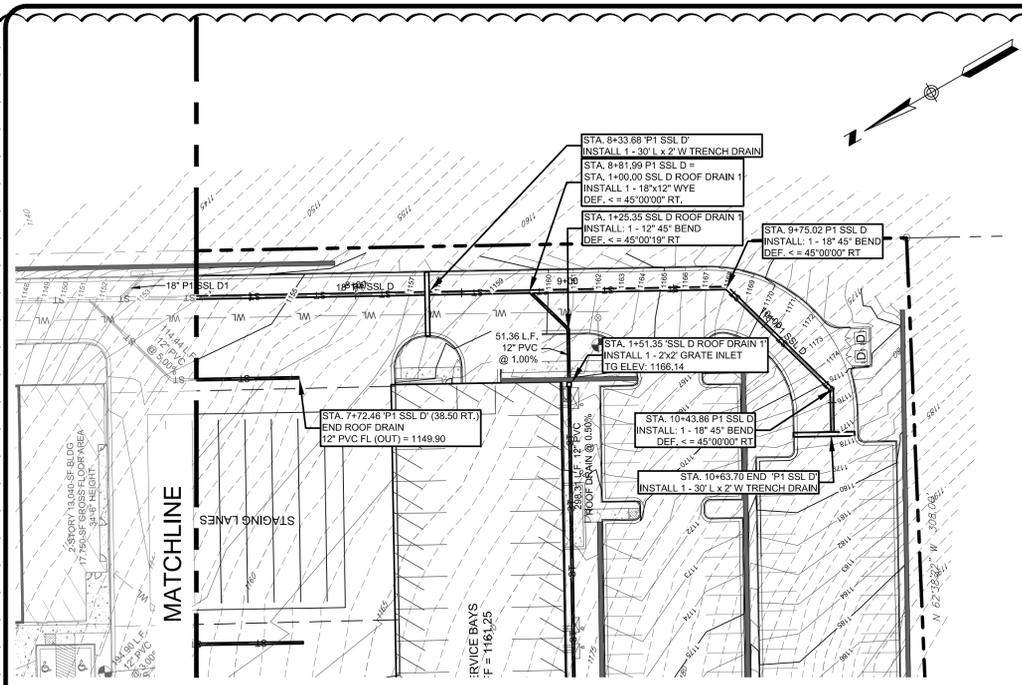
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 DRAWN BY: JTS  
 CHECKED BY: JTS  
 DRAWING NUMBER: 1338

3-20-19  
 CHARLES R. HAGER  
 127034  
 PROFESSIONAL ENGINEER

LJA Engineering, Inc.  
 Phone 512.439.4700  
 5316 Highway 290 West  
 Suite 150  
 Austin, Texas 78735  
 FRN-F-1388

JOB NUMBER: A338-401  
 SHEET NO. **33** OF 90 SHEETS

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REVISE SITE LAYOUT AND DRAINAGE SYSTEM

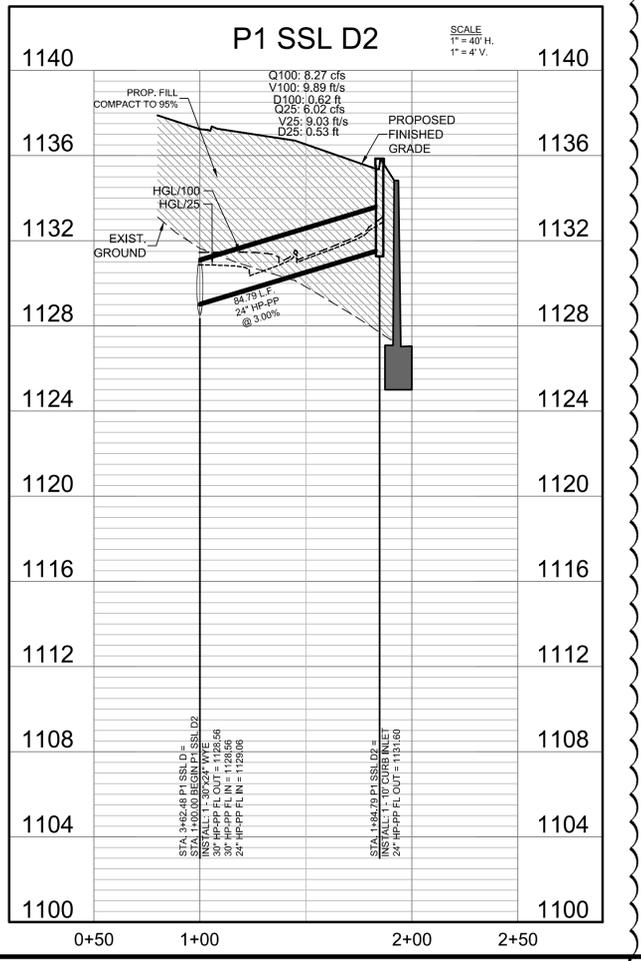
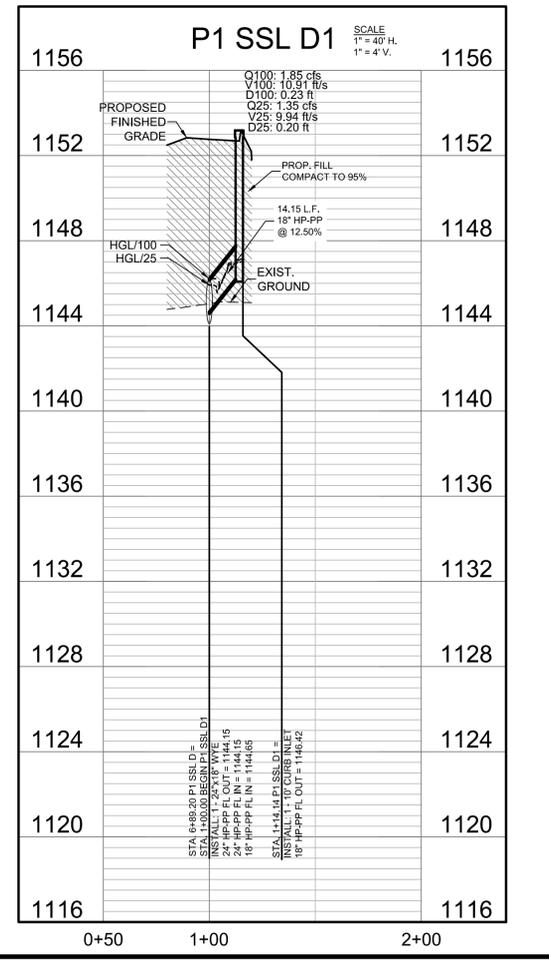
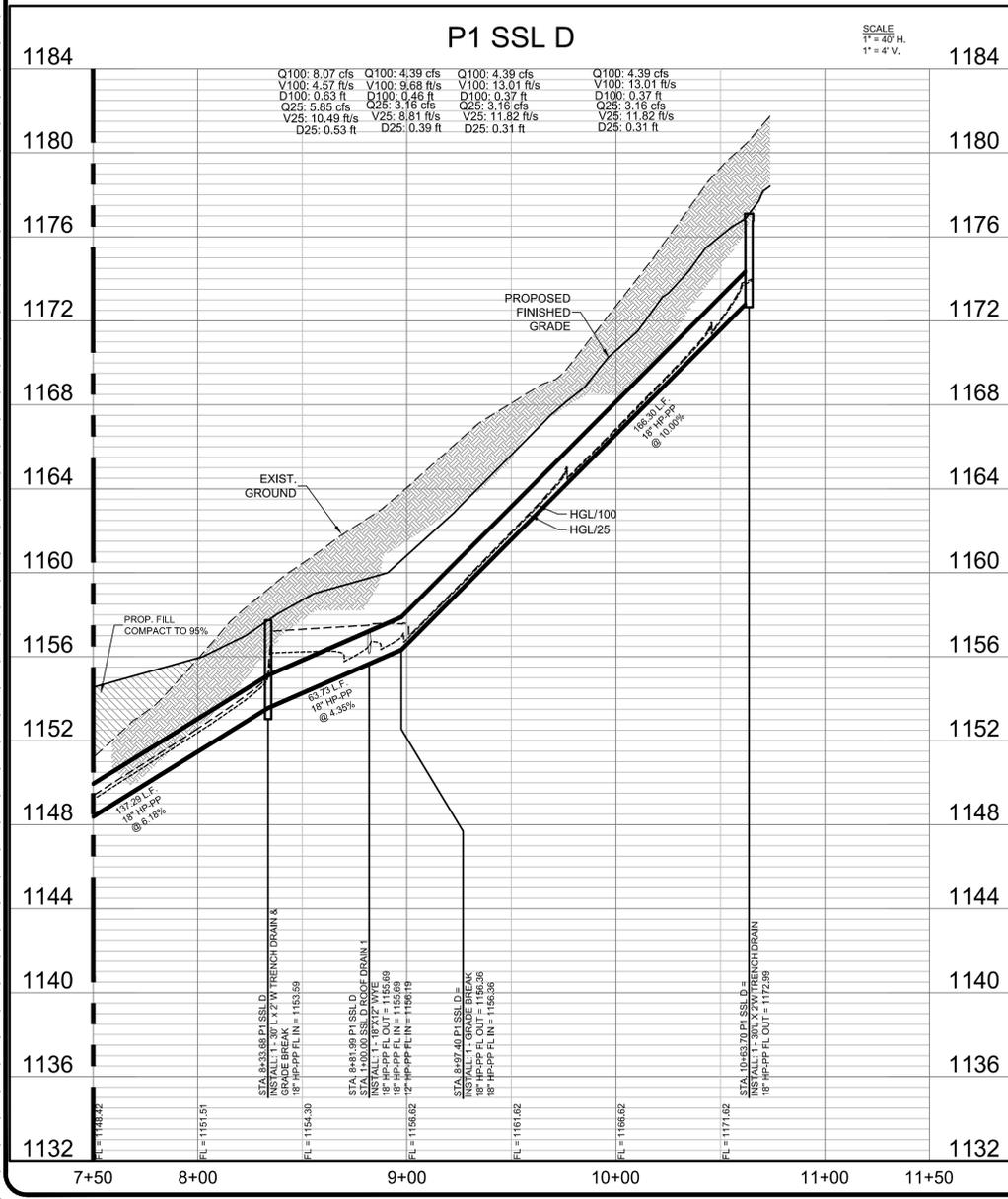
SCALE IN FEET

LEGEND

PROPOSED	EXISTING	DESCRIPTION
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WS	WS	WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
		WASTEWATER MANHOLE
		STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
		OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

- CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
- CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0"(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
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- REFERENCE STRUCTURAL DRAWINGS FOR WALL DESIGN, WALLS AND FOOTINGS DRAWN SCHEMATICALLY.



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811 Call before you dig.

REVISIONS

NO.	DATE	DESCRIPTION
C1	02/20/2019	REVISE P1 SSL D, D1 & D2 PLAN & PROFILE PER PH 1 SITE PLAN, POND & GRADING REVISIONS

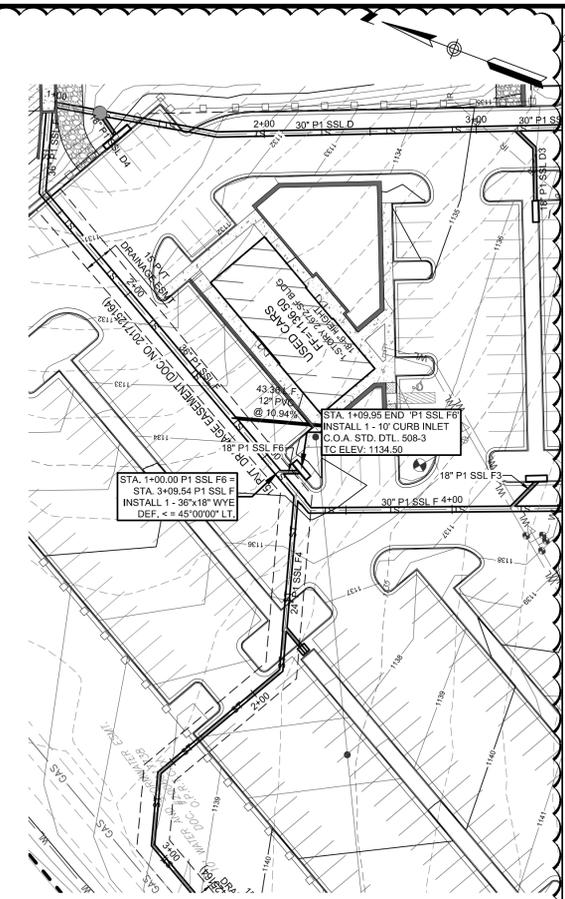
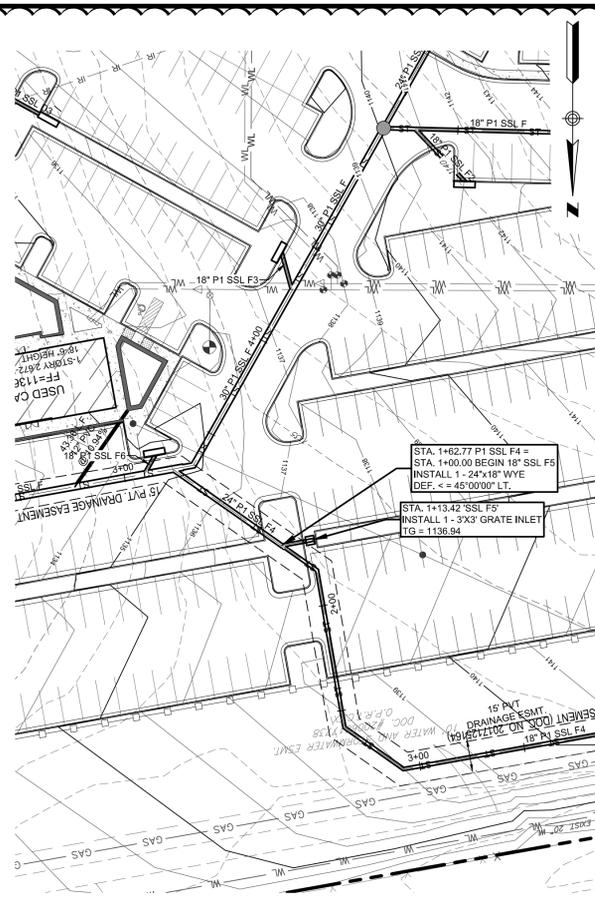
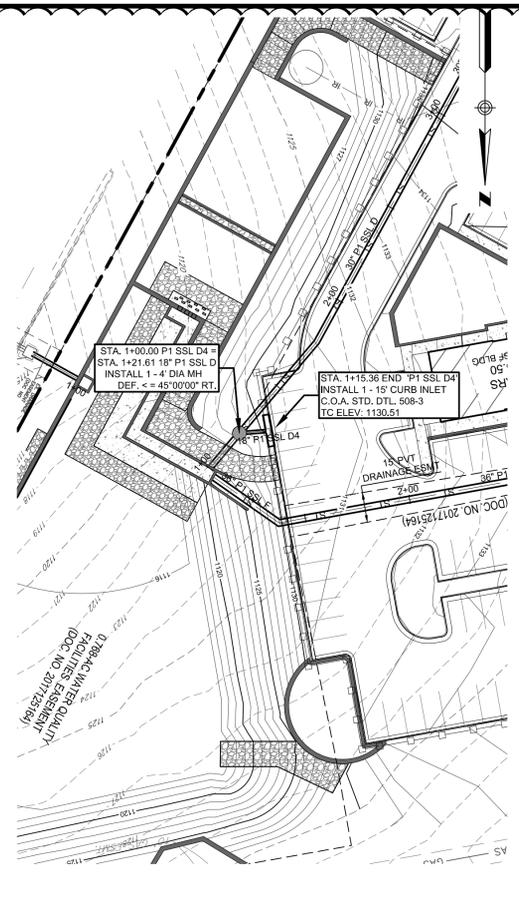
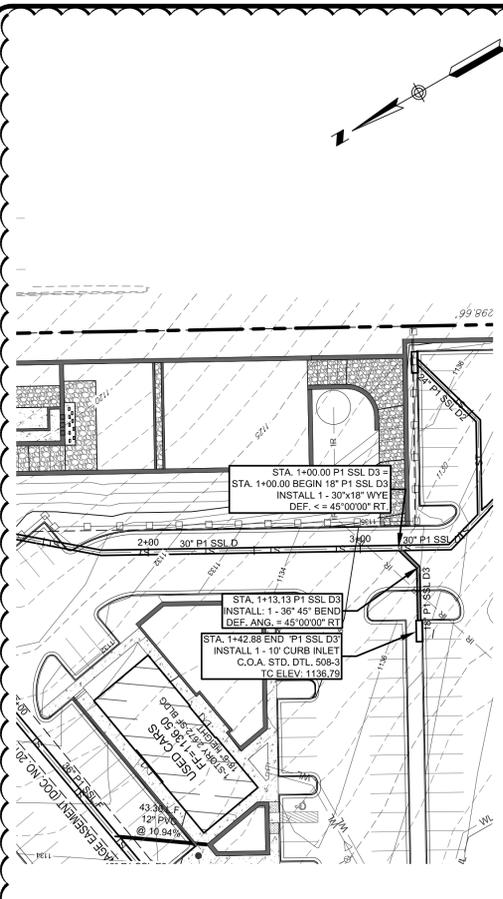
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DRAWN BY: JTS  
CHECKED BY: SDM  
DRAWING NUMBER: 3-20-19

CHARLES R. HAGER  
127034  
REGISTERED PROFESSIONAL ENGINEER

LJA Engineering, Inc.  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.439.4700  
Fax 512.439.4716  
FRN-F-1388

JOB NUMBER: A338-401  
SHEET NO. 34 OF 90 SHEETS

10-1-2019 - Covert\Submittal Drawings\Phase 1 Revision 1 Plans\1038-401-P-5711 Clang  
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 Plot Date: Mar 20, 19 - 09:47

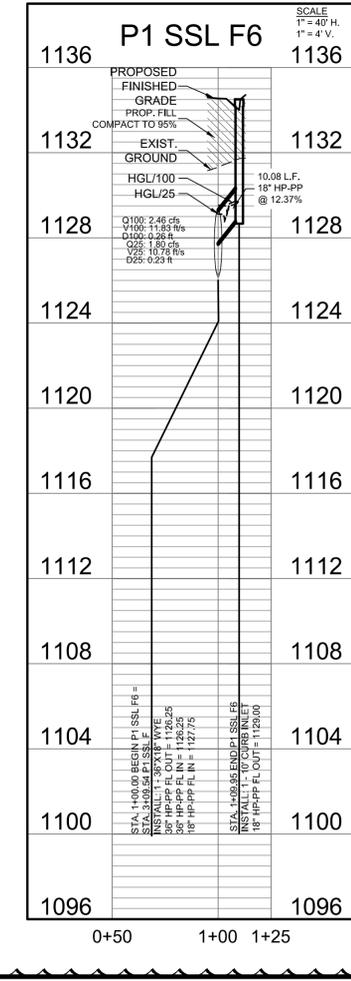
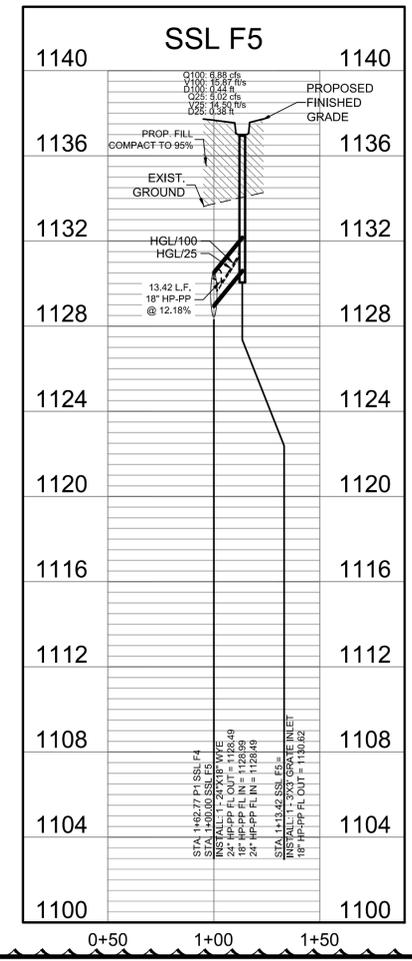
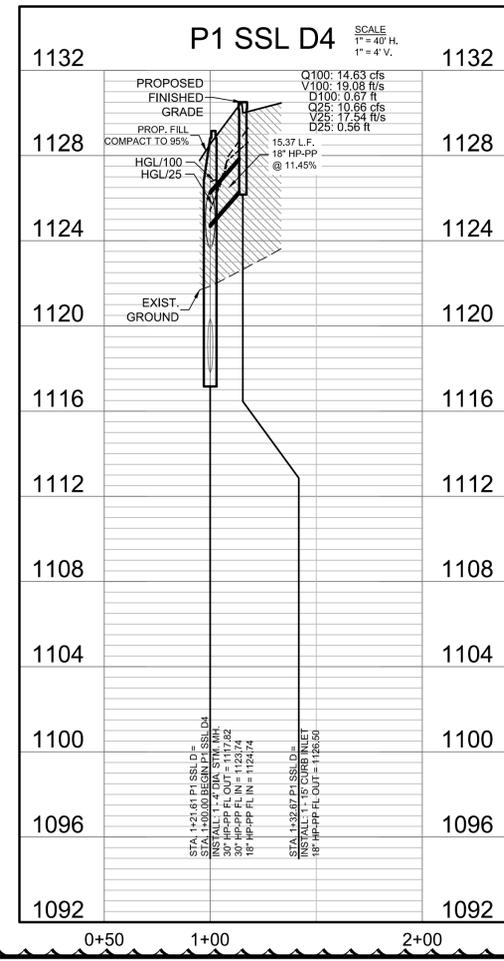
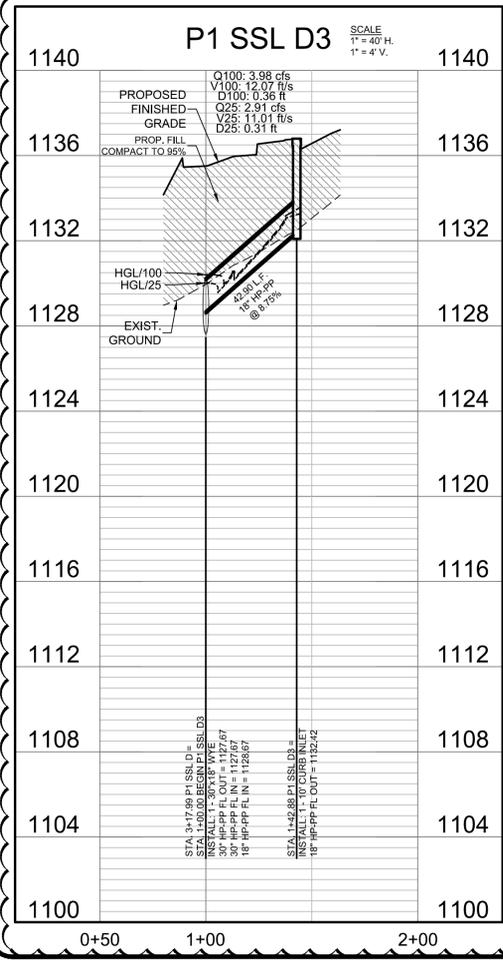


40 20 0 40 80  
 SCALE IN FEET

**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
— ST	— ST	STORM SEWER LINE
— WW	— WW	WASTEWATER LINE
— WL	— WL	WASTEWATER SERVICE WATER LINE
— W	— W	WATER SERVICE WATER VALVE
— F	— F	FIRE HYDRANT
— M	— M	WASTEWATER MANHOLE
— S	— S	STORMSEWER MANHOLE
— C	— C	CURB INLET
— G	— G	GRATE INLET
— R	— R	1/2" REBAR FOUND (OR AS NOTED)
— CR	— CR	1/2" REBAR WITH CAP FOUND
— CH	— CH	1/2" REBAR WITH CHAPARRAL CAP SET
— U	— U	UTILITY POLE
— O	— O	OVERHEAD UTILITIES
— E	— E	ELEC. UTILITY
— M	— M	ELEC. MANHOLE
— L	— L	LIGHT POLE
— T	— T	TELEPHONE UTILITY
— F	— F	UNDERGROUND FIBER OPTIC MARKER
— P	— P	TELEPHONE MANHOLE
— G	— G	UNDERGROUND GAS MARKER
— C	— C	CHAIN LINK FENCE

- NOTES:**
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**811**  
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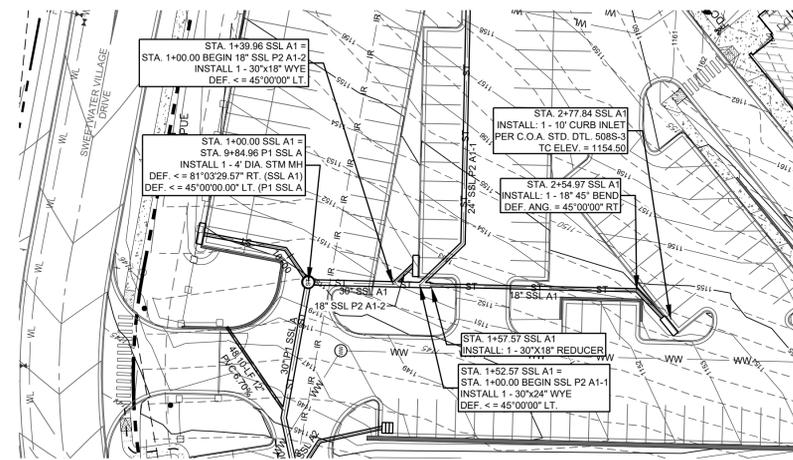
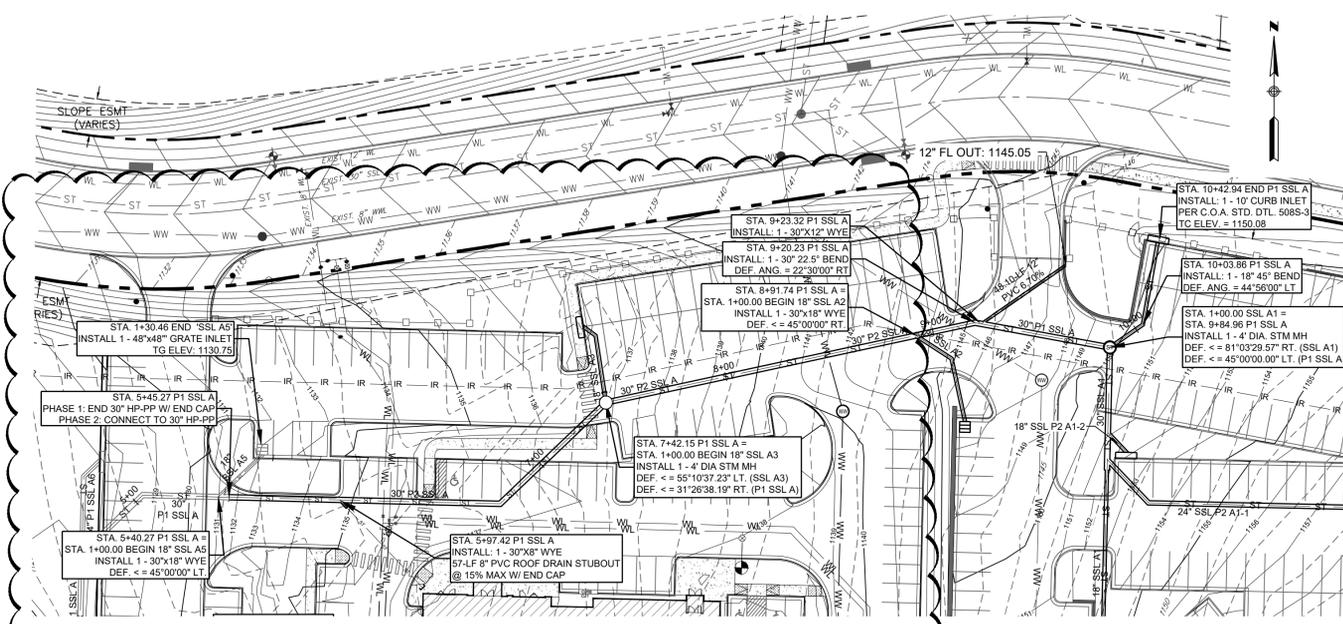
**COVERT BEE CAVE**  
**PLANS FOR SITE DEVELOPMENT**  
**PHASE 1**  
**STORMSEWER PLAN & PROFILES SHEET 10**

DATE: 03/20/2019  
 DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM  
 DRAWING NUMBER: 1038-401-P-5711

3-20-19  
 CHARLES R. HAGER  
 127034  
 PROFESSIONAL ENGINEER

LJA Engineering, Inc.  
 Phone 512.439.4700  
 Fax 512.439.4716  
 Suite 150  
 Austin, Texas 78735  
 FRN-F-1388

JOB NUMBER: A338-401  
 SHEET NO. **35** OF 90 SHEETS



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—WL—	—WL—	WATER SERVICE
—W—	—W—	WATER LINE
—WS—	—WS—	WATER SERVICE
—V—	—V—	WATER VALVE
—FH—	—FH—	FIRE HYDRANT
—WMH—	—WMH—	WASTEWATER MANHOLE
—SMH—	—SMH—	STORMSEWER MANHOLE
—CI—	—CI—	CURB INLET
—GI—	—GI—	GRATE INLET
—R—	—R—	1/2" REBAR FOUND (OR AS NOTED)
—R+—	—R+—	1/2" REBAR WITH CAP FOUND
—R+—	—R+—	1/2" REBAR WITH CHAPARRAL CAP SET
—U—	—U—	UTILITY POLE
—OU—	—OU—	OVERHEAD UTILITIES
—E—	—E—	ELEC. UTILITY
—M—	—M—	ELEC. MANHOLE
—L—	—L—	LIGHT POLE
—TU—	—TU—	TELEPHONE UTILITY
—UF—	—UF—	UNDERGROUND FIBER OPTIC MARKER
—TM—	—TM—	TELEPHONE MANHOLE
—UG—	—UG—	UNDERGROUND GAS MARKER
—C—	—C—	CHAIN LINK FENCE

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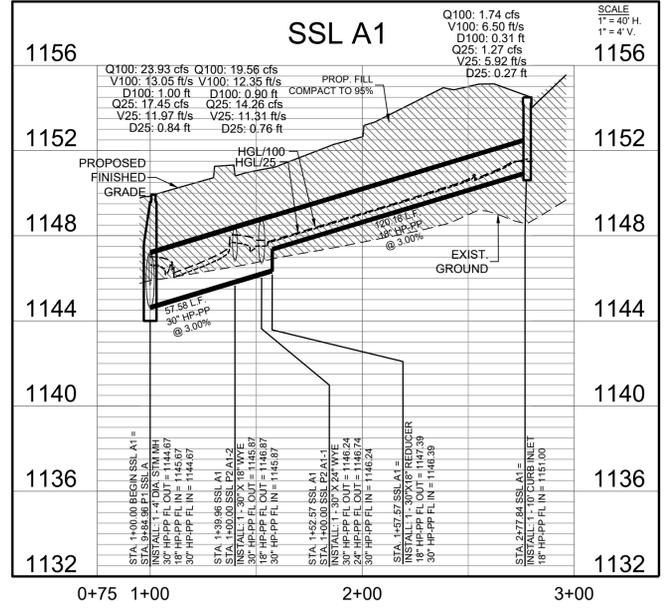
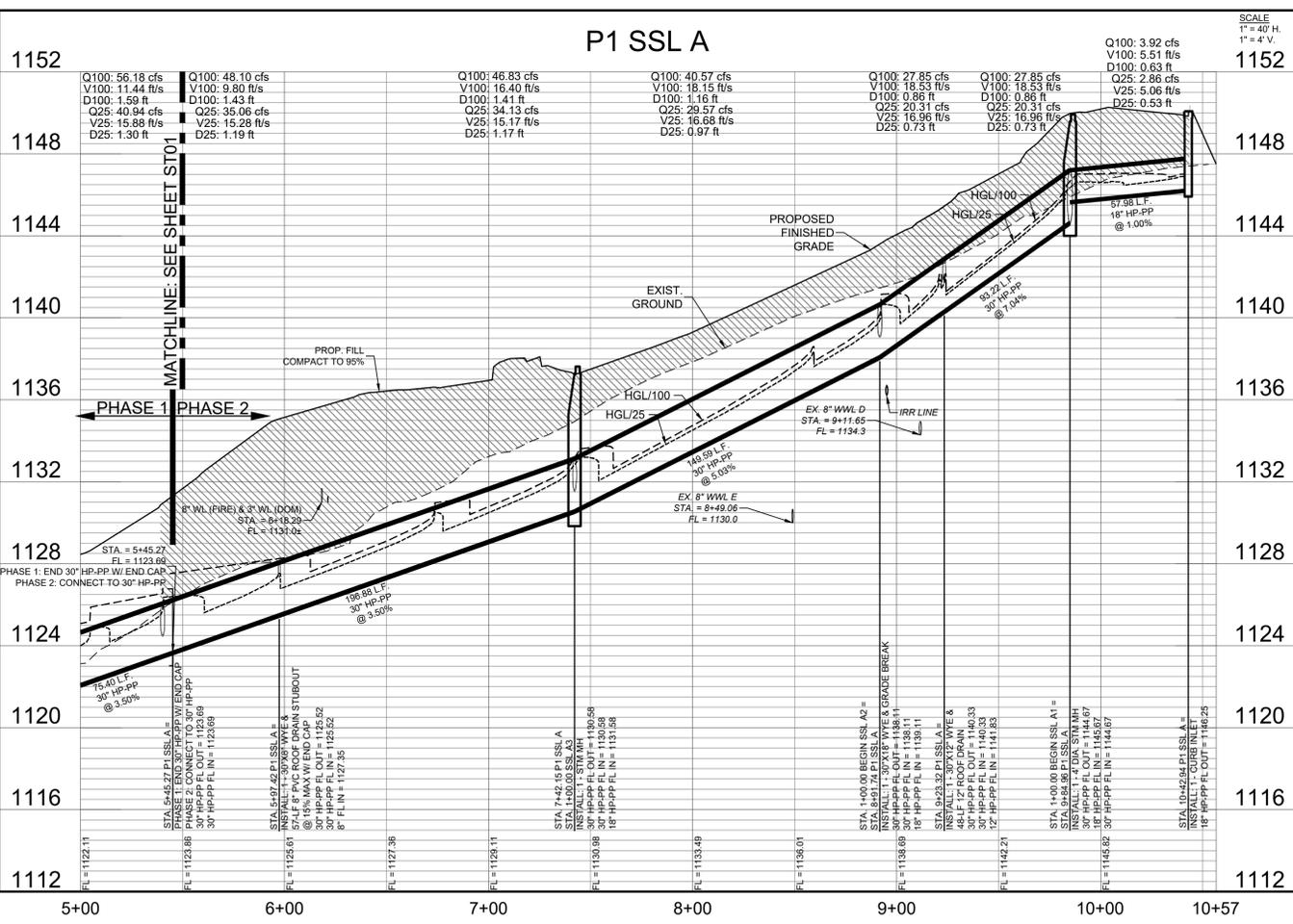
NO.	REVISIONS	DESCRIPTION	DATE	BY
C2	ADD PHASE 2 SITE PLANS TO PLANS	CRH	8/30/2019	
C3	ADD PHASE 3 SITE PLANS TO PLANS	CRH	8/29/2021	
	UPDATE HGVS			

DATE: 6/29/2021  
DESIGNED BY: JTS  
DRAWN BY: JTS  
CHECKED BY: SDM  
DRAWING NUMBER: ST11

**LJA Engineering, Inc.**  
Phone 512.439.4700  
Fax 512.439.4716  
Suite 150  
Austin, Texas 78735  
FRN-F-1386

JOB NUMBER: A338-401  
SHEET NO. **36**  
OF 90 SHEETS

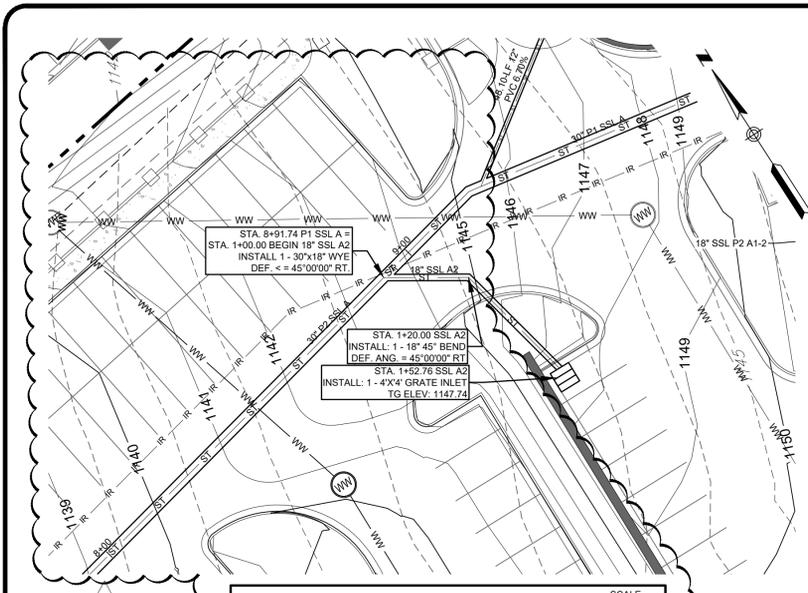
UPDATE PHASE 3 SITE PLAN, STORM LAYOUT AND GRADING



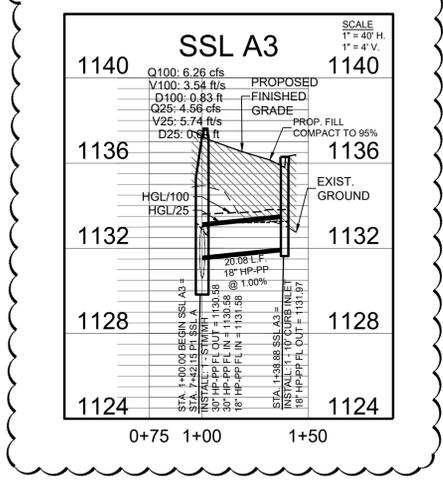
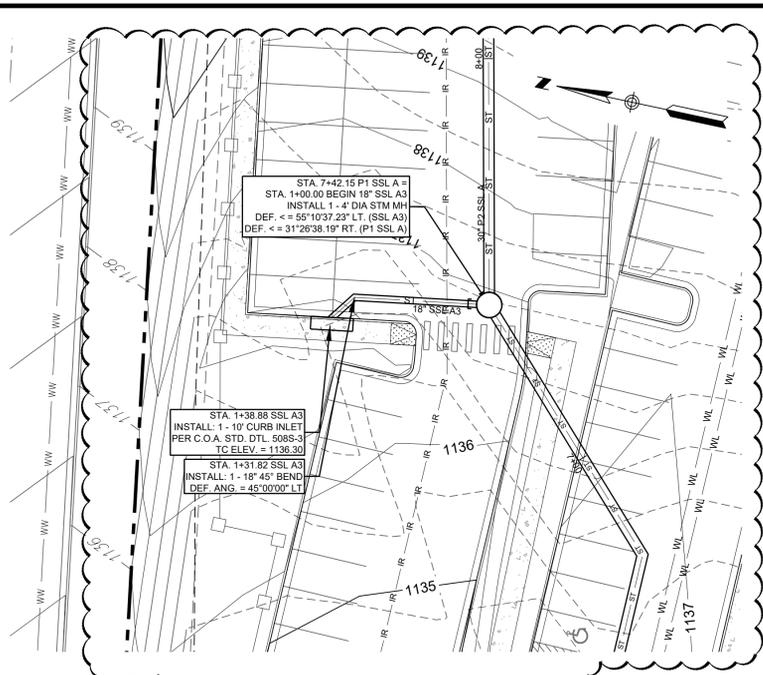
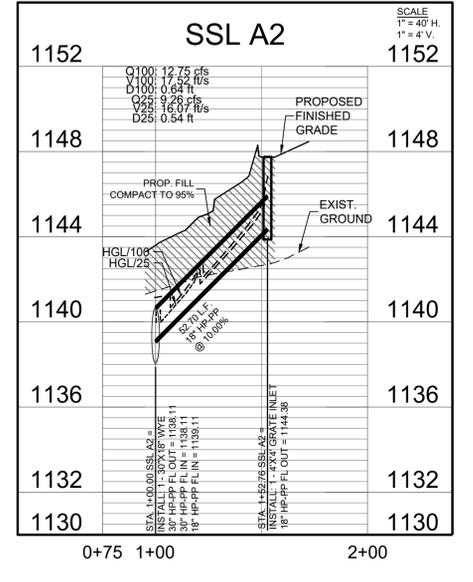
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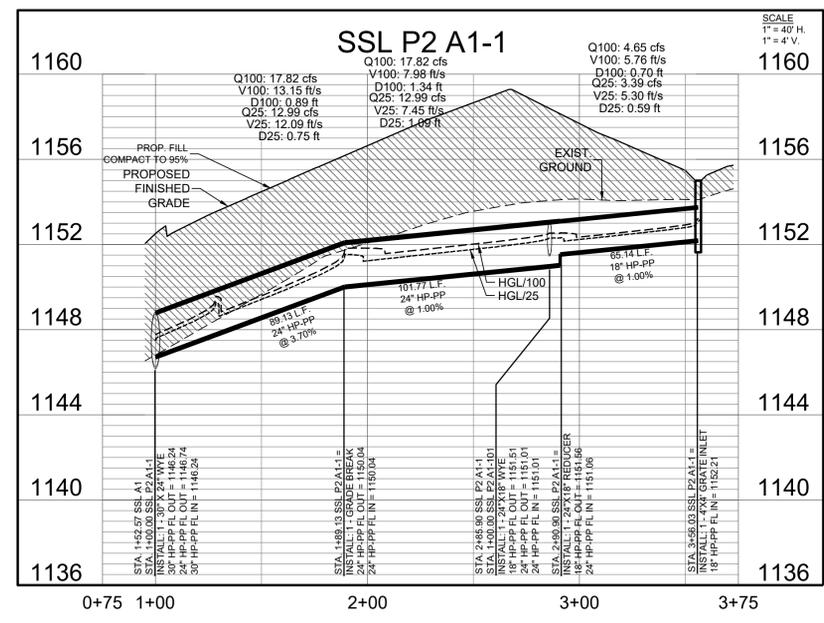
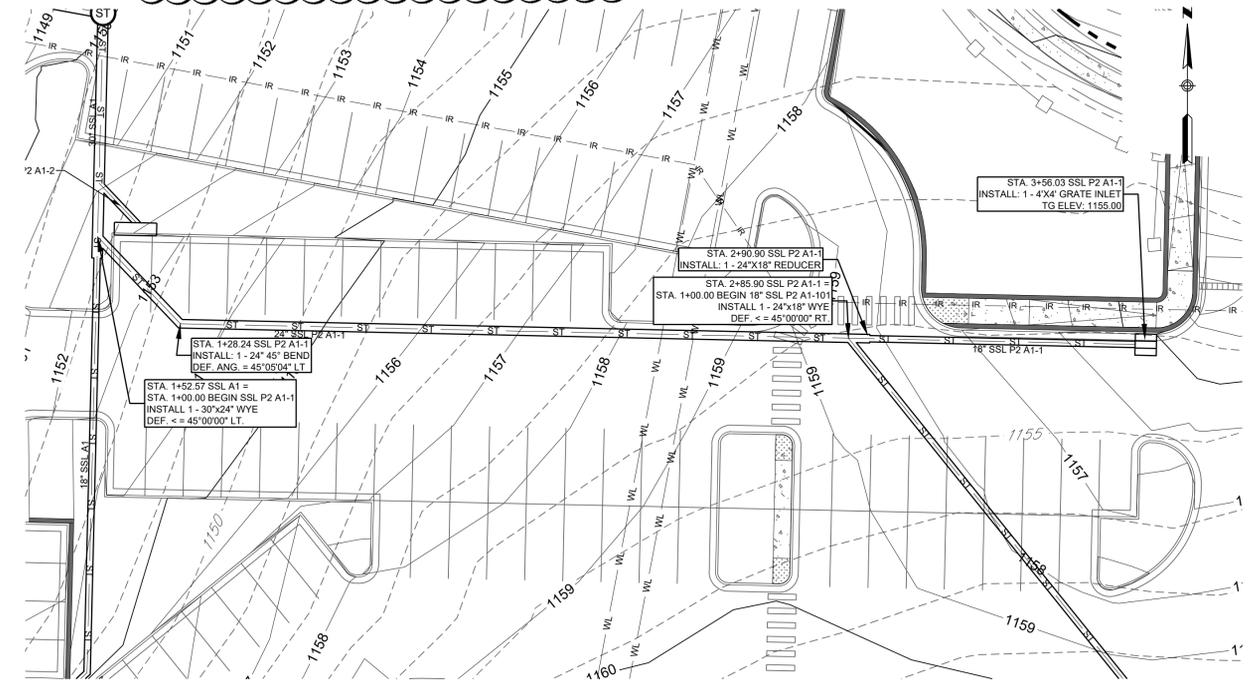
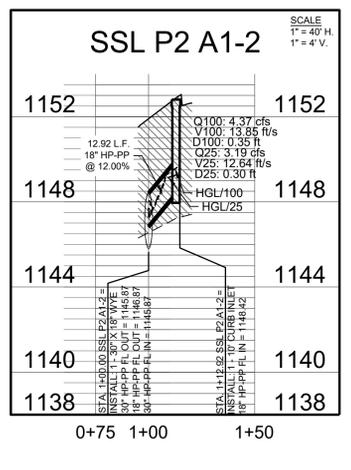
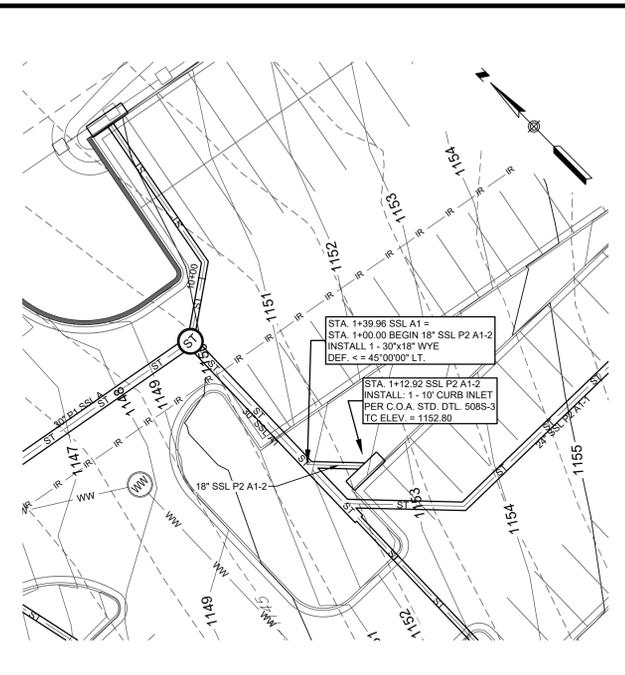
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Nov 24, 2019 1:52:29  
Plot Date/Time: Jun 23, 2021 12:33:27



UPDATE PHASE 3 SITE PLAN, STORM LAYOUT AND GRADING



UPDATE PHASE 3 SITE PLAN, STORM LAYOUT AND GRADING



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WASTEWATER SERVICE WATER LINE
	WL	WATER SERVICE WATER VALVE
	WH	FIRE HYDRANT
	WMH	WASTEWATER MANHOLE
	SMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
		OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

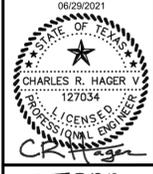
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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CRH
1	6/29/2021	ADD PHASE 2 SITE PLANS TO PLANS	JTS	
2	8/30/2019	ADD PHASE 3 SITE PLANS TO PLANS	JTS	
3	6/29/2021	UPDATE HGLS	JTS	

DATE:	6/29/2021
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NUMBER:	ST12



**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 Fax 512.439.4716  
 Suite 150  
 Austin, Texas 78735  
 FRN-F-1386

JOB NUMBER: A338-401

**ST12**

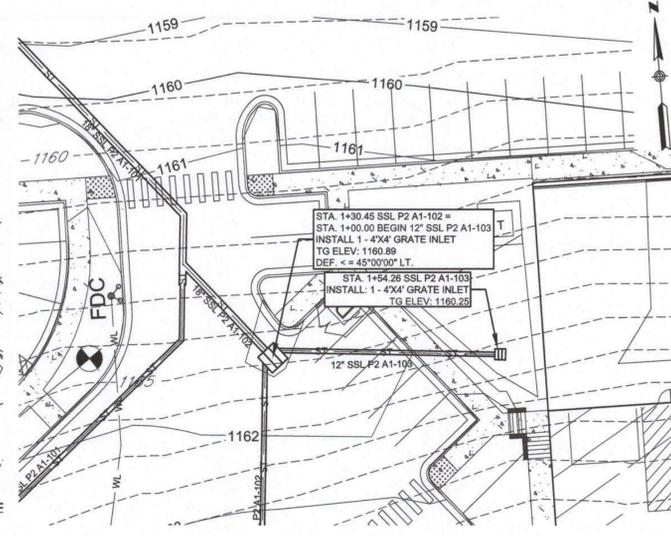
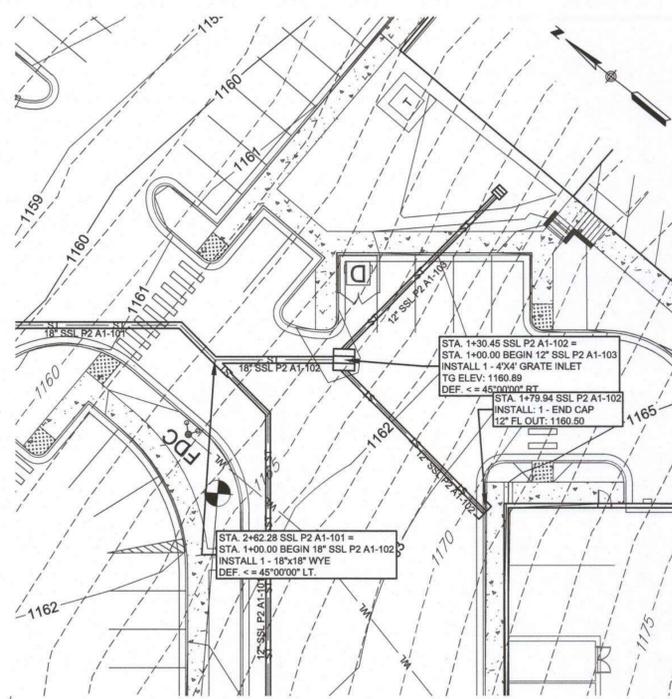
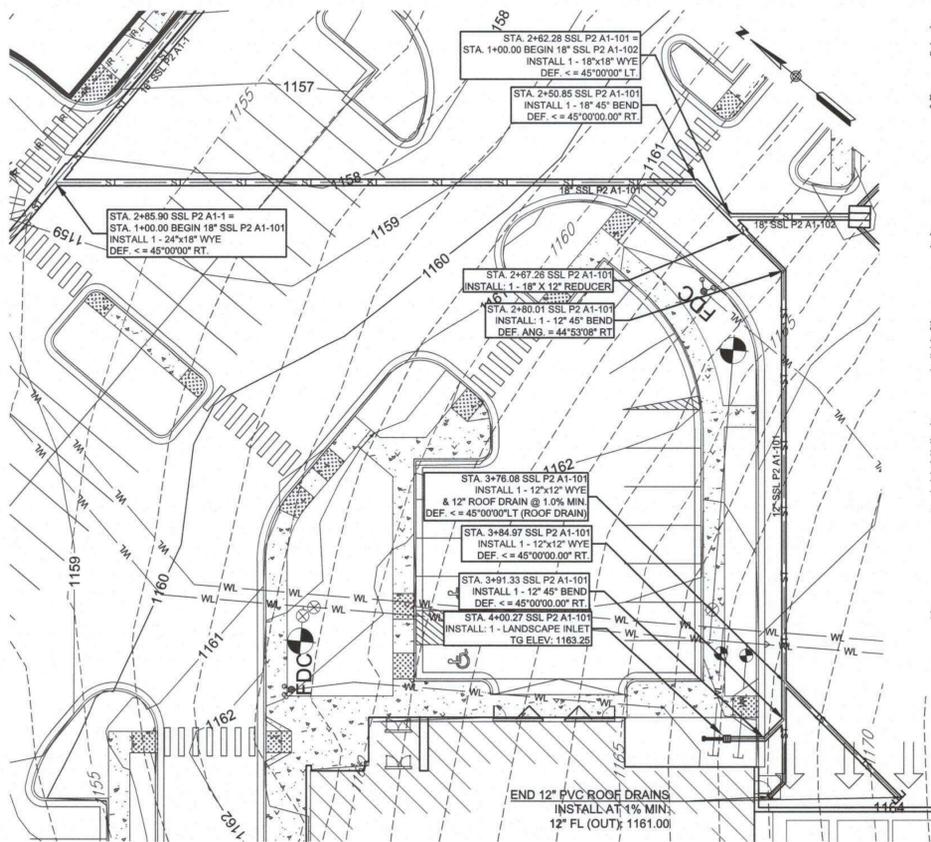
SHEET NO. **37**

OF 90 SHEETS



REPLACEMENT SHEET

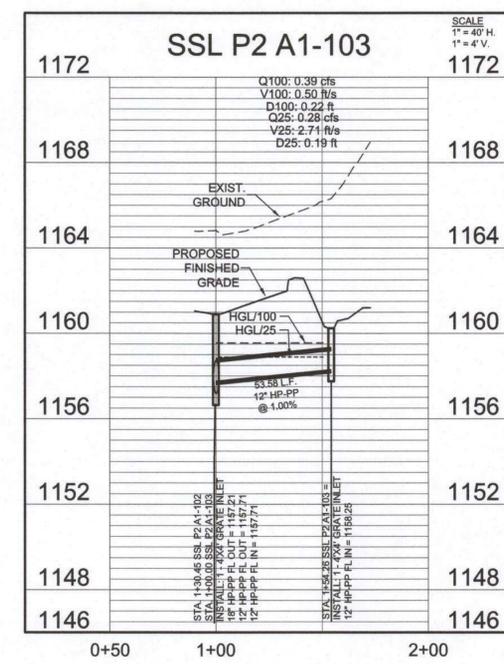
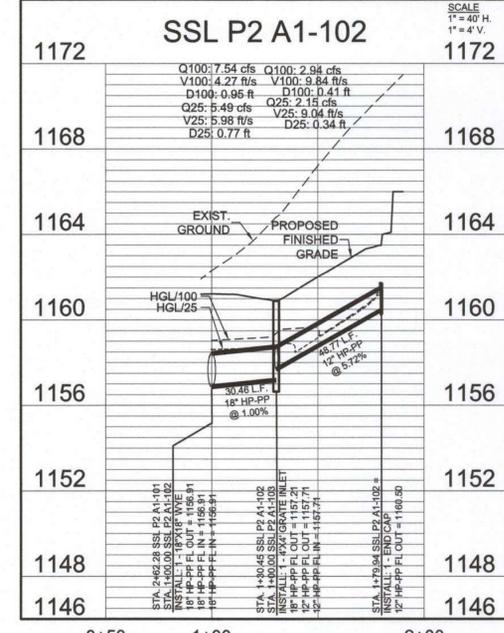
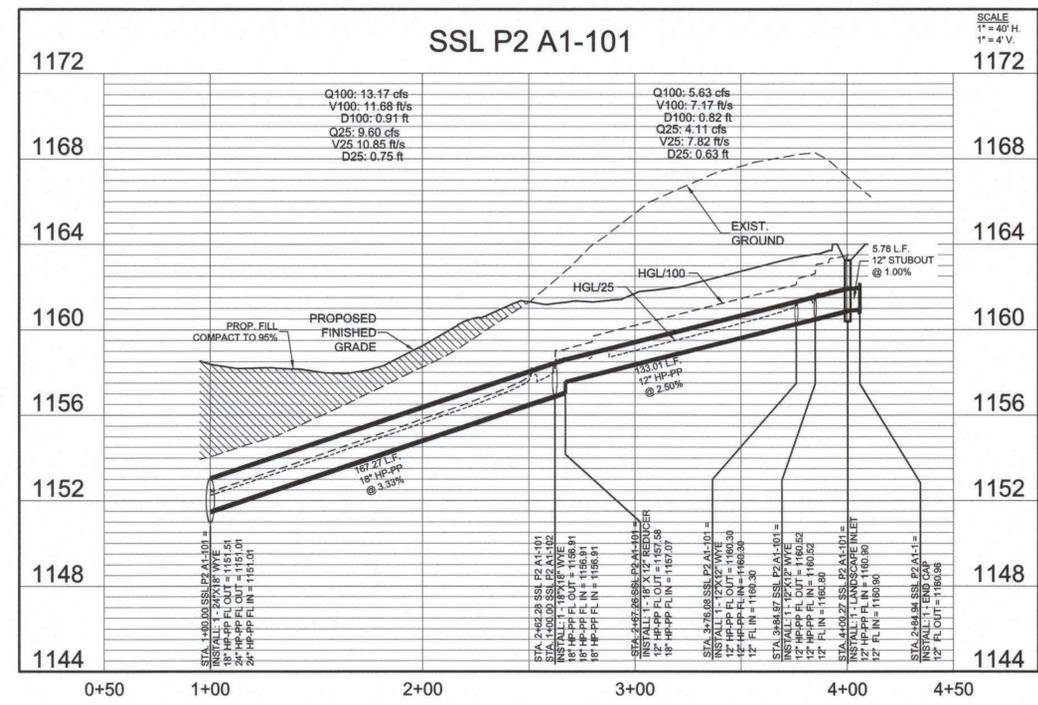
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 Plot Date/Time: Jun 23, 2021 12:31:52



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
—ST—	—ST—	STORM SEWER LINE
—WW—	—WW—	WASTEWATER LINE
—WL—	—WL—	WASTEWATER SERVICE WATER LINE
—WV—	—WV—	WATER SERVICE WATER VALVE
—FH—	—FH—	FIRE HYDRANT
—WMH—	—WMH—	WASTEWATER MANHOLE
—SMH—	—SMH—	STORMSEWER MANHOLE
—CI—	—CI—	CURB INLET
—GI—	—GI—	GRATE INLET
—R—	—R—	1/2" REBAR FOUND (OR AS NOTED)
—R+—	—R+—	1/2" REBAR WITH CAP FOUND
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—W—	—W—	WATER METER
—U—	—U—	UTILITY POLE
—OU—	—OU—	OVERHEAD UTILITIES
—E—	—E—	ELEC. UTILITY
—EM—	—EM—	ELEC. MANHOLE
—LP—	—LP—	LIGHT POLE
—TU—	—TU—	TELEPHONE UTILITY
—UFOM—	—UFOM—	UNDERGROUND FIBER OPTIC MARKER
—TMH—	—TMH—	TELEPHONE MANHOLE
—UGGM—	—UGGM—	UNDERGROUND GAS MARKER
—CLF—	—CLF—	CHAIN LINK FENCE

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5316 Highway 290 West  
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Phone 512.438.4700  
Fax 512.438.4776  
FRN-F-1386

JOB NUMBER: A338-401

ST13

SHEET NO. 38

OF 90 SHEETS

COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 2  
STORMSEWER PLAN & PROFILES SHEET 13

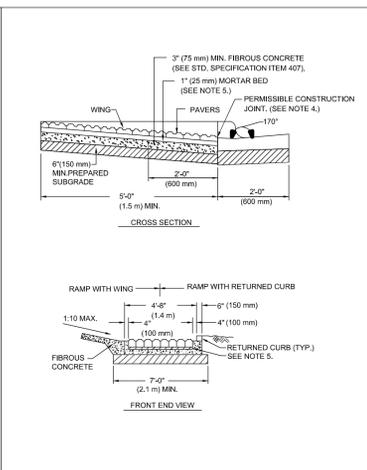
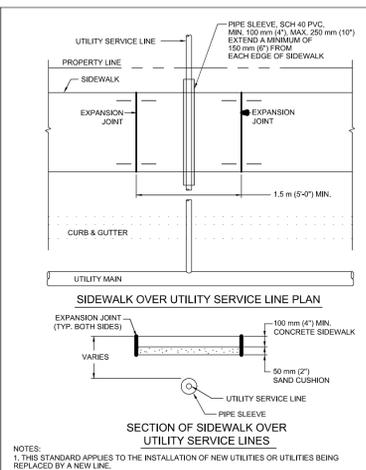
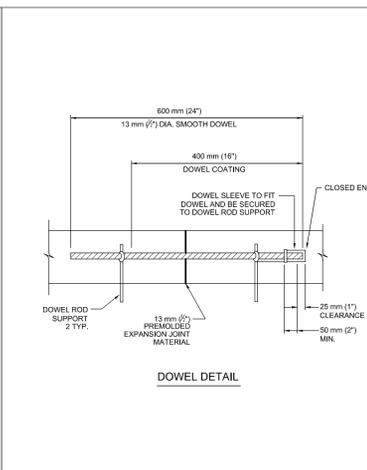
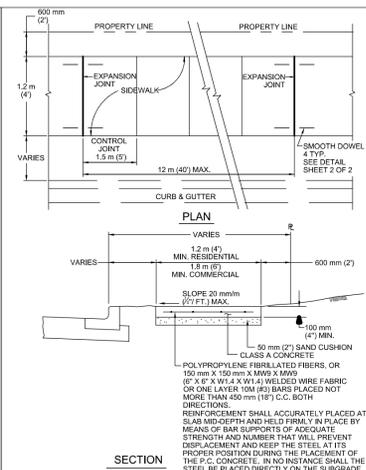
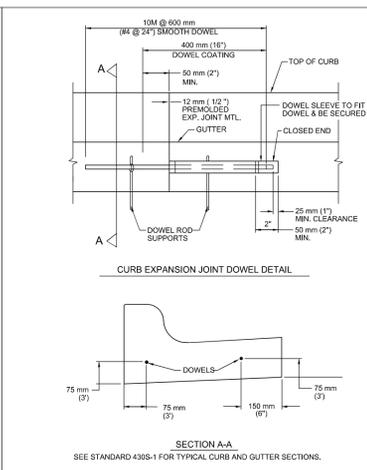
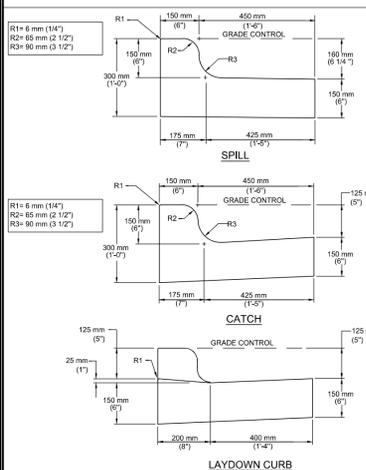
**REVISIONS**

NO.	DESCRIPTION	DATE	BY
C1	ADD PHASE 2 SITE PLANS TO PLANS	09/17/2019	CRH

DATE:	09/17/2019
DESIGNED BY:	JTS
DRAWN BY:	JTS
CHECKED BY:	SDM
DRAWING NUMBER:	FRN-F-1386



Phone 512.438.4700  
Fax 512.438.4776  
FRN-F-1386



GENERAL NOTES:  
1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION WITHIN PRIVATE PROPERTY ONLY.  
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.  
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.2" (5 mm) AND A NOMINAL HEIGHT OF 2.30" (60 mm) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (PER ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVEMENT PATTERN SHALL BE BASED THEREON UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.  
4. TYPICAL SIDEWALK WIDTHS AND CURB RADI ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADI AND CURB BASES.  
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO 2" (50 mm) JOINT SIZE. GAPS LARGER THAN 2" (50 mm) MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.  
6. MORTAR SHALL CONFORM TO STD. SPECIFICATION ITEM 403S.3.5, MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.  
7. CURB RAMPS WITH RETURNED CURB MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	<b>CURB AND GUTTER SECTION</b>	STANDARD NO. <b>430S-1</b>
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	06/21/07 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	<b>CURB EXPANSION JOINT DOWEL DETAIL</b>	STANDARD NO. <b>430S-3</b>
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	06/21/07 ADOPTED

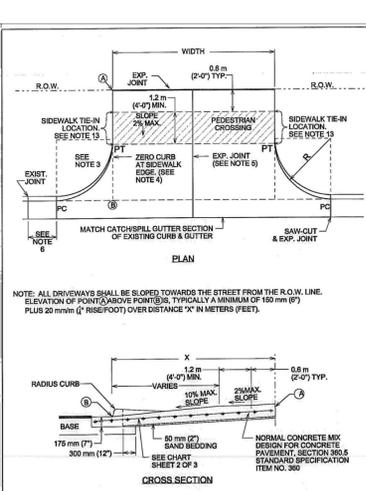
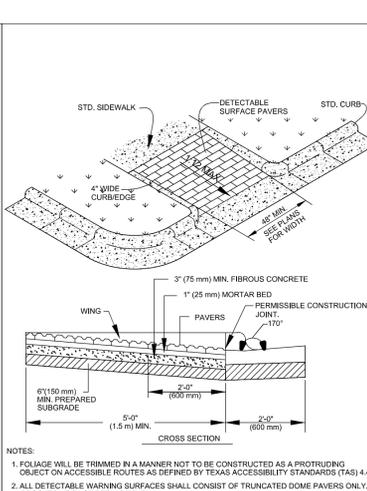
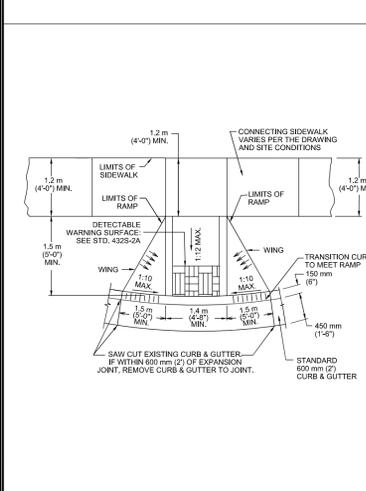
<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SIDEWALK</b>	STANDARD NO. <b>432S-1</b> 1 OF 3
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	03/26/08 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SIDEWALK</b>	STANDARD NO. <b>432S-1</b> 2 OF 3
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	03/26/08 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>SIDEWALK</b>	STANDARD NO. <b>432S-1</b> 3 OF 3
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	03/26/08 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>DETECTABLE WARNING-PAVER (PRIVATE PROPERTY)</b>	STANDARD NO. <b>432S-2B</b> 1 OF 2
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	06/21/07 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>DETECTABLE WARNING-PAVER (PRIVATE PROPERTY)</b>	STANDARD NO. <b>432S-2B</b> 2 OF 2
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	06/21/07 ADOPTED



USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 10M (40) BARS PLACED ON CHAIRS AT MIDDLE OF SLAB AT NO MORE THAN 400 mm (16") O.C. BOTH DIRECTIONS
PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 10M (40) BARS PLACED ON CHAIRS AT MIDDLE OF SLAB AT NO MORE THAN 400 mm (16") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 10M (40) BARS PLACED ON CHAIRS AT MIDDLE OF SLAB AT NO MORE THAN 400 mm (16") O.C. BOTH DIRECTIONS

**ALLOWABLE GRADES**

DRIVEWAY VOLUME (ADT)	D-GRADE CHANGE	STD.	MAX.
>1500	0%	3%	3%
600-1500	3%	6%	6%
<600	6%	15%	15%

NOTES:  
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.  
2. DRIVEWAY WIDTHS AND RAISE DIMENSIONS, ONE-WAY TRAVEL REQUIREMENTS, AND GEOMETRIC DATA ARE USUALLY VARIABLE SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 DRIVEWAYS.  
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE R.O.W. LINE.  
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.  
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.  
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.  
7. IF THE BARS IS OVERLAPPED BEFORE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.  
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN SIX (6) FEET FROM THE CORNER OF INTERSECTING RIGHT OF WAY.  
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.  
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRASS BRIMS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSIDERED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND TO BE GREATER THAN 15%.  
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK AT THE R.O.W. LINE AND AT MIDDLE OF DRIVEWAY.  
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.  
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.  
14. WATER METERS BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>TYPE I SIDEWALK CURB RAMP</b>	STANDARD NO. <b>432S-5</b>
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	01/14/08 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>TYPE II DRIVEWAY</b>	STANDARD NO. <b>433S-2</b> 1 OF 2
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	07/16/16 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>TYPE II DRIVEWAY</b>	STANDARD NO. <b>433S-2</b> 2 OF 2
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	07/16/16 ADOPTED

<b>CITY OF AUSTIN</b> DEPARTMENT OF PUBLIC WORKS	<b>TYPE II DRIVEWAY</b>	STANDARD NO. <b>433S-2</b> 2 OF 2
RECORD COPY SHOWN BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	07/16/16 ADOPTED

NO.	DATE	BY	DESCRIPTION

DATE: 05/01/2017  
DESIGNED BY: KES  
DRAWN BY: JTS  
CHECKED BY: SOM  
DRAWING NAME: 432S-2B (2 of 2)

STATE OF TEXAS  
REESE B HURLEY  
98211  
LICENSED PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRNF-1198

JOB NUMBER: A338-401
DT01
SHEET NO. <b>53</b>
OF 90 SHEETS

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

**811**  
Know what's below.  
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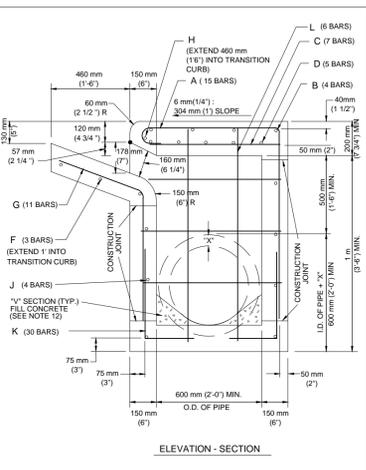
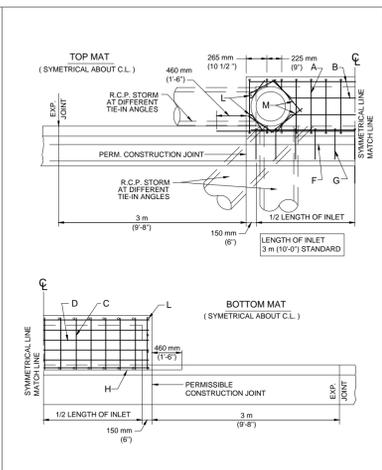
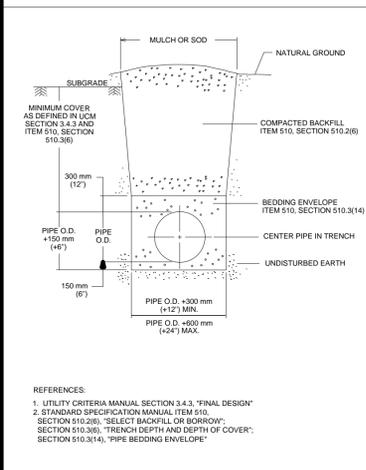
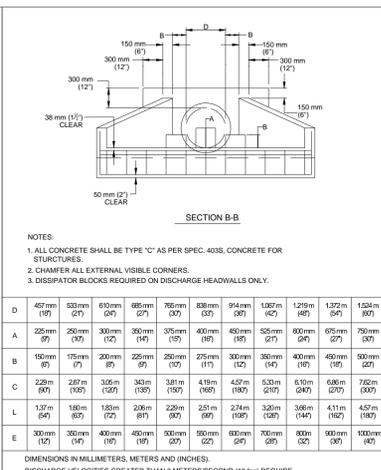
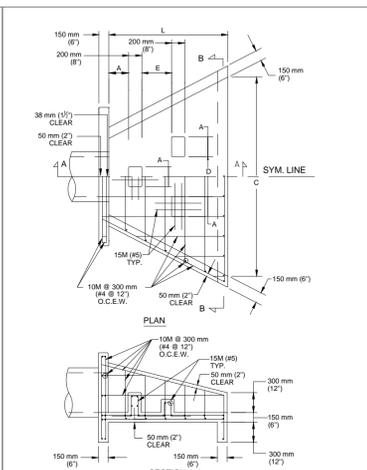
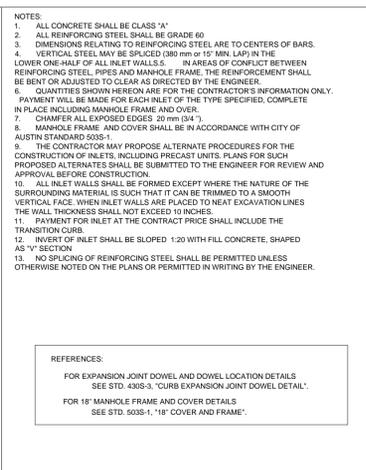


TABLE OF QUANTITIES FOR 18" OUTLET PIPE REINFORCING STEEL QUANTITIES

BAR	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	230mm (9")	15	2.7 (9'-0")	73
B	4	250mm (10")	4	3.25 (10'-8")	29
C	4	450mm (18")	7	3.70 (12'-2")	12
D	6	150mm (6")	5	3.25 (10'-8")	80
E	4	300mm (12")	6	2.60 (8'-6")	10
F	4	250mm (10")	3	4.1 (13'-0")	35
G	4	300mm (12")	11	1.25 (4'-3")	31
H	6	150mm (6")	7	4.25 (14'-0")	26
I	4	300mm (12")	7	3.25 (10'-8")	59
J	4	230mm (9")	30	8.00 (26'-7")	17
K	4	300mm (12")	6	1.3 (4'-4")	52
L	4	300mm (12")	4	5.00 (16'-5")	4.6
M	4	300mm (12")	4	5.00 (16'-5")	4.6
TOTAL STEEL LB.					413
TOTAL CONCRETE, C.Y.					4.96



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RECORD COPY SIGNED BY BILL GARDNER 03/13/2016 ADOPTED

CITY OF AUSTIN  
DEPARTMENT OF PUBLIC WORKS  
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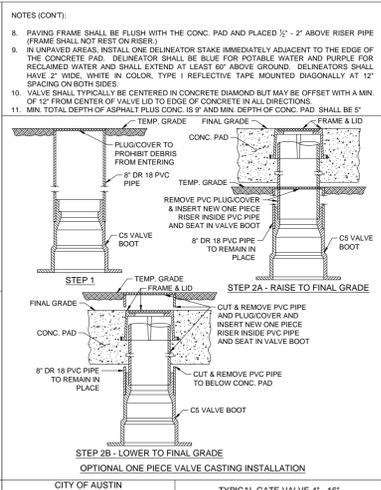
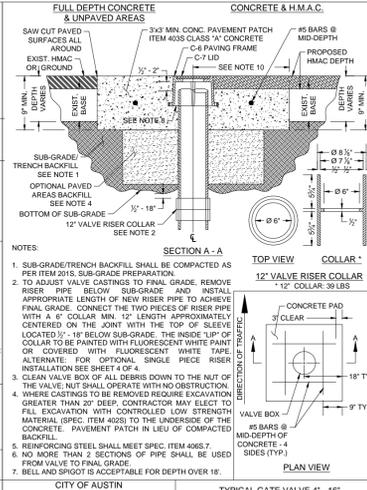
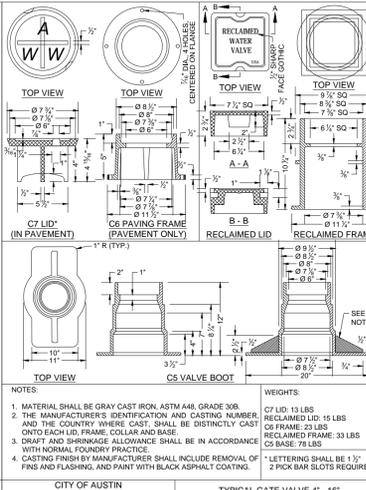
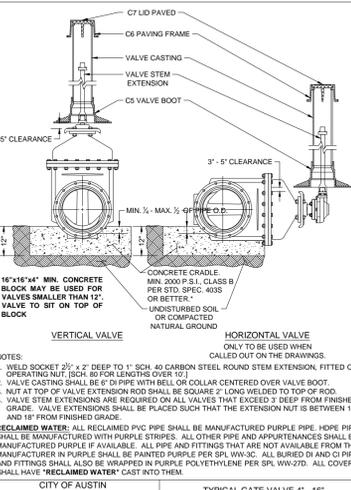
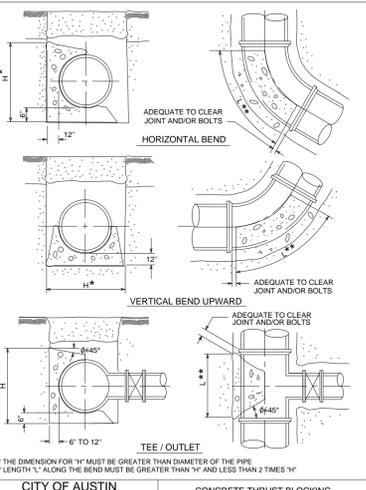
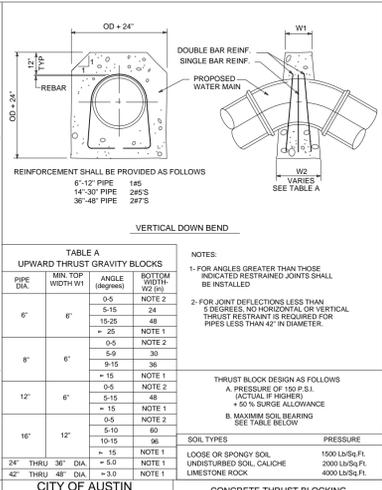
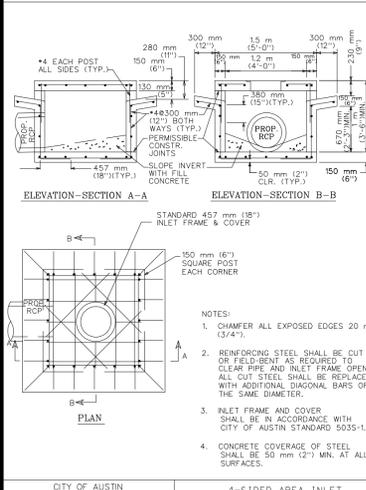
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RECORD COPY SIGNED BY BILL GARDNER 12/09/08 ADOPTED

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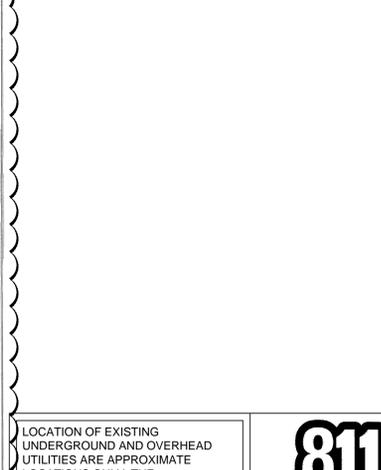
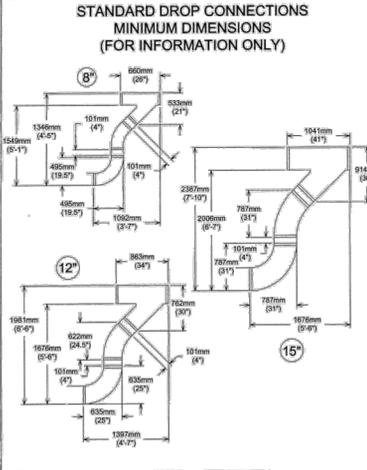
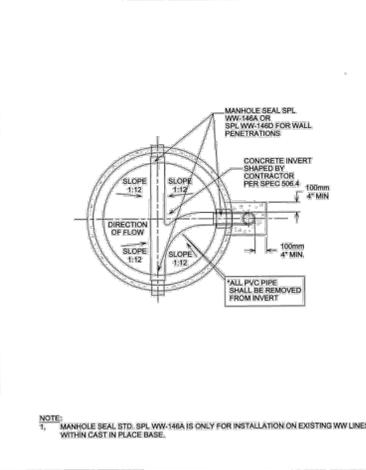
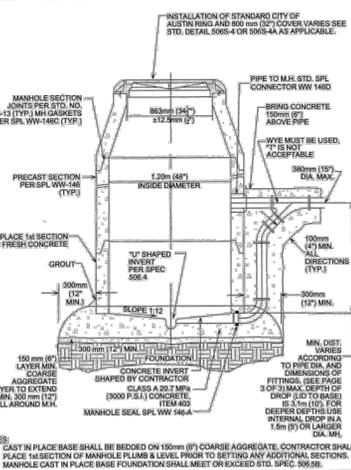
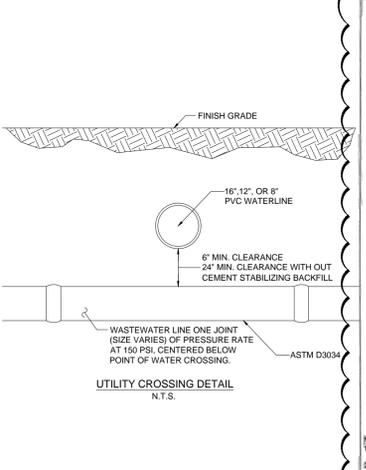
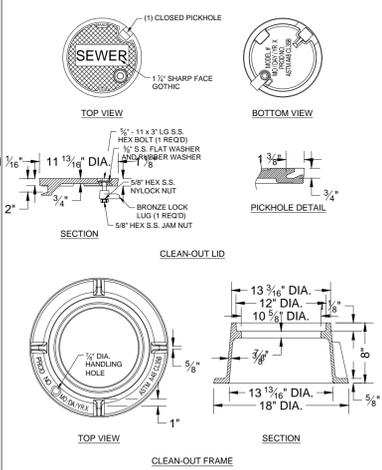
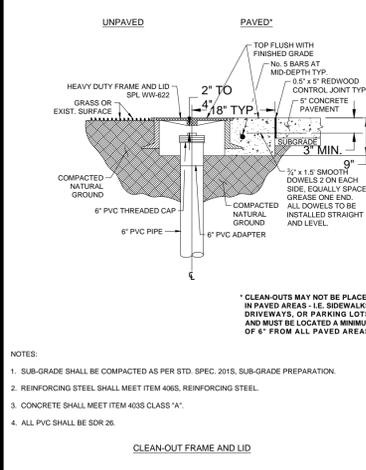
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NO.	DESCRIPTION	DATE	BY	CRH
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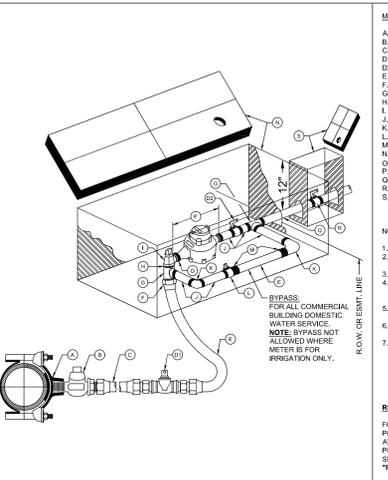
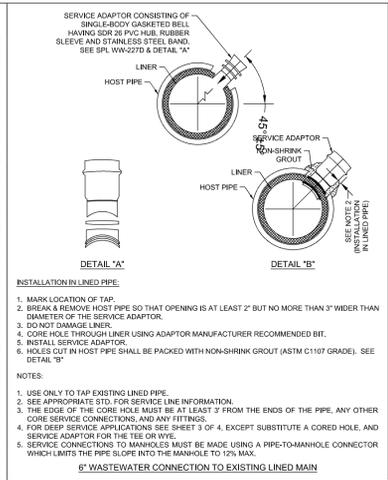
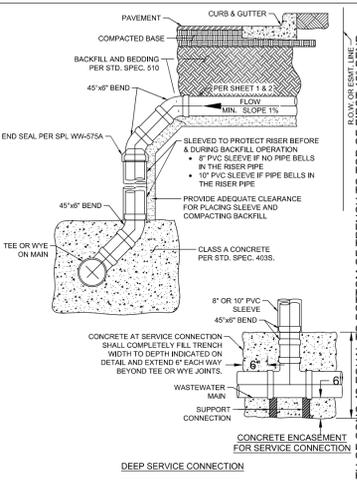
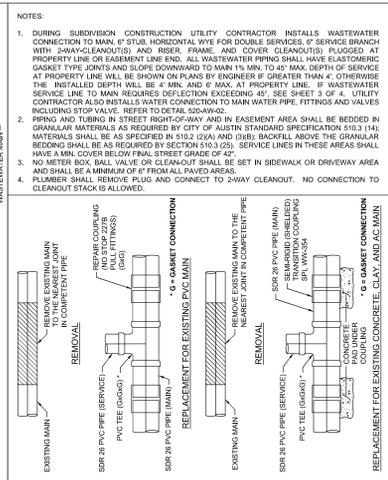
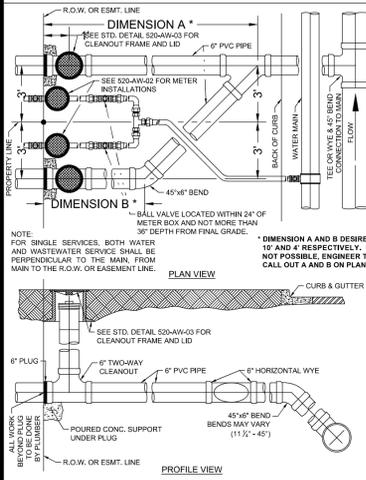


LJA Engineering, Inc.  
5316 Highway 290 West  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F 1-588

JOB NUMBER: A338-401  
DT03  
SHEET NO. 55  
OF 90 SHEETS

811  
Know what's below.  
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**MATERIALS LIST:**

- A. 2" SERVICE CLAMP
- B. 2" COPPERATION STOP MALE THREAD INLET BY COMPRESSION OUTLET
- C. 2" COPPER WATER SERVICE TUBING EXTENDED BEYOND PAVEMENT
- D. 2" BALL VALVE - SPL WW-275
- E. 2" BALL VALVE - SPL WW-275
- F. 2" BRASS COUPLING - COMPRESSION TO MALE IPT
- G. 2" BRASS TEE
- H. 2" BRASS CLOSE-NIPPLE
- I. 2" BRASS CLOSE-NIPPLE - SERVICE TUBING INLET x FLANGED OUTLET
- J. 2" BRASS ELBOW
- K. 2" LOCKABLE CURB STOP - FEMALE IPT INLET BY COMPRESSION OUTLET
- L. 2" BRASS COVERING - SERVICE TUBING INLET x FLANGED OUTLET
- M. RECTANGULAR METER BOX AND COVER, SPL WW-145A
- N. BRASS ADAPTER 1" x 1/2" FOR 1/2" METER ONLY
- O. WATER METER, LENGTH 1" (PURCHASED FROM AUSTIN WATER)
- P. 2" COPPER SERVICE TUBING (PRIVATE PLUMBING PER CODE)
- Q. CUSTOMER CUT-OFF VALVE
- R. CUSTOMER VALVE BOX AND LID

**NOTES:**

1. SERVICE CLAMP SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. BRANCH CONNECTIONS AND ALL ANGLE METER STOPS MUST BE INSTALLED PRIOR TO ANY METER INSTALLATION.
3. TOP OF BOXES SHOULD BE 1" ABOVE GROUND.
4. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (2) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (2).
5. BOX MUST BE BEING CURB NEXT TO PROPERTY LINE OR EASEMENT AND OUT OF VEHICULAR TRAFFIC AREA AND SIDEWALK.
6. BALL VALVE "O" SHALL NOT BE LOCATED UNDER SIDEWALK, CURB, OR PAVEMENT, AND NOT BE LOCATED MORE THAN 24" HORIZONTALLY FROM METER BOX OR 36" BELOW FINAL GRADE.
7. COPPER SERVICE TUBING SHALL BE COPPER TUBING SIZE ANNEALED SEAMLESS TYPE "K" MEETING ASTM B88 WITH NO SWEAT OR SOLDERED JOINTS.

**RECLAIMED WATER:**

FOR RECLAIMED WATER SERVICES AND METERS, ALL RECLAIMED TUBING SHALL BE MANUFACTURED PURPLE TUBING. ALL OTHER TUBING AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL TUBING AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-275. ALL BURIED HD PE AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-275. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	STANDARD NO. 520-AW-01 1 of 4
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

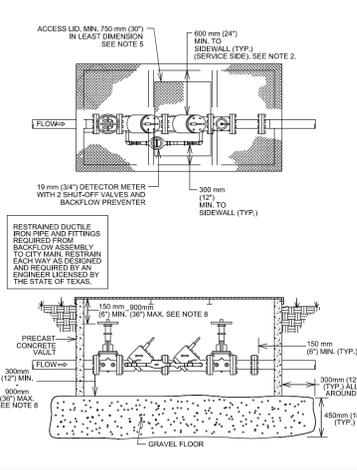
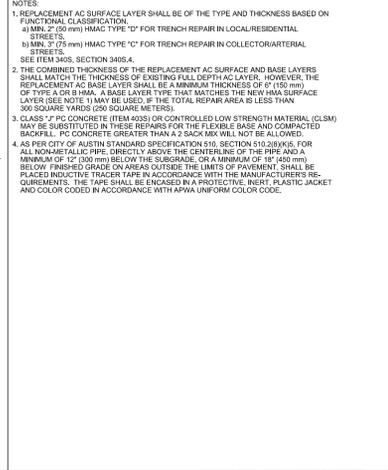
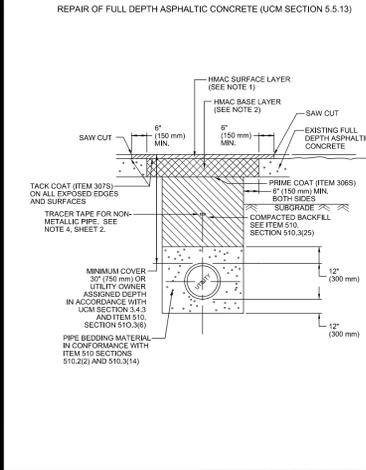
CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	STANDARD NO. 520-AW-01 2 of 4
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	STANDARD NO. 520-AW-01 3 of 4
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	STANDARD NO. 520-AW-01 4 of 4
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

CITY OF AUSTIN AUSTIN WATER	1 1/2" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	STANDARD NO. 520-AW-04 1 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

CITY OF AUSTIN AUSTIN WATER	1 1/2" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	STANDARD NO. 520-AW-04 2 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED



**NOTES:**

1. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
2. ALL TEST PORTS SHALL BE DIRECTED UPWARD AND PROTECTED. TEST PORTS ARE LOCATED ON SERVICE SIDE. PLUGS SHALL BE NON-FERROUS.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
4. CLEARANCE SHALL BE AS INDICATED AND IN THE STANDARD CROSS CONNECTION ORDINANCES AND LOCAL.
5. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 750 mm (30") IN LEAST DIMENSION.
6. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY AUSTIN WATER UTILITY SPECIAL SERVICE DIVISION WITHIN 3 DAYS AFTER BEING INSTALLED.
7. VAULT SHALL NOT BE INSTALLED IN TRAFFIC AREA.
8. VAULT DEPTH MAY NOT EXCEED 1.8m (72") BOTTOM OF LID TO TOP OF FLOOR.
9. HAND WHEELS SHALL BE HORIZONTALLY LOCATED WITHIN 300mm (12") OF ACCESS OPENING.
10. FOR ACCESS DOORS SEE SPL WW-208 OR APPROVED EQUAL (HOB LOADING REQUIRED).
11. FOR VAULT SEE SPL WW-208 OR APPROVED EQUAL (HOB LOADING REQUIRED).
12. VAULT PIPE WALL JOINTS SHALL BE SEALED WITH NON-SHRINK GROUT OR SEALANT PER SPL WW-184 OR APPROVED EQUAL.
13. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL BRIDGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN AUSTIN WATER	FULL DEPTH ASPHALTIC CONCRETE PAVEMENT TRENCH REPAIR	STANDARD NO. 1100S-5 1 of 2
RECORD COPY SIGNED BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	01/14/05 ADOPTED

CITY OF AUSTIN AUSTIN WATER	FULL DEPTH ASPHALTIC CONCRETE PAVEMENT TRENCH REPAIR	STANDARD NO. 1100S-5 2 of 2
RECORD COPY SIGNED BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	01/14/05 ADOPTED

CITY OF AUSTIN AUSTIN WATER	STANDARD FIRE LINE INSTALLATION WITHOUT MASTER METER	STANDARD NO. 520S-19C 1 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	08/31/2011 ADOPTED

CITY OF AUSTIN AUSTIN WATER	STANDARD FIRE LINE INSTALLATION WITH MASTER METER	STANDARD NO. 520S-19C 2 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	08/31/2011 ADOPTED



**REQUIRED WHEEL LOADS**

Government Specification	Wheel Load	Wheel Load (30% Impact)
UBC - Passenger Car	2,000 #	10,400 #
AASHTO - H1 Loading	8,000 #	15,600 #
AASHTO - H15 Loading	12,000 #	20,800 #
AASHTO - H20 Loading	16,000 #	

**ALLOWABLE WHEEL LOADS ON AISC Specs**

AASHTO Specs	Load At Allow Working Stress	Load At Yield Stress	Yield Stress	1.7 Safety Factor
15,000 #	20,570 #	48,290 #	27,230 #	

**Part No. GHDF-A X B**

F = Finish - Galvanized or Primed  
A = Dimension "A"  
B = Dimension "B"  
Custom Sizes Upon Request

**PLAN VIEW**

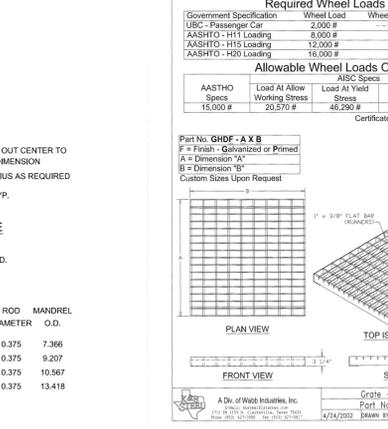
**TOP ISOMETRIC VIEW**

**FRONT VIEW**

**SIDE VIEW**

**TYPICAL MANDREL DETAILS N.T.S.**

SIZE	TYPE	AVERAGE O.D.	MIN WALL THICKNESS	L1	L2	R1	R2	T1	T2	ROD DIAMETER	MANDREL O.D.
8"	D3034	SDR26	8.40	0.323	6.00	3.78	1.25	0.375	1.0	0.375	7.366
10"	D3034	SDR26	10.50	0.444	7.50	4.72	1.50	0.375	1.0	0.375	9.207
12"	D3034	SDR26	12.50	0.461	8.00	5.59	1.75	0.375	1.0	0.375	10.967
15"	D3034	SDR26	15.30	0.588	11.25	7.08	2.00	0.375	1.0	0.375	13.418



**Required Wheel Loads**

Government Specification	Wheel Load	Wheel Load (30% Impact)
UBC - Passenger Car	2,000 #	10,400 #
AASHTO - H1 Loading	8,000 #	15,600 #
AASHTO - H15 Loading	12,000 #	20,800 #
AASHTO - H20 Loading	16,000 #	

**ALLOWABLE WHEEL LOADS ON AISC Specs**

AASHTO Specs	Load At Allow Working Stress	Load At Yield Stress	Yield Stress	1.7 Safety Factor
15,000 #	20,570 #	48,290 #	27,230 #	

**Part No. GHDF-A X B**

F = Finish - Galvanized or Primed  
A = Dimension "A"  
B = Dimension "B"  
Custom Sizes Upon Request

**PLAN VIEW**

**TOP ISOMETRIC VIEW**

**FRONT VIEW**

**SIDE VIEW**

CITY OF AUSTIN AUSTIN WATER	FULL DEPTH ASPHALTIC CONCRETE PAVEMENT TRENCH REPAIR	STANDARD NO. 1100S-5 1 of 2
RECORD COPY SIGNED BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	01/14/05 ADOPTED

CITY OF AUSTIN AUSTIN WATER	FULL DEPTH ASPHALTIC CONCRETE PAVEMENT TRENCH REPAIR	STANDARD NO. 1100S-5 2 of 2
RECORD COPY SIGNED BY BILL GARDNER	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	01/14/05 ADOPTED

CITY OF AUSTIN AUSTIN WATER	STANDARD FIRE LINE INSTALLATION WITHOUT MASTER METER	STANDARD NO. 520S-19C 1 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	08/31/2011 ADOPTED

CITY OF AUSTIN AUSTIN WATER	STANDARD FIRE LINE INSTALLATION WITH MASTER METER	STANDARD NO. 520S-19C 2 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	08/31/2011 ADOPTED



CITY OF AUSTIN AUSTIN WATER	1 1/2" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	STANDARD NO. 520-AW-04 1 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

CITY OF AUSTIN AUSTIN WATER	1 1/2" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	STANDARD NO. 520-AW-04 2 of 2
RECORD COPY SIGNED BY KATH L FLOWERS	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	05/18/2016 ADOPTED

NO.	DESCRIPTION	DATE	BY



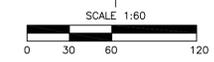
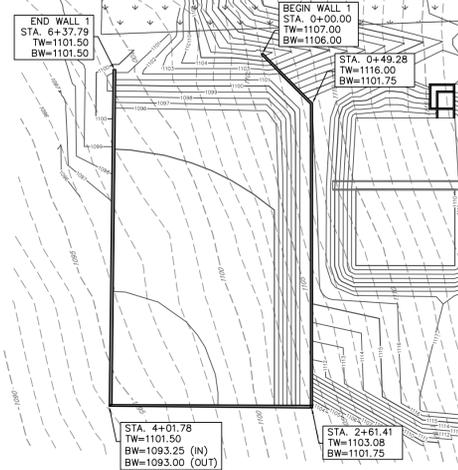
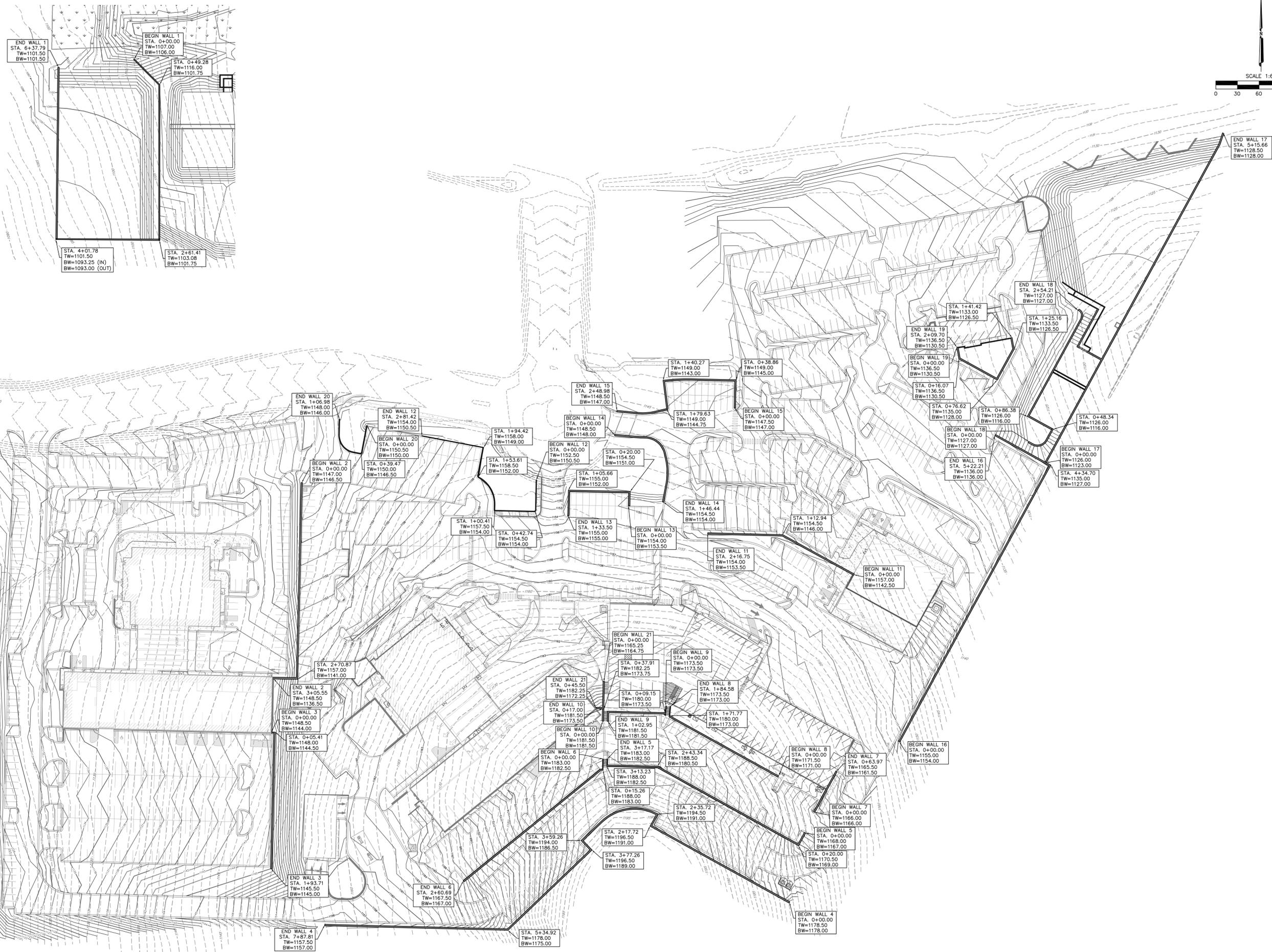
**LJA Engineering, Inc.**  
5316 Highway 290 West  
Suite 150  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRNF-1186

JOB NUMBER: A338-401
DT04
SHEET NO. <b>56</b>
OF 90 SHEETS

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

**811**  
Know what's below.  
Call before you dig.

J:\A338 - Covert Bee Cave\Drawings\A338-401-P-1101.dwg  
User: cngar  
Date: 05/17/16 10:48  
Plot Date: 05/17/16 10:48  
Plot Size: 11x17  
Plot Style: Plot Style: 24, 17, 15, 27



NO.	DATE	DESCRIPTION



**COVERT-BEE CAVE**  
BEE CAVE, TEXAS

PLAN VIEW

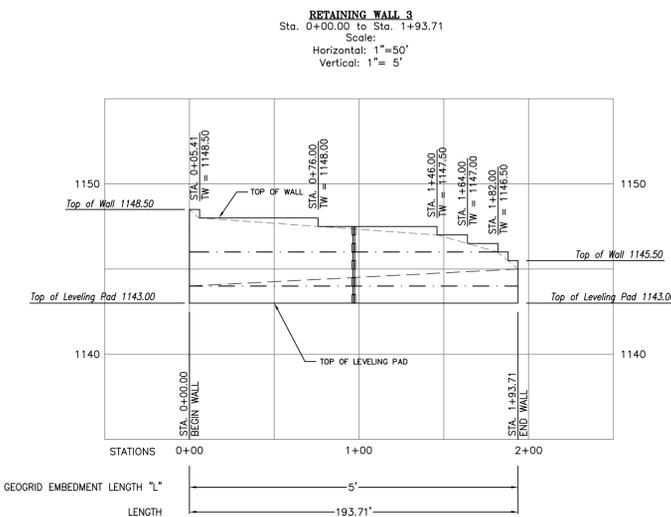
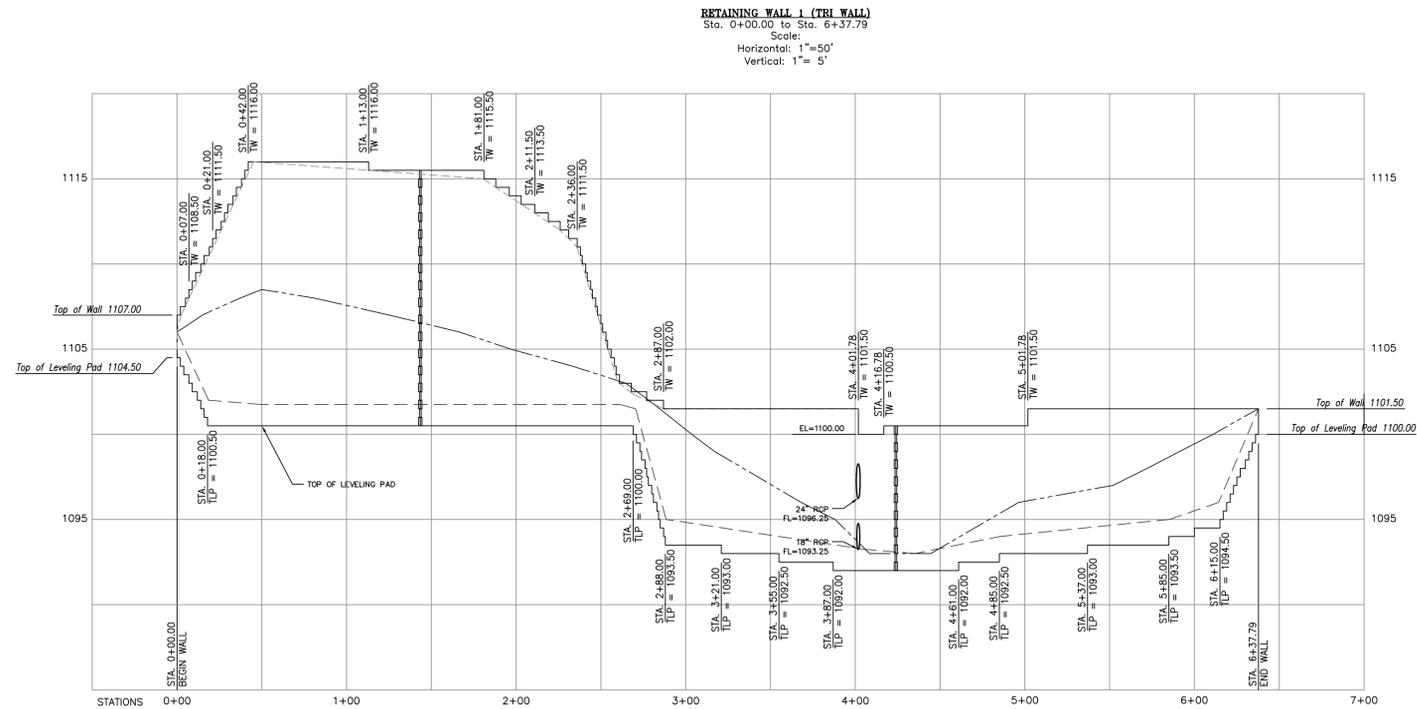
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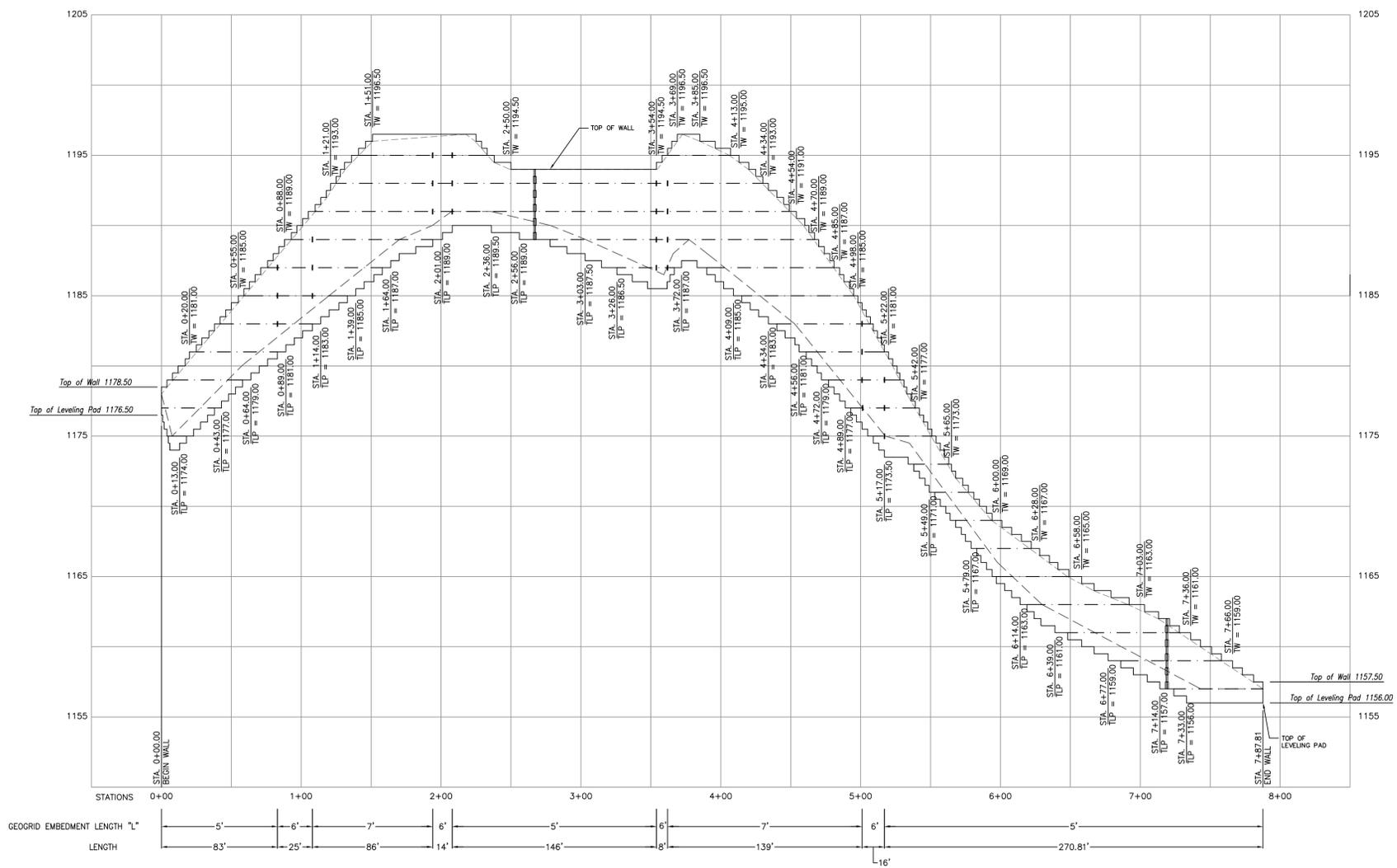
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Date: 08/15/19  
Drawn by: JY  
Project No.: GS19073

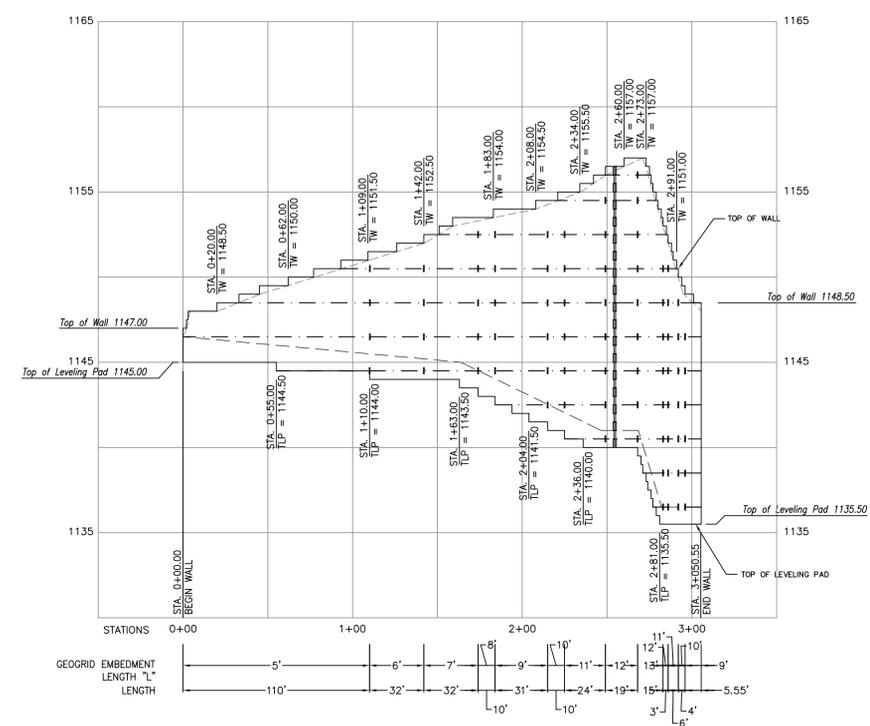
SHEET 57 OF 90  
**STR01**



**RETAINING WALL 4**  
Sta. 0+00.00 to Sta. 7+87.81  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



**RETAINING WALL 2**  
Sta. 0+00.00 to Sta. 3+05.55  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



- LEGEND**
- TENSAR UX1400 GEORGRID
  - FINISHED GRADE AT TOP OF WALL
  - FINISHED GRADE AT BOTTOM OF WALL
  - FINISHED GRADE AT BOTTOM OF WALL (OUTSIDE POND)
  - XXXX GEORGRID ELEVATION
  - | GEORGRID CHANGE OR TERMINATION POINT
  - MORTARED LIMESTONE BLOCK

REVISIONS


Carey M. Witt  
STATE OF TEXAS  
REGISTERED PROFESSIONAL ENGINEER  
77259  
08/15/19

COVERT-BEE CAVE  
BEE CAVE, TEXAS

PROFILES 1 - 4

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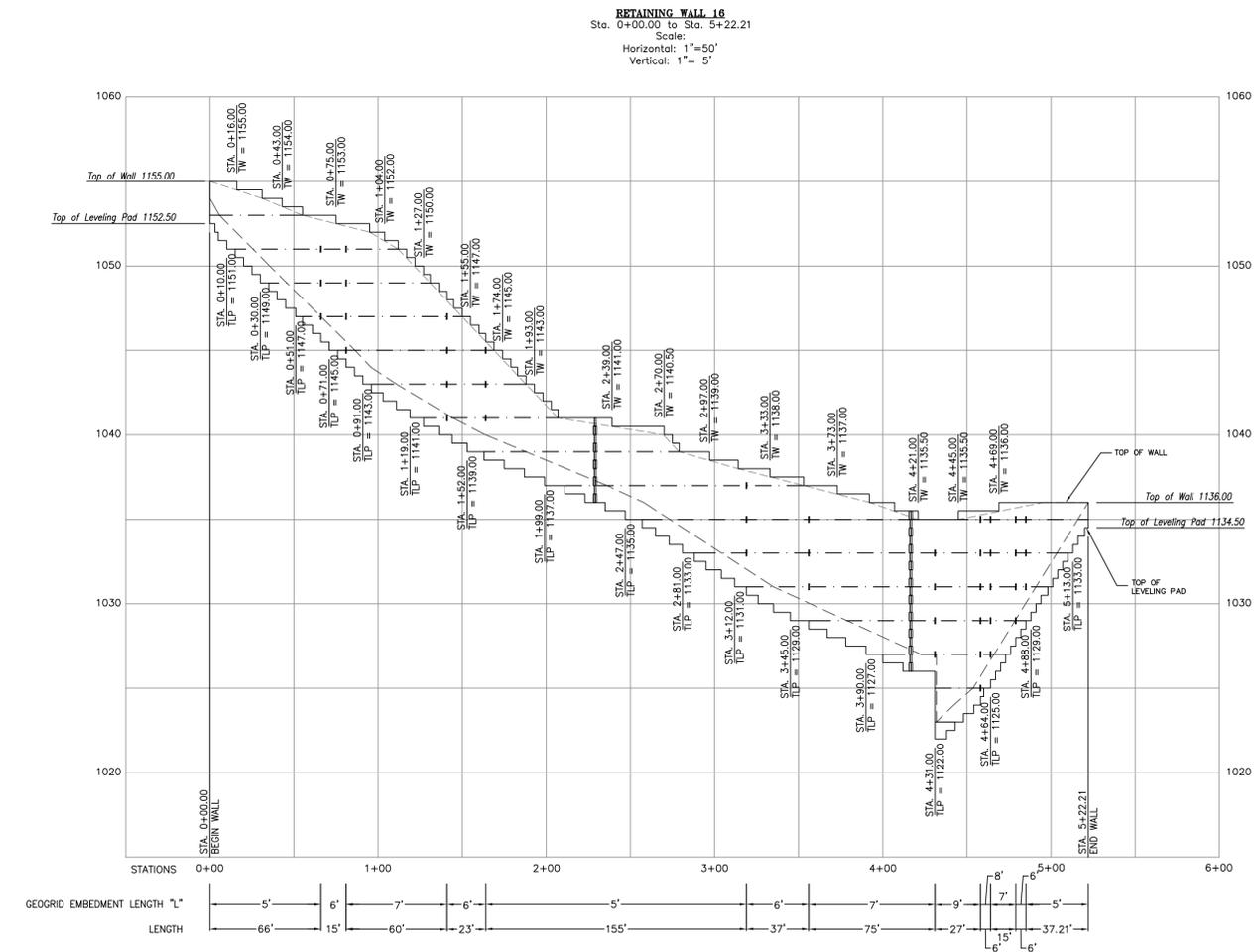
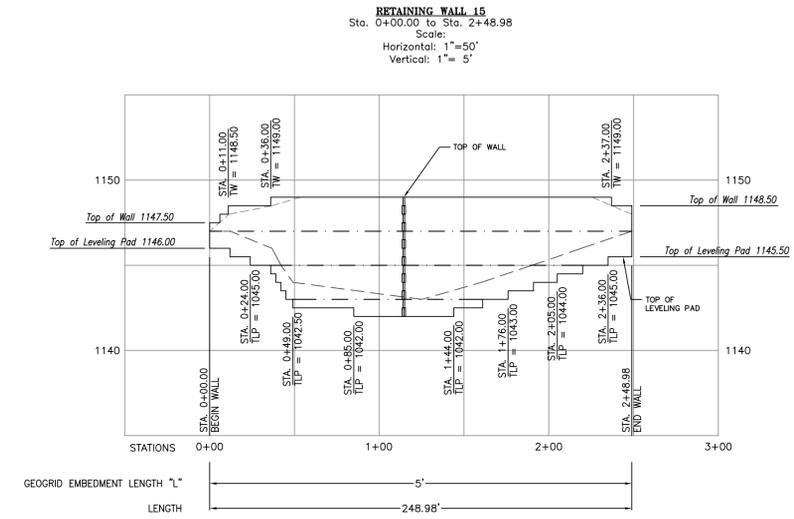
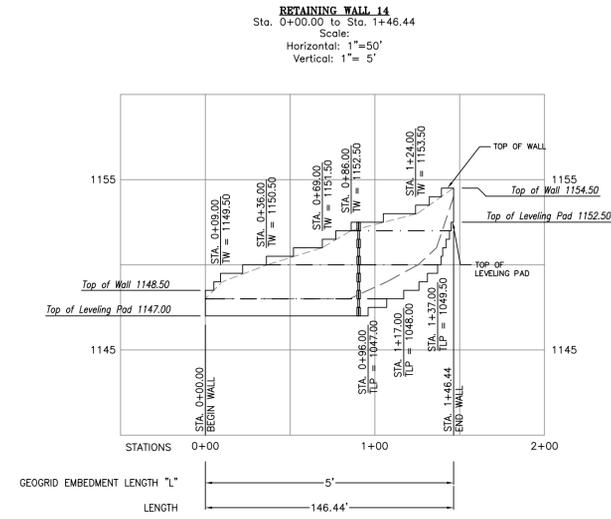
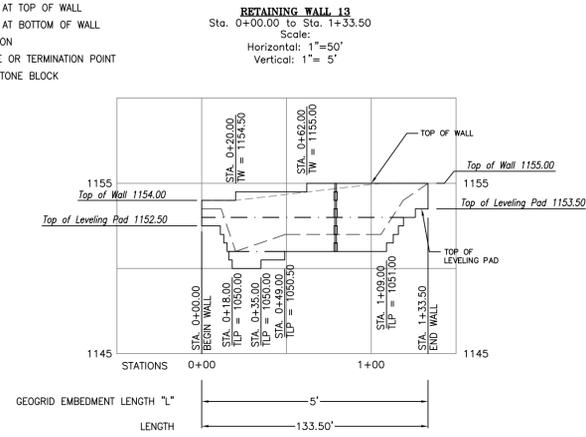
**GEOSOLUTIONS**

Scale: NOT TO SCALE  
Date: 08/15/19  
Drawn by: JY  
Project No.: GS19073



**LEGEND**

- TENSAR UX1400 GEOGRID
- - - FINISHED GRADE AT TOP OF WALL
- - - FINISHED GRADE AT BOTTOM OF WALL
- XXXXX GEOGRID ELEVATION
- I GEOGRID CHANGE OR TERMINATION POINT
- █ MORTARED LIMESTONE BLOCK



REVISIONS



**COVERT-BEE CAVE**  
BEE CAVE, TEXAS

PROFILES 13 - 16

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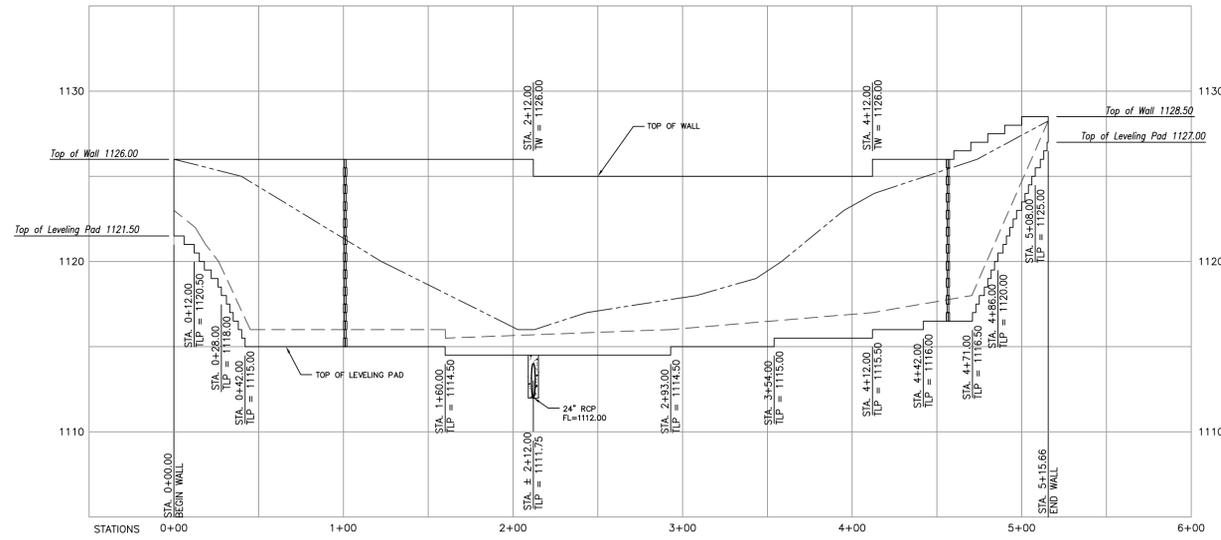
GEO SOLUTIONS

Scale: NOT TO SCALE  
Date: 08/15/19  
Drawn by: JY  
Project No.: GS19073

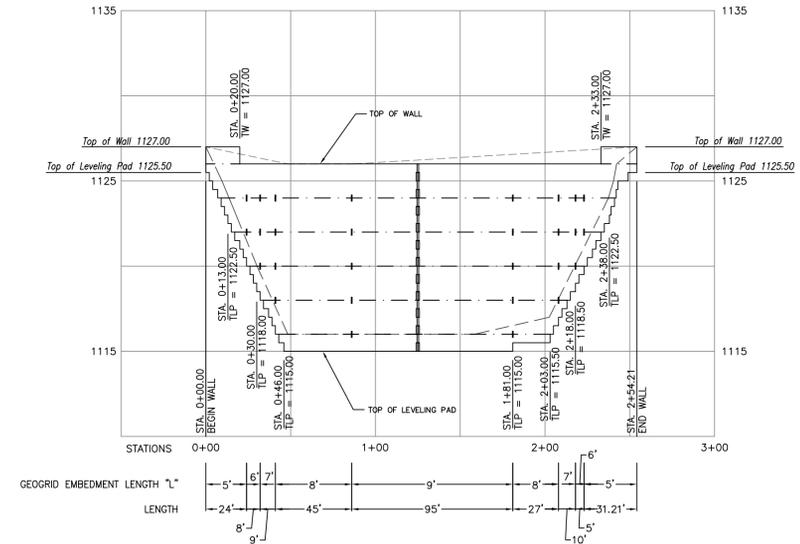
**LEGEND**

- TENSAR UX1400 GEOGRID
- FINISHED GRADE AT TOP OF WALL
- FINISHED GRADE AT BOTTOM OF WALL
- FINISHED GRADE AT BOTTOM OF WALL (OUTSIDE POND)
- XXXXX GEOGRID ELEVATION
- I GEOGRID CHANGE OR TERMINATION POINT
- █ MORTARED LIMESTONE BLOCK

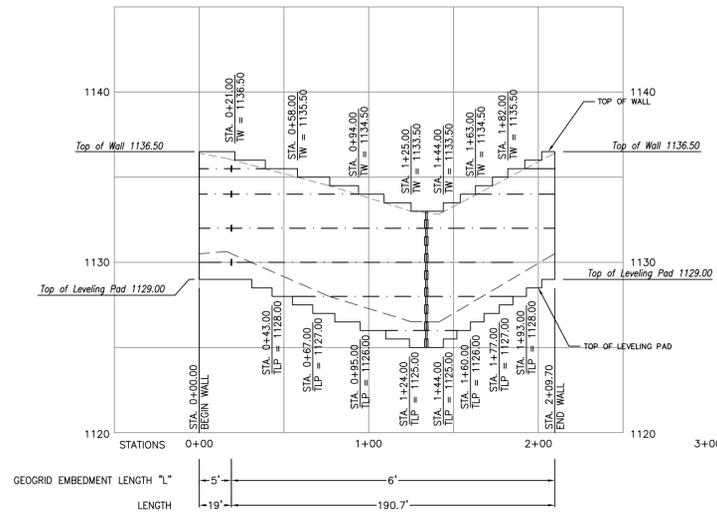
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Horizontal: 1"=50'  
Vertical: 1"= 5'



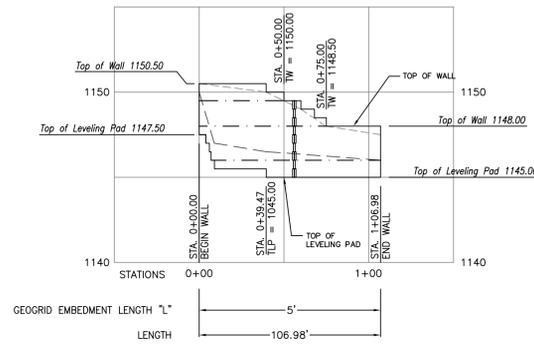
**RETAINING WALL 18**  
Sta. 0+00.00 to Sta. 2+54.21  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



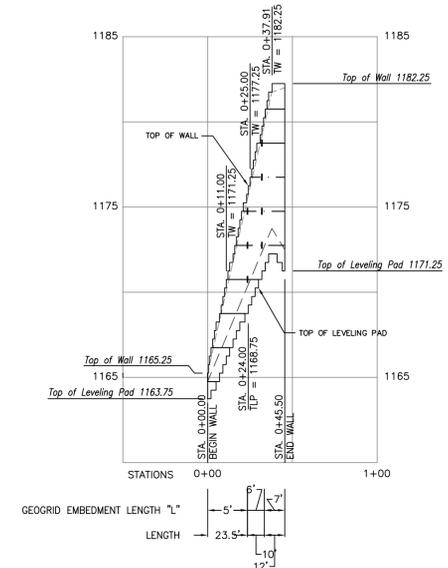
**RETAINING WALL 19**  
Sta. 0+00.00 to Sta. 2+09.70  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



**RETAINING WALL 20**  
Sta. 0+00.00 to Sta. 1+06.98  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



**RETAINING WALL 21**  
Sta. 0+00.00 to Sta. 0+45.50  
Scale:  
Horizontal: 1"=50'  
Vertical: 1"= 5'



REVISIONS



COVERT-BEE CAVE  
BEE CAVE, TEXAS

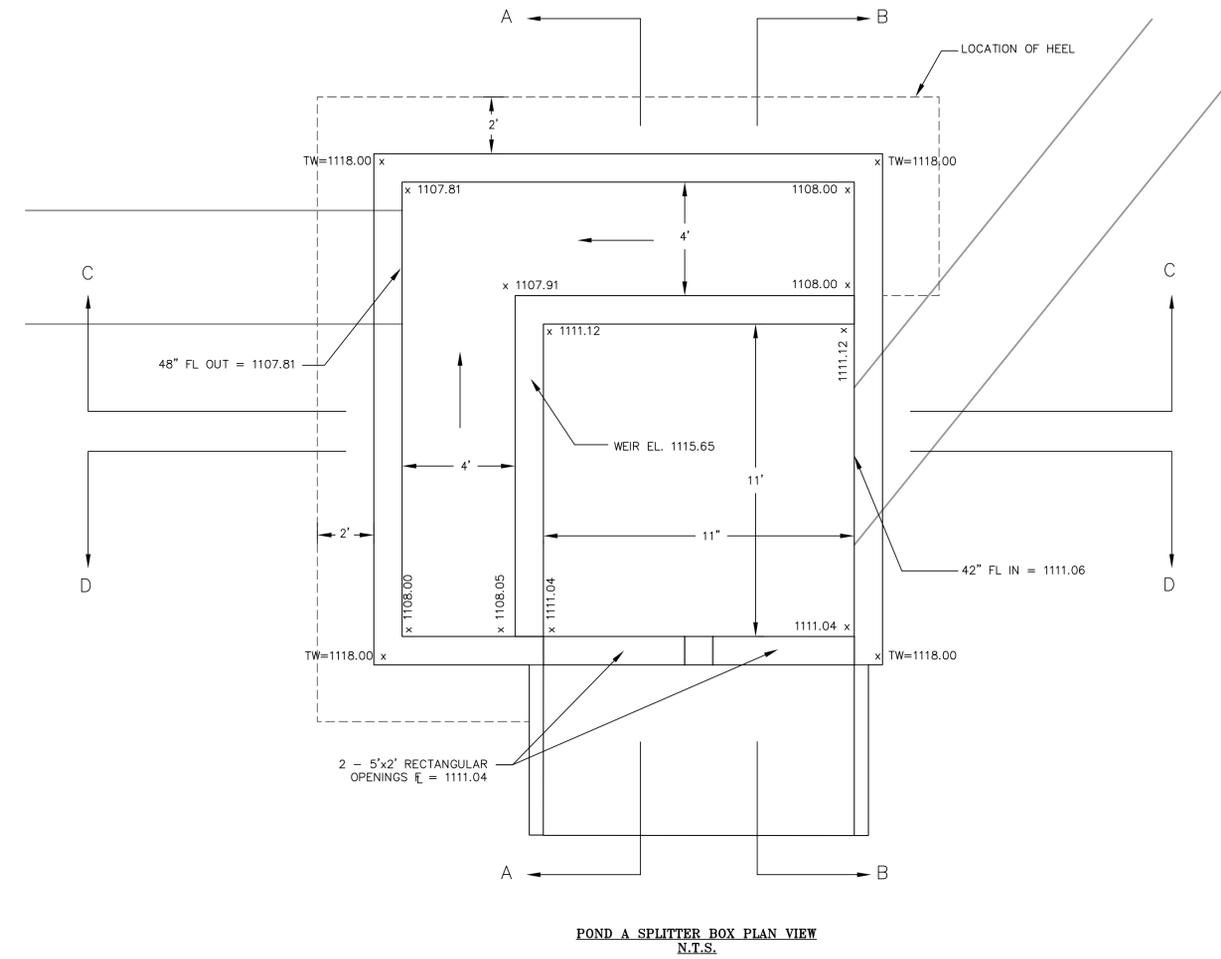
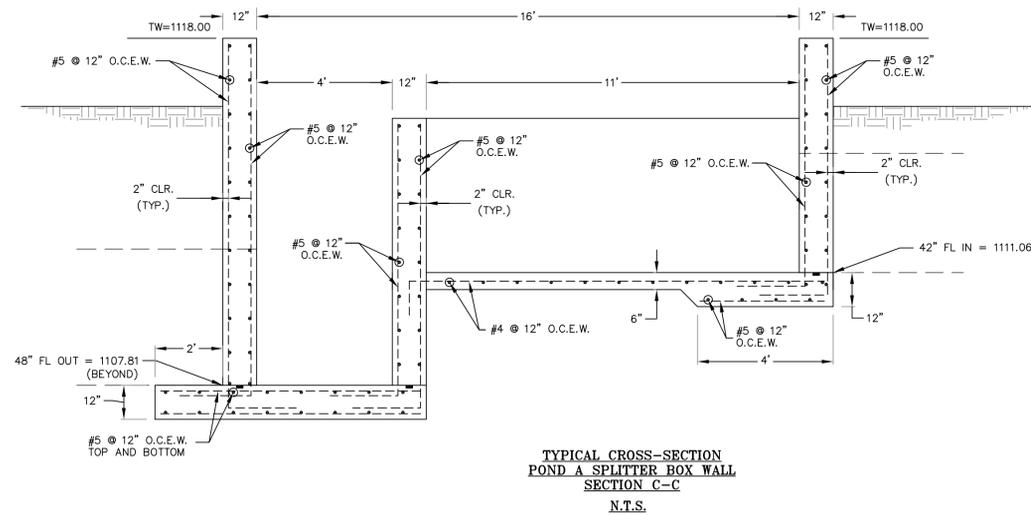
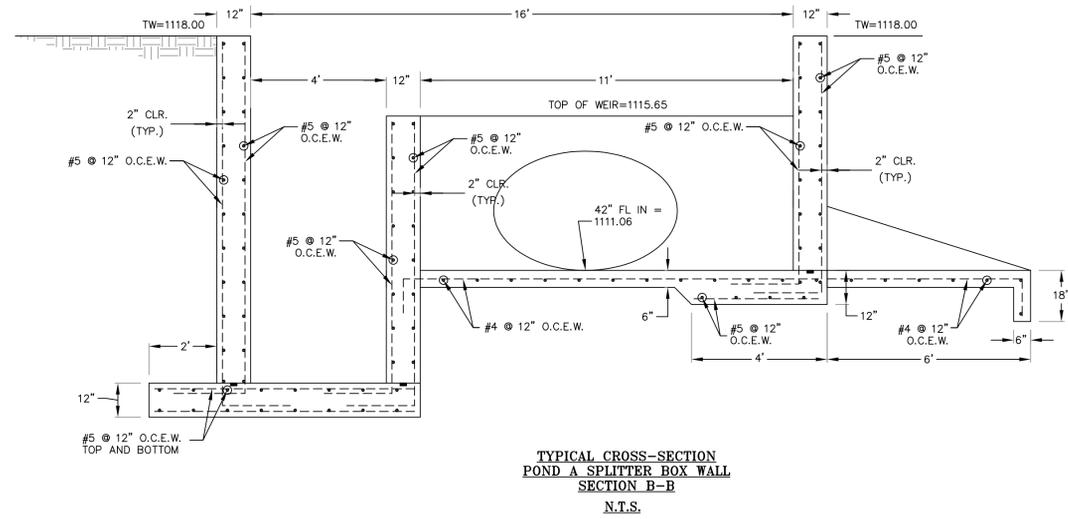
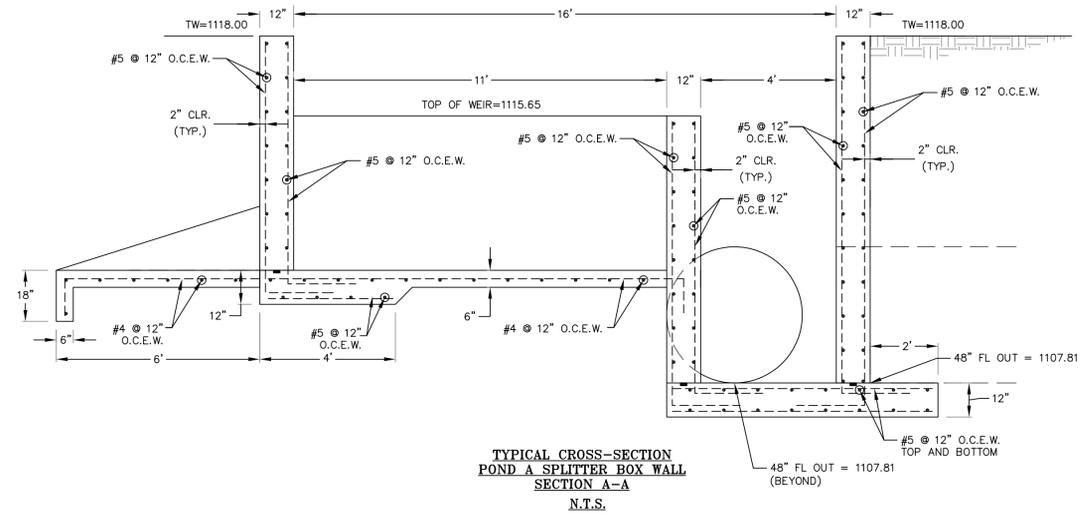
PROFILES 17 - 21

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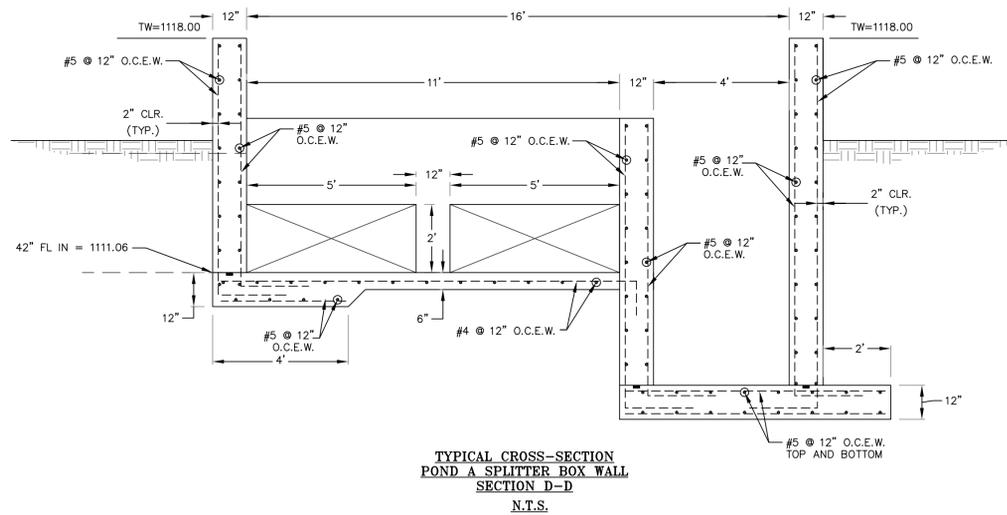


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Date: 08/15/19  
Drawn by: JY  
Project No.: GS19073

SHEET 61 OF 90  
STR07



- NOTES:
1. SEE DETAIL SHEET FOR ADDITIONAL REINFORCEMENT AT CIRCULAR AND RECTANGULAR OPENINGS, WALL CORNERS AND WALL INTERSECTIONS.
  2. SEE DETAIL SHEET FOR BASE JOINT/WATERSTOP DETAILS.



REVISIONS



**COVERT-BEE CAVE**  
BEE CAVE, TEXAS

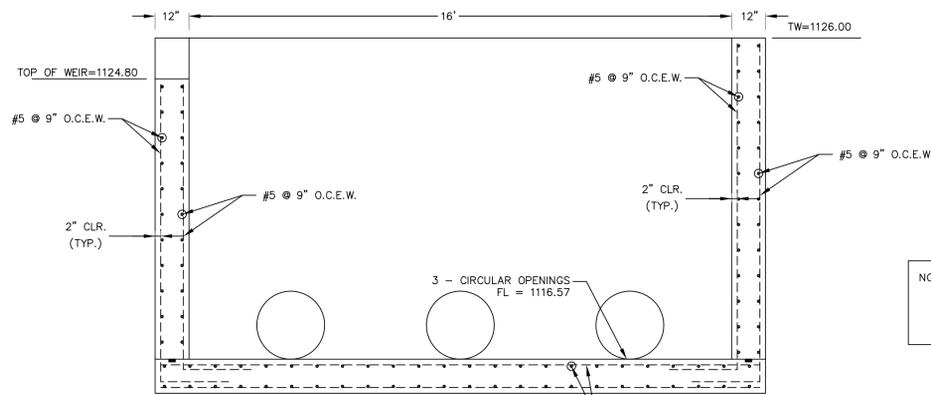
POND A SPLITTER BOX PLAN AND SECTIONS

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Phone: 512-445-0796  
www.geosolutionsinc.com  
Reg. Eng. Firm #F-4189

**GEO SOLUTIONS**

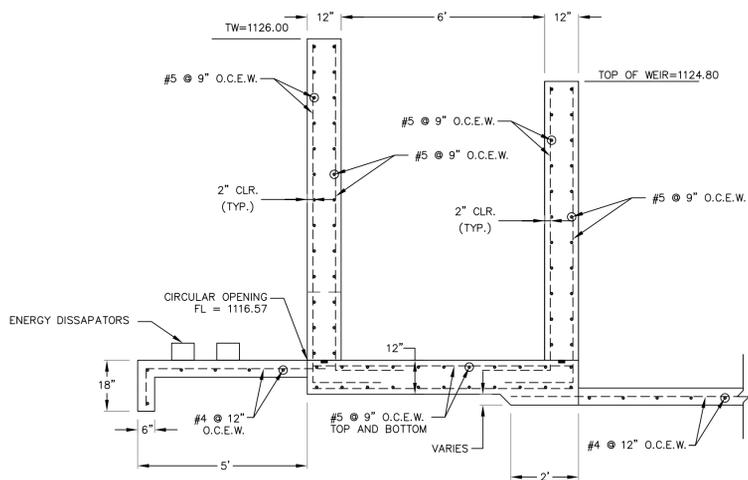
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Drawn by: JY  
Project No.: GS19073

SHEET 62 OF 90  
**STR06**

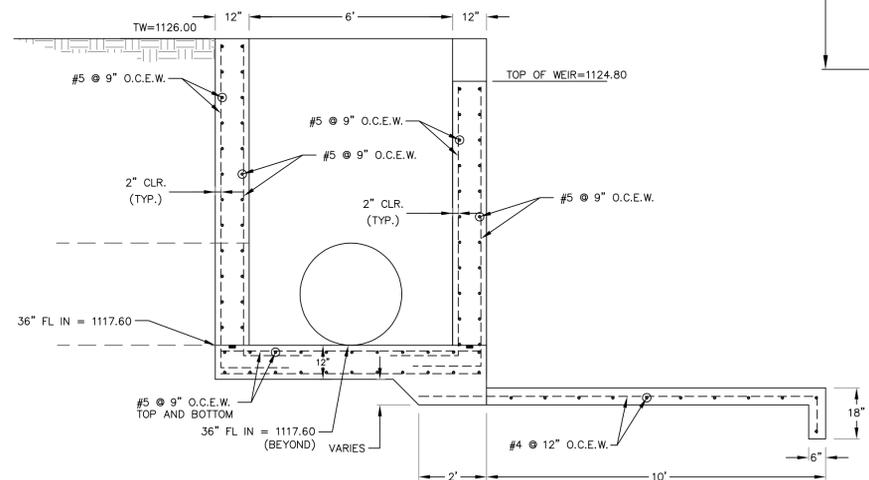


TYPICAL CROSS-SECTION  
POND B SPLITTER BOX WALL  
SECTION A-A  
N.T.S.

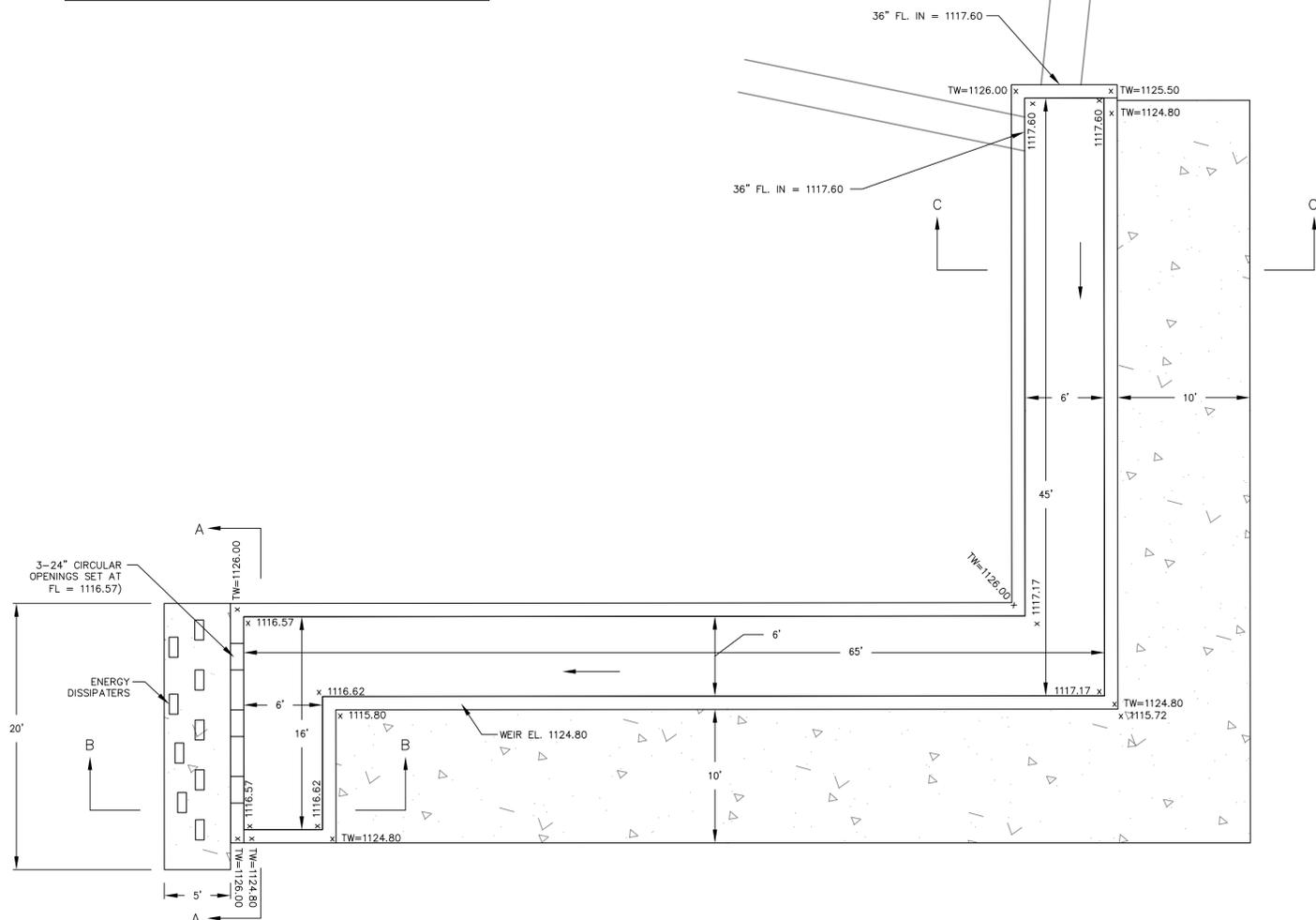
NOTES:  
1. SEE DETAIL SHEET FOR ADDITIONAL REINFORCEMENT AT CIRCULAR AND RECTANGULAR OPENINGS, WALL CORNERS AND WALL INTERSECTIONS.  
2. SEE DETAIL SHEET FOR BASE JOINT/WATERSTOP DETAILS.



TYPICAL CROSS-SECTION  
POND B SPLITTER BOX WALL  
SECTION B-B  
N.T.S.

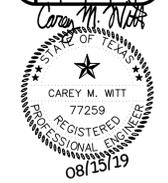


TYPICAL CROSS-SECTION  
POND B SPLITTER BOX WALL  
SECTION C-C  
N.T.S.



POND B SPLITTER BOX PLAN VIEW  
N.T.S.

NO.	DATE	REVISIONS



COVERT-BEE CAVE  
BEE CAVE, TEXAS  
POND B SPLITTER BOX PLAN AND SECTIONS

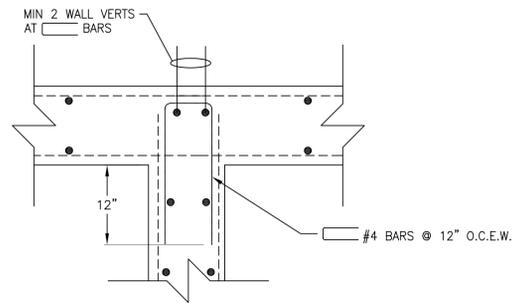
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Phone: 512-445-0796  
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**GEO SOLUTIONS**

Scale: NOT TO SCALE  
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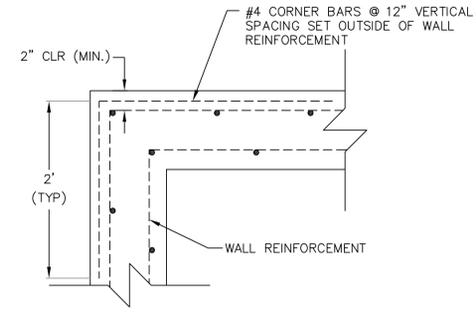
SHEET 63 OF 90  
**STR07**

**RETAINING WALL NOTES**

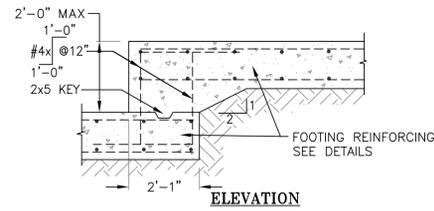
1. SUBGRADE UNDER FOOTING SHALL BE REPLACED PER SUBGRADE IMPROVEMENT DETAIL INCLUDED IN CONCRETE STRUCTURES PLAN SHEETS.
2. RETAINING WALL CONSTRUCTION SHALL CONFORM TO LOCAL GOVERNING STANDARD SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE.
3. CONCRETE SHALL BE CLASS C NORMAL WEIGHT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3600 PSI., UNLESS OTHERWISE NOTED.
4. REINFORCING STEEL SHALL BE ASTM/ANSI A615, GRADE 60.
5. SEALANT AT JOINTS SHALL CONSIST OF LOW MODULUS, HIGH PERFORMANCE, TWO-PART POLYSULFIDE OR POLYURETHANE, NON-SAG ELASTOMERIC SEALANT SUITABLE FOR USE IN WATER IMMERSION APPLICATIONS. SEALANT SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INCLUDING USE OF A PRIMER AS REQUIRED. PRODUCTS SHALL MEET THE REQUIREMENTS OF ASTM C 1247 AND ASTM C 920. PRODUCT SHALL BE MANUFACTURED BY BOSTIK, INC., SIKA CORPORATION, OR APPROVED EQUAL. SEALANT SHALL BE GRAY IN COLOR.
6. DO NOT BEGIN BACKFILLING OPERATIONS UNTIL CONCRETE HAS CURED A MINIMUM OF 7 DAYS. THE COMPACTION EFFORTS ADJACENT TO RETAINING WALLS SHALL BE CONTROLLED DURING BACKFILLING OPERATION TO PREVENT OVER COMPACTION. BACKFILLING COMPACTION SHALL BE MAINTAINED AT 93 TO 96 PERCENT OF TEX 113E MAXIMUM DRY DENSITY.
7. CHAMFER ALL EXPOSED EDGES 3/4".
8. FORMWORK FOR SURFACES TO BE EXPOSED TO VIEW IN THE FINISHED CONSTRUCTION SHALL BE SMOOTH, EITHER WOOD OR METAL. SMOOTH FORMS SHALL BE FREE OF RAISED GRAIN, TORN SURFACES, WORN EDGES, PATCHES, DENTS OR OTHER DEFECTS. STRENGTH OF FORMS SHALL BE SUCH THAT NO WARPING, BULGING OR BOWING OCCUR UNDER THE WEIGHT OF THE WET CONCRETE. JOINTS SHALL BE SMOOTH AND MORTAR TIGHT. FORMS WHICH DO NOT PRESENT A SMOOTH SURFACE OR LINE UP PROPERLY SHALL NOT BE USED. FORMS SHALL BE FREE OF RUST, GREASE OR OTHER FOREIGN SURFACES THAT MAY DISCOLOR THE FINISHED CONCRETE.
9. ALL CONCRETE SURFACES EXPOSED TO VIEW SHALL RECEIVE A RUBBED FINISH.
10. THE CONTRACTOR SHALL USE CARE TO PROPERLY VIBRATE CONCRETE DURING PLACING OPERATIONS TO ENSURE GOOD DENSITY OF CONCRETE AND TO MINIMIZE SURFACE DEFECTS.
11. ON-SITE OR SELECT FILL MATERIAL SHALL BE USED TO BACKFILL BEHIND THE WALLS AND SHALL CONSIST OF GC OR SC SOILS, AS CLASSIFIED ACCORDING TO THE UNITED SOIL CLASSIFICATION SYSTEM (USCS), AND SHALL HAVE A MAXIMUM LL NOT EXCEEDING 40, A PI NOT EXCEEDING 20, AND A MAXIMUM PARTICLE SIZE NOT EXCEEDING 4 IN.



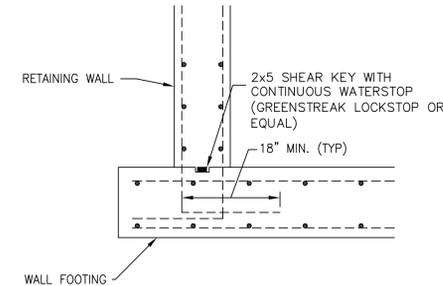
**TYPICAL WALL INTERSECTIONS**  
N.T.S.



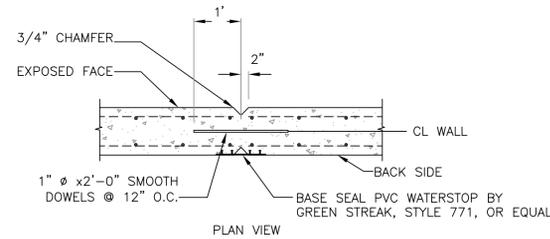
**TYPICAL WALL CORNER DETAIL**  
N.T.S.



**TYPICAL STEP IN RETAINING WALL FOOTING DETAIL (MAX STEP 2'-0")**  
N.T.S.

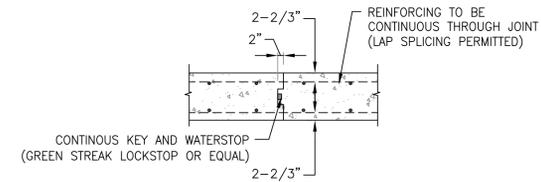


**RETAINING WALL BASE JOINT AND WATERSTOP DETAIL**  
N.T.S.

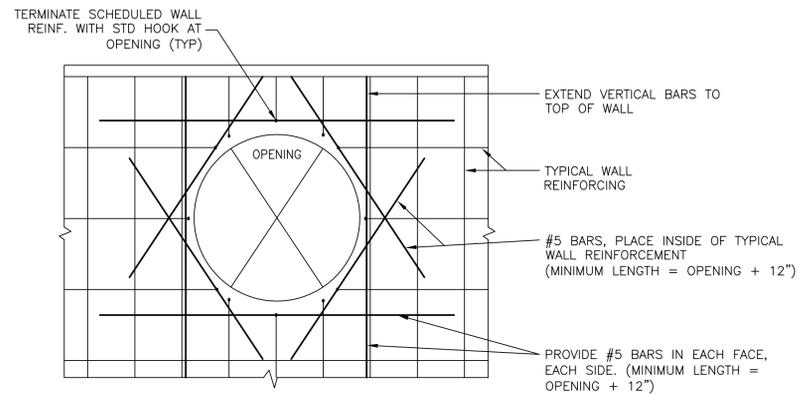


NOTE: CONTRACTION JOINT SPACING NOT TO EXCEED 20'-0" AND AT ALL ABRUPT CHANGES IN WALL HEIGHT.

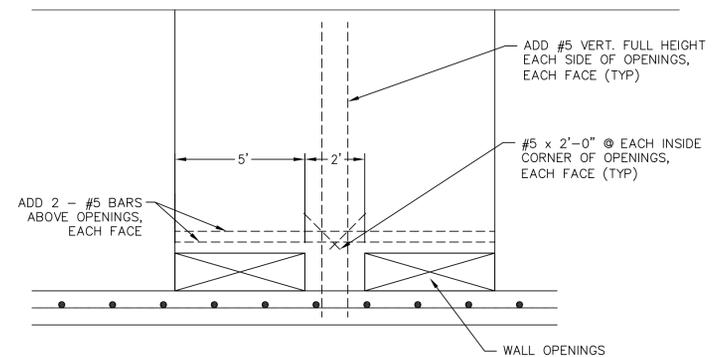
**TYPICAL VERTICAL CONTRACTION JOINT DETAIL WITH EXTERNAL WATERSTOP**  
N.T.S.



**TYPICAL VERTICAL CONSTRUCTION JOINT IN WALLS DETAIL**  
N.T.S.



**ADDITIONAL WALL REINFORCEMENT AT CIRCULAR OPENING**  
N.T.S.



**ADDITIONAL WALL REINFORCEMENT AT RECTANGULAR OPENING**  
N.T.S.

REVISIONS



COVERT-BEE CAVE  
BEE CAVE, TEXAS

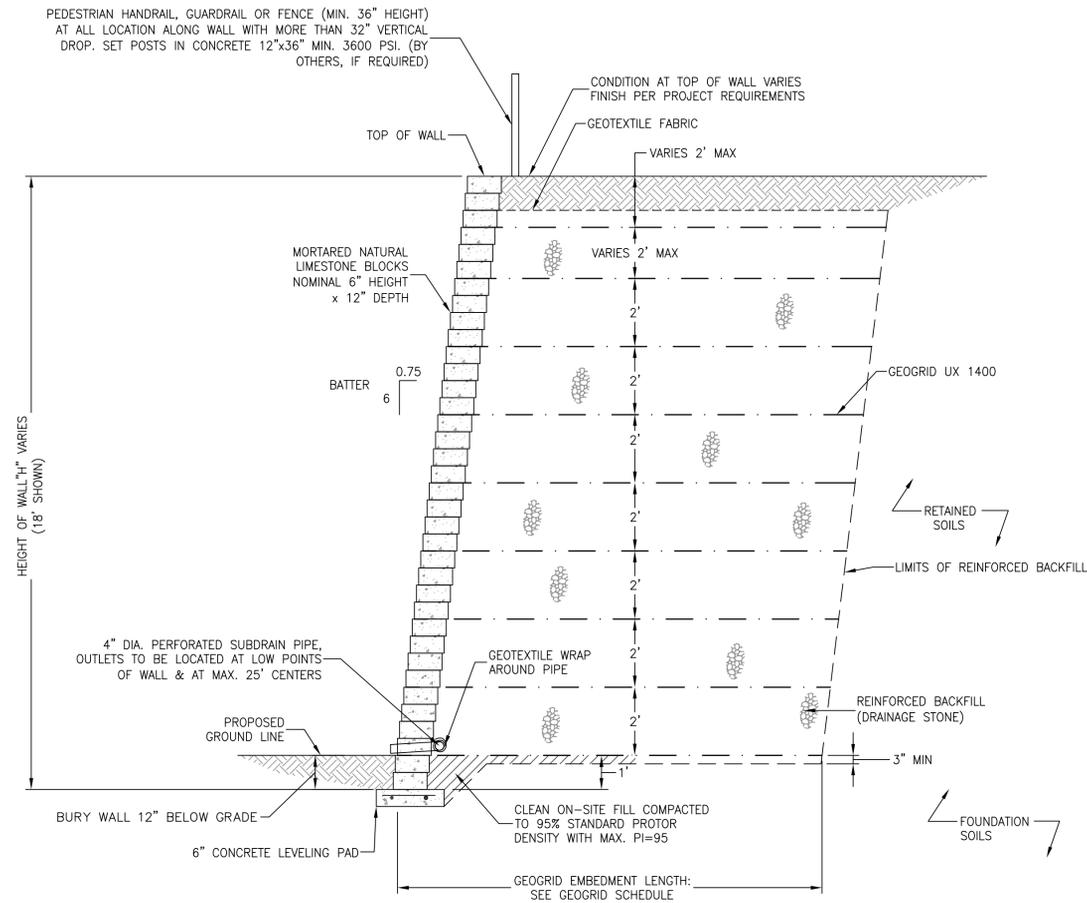
TYPICAL SPLITTER BOX DETAILS

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**GEOSOLUTIONS**

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Drawn by: JY  
Project No.: GS19073

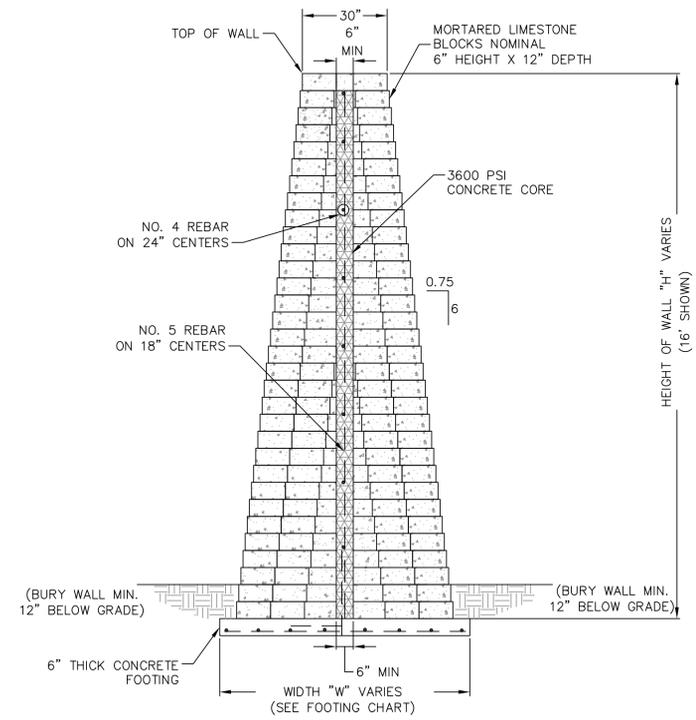


**TYPICAL CROSS-SECTION  
LIMESTONE BLOCK WALL  
FILL CONDITION  
N.T.S.**

**GEOGRID SCHEDULE**

HEIGHT OF WALL "H"	NO. OF LAYERS	GEOGRID EMBEDMENT LENGTH	GEOGRID TYPE
4.0'	2	5.0'	UX1400
5.0'	2	5.0'	UX1400
6.0'	3	5.0'	UX1400
7.0'	3	5.0'	UX1400
8.0'	4	6.0'	UX1400
9.0'	4	6.5'	UX1400
10.0'	5	7.0'	UX1400
11.0'	5	8.0'	UX1400
12.0'	6	8.5'	UX1400
13.0'	6	9.0'	UX1400
14.0'	7	10.0'	UX1400
15.0'	7	10.5'	UX1400
16.0'	8	11.0'	UX1400
18.0'	8	12.5'	UX1400

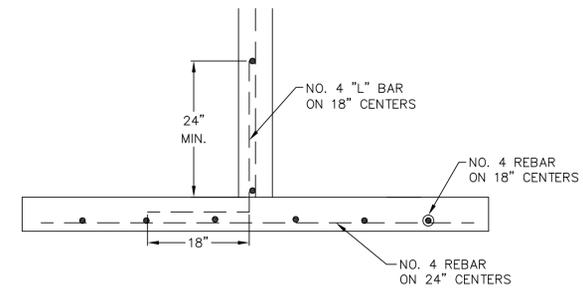
- NOTES: 1) STEP TOP OF WALL TO CORRESPOND WITH SLOPE BEHIND WALL  
 2) MINIMUM 5' GEOGRID LENGTH  
 3) WALLS WITH "H" < 3.0' DO NOT REQUIRE GEOGRID



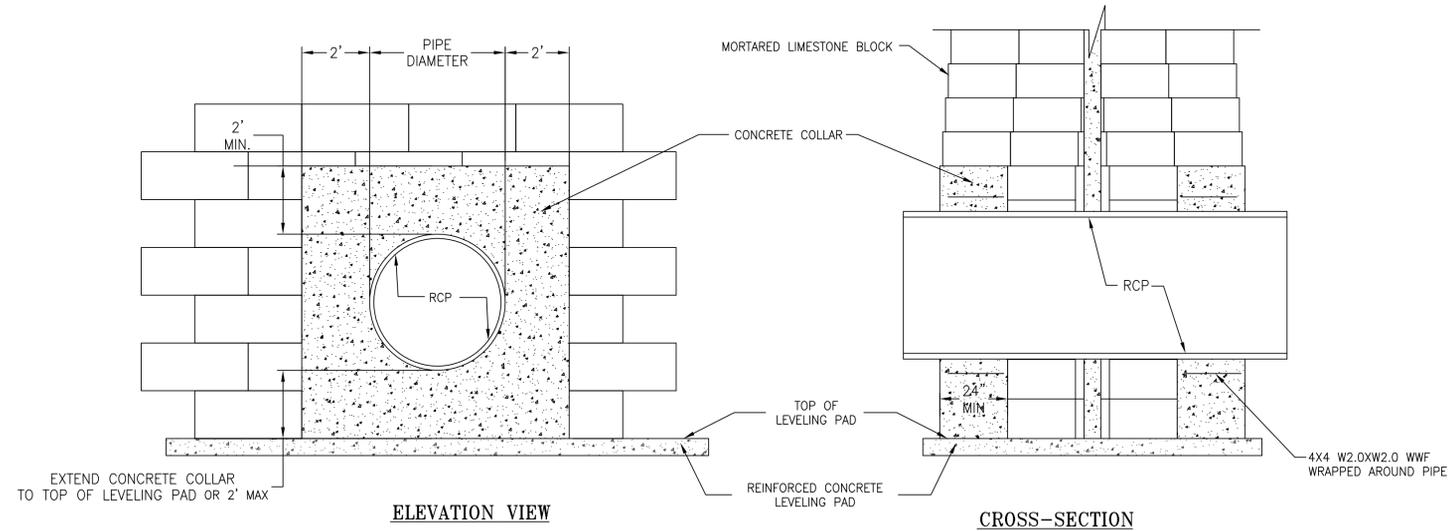
**TYPICAL CROSS-SECTION  
TRI-WALL  
N.T.S.**

HEIGHT OF WALL "H"	"W" WIDTH OF FOOTING
1'	3'-8"
2'	3'-11"
3'	4'-2"
4'	4'-5"
5'	4'-8"
6'	4'-11"
7'	5'-2"
8'	5'-5"
9'	5'-8"
10'	5'-11"
11'	6'-2"
12'	6'-5"
13'	6'-8"
14'	6'-11"
15'	7'-2"
16'	7'-5"

**FOOTING CHART (TRI WALLS)**



**TRI-WALL FOOTING DETAIL  
N.T.S.**



**ELEVATION VIEW**

**CROSS-SECTION**

**CONCRETE COLLAR  
DETAIL**

REVISIONS



**COVERT-BEE CAVE**  
BEE CAVE, TEXAS

TYPICAL RETAINING WALL CROSS-SECTIONS

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Scale: NOT TO SCALE  
Date: 08/15/19  
Drawn by: JY  
Project No.: GS19073

**CONSTRUCTION NOTES**

**1.0 MATERIALS**

**1.1 BACKFILL SOILS / DRAINAGE STONE**

1.1.1 REINFORCED BACKFILL MATERIAL SPECIFIED BELOW SHALL BE FREE DRAINING. REINFORCED BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE AND SHALL MEET THE PHYSICAL PROPERTY REQUIREMENTS DEFINED IN SECTION 6.0. THE REINFORCED BACKFILL MATERIAL SHALL BE CRUSHED ANGULAR STONE MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING
2 inch	100
1 inch	30-100
3/4 inch	10-70
1/2 inch	0-40
No. 4	0-10

**1.1.2 ON-SITE FILL**

ON-SITE FILL MATERIAL SHALL BE ON-SITE OR IMPORTED COMPRESSIBLE SOIL CLASSIFIED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM AS LOW PLASTICITY (MAX PI=25), COMPACTED TO 95% STD. PROCTOR DENSITY.

1.2 THE PORTION OF THE REINFORCED BACKFILL MATERIAL PASSING THE No. 40 SIEVE SHALL HAVE A LIQUID LIMIT OF LESS THAN 40 AND A PLASTICITY INDEX OF LESS THAN 20. REINFORCED BACKFILL MATERIAL SHALL BE CLASSIFIED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM AS LOW PLASTICITY OR NON-PLASTIC SOILS.

1.3 GEOGRID REINFORCING SHALL BE TENSAR UX1400 UNIAXIAL GEOGRID AS MANUFACTURED BY THE TENSAR CORPORATION. DESIGNS PRESENTED HEREIN ARE VALID FOR TENSAR GEOGRIDS OR ENGINEER APPROVED EQUAL.

1.4 WALL FACING SHALL BE CHOPPED LIMESTONE BLOCK.

1.5 GEOTEXTILE FABRIC SHALL BE MIRAFI 140N OR APPROVED EQUAL.

1.6 REINFORCING BARS SHALL BE ASTM A615, GRADE 60.

1.7 MORTAR SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN SPEC. 403S.

**2.0 TECHNICAL REQUIREMENTS**

2.1 PRIOR TO CONSTRUCTION OF THE GEOGRID REINFORCED WALL, THE CONTRACTOR SHALL CLEAR AND GRUB THE REINFORCED BACKFILL ZONE, REMOVING TOPSOILS, BRUSH, SOD OR OTHER ORGANIC OR DELETERIOUS MATERIALS. ANY UNSUITABLE SOILS SHALL BE OVER-EXCAVATED, REPLACED AND COMPACTED WITH REINFORCED BACKFILL MATERIAL TO PROJECT SPECIFICATIONS OR AS OTHERWISE DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER.

2.2 BACKFILL MATERIALS SHALL BE PLACED FROM THE BACK OF THE BLOCK FACING UNITS TOWARDS THE TAIL OF THE GEOGRID TO ENSURE FURTHER TENSIONING.

2.3 REINFORCED BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 8 INCHES IN UNCOMPACTED THICKNESS.

2.4 ONLY HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN THREE FEET OF THE BACK FACE OF WALL. COMPACTION SHALL BE ACHIEVED BY A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM. CARE SHALL BE EXERCISED DURING THE COMPACTION PROCESS TO AVOID MISALIGNMENT OF THE BLOCK UNITS.

2.5 REINFORCED BACKFILL MATERIAL DOES NOT REQUIRE DENSITY TESTING. COMPACTION FOR THIS TYPE OF MATERIAL SHALL CONTINUE UNTIL THERE IS NO EVIDENCE OF FURTHER COMPACTION, OR AS DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER. SHOULD THE SUBGRADE, FOR ANY REASON OR CAUSE, LOSE THE REQUIRED STABILITY OR FINISH, IT SHALL BE RECOMPACTED AND REFINISHED AT THE CONTRACTOR'S EXPENSE.

2.6 THE CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS ON-SITE AT ALL TIMES DURING CONSTRUCTION OF THE RETAINING WALL.

**3.0 GEOGRID PLACEMENT**

3.1 GEOGRID SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS.

3.2 GEOGRID EMBEDMENT LENGTH (GEL) SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS. REINFORCED BACKFILL ZONE LENGTH IS MEASURED FROM THE FRONT FACE OF THE WALL EXTENDING TO THE TAIL OF THE GEOGRIDS.

3.3 GEOGRID REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THE DESIGNATED EMBEDMENT LENGTH(S).

3.4 THE CONNECTION OF THE GEOGRID TO THE BLOCK SHALL BE A POSITIVE-MECHANICAL CONNECTION.

3.5 TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM FILL THICKNESS OF SIX INCHES IS REQUIRED FOR OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND/OR THE GEOGRID.

3.6 RUBBER-TIRED VEHICLES MAY PASS OVER THE GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.

3.7 UNIAXIAL GEOGRID SHALL BE ROLLED OUT WITH THE LONG AXIS OF THE APERTURES (MACHINE DIRECTION) PERPENDICULAR TO THE WALL FACE.

3.8 UNIAXIAL GEOGRIDS SHALL BE CUT NEXT TO THE CROSS-MACHINE DIRECTION BAR. THE CROSS-MACHINE DIRECTION BAR SHALL BE PLACED AND PULLED TAUT PRIOR TO FILL PLACEMENT.

3.9 A MINIMUM OF 3 INCHES OF FILL MATERIAL SHALL BE REQUIRED BETWEEN LAYERS OF UNIAXIAL GEOGRID AND FILTER FABRIC UNLESS OTHERWISE SHOWN.

3.10 NO CHANGES TO THE GEOGRID LAYOUT INCLUDING, BUT NOT LIMITED TO LENGTH, GEOGRID TYPE OR ELEVATION SHALL BE MADE WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF GEOSOLUTIONS INC.

**4.0 BLOCK PLACEMENT**

4.1 THE ALLOWABLE HORIZONTAL AND VERTICAL TOLERANCE FOR THE ERECTION OF THE WALLS SHALL BE LIMITED TO 1.5 inch IN 10.0 FEET OF LENGTH OR HEIGHT.

**5.0 DRAINAGE**

5.1 FOR WALLS NOT INCORPORATING FREE-DRAINING CRUSHED STONE BACKFILL, THE BACKFILL SURFACE SHALL BE GRADED AWAY FROM THE WALL FACE A MINIMUM OF 2 PERCENT SLOPE AND A TEMPORARY SOIL BERM SHALL BE CONSTRUCTED NEAR THE WALL CREST TO PREVENT SURFACE WATER RUNOFF FROM OVERTOPPING THE WALL. GRADING SHALL BE PERFORMED AT THE END OF EACH WORK DAY.

5.2 AT THE END OF EACH WORKDAY, BACKFILL SURFACE SHALL BE COMPACTED WITH A SMOOTH WHEEL ROLLER TO MINIMIZE PONDING OF WATER AND SATURATION OF THE BACKFILL.

5.3 PERMANENT SURFACE WATER DIVERSION AND/OR COLLECTION SHALL BE AS REQUIRED AND PROVIDED BY THE OWNER OR OWNER'S REPRESENTATIVE.

5.4 THE RETAINING WALL HAS BEEN DESIGNED ON THE ASSUMPTION THAT THE REINFORCED BACKFILL MATERIAL SHALL BE FREE OF SUBSURFACE DRAINAGE OF WATER (SEEPAGE). IF GROUND WATER IS ENCOUNTERED, GEOSOLUTIONS INC. SHALL BE CONTACTED IMMEDIATELY.

5.5 CARE SHALL BE TAKEN NOT TO CONTAMINATE THE GEOTEXTILE FABRIC AND/OR DRAINAGE STONE WITH FINE-GRAINED SOILS OR OTHER DELETERIOUS MATERIALS.

**6.0 DESIGN PARAMETERS**

6.1 DESIGN OF THE RETAINING WALLS IS BASED ON THE FOLLOWING PARAMETERS:

	EFFECTIVE FRICTION ANGLE	EFFECTIVE COHESION	MOIST UNIT WT
REINFORCED BACKFILL	34°	0 psf	125 pcf
RETAINED SOILS	28°	0 psf	125 pcf
FOUNDATION SOILS	28°	0 psf	125 pcf

**6.2 FACTORS OF SAFETY:**

INTERNAL STABILITY:	DESIGN	FHWA
MINIMUM FACTOR OF SAFETY FOR UNCERTAINTIES	= 1.5	= 1.5
MINIMUM FACTOR OF SAFETY FOR GEOGRID PULLOUT	= 1.5	= 1.5
MINIMUM FACTOR OF SAFETY FOR SLIDING AT LOWEST GEOGRID	= 1.5	= 1.5

SOIL-GEOGRID INTERACTION COEFFICIENT	= 0.7
PERCENT COVERAGE OF GEOGRID	= 100

**6.2.2 EXTERNAL STABILITY:**

MINIMUM FACTOR OF SAFETY FOR SLIDING AT BASE	= 1.5	= 1.5
MINIMUM FACTOR OF SAFETY FOR OVERTURNING	= 2.0	= 2.0

**6.3 SURCHARGE LOADING**

= 250 psf

**7.0 SPECIAL PROVISIONS**

7.1 THE DESIGN PRESENTED HEREIN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITIONS, AND LOADINGS STATED IN SECTION 6.0.

7.2 LOCATIONS AND GEOMETRY OF EXISTING STRUCTURES AND GRADE ABOVE AND BELOW THE WALLS MUST BE VERIFIED BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

7.3 THE OWNER OR OWNER'S REPRESENTATIVE IS RESPONSIBLE FOR REVIEWING AND VERIFYING THAT THE ACTUAL SITE CONDITIONS ARE AS DESCRIBED IN SECTION 6.0 PRIOR TO AND DURING CONSTRUCTION. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE ON-SITE TO ASSURE THE PROVISIONS IN THE CONSTRUCTION NOTES ARE FOLLOWED.

7.4 THE SOIL DESIGN PARAMETERS STATED IN SECTION 6.0 TAKEN FROM THE GEOTECHNICAL REPORT TITLED "COVERT AUTO DEALERSHIP, SOUTH OF HIGHWAY 71 AND WEST OF VAIL DIVIDE, BEE CAVE, TEXAS" DATED APRIL 4, 2016 PREPARED BY TERRACON CONSULTANTS, INC.

7.5 IF ANY ROCK FORMATIONS AND/OR GROUNDWATER ARE ENCOUNTERED DURING THE CONSTRUCTION OF THIS WALL, IMMEDIATELY CONTACT THE OWNER OR OWNER'S REPRESENTATIVE.

7.6 ANY REVISIONS TO DESIGN PARAMETERS STATED IN SECTION 6.0 OR STRUCTURE GEOMETRY SHALL REQUIRE DESIGN MODIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

7.7 THIS DESIGN IS VALID ONLY FOR THE COVERT BEE CAVE PROJECT, BEE CAVE, TEXAS.

**8.0 OWNER'S RESPONSIBILITIES**

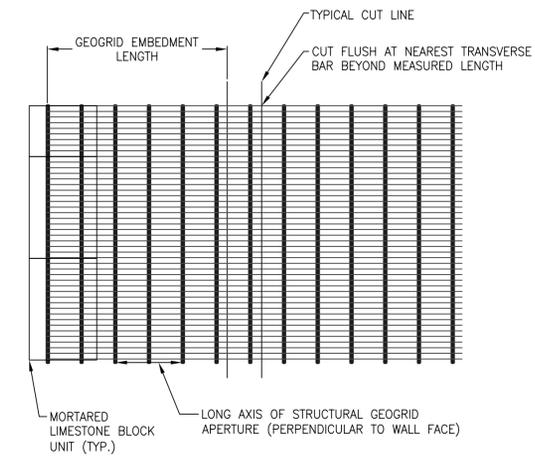
8.1 OWNER SHALL BE RESPONSIBLE FOR CONFIRMING THAT ALL REQUIREMENTS SET FORTH ON THESE DRAWINGS ARE MET. ASSIGNMENT OR DELEGATION OF RESPONSIBILITIES BY OWNER TO OWNER'S REPRESENTATIVE SHALL NOT RELIEVE OWNER OF RESPONSIBILITY OF CONFIRMING THAT ALL REQUIREMENTS SET FORTH HEREIN ARE MET.

8.2 OWNER (OR OWNER-DESIGNATED REPRESENTATIVES) RESPONSIBILITIES, AS DESCRIBED IN PREVIOUS SECTIONS OF THESE NOTES, SHALL INCLUDE:

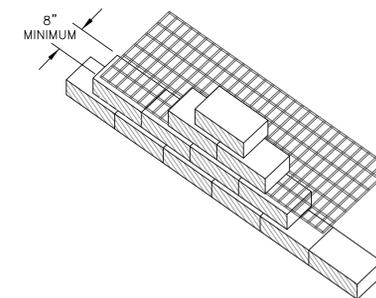
8.2.1 PERMANENT SURFACE WATER DIVERSION (SECTION 5.0).

8.2.2 CONFIRMATION OF GEOMETRY AND LOADING CONDITIONS FOR AREAS ADJACENT TO WALL (SECTION 7.0).

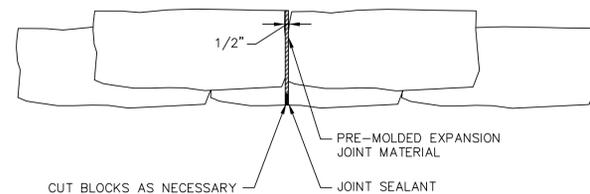
8.2.3 ASSURING CONFORMITY WITH CONSTRUCTION DRAWINGS AND NOTES DURING CONSTRUCTION BY ON-SITE INSPECTION (SECTION 7.0).



**GEOGRID ORIENTATION DETAIL**  
N.T.S.

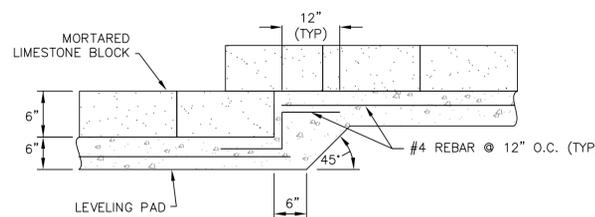


**LIMESTONE BLOCK UNIT AND GEOGRID CONNECTION DETAIL**  
N.T.S.

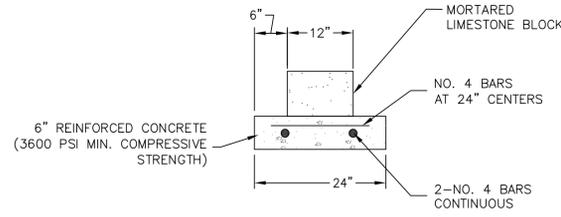


**PLAN VIEW**  
**EXPANSION JOINT DETAIL**  
N.T.S.

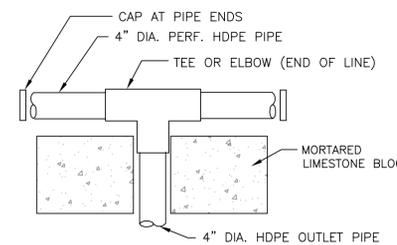
NOTE: CONSTRUCT VERTICAL 1/2" EXPANSION JOINT A DISTANCE FROM ALL 90 DEGREE OR LESS CORNERS, EQUAL TO THE WALL HEIGHT AT THE CORNER.



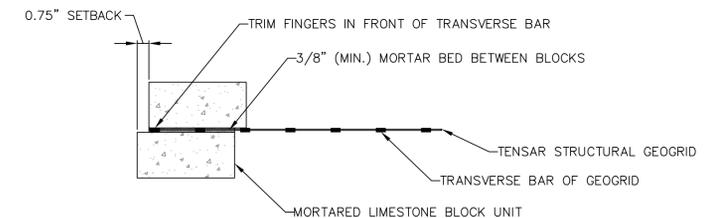
**TYPICAL SMALL LIMESTONE BLOCK MSE WALL LEVELING PAD STEP DETAIL**  
N.T.S.



**TYPICAL SMALL LIMESTONE BLOCK MSE WALL LEVELING PAD DETAIL**  
N.T.S.



**SUBDRAIN PIPE OUTLET DETAIL**  
N.T.S.



**NATURAL LIMESTONE BLOCK TO GEOGRID CONNECTION DETAIL**  
N.T.S.

REVISIONS



**COVERT-BEE CAVE**  
BEE CAVE, TEXAS

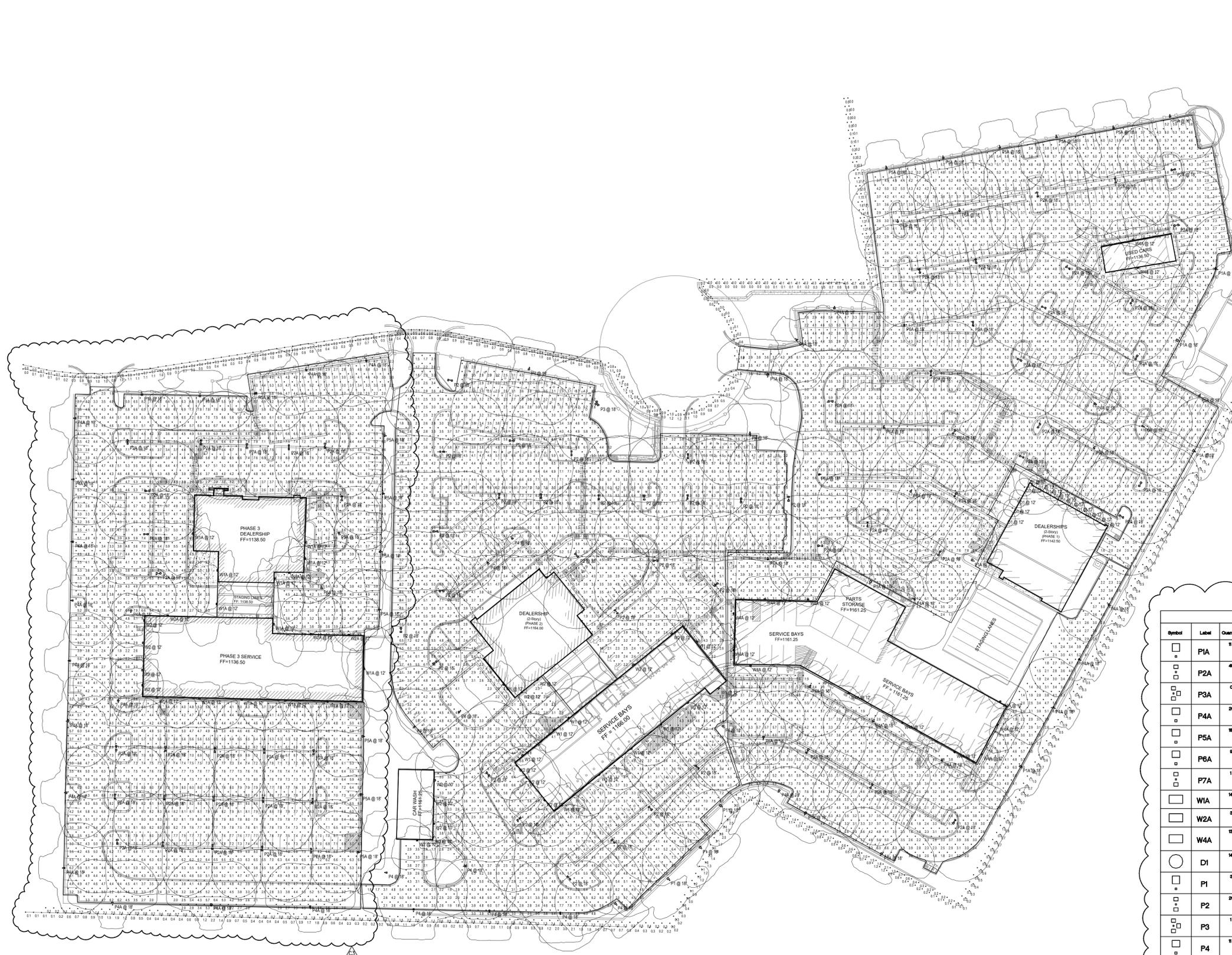
TYPICAL RETAINING WALL DETAILS

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5' offset of North Property Line	+	0.6 fc	17 fc	0.0 fc	N/A	N/A
5' offset of plan East Property Line	+	0.5 fc	15 fc	0.0 fc	N/A	N/A
5' South of Property Line	+	0.9 fc	3.0 fc	0.1 fc	30.01	9.01
Phase 1	+	4.1 fc	8.5 fc	1.4 fc	8.11	2.91
Phase 2	+	4.5 fc	8.3 fc	1.5 fc	5.51	3.01
Phase 3	+	5.4 fc	10.0 fc	1.8 fc	5.61	3.01
North Property Line	+	0.7 fc	2.3 fc	0.0 fc	N/A	N/A
Plan East Property Line	+	0.6 fc	2.0 fc	0.0 fc	N/A	N/A
South Property Line	+	1.3 fc	3.8 fc	0.1 fc	38.01	13.01

LIGHT FIXTURE SCHEDULE											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Fixture Name	Lumens Per Lamp	Light Loss Factor	Wattage
□	P1A	11	Lithonia Lighting	DB01 LED P6 40K T8M MVCLT	DB01 LED P6 40K T8M MVCLT	LED	1	DB01_LED_P6_40K_T8M_MVCLT	19027	0.95	103
□	P2A	49	Lithonia Lighting	DB01 LED P6 40K T8W MVCLT	DB01 LED P6 40K T8W MVCLT	LED	1	DB01_LED_P6_40K_T8W_MVCLT	19027	0.95	276
□	P3A	0	Lithonia Lighting	DB01 LED P2 40K T8FM MVCLT	DB01 LED P2 40K T8FM MVCLT	LED	1	DB01_LED_P2_40K_T8FM_MVCLT	8865	0.95	20
□	P4A	28	Lithonia Lighting	DB01 LED P6 40K T8M MVCLT	DB01 LED P6 40K T8M MVCLT	LED	1	DB01_LED_P6_40K_T8M_MVCLT	15485	0.95	138
□	P5A	18	Lithonia Lighting	DB01 LED P6 40K T8FM MVCLT	DB01 LED P6 40K T8FM MVCLT	LED	1	DB01_LED_P6_40K_T8FM_MVCLT	19029	0.95	138
□	P6A	9	Lithonia Lighting	DB01 LED P6 40K T8W MVCLT	DB01 LED P6 40K T8W MVCLT	LED	1	DB01_LED_P6_40K_T8W_MVCLT	19035	0.95	103
□	P7A	1	Lithonia Lighting	DB01 LED P6 40K T8W MVCLT	DB01 LED P6 40K T8W MVCLT	LED	1	DB01_LED_P6_40K_T8W_MVCLT	19035	0.95	326
□	W1A	14	Lithonia Lighting	DB01W LED 200 700 40K T8M MVCLT	DB01W LED WITH (2) 10 LED LIGHT ENGINE, TYPE T8M OPTIC, 4000K, +700mA	LED	1	DB01W_LED_200_700_40K_T8M_MVCLT	5454	0.95	457
□	W2A	3	Lithonia Lighting	DB01W LED 200 700 40K T8FM MVCLT	DB01W LED WITH (2) 10 LED LIGHT ENGINE, TYPE T8FM OPTIC, 4000K, +700mA	LED	1	DB01W_LED_200_700_40K_T8FM_MVCLT	5954	0.95	457
□	W4A	13	Lithonia Lighting	DB01W LED 100 850 40K T8M MVCLT HS	DB01W LED WITH (1) 10 LED LIGHT ENGINE, TYPE T8M OPTIC, 4000K, +800mA WITH HOUSE-SIDE SHIELDS	LED	1	DB01W_LED_100_850_40K_T8M_MVCLT_HS	1700	0.95	161
○	D1	14	Lithonia Lighting	LDN 40/10 LOAR LD	40" LDN 4000K 1000Lx 80 CRI CLEAR WHITE OFFICE REFLECTOR	LED	1	LDN_40_10_LD	883	0.95	12.55
□	P1	3	Lithonia Lighting	DB01 LED P6 40K T8M MVCLT	DB01 LED P6 40K T8M MVCLT	LED	1	DB01_LED_P6_40K_T8M_MVCLT	19027	0.95	103
□	P2	28	Lithonia Lighting	DB01 LED P6 40K T8W MVCLT	DB01 LED P6 40K T8W MVCLT	LED	1	DB01_LED_P6_40K_T8W_MVCLT	19027	0.95	276
□	P3	1	Lithonia Lighting	DB01 LED P2 40K T8FM MVCLT	DB01 LED P2 40K T8FM MVCLT	LED	1	DB01_LED_P2_40K_T8FM_MVCLT	8865	0.95	20
□	P4	11	Lithonia Lighting	DB01 LED P6 40K T8M MVCLT	DB01 LED P6 40K T8M MVCLT	LED	1	DB01_LED_P6_40K_T8M_MVCLT	15485	0.95	138
□	P6	2	Lithonia Lighting	DB01 LED P6 40K T8W MVCLT	DB01 LED P6 40K T8W MVCLT	LED	1	DB01_LED_P6_40K_T8W_MVCLT	19035	0.95	103
□	W1	11	Lithonia Lighting	DB01W LED 200 700 40K T8M MVCLT	DB01W LED WITH (2) 10 LED LIGHT ENGINE, TYPE T8M OPTIC, 4000K, +700mA	LED	1	DB01W_LED_200_700_40K_T8M_MVCLT	5454	0.95	457
□	W2	19	Lithonia Lighting	DB01W LED 100 700 40K T8FM MVCLT	DB01W LED WITH (1) 10 LED LIGHT ENGINE, TYPE T8FM OPTIC, 4000K, +700mA	LED	1	DB01W_LED_100_700_40K_T8FM_MVCLT	2808	0.95	26.2

# SITE PLAN - PHOTOMETRICS

SCALE: 1" = 60'



## COVERT CADILLAC OF BEE CAVE WITHIN THE SWEETWATER DEVELOPMENT BAC- Sweetwater/Hwy 71 - BeeCave, Texas 78738

SHEET TITLE  
 SITE PHOTOMETRICS PLAN

ISSUED  
 11/20/2020  
 REVISIONS

PROJECT NO.:

SHEET NO.

**LP01**  
 SHEET 81 OF 90

capt & smart  
 consulting engineers, inc.  
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 512.762.2407 phone  
 Texas Registration Number: F-13532

capt & smart  
 consulting engineers, inc.  
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**EROSION CONTROL NOTES**

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREENATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREENATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREENATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT, 974-2278, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE.
5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ABORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS ONE SQUARE FOOT IN TOTAL AREA, BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW.
  - A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL (SEE STANDARD SPECIFICATION ITEM NO. 6013.3(A)) DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES. THE TOPSOIL SHALL BE COMPOSED OF 3 PARTS OF SOIL MIXED WITH 1 PART COMPOST, BY VOLUME. THE COMPOST SHALL BE DILLO DIRT OR AN EQUAL APPROVED BY THE ENGINEER, OR DESIGNATED REPRESENTATIVE. THE APPROVED EQUAL, IF USED, SHALL MEET THE DEFINITION OF COMPOST AS DEFINED BY TxDOT SPECIFICATION ITEM 161). THE SOIL SHALL BE LOCALLY AVAILABLE NATIVE SOIL THAT MEETS THE FOLLOWING SPECIFICATIONS:
    - SHALL BE FREE OF TRASH, WEEDS, DELETERIOUS MATERIALS, ROCKS, AND DEBRIS.
    - SHALL PASS THROUGH A 0.375-INCH (3/8") SCREEN.
    - SOIL TEXTURE CLASS TO BE LOAM, SANDY CLAY LOAM, OR SANDY LOAM IN ACCORDANCE WITH THE USDA TEXTURE TRIANGLE. SOIL KNOWN LOCALLY AS "RED DEATH" OR AUSTIN SANDY LOAM IS NOT AN ALLOWABLE SOIL. TEXTURAL COMPOSITION SHALL MEET THE FOLLOWING CRITERIA.

TEXTURE CLASS	MINIMUM	MAXIMUM
CLAY	5%	25%
SILT	10%	50%
SAND	30%	80%

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY OFTEN BE USED, BUT IT SHOULD MEET THE SAME STANDARDS AS SET FORTH IN THESE STANDARDS.

THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

**VEGETATIVE STABILIZATION:**

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH COOL SEASON COVER CROPS (WHEAT AT 0.5 POUNDS PER 1000 SF, OATS AT 0.5 POUNDS PER 1000 SF, CEREAL RYE GRASS AT 0.5 POUNDS PER 1000 SF) WITH A TOTAL RATE OF 1.5 POUNDS PER 1000 SF. COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUNDS PER 1000 SF.
  - A. FERTILIZER SHALL BE WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.
  - B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.
  - C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1 1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
  - D. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

**TABLE 1: HYDROMULCHING FOR VEGETATIVE STABILIZATION**

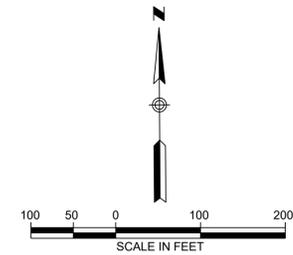
MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
100% OR ANY BLEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL (EXCEPT NO MUIR SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0-3 MONTHS	MODERATE SLOPES/ FROM FLAT TO 3:1	1500 TO 2000 LBS PER ACRE

**PERMANENT VEGETATIVE STABILIZATION:**

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOVED TO A HEIGHT OF LESS THAN ONE-HALF (1/2) INCH AND THE AREA SHALL BE RE-SEEDING IN ACCORDANCE WITH 2. BELOW.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1000 SF WITH A PURITY OF 95% WITH 85% GERMINATION. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL.
  - A. FERTILIZER SHALL BE A WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.
  - B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.
  - C. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT DAILY INTERVALS (MINIMUM) DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
  - D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1 1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
  - E. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

**TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION**

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS 10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND ERODIVE SOIL CONDITIONS	2500 TO 4000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)
FIBER REINFORCED MATRIX (FRM)	85% ORGANIC DEFIBRATED FIBERS 25% REINFORCING FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND ERODIVE SOIL CONDITIONS	3000 TO 4500 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)



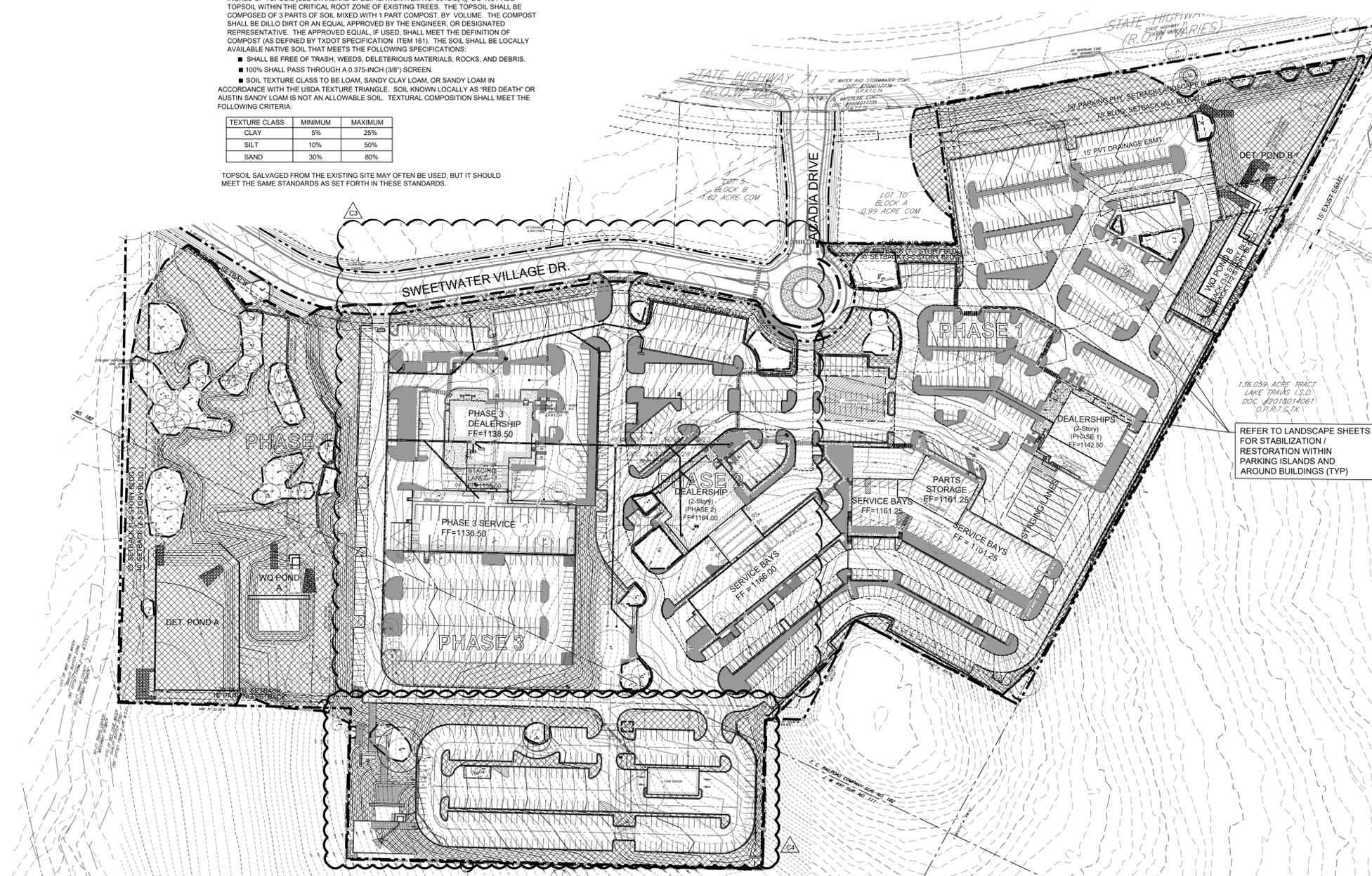
**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
LOC	LOC	LIMITS OF CONSTRUCTION (SEE SHEETS EC01 - EC03)
[Symbol]	[Symbol]	ROCK RIPRAP
[Symbol]	[Symbol]	STABILIZE PER LANDSCAPE PLANS
[Symbol]	[Symbol]	HYDROMULCH OR SOD
[Symbol]	[Symbol]	TREE TO REMAIN
[Symbol]	[Symbol]	TREE TO BE REMOVED
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	STORM SEWER LINE
[Symbol]	[Symbol]	WASTEWATER LINE
[Symbol]	[Symbol]	WATER LINE

**RESTORATION / STABILIZATION NOTES:**

1. INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED IN ANY GIVEN AREA.
2. THE FINAL STABILIZATION/REVEGETATION EFFORTS SHALL BE IN ACCORDANCE WITH THE APPROVED RESTORATION PLAN DETAILS AND SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE WATERING/IRRIGATION TO ACHIEVE THE PERMANENT STABILIZATION REQUIREMENTS IN ALL DISTURBED/REVEGETATED AREAS BEFORE FINAL ACCEPTANCE FOR THIS PROJECT CAN BE OBTAINED.
4. ALL DISTURBED BARE AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
5. ALL DISTURBED AREAS MUST MEET THE REQUIREMENT FOR PERMANENT STABILIZATION.
6. THE NOTICE OF TERMINATION (NOT) FOR THIS PROJECT SHALL NOT BE SUBMITTED UNTIL THE TRAVIS COUNTY ENVIRONMENTAL INSPECTOR APPROVES CLEARANCE.
7. ALL SLOPES STEEPER THAN 3:1 REQUIRE SOIL RETENTION BLANKET (SRB).

ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOD ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.



**COVERT BEE CAVE**  
**PLANS FOR SITE DEVELOPMENT**  
**PHASE 1**  
**RESTORATION & STABILIZATION PLAN**

NO.	REVISIONS	DESCRIPTION	DATE	BY
C3	REVISE PHASE 3 RESTORATION PLAN		11-16-2020	CRH
C4	ADDED PHASE 04 SITE LAYOUT RESTORATION		08-17-2022	RJS

DATE: 09/12/2022  
 DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM  
 DWG NAME: A338-HH-RESTORATION-C3.DWG

09/12/2022  
  
**Charles R. Hager**  
 PROFESSIONAL ENGINEER

**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735  
 FRN-F-1386

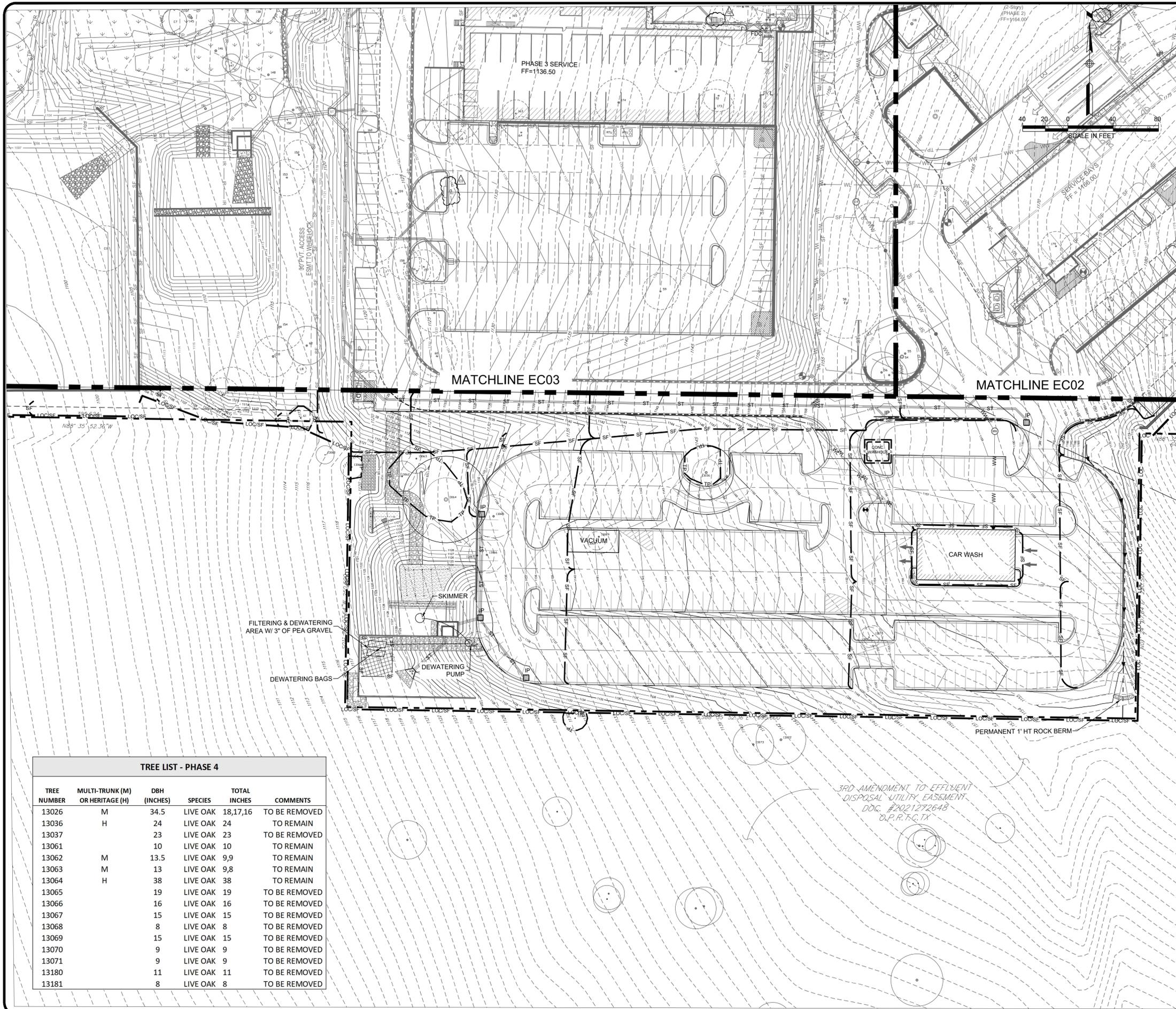
JOB NUMBER: A338-401

RE01

SHEET NO. **82** OF 90 SHEETS

**811**  
 Know what's below.  
 Call before you dig.

I:\A338 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401-R-RESTORATION-C3.dwg  
 User: rmanok  
 Last Modified: Aug 17, 2022 1:34:22  
 Plot Date/Time: Sep 22, 2022 1:34:26



**LEGEND**

PROPOSED	EXISTING	LIMITS OF CONSTRUCTION
LOC		SILT FENCE
SF		LIMITS OF CONST./SILT FENCE
LOC/SF		TREE PROTECTION
TP		INLET PROTECTION
IP		ROCK BERM
RB		STABILIZED CONSTRUCTION ENTRANCE
SCE		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

- NOTES:**
- CONTRACTOR SHALL PROVIDE INLET PROTECTION, AS EACH PROPOSED INLET IS INSTALLED.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT LIMITS AND ROOT SYSTEMS OF ALL TREES OUTSIDE LIMITS BY NOT PARKING UNDER TREES, NOT DRIVING EQUIPMENT OVER ROOT ZONES AND NOT STORING MATERIALS UNDER TREES. PROTECTION OF VEGETATION TO REMAIN SHALL INCLUDE NOT ONLY HARDWOODS, BUT CEDARS AND UNDERBUSH.
  - ALL VEGETATION WITHIN LIMITS OF CONSTRUCTION AND NOT LOCATED WITHIN AREAS OF CUT/FILL SHALL BE PROTECTED TO THE EXTENT FEASIBLE.
  - TREES TO REMAIN THAT ARE LOCATED INSIDE THE SILT FENCE AND/OR ORANGE MESH FENCE SHALL HAVE TREE PROTECTION FENCING.
  - TEMPORARY STORAGE AND STOCKPILE AREAS SHALL BE USED DURING TIME OF CONSTRUCTION BUT SHALL BE RESTORED AND REVEGETATED.
  - ALL STORM DRAIN LINES ARE TO BE AT A MINIMUM OF FIVE FEET FROM CENTERLINE OF PIPE TO FACE OF TREE. ANY STORM DRAIN LINES TO BE PLACED WITHIN A TREE'S DRIP LINE MUST BE SAWCUT PRIOR TO TRENCHING.
  - PRIOR TO EXCAVATION WITHIN TREE DRIP LINES, OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING, AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH FOUR (4) INCHES OF ORGANIC MULCH TO BE PRODUCED ON SITE, TO MINIMIZE SOIL COMPACTION.
  - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
  - WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY AS NECESSARY DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
  - WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SITE'S EROSION CONTROL. SEDIMENT REMOVAL SHALL BE PROVIDED AS NOTED ON THE PLANS. REPAIR TO SILT FENCE AND ORANGE MESH FENCING/MANHOLE FENCING SHALL BE PROVIDED TO INSURE: 1) ORANGE MESH FENCE / SILT FENCE REMAINS IN PLACE AND STANDING AT ALL TIMES; 2) SILT FENCING TO BE REPLACED / REPAIRED DUE TO CONTRACTOR DAMAGE OR ANY DAMAGE DUE TO STORM WATER DURING RAIN EVENTS.
  - DEWATERING OF THE TEMPORARY POND WILL BE PROVIDED TO ENSURE THERE IS ADEQUATE STORAGE FOR THE FOLLOWING RAIN EVENT. CONTRACTOR SHALL PROVIDE ADEQUATE FILTRATION DURING PUMPING TO ENSURE SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
  - THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
  - CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
  - SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.2(G).
  - ROUGH SITE GRADING WILL BE CONSTRUCTED IN PHASE ONE AND SHALL IGNORE PHASING LINES. THE REMAINING IMPROVEMENTS FOR PHASE ONE SHALL ADHERE TO THE PHASING LINES. EROSION CONTROL MEASURES AND SEEDING MUST BE INSTALLED ACROSS THE ENTIRE LIMITS OF CONSTRUCTION TO AVOID EROSION.
  - CONCRETE WASHOUT LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTED ON THE SITE MAP AT THAT TIME.
  - POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ON SITE.
  - MUD AND OR DIRT TRACKED INTO THE ROADWAY MUST BE IMMEDIATELY REMOVED UPON DISCOVERY.
  - EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY COUNTY INSPECTOR.
  - LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ON SITE.
  - INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
  - INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
  - SEE SHEET RE01 FOR SITE STABILIZATION AND RESTORATION PLAN.
- ADDITIONAL NOTES:**
- ALL EROSION AND SEDIMENTATION CONTROLS (ESC) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE TO THE PROJECT SITE, UNLESS OTHERWISE CALLED OUT TO BE PHASED.
  - INSTALL SILT FENCE ACCORDINGLY FOR RUN-ON DIVERSION OR OFFSITE SEDIMENT CONTROL, DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
  - ALL ESC USED ON SITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
  - THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
  - ALL DISTURBED AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED. AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
  - COUNTY INSPECTOR MAY REQUEST ADDITIONAL CONTROLS BE INSTALLED ON SITE AS NEEDED.
  - TEMPORARY ESC'S SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN ACHIEVED.
  - CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
  - TRAVIS COUNTY REQUIRES CERTIFIED SWP'S INSPECTORS TO CONDUCT SWP'S INSPECTIONS AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
  - A DE-WATERING PLAN FOR THE POND(S) MUST BE PROVIDED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS TO THE GREATEST EXTENT FEASIBLE BY DRAINING WATER FROM THE SURFACE OF THE IMPROVEMENT.
  - ALL SLOPES STEEPER THAN 3:1 REQUIRE SOIL RETENTION BLANKET (SRB).
  - ALL DISTURBED EARTHEN AREAS TO BE IMMEDIATELY STABILIZED WITH HYDROMULCH AND / OR SOD ONCE CONSTRUCTION IN RESPECTIVE AREAS IS COMPLETED.

**TREE LIST - PHASE 4**

TREE NUMBER	MULTI-TRUNK (M) OR HERITAGE (H)	DBH (INCHES)	SPECIES	TOTAL INCHES	COMMENTS
13026	M	34.5	LIVE OAK	18,17,16	TO BE REMOVED
13036	H	24	LIVE OAK	24	TO REMAIN
13037		23	LIVE OAK	23	TO BE REMOVED
13061		10	LIVE OAK	10	TO REMAIN
13062	M	13.5	LIVE OAK	9,9	TO REMAIN
13063	M	13	LIVE OAK	9,8	TO REMAIN
13064	H	38	LIVE OAK	38	TO REMAIN
13065		19	LIVE OAK	19	TO BE REMOVED
13066		16	LIVE OAK	16	TO BE REMOVED
13067		15	LIVE OAK	15	TO BE REMOVED
13068		8	LIVE OAK	8	TO BE REMOVED
13069		15	LIVE OAK	15	TO BE REMOVED
13070		9	LIVE OAK	9	TO BE REMOVED
13071		9	LIVE OAK	9	TO BE REMOVED
13180		11	LIVE OAK	11	TO BE REMOVED
13181		8	LIVE OAK	8	TO BE REMOVED

3RD AMENDMENT TO EFFLUENT DISPOSAL UTILITY EASEMENT, DOC. #2021272648, O.P.R. T.C. TX

**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 4  
EROSION & SEDIMENTATION CONTROL & TREE PROTECTION**

DATE: 08/17/2022  
BY: RJS  
REVISIONS: DESCRIPTION: DATE  
NO. CA ELEMENTS

DATE: 09/12/2022  
DESIGNED BY: CRH  
DRAWN BY: RLS  
CHECKED BY: CRH  
DWG NAME: C:\DWG

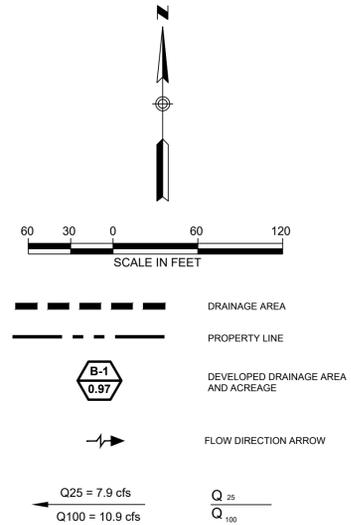
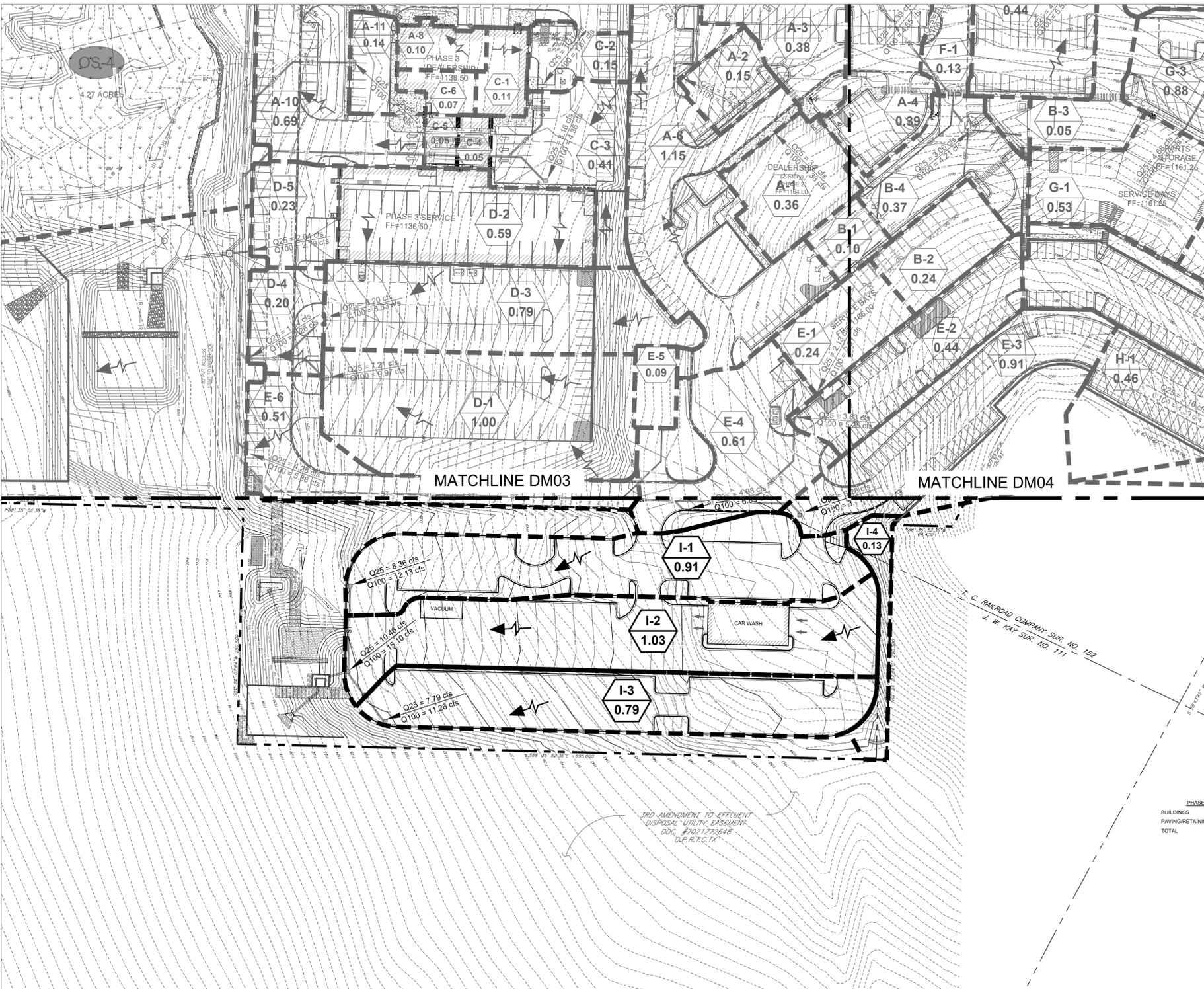
09/12/2022  
CHARLES R. HAGER  
127034  
PROFESSIONAL ENGINEER  
STATE OF TEXAS

**LJA Engineering, Inc.**  
7500 Rialto Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
Phone 512.438.4700  
Fax 512.438.4716  
FRN-F-1386

JOB NUMBER: A338-401  
EC04  
SHEET NO. 83 OF 90 SHEETS

811  
Know what's below.  
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CA ADDITIONAL SHEET - C4



**RATIONAL METHOD - COA Drainage Criteria and Design Standards**

**Drainage Area Calculations**

City of Austin Zone 1 Atlas 14 intensity-duration-frequency curves

	2 Yr	5 Yr	10 Yr	25 Yr	100 Yr
a	45.24	53.47	61.25	69.96	77.31
b	9.34	8.65	8.35	7.94	6.83
c	0.7399	0.7228	0.7147	0.6954	0.6524

Where:  
 Q = peak runoff in cubic feet per second.  
 C = the coefficient of runoff.  
 A = the area in acres contributing runoff to the point of design.  
 i = the average intensity of rainfall in inches per hour

**Rational Method Runoff Coefficients for Composite Analysis**

	25-YR	100-YR
Asphaltic	0.86	0.85
Concrete	0.88	0.97
GRASS, Fair Cond.		
Over 7%	0.46	0.53

**DEVELOPED CONDITIONS - DRAINAGE CALCULATIONS**

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	C25	C100	Tc (min)	I25	I100	Q25	Q100	Water Quality Provided
I-1	0.909	0.217	0.692	0.78	0.86	5.00	11.79	15.42	8.36	12.13	Yes
I-2	1.029	0.044	0.985	0.86	0.95	5.00	11.79	15.42	10.46	15.10	Yes
I-3	0.789	0.060	0.709	0.84	0.93	5.00	11.79	15.42	7.79	11.26	Yes
I-4	0.136	0.136	0.000	0.46	0.53	5.00	11.79	15.42	0.74	1.11	Yes

COVERT BEE CAVE  
 PLANS FOR SITE DEVELOPMENT  
 PHASE 4  
 ONSITE DRAINAGE AREA MAP

REVISIONS

NO.	DATE	DESCRIPTION

DATE: 09/12/2022  
 DESIGNED BY: JTS  
 DRAWN BY: JTS  
 CHECKED BY: SDM  
 DWG NAME: C:\DWG



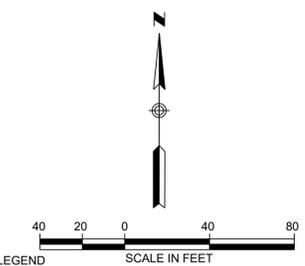
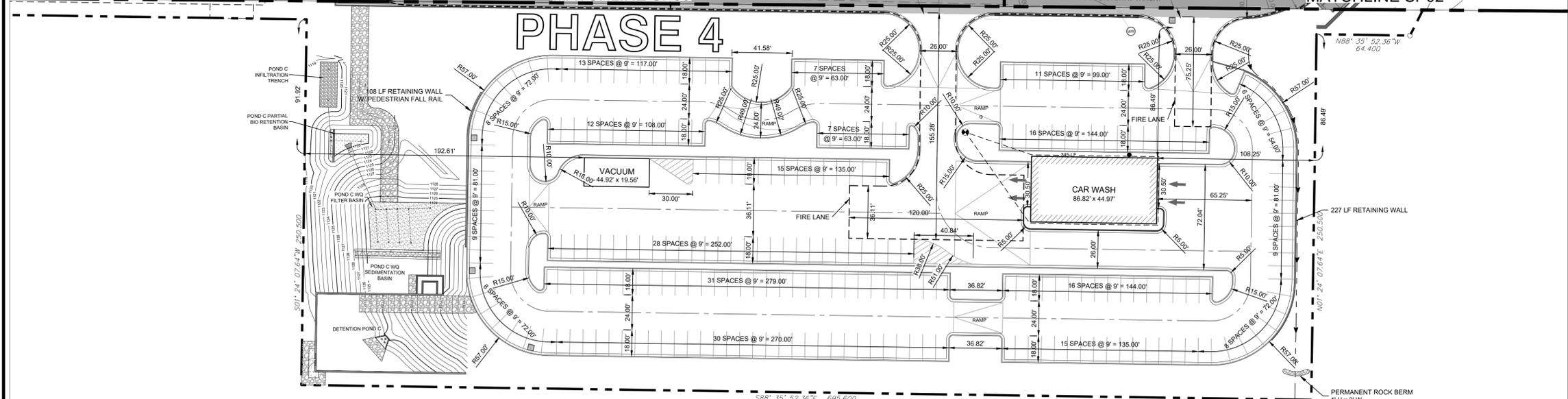
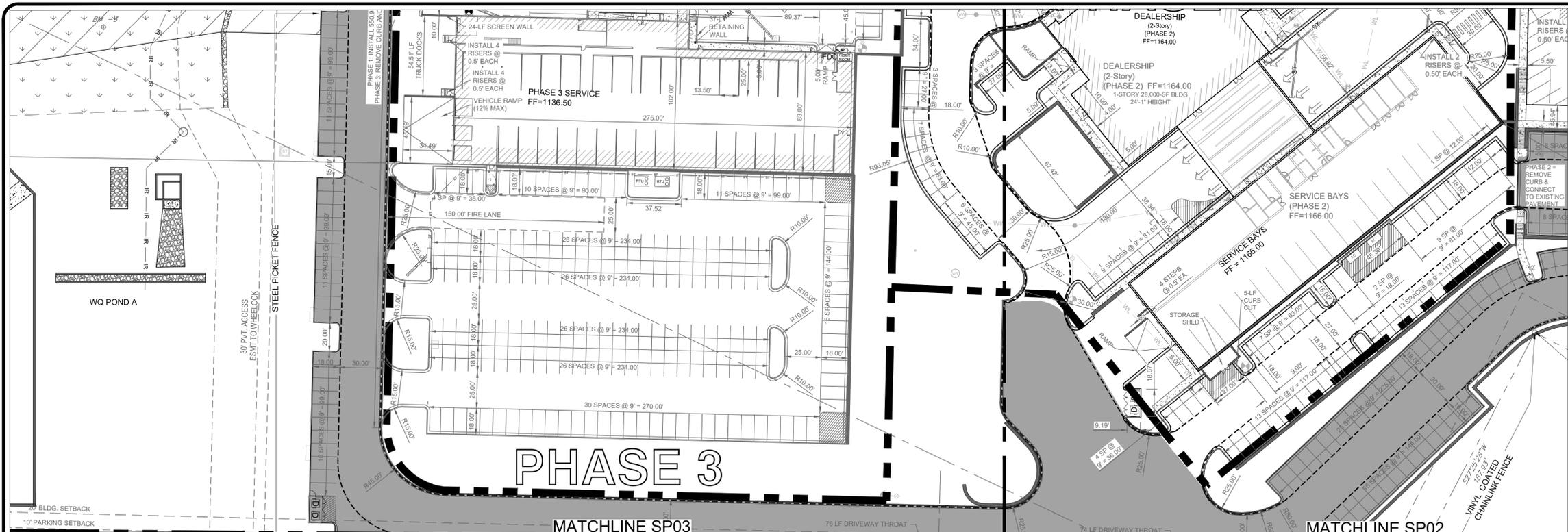
**LJA Engineering, Inc.**  
 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735  
 Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

JOB NUMBER:  
 A338-401  
 DM05  
 SHEET NO.  
**84**  
 OF 90 SHEETS

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



11/13/2022 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401-FR-0803 - C4.dwg  
 User: rmanok  
 Last Modified: Sep 12, 2022 - 14:39  
 Plot Date/Time: Sep 12, 2022 - 14:41:15



**LEGEND**

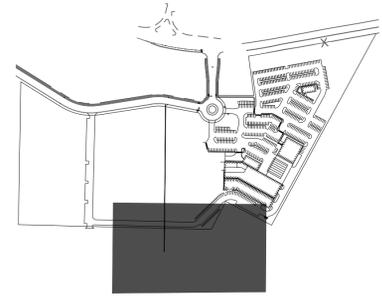
PROPOSED	EXISTING	DESCRIPTION
		CONCRETE SIDEWALK
		DECOMPOSED GRANITE WALKWAY
		PROPERTY BOUNDARY
		OPEN SPACES
		FIRE LANE
		ACCESSIBLE ROUTE
		SIDEWALK RAMP
		HANDICAPPED PARKING SPACES & SIDEWALK RAMP
		CROSSWALK
		STORM SEWER LINE
		WASTEWATER LINE
		WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WASTEWATER MANHOLE
		STORM SEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
		OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

**NOTES:**  
 1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.  
 2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.

PHASE 1 PAVEMENT	
STANDARD	248
ACCESSIBLE	0
ACCESSIBLE (VAN)	0
<b>TOTAL</b>	<b>248</b>

PHASE 4 PARKING	
STANDARD	248
ACCESSIBLE	0
ACCESSIBLE (VAN)	0
<b>TOTAL</b>	<b>248</b>



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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT**

PHASE 4  
SITE PLAN SHEET 4

NO.	REVISIONS	DATE	BY

DATE: 09/12/2022  
 DESIGNED BY: CRH  
 DRAWN BY: ADG  
 CHECKED BY: CRH  
 DWG NAME: A338-401-P-SP04  
 C4.DWG

09/12/2022  
 STATE OF TEXAS  
 CHARLES R. HAGER  
 127034  
 LICENSED PROFESSIONAL ENGINEER  
*Charles R. Hager*

**LJA Engineering, Inc.**  
 Phone 512.439.4700  
 7500 Riata Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735  
 Fax 512.439.4716  
 FRN-F-1386

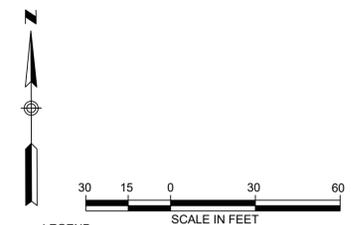
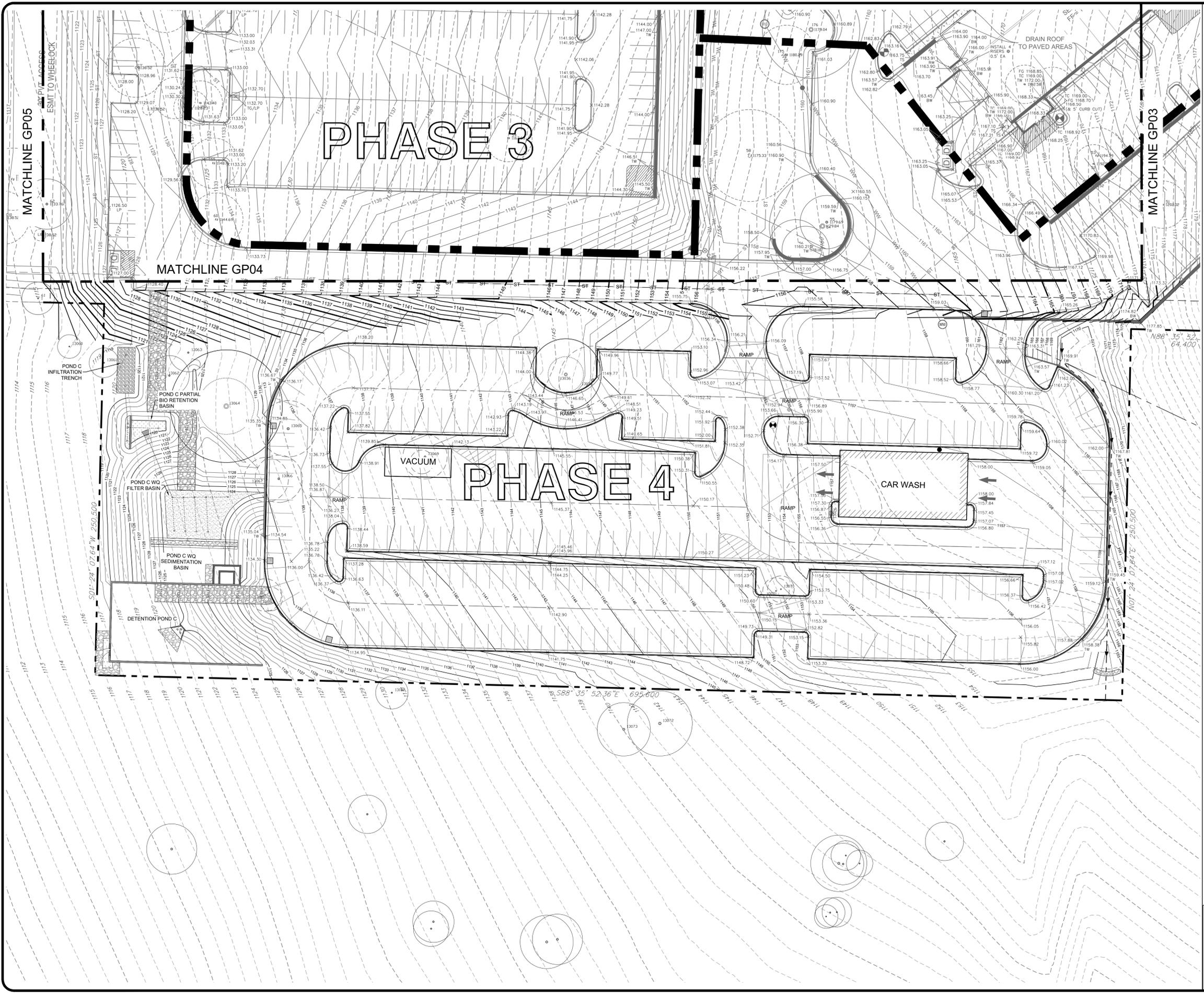
JOB NUMBER:  
A338-401

SP04

SHEET NO.  
**85**

OF 90 SHEETS

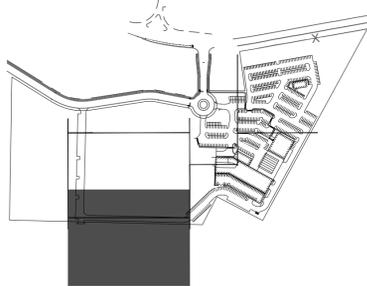
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 User: rmanok  
 Last Modified: Sep 12, 2022 14:44  
 Plot Date/Time: Sep 12, 2022 14:58:36



**LEGEND**

PROPOSED	EXISTING	DESCRIPTION
800	800	CONTOURS
(Thick dashed line)		PROPOSED RETAINING WALL
X100.00		TOP OF PAVEMENT
X100.00		TOP OF CURB/CONCRETE
X100.00		TOP OF GRATE
X100.00		LOW POINT
X100.00		HIGH POINT
X100.00		FINISHED SLAB
X100.00		TOP OF WALL
X100.00		BOTTOM OF WALL
X100.00		FINISHED GROUND
(Circle with dot)		TREE TO REMAIN
(Circle with cross)		TREE TO BE REMOVED
ST		STORM SEWER LINE
WW		WASTEWATER LINE
WL		WATER LINE
(Circle with cross)		WATER VALVE
(Circle with cross)		FIRE HYDRANT
(Circle with cross)		WASTEWATER MANHOLE
(Circle with cross)		STORMSEWER MANHOLE
(Circle with cross)		1/2" REBAR FOUND (OR AS NOTED)
(Circle with cross)		1/2" REBAR WITH CAP FOUND
(Circle with cross)		1/2" REBAR WITH CHAPARRAL CAP SET
(Circle with cross)		COTTON SPINDLE WITH CHAPARRAL WASHER SET
(Circle with cross)		WATER METER
(Circle with cross)		UTILITY POLE
(Circle with cross)		OVERHEAD UTILITIES
(Circle with cross)		ELEC. UTILITY
(Circle with cross)		ELEC. MANHOLE
(Circle with cross)		LIGHT POLE
(Circle with cross)		TELEPHONE UTILITY
(Circle with cross)		UNDERGROUND FIBER OPTIC MARKER
(Circle with cross)		TELEPHONE MANHOLE
(Circle with cross)		UNDERGROUND GAS MARKER
(Circle with cross)		CHAIN LINK FENCE

- NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
  3. ALL SIDEWALKS ADJACENT TO BACK OF CURB SHALL BE 5' WIDE. ALL OTHER SIDEWALKS SHALL BE 4' WIDE UNLESS OTHERWISE NOTED.
  4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
  6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
  7. RAMP SHALL NOT EXCEED 8.33%. RAMP LONGER THAN 6' REQUIRE HANDRAILS. RAMP LONGER THAN 30' REQUIRE A LEVEL LANDING.
  8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT

NO.	REVISIONS	DESCRIPTION	DATE

DATE: 09/12/2022  
 DESIGNED BY: CRH  
 DRAWN BY: ADG  
 CHECKED BY: CRH  
 DWG NAME: CLWG



**LJA Engineering, Inc.**  
 7500 Riata Boulevard  
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 FRN-F-1386

JOB NUMBER:  
A338-401  
**GP08**  
 SHEET NO.  
**86**  
 OF 90 SHEETS

13.A338 - Covert Bee Cave Site Development Phase 4 - Revision Plans A338-401-F-0801 - CLWG  
 User: rmanok  
 Last Modified: Aug 17, 2022 10:09:59 AM  
 Plot Date/Time: Sep 12, 2022 12:14:13



Additional information is provided for cells with a red triangle in the upper right corner. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG. Characters shown in red are data entry fields. Characters shown in black (bold) are calculated fields. Changes to these fields will require a revision.

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Page 3-29 Equation 3.3:  $L_{R} = 27.2(A_{i} \times P)$

where:  $L_{R}$  TOTAL PROJECT = Required TSS removal result  
 $A_{i}$  = Net increase in impervious area  
 $P$  = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project  
 County = Travis acres  
 Total project area included in plan = 3.66 acres  
 Predevelopment impervious area within the limits of the plan = 0.00 acres  
 Total post-development impervious area within the limits of the plan = 2.41 acres  
 Total post-development impervious cover fraction = 0.65  
 $P$  = 32 inches

$L_{R}$  TOTAL PROJECT = 2101 lbs.

\* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 1

**2. Drainage Basin Parameters (This information should be provided for each basin):**

Drainage Basin/Outfall Area No. = 1  
 Total drainage basin/outfall area = 3.66 acres  
 Predevelopment impervious area within drainage basin/outfall area = 0.00 acres  
 Post-development impervious area within drainage basin/outfall area = 2.41 acres  
 Post-development impervious fraction within drainage basin/outfall area = 0.65  
 $L_{R}$  THIS BASIN = 2101 lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Sand Filter  
 Removal efficiency = 89 percent

**4. Calculate Maximum TSS Load Removed ( $L_{R}$ ) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7:  $L_{R} = (BMP \text{ efficiency}) \times P \times (A_{i} \times P)$

where:  $A_{i}$  = Total On-Site drainage area  
 $A_{i}$  = Impervious area proposed in plan  
 $A_{p}$  = Pervious area remaining in plan  
 $L_{R}$  = TSS Load removed from this basin

$A_{i}$  = 3.66 acres  
 $A_{p}$  = 2.41 acres  
 $A_{i}$  = 1.16 acres  
 $L_{R}$  = 2396 lbs

**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**

Desired  $L_{R}$  THIS BASIN = 2101 lbs.  
 $F$  = 0.88

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.**

Rainfall Depth = 1.50 inches  
 Post Development Runoff Coefficient = 0.48  
 On-site Water Quality Volume = 9392 cubic feet

Calculations from RG-348

Off-site area draining to BMP = 0.00 acres  
 Off-site impervious cover draining to BMP = 0.00 acres  
 Impervious fraction of off-site area = 0.00  
 Off-site Runoff Coefficient = 0.00  
 Off-site Water Quality Volume = 0 cubic feet

Storage for Sediment = 1678 cubic feet

Total Capture Volume (required water quality volume(s) x 1.20) = 11270 cubic feet  
 The following sections are used to calculate the required water quality volume(s) for the selected BMP. The values for BMP Types not selected in cell C45 will show NA.

**7. Retention/Irrigation System**

Designed as Required in RG

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = 0.1 in/hr  
 Irrigation area = NA square feet  
 NA

**8. Extended Detention Basin System**

Designed as Required in RG

Required Water Quality Volume for extended detention basin = NA cubic feet

**9. Filter area for Sand Filters**

Designed as Required in RG

**9A. Full Sedimentation and Filtration System**

Water Quality Volume for sedimentation basin = 11270 cubic feet  
 Minimum filter basin area = 822 square feet  
 Maximum sedimentation basin area = 4696 square feet  
 Minimum sedimentation basin area = 1174 square feet

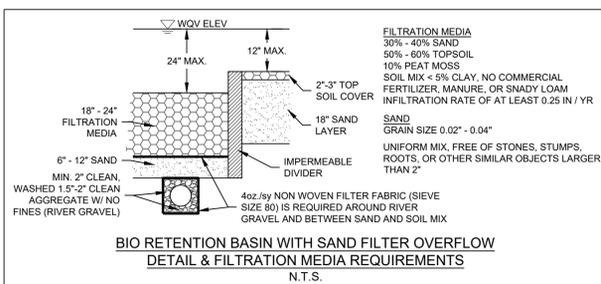
**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = 11270 cubic feet  
 Minimum filter basin area = 939 square feet  
 Maximum sedimentation basin area = 3757 square feet  
 Minimum sedimentation basin area = 236 square feet

**ENVIRONMENTAL NOTES:**

CONTACT POSTINSPECTION@TRAVISCOUNTYTX.GOV TO SCHEDULE THE FOLLOWING MILESTONE INSPECTION(S) FOR THE WATER QUALITY STRUCTURES WITH AT LEAST A 48-HOUR NOTICE, IF APPLICABLE.

- PRE-POUR OF ALL CONCRETE WITHIN THE FOOTPRINT OF THE WQ CONTROL OR POND.
- PLACEMENT OF ALL ROCK-FILLED GABIONS/MATTRESSES AND LEVEL SPREADERS.
- INSPECTION OF SAND/BIO-FILTRATION MEDIA AND/OR ROCK PRIOR TO INSTALLING.
- UNDERDRAIN PIPING PRIOR TO COVERING WITH SAND/BIO-FILTRATION MEDIA OR ROCK IN INFILTRATION TRENCH - IF COVERED, REMOVAL OF MATERIAL WILL BE REQUIRED.
- INSPECTION OF DESIGNED PLANTINGS PRIOR TO INSTALLING IN RAIN GARDEN/BIO-FILTRATION BASINS.
- SUBSOIL INFILTRATION RATE TESTING FOR INFILTRATION TRENCHES/BASINS.
- COMPLETION OF CONSTRUCTION OF WATER QUALITY STRUCTURE(S).



**COVERT - BEE CAVE - WATER QUALITY POND C DESIGN CALCULATIONS WATER QUALITY CONTROLS POND C**

**DRAINAGE AREA DATA:**  
 DRAINAGE AREA TO CONTROL (DA) = 2.87 ACRES  
 DRAINAGE AREA IMPERVIOUS COVER (IC) = 84%  
 CAPTURE DEPTH (CD) = 0.5" + ((IC% - 0.2) \* 0.0025) = 1.14 INCHES  
 25 YEAR PEAK FLOW RATE TO CONTROL (Q25) = 21.40 CFS  
 100 YEAR PEAK FLOW RATE TO CONTROL (Q100) = 30.10 CFS

**WATER QUALITY CONTROL CALCULATIONS:**  
 WATER QUALITY VOLUME (WQV = CD\*DA\*3630) = 11,888 CF  
 PROPOSED WATER QUALITY CONTROLS:  
 1) SAND FILTER  
 2) BIORETENTION  
 3) INFILTRATION TRENCH

**ORIFICE SIZING FOR SEDIMENTATION AND FILTRATION BASIN**  
 WQ VOLUME = 11,888 CF  
 MINIMUM DRAWDOWN TIME = 48 HR = 172800 SECONDS  
 FLOW = 13164 CF / 172800 SEC = 0.076 CFS  
 HEAD = 1127.75 - 1121.38 = 6.40 (POND AVG HEAD TO ORIFICE CL)  
 $A = 0.076 \text{ CFS} / (60 * (64.4 * 6.40)^{0.5}) = 0.00254 \text{ SF}$   
 $R = (A / (3.14))^{0.5} = 0.04 \text{ FT}$   
 $D \text{ (in.)} = 2R * 12 = 1.07 \text{ inch orifice}$   
 $Q = 0.00254 * 60 * (64.4 * 6.40)^{0.5} = 0.076 \text{ CFS}$   
 DRAWDOWN TIME = 13164 CF / 0.076 CFS = 172800 SEC = 48 HRS  
 THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS

**ORIFICE SIZING FOR BIO RETENTION BASIN**  
 WQ VOLUME = 29543 CF  
 MINIMUM DRAWDOWN TIME = 48 HR = 172800 SECONDS  
 FLOW = 29543 CF / 172800 SEC = 0.171 CFS  
 HEAD = 1127.75 - 1121.38 = 6.40 (POND AVG HEAD TO ORIFICE CL)  
 $A = 0.171 \text{ CFS} / (60 * (64.4 * 6.40)^{0.5}) = 0.014036 \text{ SF}$   
 $R = (A / (3.14))^{0.5} = 0.07 \text{ FT}$   
 $D \text{ (in.)} = 2R * 12 = 1.60 \text{ inch orifice}$   
 $Q = 0.171 * 60 * (64.4 * 6.40)^{0.5} = 0.171 \text{ CFS}$   
 DRAWDOWN TIME = 29543 CF / 0.171 CFS = 172800 SEC = 48 HRS  
 THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS

**COVERT - BEE CAVE - POND C PARTIAL SEDIMENTATION / FILTRATION WATER QUALITY BASIN CALCULATIONS FOR DEVELOPMENT PERMITS COVERT BEE CAVE POND C**

**DRAINAGE AREA DATA:**  
 DRAINAGE AREA TO CONTROL (DA) = 2.87 ACRES  
 DRAINAGE AREA IMPERVIOUS COVER (IC) = 0.84 PERCENT  
 CAPTURE DEPTH (CD) = (0.5" + ((IC% - 20)/100)) = 1.14 INCHES

**WATER QUALITY CONTROL CALCULATIONS:**  
 WATER QUALITY VOLUME (WQV = CD\*DA\*3630) = 11,888 CF  
 TOTAL CAPTURE VOLUME (WQV X 1.05) = 12,483 CF  
 MAX PONDING DEPTH ABOVE FILTRATION MEDIUM (H) = 3.75 FT  
 SEDIMENTATION BASIN VOLUME (≥ 20% WQV) = 4,317 CF  
 FILTRATION BASIN AREA (WQV/10) = 1,427 SF  
 FILTRATION POND VOLUME = 8,847 CF  
 TOTAL POND VOLUME (WQV+FREEBOARD) = 13,164 CF

WATER QUALITY ELEVATION = 1127.75 FT MSL  
 ELEVATION OF SPLITTER/OVERFLOW WEIR = 1127.75 FT MSL  
 HEIGHT OF GABION WALL = 1127.25 FT MSL

SEDIMENTATION BASIN:				FILTRATION BASIN:				TOTAL	
ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]	ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]	POND VOL. [CF]	
1124	0	0	0	1124	1427	0	0	0	
1125	1115	558	558	1125	1952	1689	1689	2,247	
1126	1295	1205	1763	1126	2426	2189	3878	5,641	
1127	1475	1385	3148	1127	2902	2664	6542	9,690	
1127.75	1643	1169	4317	1127.75	3243	2304	8847	13,164	
1128	1655	412	4729	1128	3376	827	9674	14,403	
1128.5	1745	850	5579	1128.5	3602	1745	11419	16,998	

**OVERALL DRAINAGE SUMMARY AT STUDY POINT #5**

STORM EVENT	EXISTING COND. (CFS)	DEVELOPED COND. (CFS)
2YR	15.80	14.00
10YR	29.20	27.80
25YR	38.00	36.10
100YR	52.90	50.10

**DETENTION POND C SUMMARY**

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	15.70	12.04	9.20	12.09	1,120.10
10YR	24.30	12.04	17.30	12.08	1,121.00
25YR	29.80	12.04	22.20	12.07	1,121.50
100YR	39.50	12.04	30.20	12.07	1,122.20

**Detention Pond C - Stage Storage Table**

Elevation (FT)	Area (AC)	A1+A2+sq (A1^2A2)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)
1116.00	0.000	0.00	0.00	0.00
1117.00	0.053	0.05	0.02	0.02
1118.00	0.058	0.17	0.06	0.07
1119.00	0.063	0.18	0.06	0.13
1120.00	0.069	0.20	0.07	0.20
1121.00	0.074	0.21	0.07	0.27
1122.00	0.080	0.23	0.08	0.35
1123.00	0.085	0.24	0.16	0.43
1124.00	0.090	0.25	0.17	0.52

**Detention Pond C - Outfall Structure**

Elevation (FT)	1" Weir (CFS)	7" Weir @ 1.119.00 (CFS)	Total Flow (CFS)
1,116	0.00	0.00	0.00
1,117	2.40	0.00	2.40
1,118	5.09	0.00	5.09
1,119	8.49	0.00	8.49
1,120	15.59	0.00	15.59
1,121	24.00	20.40	44.40
1,122	33.54	56.00	89.54
1,123	44.09	99.77	143.86
1,124	55.56	148.80	204.36

**COVERT - BEE CAVE POLLUTANT LOADING AND REMOVAL CALCULATIONS FOR WATER QUALITY BMPs C' SITE DATA**

WATER QUALITY AREA C  
 ACRES 2.870 WQ Area  
 IMPERVIOUS COVER 84.11%  
 RECHARGE ZONE? No  
 RUNOFF COEFF. 0.6920  
 LAND USE (SF, MF, CO?) CO  
 PAVED AREA (NO ROOFTOPS) 2,414 ac.

BASE BMP POLLUTANT LOAD REMOVAL EFFICIENCIES (PER THE 2007 LCRA TGM)  
 $E_{TOT} = [1 - (E_1)(1 - E_2)](1 - E_3)(1 - E_4)(1 - E_5)$

	TSS	TP	O&G
SAND FILTER	80%	55%	89%
BIORETENTION POND	80%	72%	89%
INFILTRATION TRENCH	90%	90%	90%
TOTAL EFFICIENCY	97.98%	95.61%	99.11%

**BASELINE LOADING**

POLLUTANT	UNIT LOAD(Dp)	BASELINE LOAD (Tp)
TSS	560.8	1609.54
TP	0.816	2.34
O&G	25.492	61.54

**POLLUTANT CONCENTRATIONS FOR DEVELOPED SITES**

SF: >15%	SF: >15%	MF: 0-15%	MF: >15%	CO: 0-15%	CO: >15%
82.5	110	82.5	110	82.5	110
0.1	0.16	0.1	0.16	0.1	0.16
5	5	5	5	5	5

**DEVELOPED LOADING**

POLLUTANT	UNIT LOAD(Dp)	DEVELOPED LOAD (Tp)
TSS	560.8	1609.54
TP	0.816	2.34
O&G	25.492	61.54

**UNIT LOADS FOR DEVELOPED SITES**

SF: >15%	SF: >15%	MF: 0-15%	MF: >15%	CO: 0-15%	CO: >15%
420.6	560.8	420.6	560.8	420.6	560.8
0.5	0.8	0.5	0.8	0.5	0.8
25.5	25.5	25.5	25.5	25.5	25.5

**REMOVAL SUMMARY**

POLLUTANT	REQ'D REMOVAL (LB)	BMP REMOVAL BY BMP (LB)	% OF INCREASED LOAD REMOVED	% OF TOTAL LOAD REMOVED
TSS Removed (Sand Filter)	1475	1287.63	82.94%	80.00%
TSS Removed (Bioretention)	1475	208.02	14.13%	12.80%
TSS Removed (Infiltration Trench)	1475	83.34	5.64%	5.18%
TSS Removed (Total)	1475	1577.09	105.99%	97.98%
TP Removed (Retention Irrigation)	2.19	1.29	55.96%	55.00%
TP Removed (Bioretention)	2.19	0.61	28.33%	25.92%
TP Removed (Infiltration Trench)	2.19	0.32	14.71%	13.74%
TP Removed (Total)	2.19	2.22	96.31%	94.66%
O&G Removed (Retention Irrigation)	58.46	54.77	93.69%	89.00%
O&G Removed (Bioretention)	58.46	4.82	8.25%	7.83%
O&G Removed (Infiltration Trench)	58.46	1.40	2.38%	2.28%
O&G Removed (Total)	58.46	60.99	99.11%	99.11%

**BIORETENTION POND - C**

	Required	Provided
Water Quality Volume	11,888 cf	-
Required Bioretention BMP Volume (WQV x .044)	523 cf	1,300 cf
Sand Filter Overflow Area (WQV/18)	29 sf	64 sf
Sand Filter Ponding Depth	1 ft max	1 ft
Basin Area	247 sf	245 sf
Basin Area Ponding Depth	2 ft	2 ft
Total Area	276 sf	309 sf

**INFILTRATION TRENCH - C**

	Required	Provided
Water Quality Volume	11,888 cf	-
Soil Infiltration Rate (Infiltration Rate based on NRCS soil survey) (Vr per HLWO Technical Manual)	0.50 in/hr	-
Reduced Infiltration Trench BMP Volume	357 cf	-
WQV Vr = WQV (WQV x .03) (1 - Vr)	-	-
Required Infiltration Trench Volume = (WQV Vr)/0.35	1,019 cf	-
Required Surface Area	-	509 sf
Required Water Quality Volume / 48 hour / Porosity / 12	-	-
Trench Depth	8.00 ft	-
Trench Width	12 ft	-
Trench Length	31 ft	-
Infiltration Surface Area	1,080 sf	-
Infiltration Trench Volume	1,042 cf	-
Infiltration Trench Volume / Infiltration Surface Area	0.98	-

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



COVERT BEE CAVE PLANS FOR SITE DEVELOPMENT PHASE 4 DETENTION & WATER QUALITY POND PLAN

DATE	DESCRIPTION
06/22/2023	DESIGNED BY: ADG
	DRAWN BY: ADG
	CHECKED BY: CRH
	APPROVED BY: WOI
	CADWIG

06/22/2023  
 DESIGNED BY: ADG  
 DRAWN BY: ADG  
 CHECKED BY: CRH  
 APPROVED BY: WOI  
 CADWIG

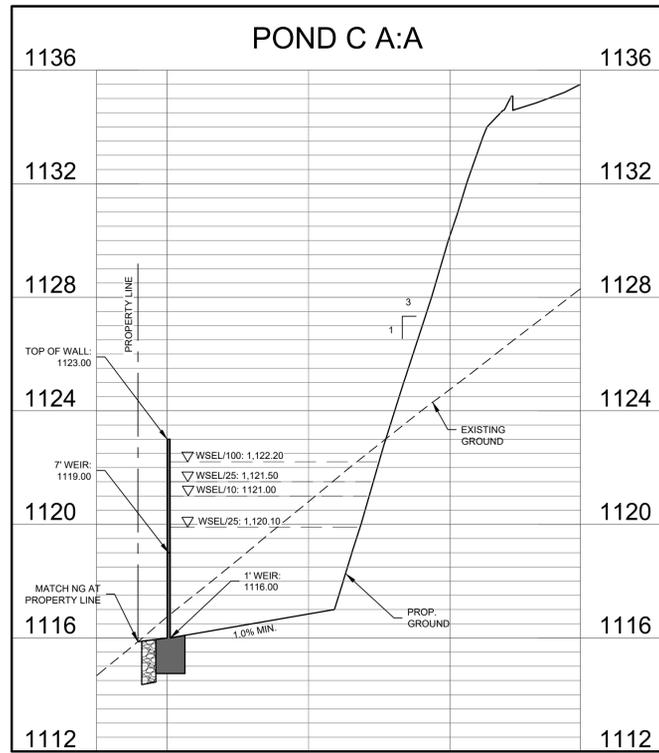
06/22/2023  
 CHARLES R. HAGER  
 LICENSED PROFESSIONAL ENGINEER  
 127034

Phone 512.439.4700  
 Fax 512.439.4716  
 FRN-F-1386

**LJA Engineering, Inc.**  
 7500 Ritolo Boulevard  
 Building II, Suite 100  
 Austin, Texas 78735

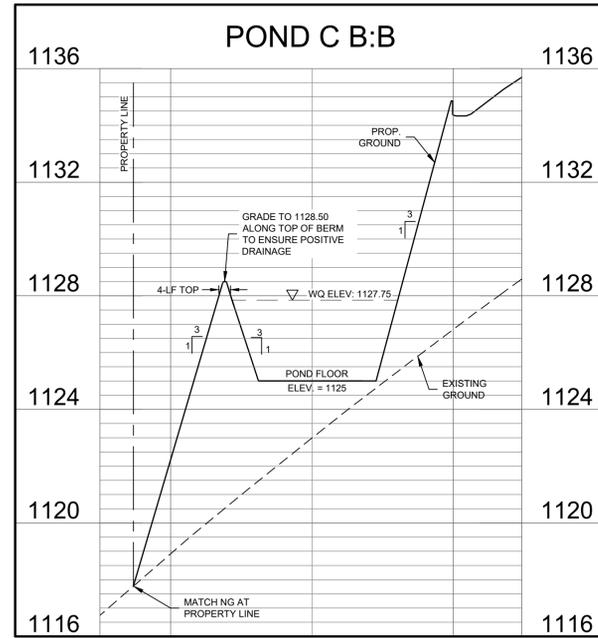
JOB NUMBER: A338-401  
 SHEET NO. WQ05  
 89 OF 90 SHEETS

I:\A338 - Covert\Submittal Drawings\Phase 4 - Revision Plans\A338-401



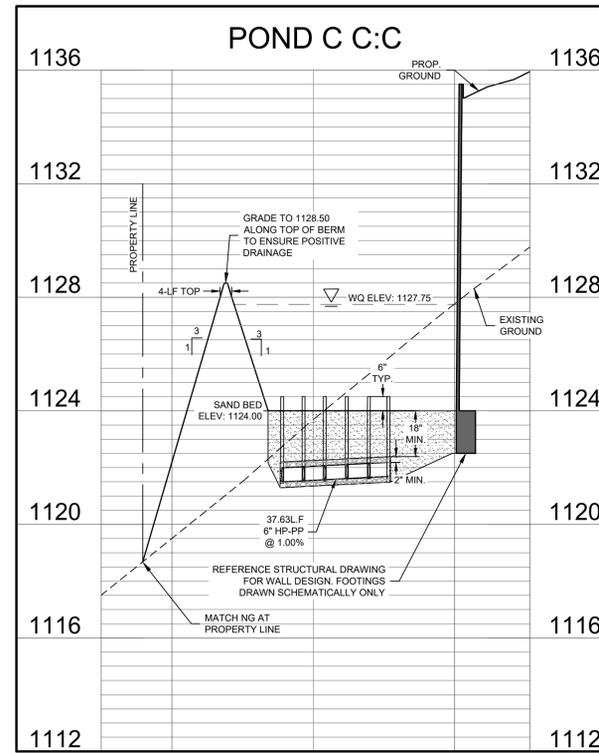
**DETENTION POND C**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL



**POND C PARTIAL SEDIMENTATION BASIN  
CROSS SECTION B:B**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL



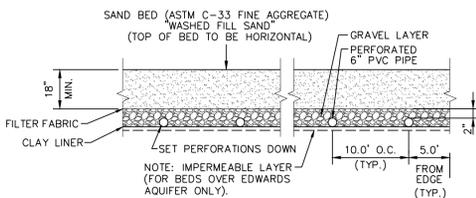
**POND C PARTIAL FILTRATION BASIN  
CROSS SECTION C:C**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL

**SAND BED SPECIFICATION**

THE TOP LAYER SHALL BE TWELVE (12) TO EIGHTEEN (18) INCHES OF 0.02-0.04 INCH DIAMETER SAND WHICH CORRESPONDS WITH ASTM C-33 CONCRETE SAND (SMALLER SAND SIZE IS NOT ACCEPTABLE). UNDER THE SAND SHALL BE A LAYER OF ONE-HALF (0.5) TO ONE AND ONE-HALF (1.5) INCH DIAMETER WASHED, ROUND RIVER GRAVEL WHICH PROVIDES A MINIMUM OF THREE (3) INCHES OF COVER OVER THE TOP OF THE UNDERDRAIN LATERAL PIPES. TWO (2) INCHES OF GRAVEL IS REQUIRED UNDER THE LATERAL PIPES. THE SAND AND GRAVEL MUST BE SEPARATED BY A LAYER OF GEOTEXTILE FABRIC MEETING THE SPECIFICATIONS LISTED BELOW.

- NOTES:  
1. ALL LATERALS SHALL BE SCH-40 PVC PERFORATED PIPE. PERFORATIONS SHOULD BE THREE-EIGHTHS (3/8) INCH. MAXIMUM SPACING BETWEEN ROWS OF PERFORATIONS SHOULD NOT EXCEED SIX (6) INCHES.



**SAND BED PROFILE (WITH GRAVEL FILTER)**  
N.T.S.

**GEOTEXTILE FABRIC SPECIFICATIONS**

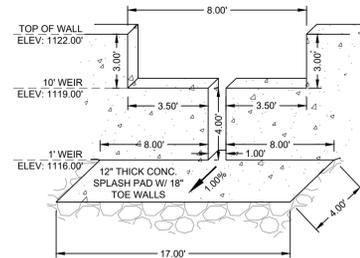
Property	Test Method	Unit	Specification
Material	Nonwoven geotextile fabric		
Unit Weight	ASTM D-3376	Oz/Sq. Yd.	3 (min.)
Water Flow Rate	ASTM D-4491	gpm/ft.	275 (min.)
Puncture Strength	ASTM D-751 (Modified)	Lb.	125 (min.)
Mullen Burst Strength	ASTM D-3378	Psi	120 (min.)
Tensile Strength	ASTM D-1682	Lb.	200 (min.)
Equip. Opening Size	US Standard Sieve	No.	80 (min.)
uv Radiation Stability	ASTM D-4355	%	70% (min.)

Equivalent methods for protection of the geomembrane liner will be considered by the Environmental and Conservation Services Department on a case by case basis. Equivalency will be judged on the basis of ability to protect the geomembrane from puncture, tearing and abrasion.

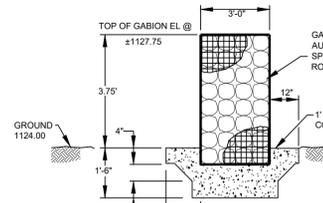
Source: City of Austin

**SAND FILTER BASIN NOTES:**

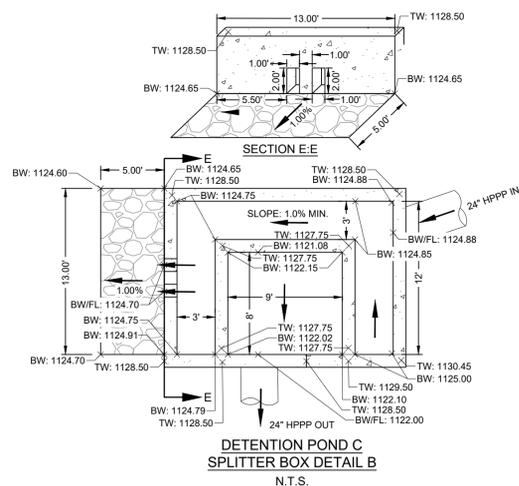
- SAND FILTER BASIN MUST BE LOCATED OUTSIDE BUFFER ZONE
- CONTRIBUTING DRAINAGE AREA LESS THAN 20 AC RECOMMENDED
- PRE-TREATMENT REQUIRED IN FORM OF SEDIMENT FOREBAY
- SECONDARY TREATMENT REQUIRED BEFORE OR AFTER BASIN
- BMP VOL = 1.05 \* IWKV
- AT LEAST 2:1 LENGTH TO WIDTH RATIO
- SECONDARY TREATMENT REQUIRED



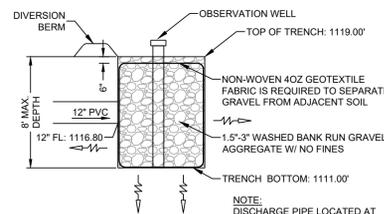
**DETENTION POND C OUTFALL  
STRUCTURE DETAIL A**  
N.T.S.



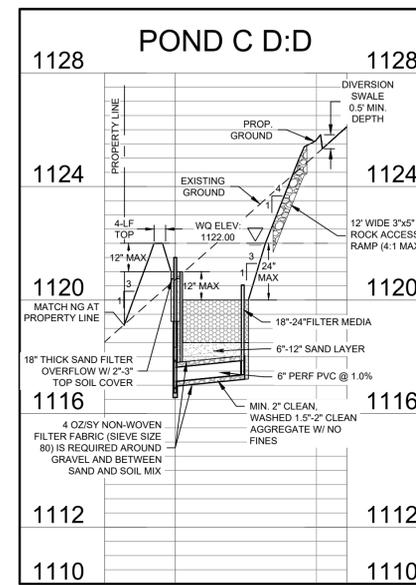
**GABION BASKET DETAIL C**  
N.T.S.



**DETENTION POND C  
SPLITTER BOX DETAIL B**  
N.T.S.



**INFILTRATION TRENCH DETAIL D**  
N.T.S.



**POND C BIO-RETENTION BASIN  
CROSS SECTION D:D**

SCALE: 1" = 4' VERTICAL  
SCALE: 1" = 40' HORIZONTAL

**NOTES:**

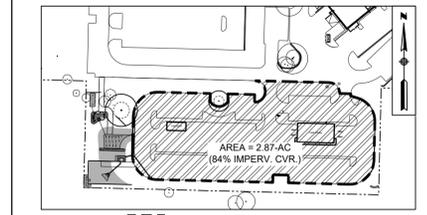
- THE DETENTION AND WATER QUALITY POND IS TO BE CONSTRUCTED FIRST IN THE SEQUENCE OF CONSTRUCTION (SOC) BEFORE SITE CLEARING AND GRADING TO ACT AS A SEDIMENTATION POND DURING CONSTRUCTION.
- A DE-WATERING METHOD/PLAN FOR THE POND MUST BE APPROVED BY THE COUNTY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD/PLAN MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS IN THE PONDED WATER TO THE GREATEST EXTENT FEASIBLE.

WATER QUALITY IMPROVEMENTS HAVE BEEN DESIGNED TO MEET THE CITY OF BEE CAVE NPS REGULATIONS (ARTICLE 20.04), AS REQUIRED FOR PROJECTS DRAINING TO LITTLE BARTON CREEK BY ARTICLE II, SECTION 2.02.A.XI OF THE DEVELOPMENT AGREEMENT BETWEEN WS-COS DEVELOPMENT INC., WS-COS INVESTMENTS, LLC, MATTHEWS-BARNES BROTHERS INVESTMENT, THE CITY OF BEE CAVE, AND THE LAZY NINE MUNICIPAL UTILITY DISTRICT NO. 1A

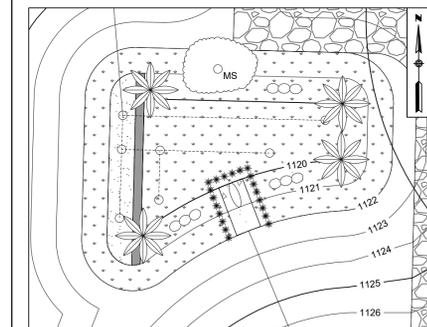
**ENVIRONMENTAL NOTES:**

CONTACT POSTINSPECTION@TRAVISCOUNTYTX.GOV TO SCHEDULE THE FOLLOWING MILESTONE INSPECTION(S) FOR THE WATER QUALITY STRUCTURES WITH AT LEAST A 48-HOUR NOTICE, IF APPLICABLE:

- PRE-POUR OF ALL CONCRETE WITHIN THE FOOTPRINT OF THE WQ CONTROL OR POND
- PLACEMENT OF ALL ROCK-FILLED GABIONS/MATTRESSES AND LEVEL SPREADERS.
- INSPECTION OF SAND/BIO-FILTRATION MEDIA AND/OR ROCK PRIOR TO INSTALLING.
- UNDERDRAIN PIPING PRIOR TO COVERING WITH SAND/BIO-FILTRATION MEDIA OR ROCK IN INFILTRATION TRENCH - IF COVERED, REMOVAL OF MATERIAL WILL BE REQUIRED.
- INSPECTION OF DESIGNED PLANTINGS PRIOR TO INSTALLING IN RAIN GARDEN/BIO-FILTRATION BASINS.
- SUBSOIL INFILTRATION RATE TESTING FOR INFILTRATION TRENCHES/BASINS.
- COMPLETION OF CONSTRUCTION OF WATER QUALITY STRUCTURE(S).



**PHASE 4 WQ TREATMENT AREA MAP**  
SCALE: 1" = 200'



**BIO RETENTION BASIN PLANTING PLAN**  
SCALE: 1" = 10'

**PLANT LEGEND**

- BERMUDA BLUE SEED (REFER TO ECS NOTES)
- BUSHY BLUE STEM
- BUNCH GRASS HEDGE ROW (BIG MUHLY) EVERY 1' O.C.
- DWARF PALMETTO
- MEXICAN SYCAMORE

**Outfall Rip Rap Sizing (POND C OUT)**

$Q_{100} = 31.60$ cfs
$A = 35.00$ ft <sup>2</sup> (1' Ht x 35' Length Rock Berm)
$V = 0.90$ fps ( $V=Q/A$ )
$D_{50} = 0.10$ ( $D_{50} = 0.0105V^{2.00}$ ) inches min.

**USE 12" THICK CLASS 1 6" DIA. (D<sub>50</sub>) RIP-RAP.**

**Outfall Rip Rap Sizing (POND C IN - SSL)**

$Q_{100} = 38.49$ cfs
$A = 3.14$ ft <sup>2</sup> (36" Pipe IN)
$V = 12.25$ fps ( $V=Q/A$ )
$D_{50} = 21.98$ ( $D_{50} = 0.0105V^{2.00}$ ) inches min.

**USE CLASS VII 23" DIA. (D<sub>50</sub>) RIP-RAP.**

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**COVERT BEE CAVE  
PLANS FOR SITE DEVELOPMENT  
PHASE 4  
DETENTION & WATER QUALITY POND DETAILS**

NO.	DATE	DESCRIPTION	BY
C1	9/7/2018	REVISE SITE PLAN/AVAILABILITY PLAN AND MASS GRADING	CRH
C2	8/30/2019	ADD PHASE 2 SITE PLANS TO PLANS	CRH
C3	6/29/2021	ADD PHASE 3 SITE PLAN TO PLANS AND REVISION GRADING	CRH
RF	11/16/2021	REMOVE CAR WASH / FUEL PAD & FIK DUMPSTER	CRH



**LJA Engineering, Inc.**  
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Fax 512.438.4716  
7500 Riatico Boulevard  
Building II, Suite 100  
Austin, Texas 78735  
FRN-F-1386

JOB NUMBER: A338-401  
SHEET NO. **90** OF 90 SHEETS