MODIFICATION TO APPROVED CONTRIBUTING ZONE PLAN

FOR

BIG SKY RANCH PHASE ONE

Dripping Springs, Texas

Prepared for:

Meritage Homes of Texas, LLC
8920 Business Park Drive, Suite 350
Austin, TX 78759

For Review by:

Texas Commission on Environmental Quality

Prepared by:

DOUCET
A Kleinfelder Company

TBPE Firm #3937
7401B Highway 71 W., Ste. 160
Austin, Texas 78735

Engineer's Certification:
To the best of my knowledge, this application and all attachments accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer and were prepared in compliance with the rules of TAC Title 30, Part 1, Chapter 213, Subchapter B.

_____
Jacob Harris, P.E.

STATE OF TEXAS
JACOB S. HARRIS
144473
LICENSED
PROFESSIONAL ENGINEER

April 2025
D&A Project No. 1691-002

Modification of a Previously Approved Contributing Zone Plan

Table of Contents

0)	**Edwards Aquifer Application Cover Page *(TCEQ-20705)***	**Section 0**
1)	**Modification of a Previously Approved CZP Form *(TCEQ-10259)***	**Section 1**
A.	Original Approval Letters	Attachment A
B.	Narrative of Proposed Modification	Attachment B
C.	Current Site Plan of the Approved Project	Attachment C
2)	**Contributing Zone Plan Application (TCEQ-10257)**	**Section 2**
A.	Road Map	Attachment A
B.	USGS Map	Attachment B
C.	Project Narrative	Attachment C
D.	Factors Affecting Surface Water Quality	Attachment D
E.	Volume and Character of Stormwater	Attachment E
J.	BMPs for Upgradient Stormwater	Attachment J
K.	BMPs for On-Site Stormwater	Attachment K
L.	BMPs for Surface Streams	Attachment L
M.	Construction Plans & TSS Calculations	Attachment M
N.	Inspection, Maintenance, Repair & Retrofit Plan	Attachment N
P.	Measures for Minimizing Surface Stream Contamination	Attachment P
3)	**Storm Water Pollution Prevention Plan *(SWPPP)***	**Section 3**
4)	**Copy of Notice of Intent *(NOI)***	**Section 4**
5)	**Agent Authorization Form *(TCEQ-0599)***	**Section 5**
6)	**Application Fee Form *(TCEQ-0574)***	**Section 6**
7)	**Copy of Check for Fees**	**Section 7**
8)	**Core Data Form *(TCEQ-10400)***	**Section 8**
9)	**Optional Enhanced Measures (per TCEQ RG-348A)**	**Section 9**
10)	**Construction Plans**	**Section 10**

SECTION 0

EDWARDS AQUIFER APPLICATION COVER PAGE

(TCEQ-20705)

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

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.

1. Regulated Entity Name: Big Sky Ranch Phase One					**2. Regulated Entity No.:** RN110564440			
3. Customer Name: Meritage Homes of Texas, LLC					**4. Customer No.:** 603298068			
5. Project Type: **(Please circle/check one)**	New	Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures - **YES**
7. Land Use: **(Please circle/check one)**	Residential	Non-residential				**8. Site (acres):**		73.44 Ac
9. Application Fee:	$6,500	**10. Permanent BMP(s):**				(3) Batch Detention Ponds		
11. SCS (Linear Ft.):	N/A	**12. AST/UST (No. Tanks):**				N/A		
13. County:	Hays	**14. Watershed:**				Onion Creek / 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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	_X_	__	__
Region (1 req.)	_X_	__	__
County(ies)	_X_	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __ Barton Springs/ Edwards Aquifer _X_ Hays Trinity __Plum Creek	__ Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda _X_ Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	__	__	__	__
Region (1 req.)	__	__	__	__	__
County(ies)	__	__	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__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. Jacob Harris, P.E. - Doucet (Authorized Agent)
Print Name of Customer/Authorized Agent 4/24/2025
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):

SECTION 1

MODIFICATION OF A PREVIOUSLY APPROVED CZP FORM

(TCEQ-10259)

Modification of a Previously Approved Contributing Zone Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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 **Modification of a Previously Approved Contributing Zone Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Jacob Harris, P.E.

Date: 4/24/2025

Signature of Customer/Agent:

_____

Project Information

1. Current Regulated Entity Name: Big Sky Ranch Phase One
   Original Regulated Entity Name: Big Sky Ranch Phase One
   Assigned Regulated Entity Number(s) (RN): 110564440
   Edwards Aquifer Protection Program ID Number(s): 11001353
   ☒ The applicant has not changed and the Customer Number (CN) is: 603298068
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):

☒ Any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
☐ Any change in the nature or character of the regulated activity from that which was originally approved;
☐ A change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
☐ Any development of land previously identified in a contributing zone plan as undeveloped.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

CZP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	73.44	73.44
Type of Development	Subdivision, Roadway	Subdivision, Roadway
Number of Residential Lots	256	256
Impervious Cover (acres)	30.83	30.83
Impervious Cover (%)	42	42
Permanent BMPs	3 Batch Detention Ponds	3 Batch Detention Ponds
Other	N/A	N/A
AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	N/A	N/A
Other	N/A	N/A
UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	N/A	N/A
Other	N/A	N/A

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved,

including previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Projec**t. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☒ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☒ Acreage has not been added to or removed from the approved plan.
   ☐ Acreage has been added to or removed from the approved plan and is discussed in *Attachment B: Narrative of Proposed Modification*.

8. ☒ 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. The copies must be submitted to the appropriate regional office.

ATTACHMENT A

ORIGINAL APPROVAL LETTERS

MODIFICATION TO APPROVED CONTRIBUTING ZONE PLAN (TCEQ-10259)

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Toby Baker, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 18, 2019

Mr. Matthew Scrivener
Meritage Homes of Texas, LLC
8920 Business Park Drive, Suite 350
Austin, Texas 78759

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: Big Sky Ranch Phase 1; located 0.3 miles east of Founders Park Road and Ranch Road 12; Dripping Springs ETJ; Texas

TYPE OF PLAN: Request for Approval of a Contributing Zone Plan with Optional Enhanced Measures (CZP-OEM); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer, Subchapter B

Edwards Aquifer Protection Plan ID No. 11001353; Regulated Entity No. RN110564440

Dear Mr. Scrivener:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP-OEM Application for the above-referenced project submitted to the Austin Region Office by Doucet and Associates, Inc. on behalf of Meritage Homes of Texas, LLC on November 13, 2018. Final review of the CZP-OEM was completed after additional material was received on January 11 & 15, 2019. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed single-family residential development is the first phase of a multi-phase development and will be located on 73.44 acres within the 200.40-acre overall site and will include construction of 256 single family residences, roads, permanent BMPs, sidewalks, open space/parkland, improvements to the existing Founders Park Road, utilities and other appurtenances. The impervious cover will be 30.83-acres (consisting of 28.84-acres onsite (41%) and 1.99 acres of impervious cover from the adjacent Founders Park Road section). Project wastewater will be disposed of by conveyance to the proposed Travis County MUD No. 22 Wastewater Treatment Plant.

GEOLOGY

According to the Geologic Assessment Report included in the application, the site is located entirely in the Edwards Aquifer Contributing Zone. The site is underlain by the Upper Glen Rose Formation (Kgr(u)). No sensitive geologic features and one (1) water well were identified in the report.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, three (3) batch detention water quality basins, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 28,182 pounds of TSS generated from the 30.83 acres of impervious cover. The BMPs outlined below are designed to remove cumulatively 42,323 pounds of TSS.

Batch Detention Water Quality Basin "1" will have a contributing drainage area of 66.22 acres with up to 25.60 acres of impervious cover at final buildout conditions. Basin "1" is designed to remove 23,401 pounds of TSS and will have a water quality volume of 161,742 ft^3 (159,446 ft^3 are required).

Batch Detention Water Quality Basin "2" will have a contributing drainage area of 34.45 acres with up to 14.70 acres of impervious cover at final buildout conditions. Basin "2" is designed to remove 13,437 pounds of TSS and will have a water quality volume of 85,642 ft^3 (84,846 ft^3 are required).

Batch Detention Water Quality Basin "3" will have a contributing drainage area of 18.40 acres with up to 6.00 acres of impervious cover at final buildout conditions. Basin "3" is designed to remove 5,485 pounds of TSS and will have a water quality volume of 41,875 ft^3 (35,926 ft^3 are required).

SPECIAL CONDITIONS

I. Permanent stream buffers are established for all natural drainages with a contributing drainage area of five or more acres as depicted on the approved site plans. Regulated activity is not allowed in the buffers except as shown on the approved site plans.

II. If any sensitive feature (cave, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Region Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

III. All permanent pollution abatement measures shall be operational and Standard Condition No. 14 of this approval satisfied prior to occupancy of homes within their respective drainage areas.

IV. All sediment and/or media removed from the permanent BMPs during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

V. Inspection, maintenance and repair records shall be maintained for permanent BMPs for the most recent three years and made available to the TCEQ upon request.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved CZP-OEM and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP-OEM application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Region Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP), must be installed prior to construction and inspected, maintained and repaired during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized in the respective contributing drainage area. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

8. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
10. Discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices in accordance with the approved plan.

11. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

13. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 5, above.

<u>After Completion of Construction:</u>

14. Owners of permanent BMPs and measures must insure that the 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 Austin Region Office within 30 days of site completion.

15. The applicant shall be 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. A copy of the transfer of responsibility must be filed with the executive director through the Austin Region Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved CZP-OEM. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

17. This approval will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the Austin Region Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Zach Lanfear of the Edwards Aquifer Protection Program of the Austin Region Office at (512) 339-2929.

Sincerely,

Robert Sadlier, Water Section Team Leader
Austin Region Office
Texas Commission on Environmental Quality

RCS/zcl

Enclosure: Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Tom Hegemier, P.E.
Doucet & Associates, Inc.
7401B Highway 71 West, Suite 160
Austin, Texas 78735

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____
Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

MODIFICATION TO APPROVED CONTRIBUTING ZONE PLAN (TCEQ-10259)

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

The approved Big Sky Ranch Phase One Contributing Zone Plan is for a proposed subdivision development for a 73.44-acre site. Phase One consists of 69.82 acres out of the 200.4-acre site, and approximately 3.62 acres of ROW along Founders Park Road that will be improved. The subject tract is located northeast of the intersection of Hwy 290 and Ranch Road 12 and adjacent to Founders Park and is in the 2-mile ETJ of the City of Dripping Springs, as well as the Edwards Aquifer Contributing Zone. The project has been completed across all phases, and homes are currently occupied or ready for sale. Construction was carried out as proposed with no major deviations from the approved plans.

The approved subdivision utilizes batch detention water quality ponds with additional stacked volume to treat runoff to meet TCEQ water quality requirements and reduce proposed development peak runoff to existing conditions. Stormwater from all developed areas is routed via underground storm sewer to one of three batch detention water quality ponds. Phase One includes single family residential lots, public parkland and undisturbed open space, resulting in approximately 28.84 acres of impervious cover, or 41%. The batch detention basins manage runoff from other phases; however, they were constructed to their final design size prior to the construction of those future phases to ensure the treatment was adequate and available for the fully developed condition phase by phase.

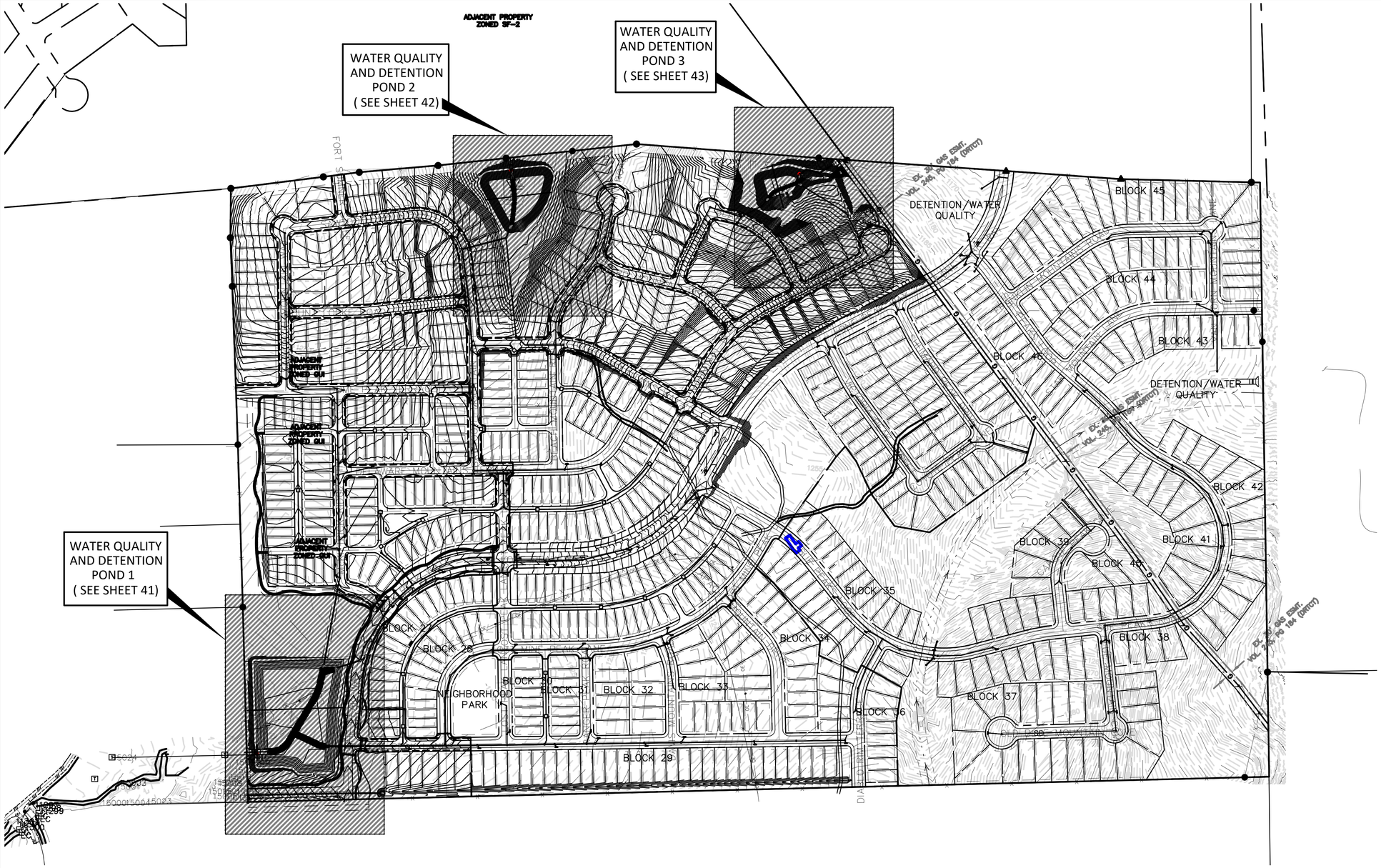
The approved improvements to Founders Park Road included widening the roadway from 20’ width with 4’ gravel shoulders to 32’ width with 2’ concrete laydown curbs. A set of 4- 3’x6’ RBC was also added that crosses Founders Park Road east of Rob Shelton Blvd to convey flow from Pond 1. A pipe carrying flow from offsite area OS-1 also discharges into the 4- 3’x6’ culvert. The 3.62 acres of ROW along Founders Park has approximately 1.99 acres of impervious cover following the improvements.

The previous approved plan included batch detention-style water quality BMPs, that were manufactured by smartPOND, however there have been maintenance issues that require a change to the existing outflow equipment. The proposed modification to the approved Phase 1 plans is to simply switch the faulty equipment mounted to the outflow structure with an approved equivalent made by Autoflow Water Management Systems. This system is a sluicegate style outflow device that retrofits directly on to the existing orifice with no further modifications. This model and style has been selected to better manage the sediment and debris buildup currently occurring on the existing equipment.

ATTACHMENT C

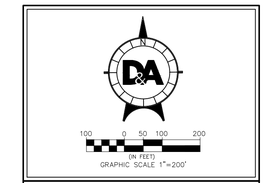
CURRENT SITE PLAN OF APPROVED PROJECT

MODIFICATION TO APPROVED CONTRIBUTING ZONE PLAN (TCEQ-10259)



OVERALL DETENTION AND WATER QUALITY POND PLAN

SCALE: 1" = 200'



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

OVERALL POND PLAN

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET
40
OF 175

Project No.: 1691-002

Drawing: G:\pwworking\austin-dms\739A\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:00:40

SECTION 2

CONTRIBUTING ZONE PLAN APPLICATION

(TCEQ-10257)

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: Jacob Harris, P.E.

Date: 4/24/2025

Signature of Customer/Agent:

_____

Regulated Entity Name: Big Sky Ranch Phase One

Project Information

1. County: Hays
2. Stream Basin: Little Barton Creek/Onion Creek
3. Groundwater Conservation District (if applicable): Hays Trinity
4. Customer (Applicant):

   Contact Person: Brandon Hammann, P.E.
   Entity: Meritage Homes of Texas, LLC
   Mailing Address: 8920 Business Park Drive, Suite 350
   City, State: Austin, TX Zip: 78759
   Telephone: 512-610-4851 Fax: _____
   Email Address: brandon.hammann@meritagehomes.com

5. Agent/Representative (If any):

Contact Person: Jacob Harris, P.E.
Entity: Doucet, A Kleinfelder Company
Mailing Address: 7401 B Hwy 71 West, Suite 160
City, State: Austin, TX Zip: 78735
Telephone: 512-583-2600 Fax: _____
Email Address: jacharris@kleinfelder.com

6. Project Location:

☒ The project site is located inside the city limits of Dripping Springs, TX.
☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
☐ 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.

Northeast of the intersection of Hwy 290 and Ranch Road 12, adjacent to Founders Park

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: 804
☐ Residential: # of Living Unit Equivalents: _____
☐ Commercial
☐ Industrial
☐ Other: _____

13. Total project area (size of site): 73.44 Acres

    Total disturbed area: 73.44 Acres

14. Estimated projected population: 1,810

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

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	***Sq. Ft.***	***Sq. Ft./Acre***	***Acres***
Structures/Rooftops	899,078	÷ 43,560 =	20.64
Parking	0	÷ 43,560 =	0
Other paved surfaces	357,370	÷ 43,560 =	8.20
Total Impervious Cover	1,256,270	÷ 43,560 =	28.84

Total Impervious Cover 28.84 **÷ Total Acreage** 73.44 **X 100 =** 41**% 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 x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

21. Pavement Area:

Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% 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 City of Dripping Springs (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

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
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

Length (L)(Ft.)	*Width(W)(Ft.)*	*Height (H)(Ft.)*	*L x W x H = (Ft3)*	*Gallons*

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" = 200'.

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): Firm Panel #48209C0105G effective on 1/17/2025.

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: TCEQ Optional Enhanced Measures.

☐ 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.

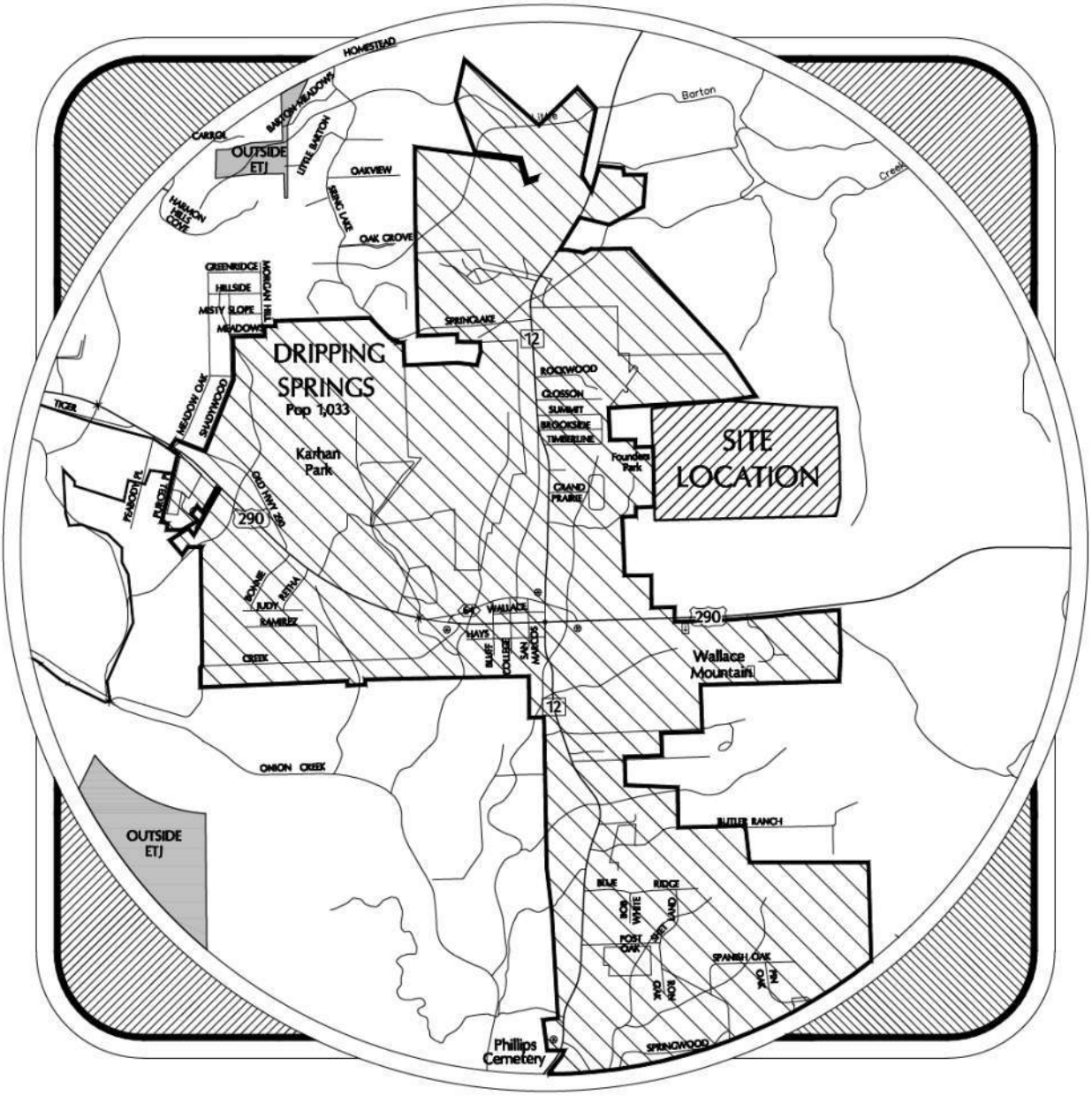
ATTACHMENT A

ROAD MAP

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT A

ROAD MAP



The site is located Northeast of the intersection of Hwy 290 and Ranch Road 12, adjacent to Founders Park.

DOUCET
A Kleinfelder Company

ATTACHMENT B

USGS MAP

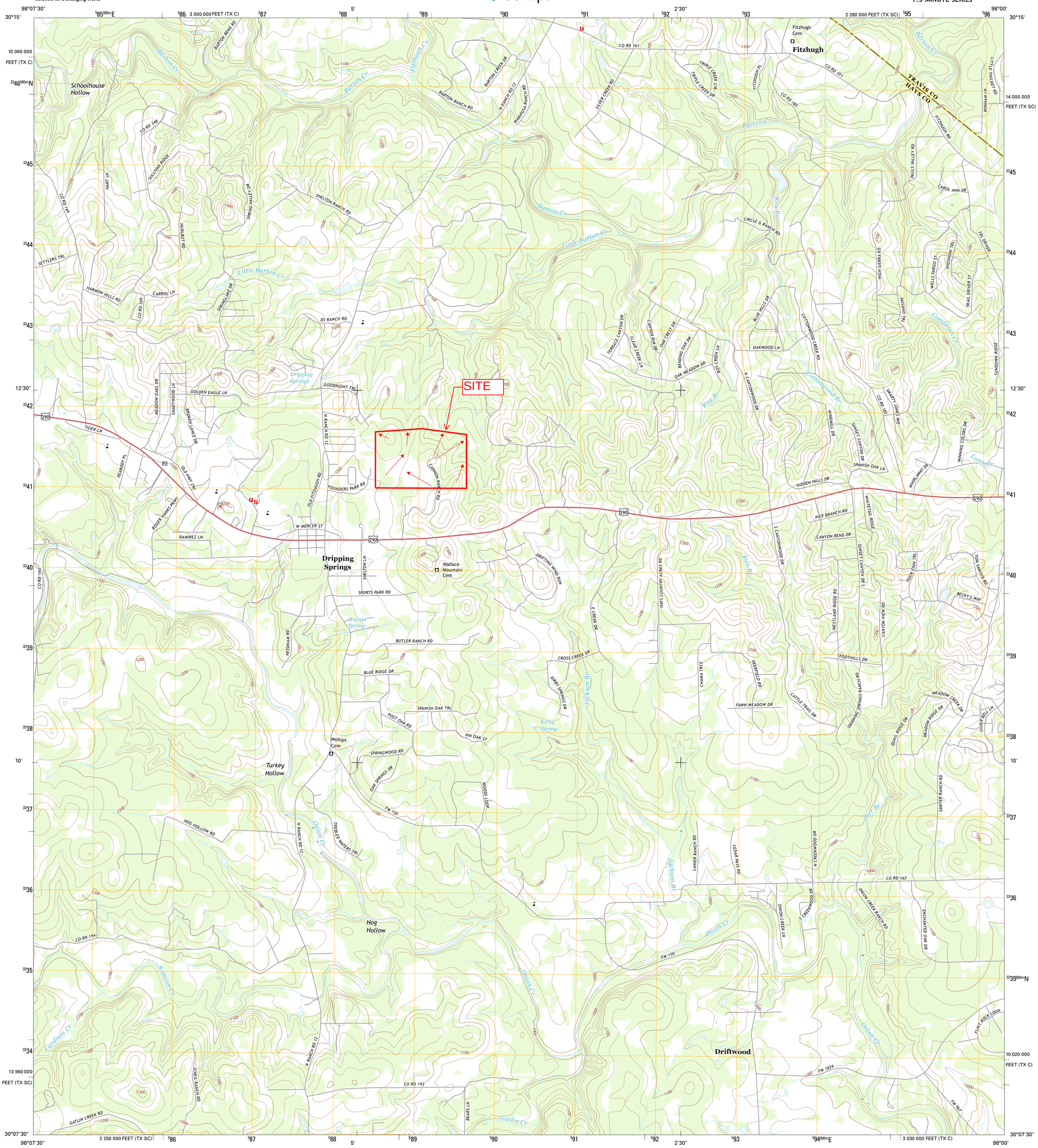
Dripping Springs Quadrangle

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

DRIPPING SPRINGS QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central and central zones)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, October 2014
Roads..... U.S. Census Bureau, 2014 - 2015
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2002
Boundaries.....Multiple sources; see metadata file 1972 - 2015

Wetlands.....FWS National Wetlands Inventory 1977 - 2014

MN
GN
4° 15'
76 MILS
0° 28'
8 MILS
UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NU
Grid Zone Designation
14R

SCALE 1:24 000

KILOMETERS: 1 0.5 0 1 2
METERS: 1000 500 0 1000 2000
MILES: 1 0.5 0 1
FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Hammetts Crossing
2 Shingle Hills
3 Bee Cave
4 Henly
5 Signal Hill
6 Rough Hollow
7 Driftwood
8 Mountain City

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

DRIPPING SPRINGS, TX
2016

NSN. 7643016395933
NGA REF NO. USGSX24K12801
7643016395933

ATTACHMENT C

PROJECT DESCRIPTION

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT C

PROJECT NARRATIVE

Big Sky Ranch is a phased subdivision located within the City of Drippings Springs at the northeast intersection of Hwy 290 and Ranch Road 12, adjacent to Founders Park. The project consists of four total phases and is approximately 212.6 acres in area. Phase One of this project encompasses 73.44 acres of that area with 24.84 acres of impervious, or 41% of the phase area. In addition to the on-site area of Big Sky Ranch, approximately 3.6 acres of the existing Founders Park Road ROW is to be improved as well.

The project is in the Edwards Aquifer Contributing Zone and will utilize batch detention water quality ponds with additional stacked volume to treat runoff to meet TCEQ water quality requirements while reducing proposed development peak runoff to existing conditions. Phase One includes single-family residential lots, public parkland, and undisturbed open space. The proposed BMPs within Phase One are sized to treat the impervious cover runoff generated in this phase as well as areas from future phases. Construction is sequenced to ensure that BMPs are constructed and sized to adequately treat impervious cover as the development progresses. An exhibit depicting the proposed BMPs throughout the whole project as well as the total planned impervious cover is included in Section 2, Attachment M.

The improvements to Founders Park Road include widening the roadway from 20' wide with 4' gravel shoulders to 32' wide with 2' concrete laydown curbs. A set of 4 - 3' x 6' RBC also cross Founders Park Road east of Rob Shelton Blvd. to convey flow from Pond 1. A pipe carrying flow from offsite area OS-1 discharges into the 4 - 3' x 6' culvert. The 3.62 acres of ROW along Founders Park have approximately 1.99 acres of impervious cover after the improvements.

The subject tract is located partially within the Onion Creek Watershed and partially in the Barton Creek Watershed. No portion of the development is in the 100-year floodplain as shown on FEMA Flood Insurance Rate Map Panel No. 48209C0105G. In original existing conditions, the subject tract is undeveloped land with trees covering most of the site. The southwest portion of the tract is relatively flat, while the remainder is relatively hilly.

In addition to CZP approval, Doucet and Associates is requesting review for Optional Enhanced Measures (OEM) pursuant to Appendix A of RG-348a.

In existing and proposed conditions, the entire 212.6-acre tract is divided into seven sub-basins. The center of the project area is a high point, so runoff flows away towards the boundaries of the project area. Phase One contains parts of four separate sub-basins (the phase boundaries are not lined up with the drainage area sub-basin boundaries.) In the Existing Drainage Area Map within the Construction Plans, the map illustrates the locations and points of analysis for the sub-basins. Outlets 1, 2, and 3 are all part of Phase One.

ATTACHMENT D

FACTORS AFFECTING SURFACE WATER QUALITY

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT D

FACTORS AFFECTING WATER QUALITY

Surface water quality can be affected by disturbance during construction and by development after construction. Soil disturbance from clearing, grubbing, and cut/fill operations can lead to discharge of sediment unless adequate temporary erosion control measures are in place. For this project, the constructed batch detention ponds will be used to prevent sediment from leaving the site. Siltation collected by the control measures will be cleaned from traps, fences, berms, ponds, etc. on a routine schedule as outlined in the SWPPP and contract specifications.

During construction, surface water quality may also be affected by a spill of hydrocarbons or other hazardous substances used in construction. The most likely instances of a spill of hydrocarbons or hazardous substances are:

1. Refueling construction equipment.
2. Performing operator-level maintenance, including adding petroleum, oils, or lubricants.
3. Unscheduled or emergency repairs, such as hydraulic fluid leaks.

Every effort will be made to be cautious and prevent spills. In the event of a fuel or hazardous substance spill as defined by the Reportable Quantities Table (30 TAC 327 and printed from TCEQ website), the contractor is required to clean up the spill and notify the TCEQ as required in 30 TAC 327. During business hours report spills to the TCEQ's Austin Regional Office at (512) 339-2929, after business hours call 1-800-832-8224, the State Emergency Response Center.

After construction is complete, impervious cover for the 212.6 acres site is the major reason for degradation of water quality. Impervious cover includes the residential rooftops, street pavement and concrete sidewalks. Oil and fuel discharge from vehicles are anticipated. Four batch detention ponds and two extended detention ponds are proposed to mitigate these factors.

ATTACHMENT E

VOLUME AND CHARACTER OF STORMWATER

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT E

VOLUME AND CHARACTER OF STORMWATER

The 212.6-acre site made up of Phases One through Four has about 37% impervious cover, consisting of rooftops, sidewalks and street pavement. The remaining pervious portion of the site will consist of landscape and natural areas. Storm water from developed areas will travel as sheet flow or shallow concentrated flow across both pervious and impervious areas, captured by underground storm sewer systems and conveyed to a vegetative filter strip or one of six batch detention or extended detention ponds for water quality treatment purposes. The site for Phase One contains parts of four drainage areas, DA 1, DA 2, DA 3, and DA 4. Phase Two contains parts of four drainage areas, DA 1, DA 2, DA 4, and DA 5. Phase Three contains parts of DA 4, DA 5, DA 6, and DA 7. Phase Four contains parts of DA 1. The constructed ponds for Phases One and Four are located at the outfalls of drainage areas DA 1, DA 2, and DA 3. The constructed ponds for Phase Two are located at the outfalls of drainage areas DA 4 and DA 5. The pond to be built for Phase Three is located at the outfall of DA 6.

- DA 1 (62.6 acres) is 53% impervious, has a CN value of 82, and will drain to the west to a batch detention pond that ultimately discharges towards the west towards Founders Park. This pond is required to have a water quality volume (WQV) of 3.7 ac-ft and 3.71 ac-ft of volume is provided. Detention Pond 1 will also over detain to compensate for lack of detention for offsite area OS-1 and the roadway improvements along Founders Park Road.

- DA 2 (34.45 acres) is 51% impervious cover, has a CN value of 76, and will drain to the north to a batch detention pond that discharges north towards Little Barton Creek. The pond is required to have a WQV of 1.95 ac-ft and provides 1.97 ac-ft.

- DA 3 (18.40 acres) is 33% impervious cover, has a CN value of 80, and will drain to the north to a batch detention pond that discharges north towards Little Barton Creek. The pond is required to have a WQV of 0.83 ac-ft and provides 0.97 ac-ft.

- DA 4 (14.06 acres) is 28% impervious cover, has a CN value of 84, and will drain to the north to an extended detention pond that discharges north towards Little Barton Creek. The pond is required to have a WQV of 0.731 ac-ft and provides 0.757 ac-ft.

- DA 5 (64.9 acres) is 30% impervious cover, has a composite CN value of 85, and will drain to the east to a batch detention pond that discharges east and flows north towards Little Barton Creek. The pond is required to have a WQV of 5.03 ac-ft and provides 5.32 ac-ft.

- DA 6 (15.2 acres) is 48% impervious cover, has a composite CN value of 89, and will drain to the northeast corner of the site to an extended detention pond that discharges east to Little Barton Creek. The pond is required to have a WQV of 0.59 ac-ft and provides 0.60 ac-ft.

- DA 7 (9.01 acres) is 15% impervious cover, has a composite CN value of 83, and will drain to the east as bypass flow to Little Barton Creek. The water quality ponds are sized to overcompensate and treat all bypass runoff.

The first flush of runoff will contain small amounts of oil, gas, and suspended solids, which will be captured and treated by the water quality ponds. After passing through the ponds, the treated runoff will be released from the site and eventually drain into Onion Creek for Pond 1, and Little Barton Creek for Ponds 2 through 6.

For details of the ponds and all calculations, see the Water Quality Plan and Details in the Construction Plans.

ATTACHMENT J

BMPs FOR UPGRADIENT STORMWATER

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT J

BMPs FOR UPGRADIENT STORMWATER

In Phase One, the off-site area OS-1 enters the property and sheet flows across the undeveloped land in existing conditions. In proposed conditions, the runoff generated by this area is diverted via the proposed grading around the site boundary where it previously entered, and travels to the common discharge point of Pond 1, known as Outfall #1. As the offsite area is now diverted around the property, and no proposed impervious cover is affected by this offsite area, thus no additional BMPs are proposed to treat this area.

ATTACHMENT K

BMPs FOR ON-SITE STORMWATER

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT K

BMPs FOR ON-SITE STORMWATER

On-site stormwater will travel as sheet flow or shallow concentrated flow across pervious and impervious areas before being collected by curb and gutter, then flows into an on-site storm sewer system. This storm sewer connects to water quality batch detention ponds designed to treat the runoff per TCEQ requirements. Runoff to the east, bypassing the ponds (DA 5A, 6A, 7A and 7B), will sheet flow away from the site; the overall treatment requirements of the runoff will still be met as discussed in the engineering report and shown on Sheets 55 and 61. All runoff will be released from the site and eventually drain into either Onion or Little Barton Creek.

ATTACHMENT L

BMPs FOR SURFACE STREAMS

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT L

BMPs FOR SURFACE STREAMS

There are no surface streams immediately adjacent to the site. However, portions of Phases Two and Three will drain to either Outlets 1, 2, 4, 5, 6, or 7. Onion Creek is located south of Hwy. 290 and is the ultimate point of discharge for Pond 1 and Outlet 1. A swale begins to form at Outlets 2 and 4 along the north property line. There is another swale east of the discharge point at Outlet 5. These swales ultimately discharge into Little Barton Creek, a tributary of Barton Creek. Additionally, Little Barton Creek is the ultimate point of discharge for Pond 6 and Outlet 7. A description of the BMPs and measures that prevent pollutants from entering surface streams is provided in Attachment K.

ATTACHMENT M

CONSTRUCTION PLANS
& TSS CALCULATIONS

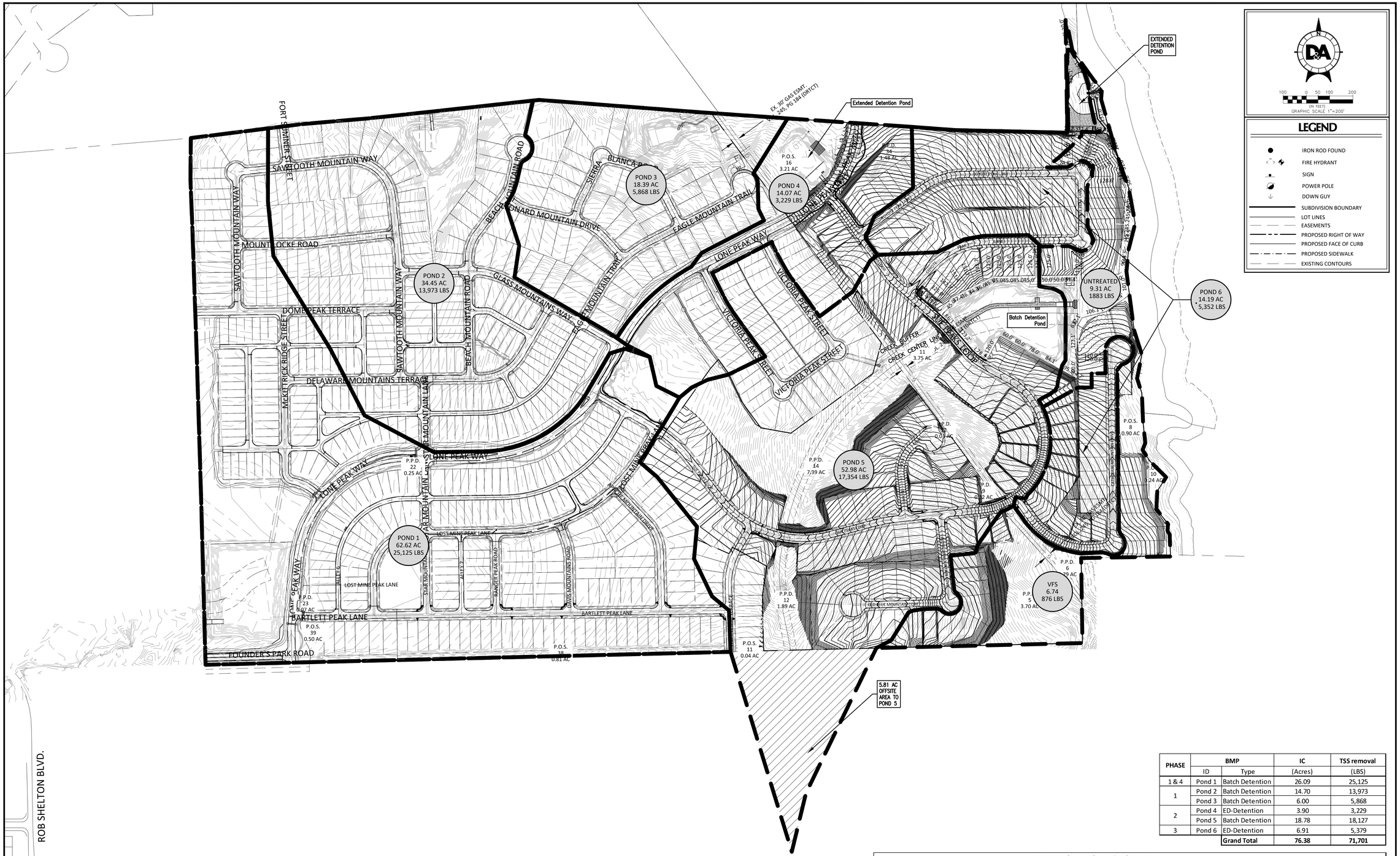
CONTRIBUTING ZONE PLAN APPLICATION
(TCEQ-10257)

ATTACHMENT M

CONSTRUCTION PLANS & TSS CALCULATIONS

Construction plans for the proposed permanent BMPs for this project are included in Section 10 – CONSTRUCTION PLANS.

The TCEQ spreadsheet has not changed due to this modification, and treatment of the runoff remains the same as was represented in the previously approved CZP-OEM. Ponds 1 through 5 were constructed as part of Phases One and Two and adequately treats constructed Phase One, constructed Phase Two, and future development of Phases Three and Four. Development of Pond 6 is proposed as part of Phase Three.



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

100 0 50 100 200
(IN FEET)
GRAPHIC SCALE 1"=200'

PHASE	BMP		IC	TSS removal
	ID	Type	(Acres)	(LBS)
1 & 4	Pond 1	Batch Detention	26.09	25,125
1	Pond 2	Batch Detention	14.70	13,973
	Pond 3	Batch Detention	6.00	5,868
2	Pond 4	ED-Detention	3.90	3,229
	Pond 5	Batch Detention	18.78	18,127
3	Pond 6	ED-Detention	6.91	5,379
		Grand Total	**76.38**	**71,701**

TCEQ Enhanced Method TSS Treatment Summary

	Ph1 (Pond 1-3)		Ph2 (pond 4-5)		Ph3 (pond 6)		Untreated areas		GRAND TOTAL	
Total area managed=	115.46	acres	74.82	acres	14.19	acres	14.03	acres	**218.50**	acres*
Pre-developed Impervious=	0	acres	0	acres	0	acres	0	acres	**0**	acres
Post-developed Impervious=	46.790	acres	22.678	acres	6.91	acres	2.060	acres	**78.44**	acres
Total post-development impervious cover fraction =	0.41		0.30		0.49		0.15		**0.36**	
P=	33	inches	33	inches	33	inches	33	inches	**33**	inches
Lm required=	**42771**	**lbs.**	**20730**	**lbs.**	**6316**	**lbs.**	**1883**	**lbs**	**71700**	lbs
Lm provided=	**44966**	**lbs.**	**21,356**	**lbs.**	**5,379**	**lbs.**	**0**	**lbs**	**71701**	lbs

Note: *Area includes 5.81 Acres of Offsite area. Total Onsite area is **212.69** acres

Calculations were obtained from Appendix A of the RG-348, *Complying with the Edwards Aquiver Rules.*

Required WQV includes the 20% additional storage for sedimentation

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Firm Registration Number: 3937

WATER QUALITY BMPS

BIG SKY RANCH PHASE THREE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
CHRISTOPHER A. REID
81546
LICENSED
PROFESSIONAL ENGINEER
02/04/2022

Designed: KMN
Drawn: KMN
Reviewed: CAR
Date: 12/09/2021

SHEET 55 OF 109

Project No.: 1691-002

Drawing: C:\pw_working\kanya-wpo\dms02716\1691002-CD-PH3-WQ.dwg
User: KNGOY
Last Modified: Dec. 08, 21 - 13:16
Plot Date/Time: Feb. 03, 22 - 15:57:58

Pond 1 A

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased loac
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of the plan =	86.1	acres
Total post-development impervious cover fraction =	0.43	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	62.62	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	25.60	acres
Post-development impervious fraction within drainage basin =	0.41	
Lm (TCEQ Required 80%)=	23400.96	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	62.62	acres
Al =	25.60	acres
Ap =	37.02	acres
Lr =	27199.70	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	23400.960	lbs.
F =	0.86	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.46	inches
Post Development Runoff Coefficient =	0.42	
On-site Water Quality Volume =	137,792	cubic feet
Off-site area draining to BMP =	0	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0	
Off-site Water Quality Volume =	0	cubic feet
Storage for sediment =		
Total Capture Volume (required water quality volume x 1.2) =	165,350	cubic feet
	3.796	acre-ft

Pond 2

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of theplan =	86.1	acres
Total post-development impervious cover fraction =	0.43	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	34.45	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	15.98	acres
Post-development impervious fraction within drainage basin =	0.43	
Lm (TCEQ Required 80%)=	14607.318	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	34.45	acres
Al =	15.98	acres
Ap =	18.47	acres
Lr =	16903.34	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	14607.318	lbs.
F =	0.86	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.46	inches
Post Development Runoff Coefficient =	0.42	
On-site Water Quality Volume =	75,805	cubic feet
Off-site area draining to BMP =	0	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0	
Off-site Water Quality Volume =	0	cubic feet
Storage for sediment =		
Total Capture Volume (required water quality volume x 1.05) =	79,596	cubic feet
	1.827	acre-ft

Pond 3 A

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased loac
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of theplan =	86.1	acres
Total post-development impervious cover fraction =	0.43	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	18.4	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	7.36	acres
Post-development impervious fraction within drainage basin =	0.40	
Lm (TCEQ Required 80%)=	6727.776	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	18.4	acres
Al =	7.36	acres
Ap =	11.04	acres
Lr =	7826.35	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	6727.776	lbs.
F =	0.86	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.46	inches
Post Development Runoff Coefficient =	0.42	
On-site Water Quality Volume =	40,488	cubic feet
Off-site area draining to BMP =	0	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0	
Off-site Water Quality Volume =	0	cubic feet
Storage for sediment =		
Total Capture Volume (required water quality volume x 1.05) =	42,513	cubic feet
	0.976	acre-ft

Pond 4

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of theplan =	86.100	acres
Total post-development impervious cover fraction =	0.43	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78,704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	8.63	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	2.78	acres
Post-development impervious fraction within drainage basin =	0.32	
Lm (TCEQ Required 80%)=	2,541.20	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	ED	
Removal efficiency =	75	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	8.63	acres
Al =	2.78	acres
Ap =	5.85	acres
Lr =	2,458.84	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	2,408.000	lbs.
F =	0.98	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	3.33	inches
Post Development Runoff Coefficient =	0.42	
On-site Water Quality Volume =	43,313	cubic feet
Off-site area draining to BMP =	0	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0	
Off-site Water Quality Volume =	0	cubic feet
Storage for sediment =		
Total Capture Volume (required water quality volume x 1.2) =	51,975	cubic feet
	1.193	acre-ft
Volume Provided =	38,920	cubic feet
	0.893	acre-ft

Pond 5

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of theplan =	86.1	acres
Total post-development impervious cover fraction =	0.43	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78,704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	66.39	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	21.76	acres
Post-development impervious fraction within drainage basin =	0.33	
Lm (TCEQ Required 80%)=	19,890.82	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	66.39	acres
Al =	21.76	acres
Ap =	44.63	acres
Lr =	23,333.20	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	21,928.000	lbs.
F =	0.94	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	2.4	inches
Post Development Runoff Coefficient =	0.33	
On-site Water Quality Volume =	190,869	cubic feet
Off-site area draining to BMP =	5.8	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.05	
Off-site Water Quality Volume =	2526	cubic feet
Storage for sediment =	38517	
Total Capture Volume (required water quality volume x 1.2) =	229,042	cubic feet
	5.258	acre-ft
Volume Provided =	234,357	cubic feet
	5.380	acre-ft

Pond 6

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =	200.4	acres
Pre-development impervious area within the limits of the plan =	0	acres
Total post-development area within the limits of theplan =	86.100	acres
Total post-development impervious cover fraction =	0.37	
P =	33	inches
Lm total project (TCEQ Required 80%)=	78,704.01	lbs.

2. Drainage Basin Parameters:

Total drainage basin =	15.16	acres
Predevelopment impervious area within drainage basin =	0	acres
Post-development impervious area within drainage basin =	7.21	acres
Post-development impervious fraction within drainage basin =	0.48	
Lm (TCEQ Required 80%)=	6,590.66	lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	ED	
Removal efficiency =	75	percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	14.19	acres
Al =	6.91	acres
Ap =	7.28	acres
Lr =	6,014.68	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	5,379.000	lbs.
F =	0.89	

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.73	inches
Post Development Runoff Coefficient =	0.36	
On-site Water Quality Volume =	32,481	cubic feet
Off-site area draining to BMP =	0	acres
Off-Site Impervious cover draining to BMP =	0	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0	
Off-site Water Quality Volume =	0	cubic feet
Storage for sediment =	6238	
Total Capture Volume (required water quality volume x 1.2) =	38,977	cubic feet
	0.895	acre-ft
Volume Provided =	37,427	cubic feet
	0.859	acre-ft

ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN

CONTRIBUTING ZONE PLAN APPLICATION
(TCEQ-10257)

ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN

The following guidelines should be used for the maintenance plan for the permanent BMPs for Big Sky Ranch Phase One.

Batch Detention Pond

- ***During Construction.*** Construction within the area draining to the system shall be complete prior to exposing the pond to stormwater runoff. All exposed areas shall be stabilized to minimize sediment loads. The basins shall become operational prior to first occupancy. Until all the construction within the basin's drainage area has been completed and exposed earth stabilized, the basin will be inspected weekly and after all rain events.

- ***Mowing.*** The side-slopes, embankment, and emergency spillway of the basin should be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins must be mowed at least twice annually, or more frequently if vegetation exceeds 18 inches in height. When mowing is performed, a mulching mower should be used or grass clippings should be caught and removed. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

- ***Inspections.*** Inspections should take place a minimum of twice a year to evaluate facility operation. One inspection should take place during or immediately following wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events. The inlet and outlet structure should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet as described in previous sections. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired/revegetated immediately. Cracks, voids, and undermining should be patched/filled to prevent additional structural damage. The inspections should be carried out with as-built pond plans in hand.

- ***Sediment Removal.*** A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches

  or 12 inches during construction, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours.

- ***Debris and Litter Removal.*** As part of periodic mowing operations and inspections, debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the inlet and outlet structure. These items should be checked for possible clogging.

- ***Erosion Control.*** The basin side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion. Corrective measures such as regrading and revegetation may be necessary. Similarly, the riprap protecting the channel near the outlet may need to be repaired or replaced.

- ***Nuisance Control.*** Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Biological control of algae and mosquitoes using fish such as fathead minnows is preferable to chemical applications.

- ***Maintenance Access.*** Due to site constraints and the relatively small sedimentation/biofiltration basin areas, the basins will be maintained via access gates and permanent ladders located at each basin, as shown on the plans. Maintenance will be performed by maintenance personnel from within the basins. Maintenance equipment and materials to be removed will be hoisted in and out of the basins via buckets using applicable mechanical equipment.

- ***Autoflow Sluicegate. [20 Point Inspection & Maintenance Plan]***
    - Clean and grease all moving parts
    - Inspect for mechanical issues and obstructions
    - Fully test device function
    - Inspect driveline components
    - Load test battery
    - Check battery fluid
    - Clean battery terminals
    - Test, clean and align solar panel
    - Inspect and remove insects, animals as needed
    - Inspect all wiring and wiring connections
    - Clean control cabinet surfaces & replace labels and warning stickers as needed
    - Test motor function
    - Test water level sensor
    - Test optical sensor function
    - Inspect and clean optical interrupt disks
    - Test volt meter
    - Test temperature sensor
    - Check all screws and bolts for proper fit and tension
    - Test WiFi and Bluetooth connections
    - Identify pond maintenance issues that could affect device operation or condition.

Extended Detention Basins:

- ***During Construction.*** Construction within the area draining to the system shall be complete prior to exposing the pond to stormwater runoff. All exposed areas shall be stabilized to minimize sediment loads. The basins shall become operational prior to first occupancy. Until all the construction within the basin's drainage area has been completed and exposed earth stabilized, the basin will be inspected weekly and after all rain events.

- ***Mowing.*** The side-slopes, embankment, and emergency spillway of the basin should be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins must be mowed at least twice annually, or more frequently if vegetation exceeds 18 inches in height. When mowing is performed, a mulching mower should be used or grass clippings should be caught and removed. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

- ***Inspections.*** Inspections should take place a minimum of twice a year to evaluate facility operation. One inspection should take place during or immediately following wet weather to determine if the basin is meeting the target detention time. The remaining inspections should occur between storm events. The inlet and outlet structure should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet as described in previous sections. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired/revegetated immediately. Cracks, voids, and undermining should be patched/filled to prevent additional structural damage. The inspections should be carried out with as-built pond plans in hand.

- ***Sediment Removal.*** A properly designed extended detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with level sensor operation. Sediment shall be removed from the basin at least every 10 years, or when sediment depth exceeds 6 inches (or 12 inches during construction).

- ***Debris and Litter Removal.*** As part of periodic mowing operations and inspections, debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the inlet and outlet structure. These items should be checked for possible clogging.

- ***Erosion Control.*** The basin side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion. Corrective measures such as regrading and revegetation may be necessary. Similarly, the riprap protecting the channel near the outlet may need to be repaired or replaced.

- ***Nuisance Control.*** Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Biological control of algae and mosquitoes using fish such as fathead minnows is preferable to chemical applications.

- ***Maintenance Access.*** Maintenance will be performed by maintenance personnel from within the basins. Maintenance equipment and materials to be removed will be hoisted in and out of the basins via buckets using applicable mechanical equipment.

Vegetated Filter Strips:

- ***Seasonal Mowing and Lawn Care.*** If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum. Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

- ***Inspection.*** Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

- ***Debris and Litter Removal.*** Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

- ***Sediment Removal.*** Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand, with flat-bottomed shovels, or by machine.

- ***Grass Reseeding and Mulching.*** A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

Non-Routine Maintenance

- ***Structural Repairs and Replacement.*** With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

Record Keeping:

Maintenance and inspection records should be kept on file by the Owner of the permanent BMP's for a period of at least three (3) years. Repair and retrofit records should be kept on file by the Owner of the permanent BMP's for a period of at least five (5) years. The attached Operation and Maintenance Checklist shall be completed for each inspection performed.

Brandon Hammann, P.E.
Print Name

Vice President of Land Development
Title

Meritage Homes of Texas, LLC
Entity Name

Signature 6/3/25
Date

Jacob Harris, P.E.
Print Name

Project Manager
Title

Signature 6/5/2025
Date

STATE OF TEXAS
JACOB S. HARRIS
144473
LICENSED
PROFESSIONAL ENGINEER

ATTACHMENT P

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

CONTRIBUTING ZONE PLAN APPLICATION (TCEQ-10257)

ATTACHMENT P

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

During construction, standard erosion measures will be used as shown in the construction plans. The entire construction site will be contained by a silt fence until construction is complete. Entry and exit from the site will be through a stabilized construction entrance. The constructed extended detention and batch detention water quality ponds will be used to capture and treat sediments during and after construction is completed.

Most of the improved areas of Big Sky Ranch Phases One and Two will drain to one of five constructed water quality ponds. Future development of Phase Three will drain to or bypass Pond 6 and vegetative filter strip. Future development of Phase Four will mostly drain to Pond 1. The vegetative filter strip and Ponds 1 through 6 are sized to treat existing Phase One, existing Phase Two, future Phases Three and Four development, compensate for the offsite area south of the property border, and compensate for the improvements to Founders Park Road.

Increased velocities at the pond outfall will be reduced to non-erosive velocities by the installation of dissipaters and rock rip rap. After completion of the project, temporary erosion and sedimentation measures (silt fence and rock berm) will remain in place until vegetative cover is established. Details concerning the erosion/sedimentation protection plan can be found on the Erosion & Sedimentation Control Plans of the Construction Plans.

SECTION 3

STORM WATER POLLUTION PREVENTION PLAN

(SWPPP)

Storm Water Pollution Prevention Plan – Table of Contents

I. **Executive Summary**

II. **Introduction**
- A. Purpose
- B. Scope

III. **Project Description**

IV. **Site Description**

V. **Storm Water Pollution Prevention Measures & Controls**
- A. Erosion & Sediment Controls
- B. Other Pollutant Controls
- C. Construction Phase BMPs

VI. **Local Plans**

VII. **Inspections and System Maintenance**

APPENDIX A **- PRE-CONSTRUCTION FORMS**
- Responsible Party Schedule
- Responsible Party Form Certification

APPENDIX B **- INSPECTION REPORT (SAMPLE FORM)**

APPENDIX C **- DELEGATION OF SIGNATORIES TO REPORTS**

APPENDIX D **- RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITY DATES**

APPENDIX E **- TPDES GENERAL PERMIT NO. TXR150000, effective March 5, 2023**

APPENDIX F **- PERMIT FORMS**
- Notice of Intent
- Construction Site Notice (Large)

APPENDIX G **- POST-CONSTRUCTION FORMS**
- Notice of Termination

I. EXECUTIVE SUMMARY

The general contractor, and all subcontractors involved with a construction activity that disturbs site soil or who implement a pollutant control measure identified in the Storm Water Pollution Prevention Plan (SWPPP) must comply with the following requirements of the Texas Pollution Discharge Elimination Systems (TPDES) General Permit, as transferred to TCEQ, and any local governing agency having jurisdiction concerning erosion and sedimentation control:

A. The contractor shall notify the following agencies 48 hours prior to construction and shall have a pre-construction meeting prior to start of construction. The Contractor shall notify the City of Dripping Springs, Hays County Environmental Health Department, TCEQ and Doucet & Associates, Inc. at least 48 hours prior to the pre-construction meeting. The contractor shall have erosion control plans and copy of approved Contributing Zone Plan available for review and discussion. A representative from each of the following agencies or companies, but not limited to the following, shall be present at the pre-construction meeting.

City of Dripping Springs	(512) 858-4725
Hays County Environmental Health Department	(512) 393-5520
TCEQ	(512) 339-2929
Doucet & Associates, Inc.	(512) 583-2600

B. Big Sky Ranch is located in the Contributing Zone which is regulated by the Texas Commission on Environmental Quality. Contractor must adhere to the approved Contributing Zone Plan (hard copy kept on site) and TCEQ General Construction Notes listed on the approved Site Development Plans.

C. A copy of the Construction Site Notice, NOI and a description of the project must be posted in a prominent place for public viewing at the construction site.

D. Complete copy of the SWPPP, including copies of all inspection reports, plan revisions, etc., must be retained at the project site at all times during working hours and kept in the permanent project records for at least three years following completion of construction.

E. As described previously, regular inspections must be made to determine effectiveness of the SWPPP. It shall be modified as needed to prevent pollutants from discharging from the site. The inspector must be a person familiar with the site, the nature of the major construction activities, and qualified to evaluate both overall system performance and individual component performance. Additionally, the inspector must either be someone empowered to implement modifications to this SWPPP and the pollutant control devices, if needed, in order to increase effectiveness to an acceptable level, or someone with the authority to cause such things to happen.

F. Oil and hazardous substances releases are to be reported per TCEQ and Federal requirements. For the TCEQ, it's 25 gallons or a visible sheen on water, and EPA depends on the type of substance according to the codified Reportable Quantity per 40 CFR 302.4.

G. Once the site reaches final stabilization, the general contractor must complete and submit a Notice of Termination (NOT). A blank form is included as Appendix G.

H. This SWPPP intends to control water-borne and liquid pollutant discharges by some combination of interception, filtration, and containment. The general contractor and subcontractors implementing this SWPPP must remain alert to the need to periodically refine and update the SWPPP in order to accomplish the intended goals.

I. This SWPPP must be amended as necessary during the course of construction in order to keep it current with the pollutant control measures utilized at the site. Amending the SWPPP does not mean that it has to be reprinted. It is acceptable to add addenda, sketches, and/or revised drawings.

J. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated must be maintained until final site stabilization is achieved. A log for keeping such records is included in the Appendices. A different form for the log may be substituted if it is found to be more useful.

II. INTRODUCTION

This SWPPP has been prepared for major activities associated with construction of Big Sky Ranch Subdivision located northeast of the intersection of Ranch Road 12 and Hwy 290 and adjacent to Founders Park in Dripping Springs, Texas. This SWPPP includes the elements necessary to comply with the TPDES General Permit for construction activities formerly administered by the U.S. Environmental Protection Agency (EPA) under the Texas Pollutant Discharge Elimination System (TPDES) program, as transferred to TCEQ, and all local governing agency requirements. This SWPPP must be implemented before the start of construction.

Construction phase pollutant sources anticipated at the site are disturbed (bare) soil, vehicle fuels and lubricants, chemicals associated with pavement construction, and pavement materials. Without adequate control there is the potential for each type of pollutant to be transported by storm water.

Project construction will consist primarily of site grading, paving, storm drainage, water quality/detention facilities, water supply, and wastewater lines.

A. Purpose

A major goal of pollution prevention efforts during project construction is to control soil and pollutants that originate on the site and prevent them from flowing to surface waters. The purpose of this SWPPP is to provide guidelines for achieving that goal. A successful pollution prevention program also relies upon careful inspection and adjustments during the construction process in order to enhance its effectiveness.

B. Scope

This SWPPP must be implemented before construction begins on the site. It primarily addresses the impact of storm rainfall and runoff on areas of the ground surface disturbed during the construction process. In addition, there are recommendations for controlling other sources of pollution that could accompany the major construction activities. This SWPPP will terminate when disturbed areas are stabilized, construction activities covered herein have ceased.

Particular forms are included which are necessary for implementing the SWPPP.

The TPDES General Permit for Storm Water Discharges from Construction Activities, as transferred to TCEQ, prohibits most non-storm water discharges during the construction phase. Allowable non-storm water discharges that could occur during construction on this project, which would therefore be covered by the General Permit, include:

1. Discharges from fire fighting activities;
2. Fire hydrant flushing;
3. Water used to wash vehicles or control dust;
4. Water flowing from potable sources and water line flushing;
5. Irrigation drainage;
6. External building wash down which does not use detergents;
7. Runoff from pavement wash down where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents have not been used;
8. Air conditioning condensate;
9. Springs and uncontaminated groundwater; and
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents.

The techniques described in this SWPPP focus on providing control of pollutant discharges with practical approaches that utilize readily available expertise, materials, and equipment. The Owner referred to in this SWPPP is Meritage Homes of Texas, LLC. The general contractor will construct the new building and site while working under contract with the owner.

III. PROJECT DESCRIPTION

Described below are the major construction activities that are the subject of this SWPPP. They are presented in the order (or sequence) they are expected to begin, but each activity will not necessarily be completed before the next begins. Also, these activities could occur in a different order if necessary to maintain adequate erosion and sedimentation control:

A. Construct rock pads for construction entrance/exit. This will be the first construction work on the project; (**Area=0.023 acres)**

B. Install sediment barriers down slope from construction activities that disturb site soil and tree protection fencing;

C. Rough cut all ponds. Either the permanent outlet structure or 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; (**Area = 5.31 acres)**

D. Clear and grub the improvement areas. Sediment barriers will already be in place down slope; (**Area= 70.44 acres)**

E. Rough grade site in accordance with plans and excavations. (**Area=70.44 acres)**

F. Underground Utilities - Sediment barriers will be utilized as required to bound the down slope side of utility construction and soil stockpiles; (**Area= 5.0 acres)**

G. Final Grading - Sediment barriers will be maintained down slope from disturbed soil during this operation (**Area=70.44 acres**); and

H. Complete drainage and paving. Installation of base materials and/or paving should occur as soon as it is feasible to do so; **(Area=2.0 acres)**

I. Complete permanent water quality controls; **(Area=1.0 acres)**

J. Completion of on-site stabilization; **(Area=70.44 acres)**

K. Finalize all site improvements **(Area= 70.44 acres)**

L. Finalize cleaning of erosion and sedimentation controls and storm drain structures. **(Area=70.44 acres)**

M. Dispose of all construction debris and trash. Hydromulch any disturbed areas following site cleanup. Complete and clean out permanent erosion control and site restoration. **(Area=70.44 acres)**

The actual schedule for implementing pollutant control measures will be determined by project construction progress. Down slope protective measures must always be in place before soil is disturbed.

IV. SITE DESCRIPTION

Included as part of this SWPPP are the project construction drawings. Refer to them for detailed site information.

A. Site Location – The site is located northwest of the intersection of Ranch Road 12 and Hwy 290, adjacent to Founders Park in Dripping Springs, Texas.

B. Site Topography – The site consists of 70.44 acres of undeveloped land with mostly Oak trees and natural grass cover. The site generally slopes to the west and the north with natural slopes that range from 0.5% to 15%.

C. Rainfall Information – The typical yearly rainfall pattern for the Dripping Springs area is approximately 37 inches per year.

D. Site Soils – There are eight types of soils expected on site – Brackett-Rock outcrop-Comfort complex, Bracket-Rock outcrop-Real complex, Denton silty clay, Doss silty clay, Krum clay at 1 to 3 percent slopes, Krum clay at 3 to 5 percent slopes, Sunev clay loam, and Tarpley clay. Most soils have high runoff potential and are well drained.

E. Total Area and Disturbed Area - The total project area (size of site) and disturbed area is approximately 212.6 acres. The entire site will be disturbed for the mass grading, utilities, streets, and water quality measures.

F. Quality Receiving Surface Waters and Wetlands Waters and Wetlands – No wetlands are involved with this project. Discharge from the site will ultimately be into Onion Creek and Little Barton Creek after leaving the site via batch detention water quality ponds.

G. Erosion Control Plan – An erosion control plan is included in the site development plans.

V. STORM WATER POLLUTION PREVENTION MEASURES AND CONTROLS

A variety of storm water pollutant controls are recommended for this project. Some controls are intended to function temporarily and will be used as needed for pollutant control during the construction period. These include temporary sediment barriers and a temporary sediment basin. For most disturbed areas, permanent stabilization will be accomplished by covering the soil with pavement, or vegetation.

A. Erosion and Sediment Controls

1. Soil Stabilization - The purpose of soil stabilization is to prevent soil from leaving the site. In the natural condition, soil is stabilized by native vegetation. The primary technique to be used at this project for stabilizing site soil will be to provide a protective cover of grass, pavement, or building.

(a) Temporary Seeding - Within 14 days after construction activity

ceases on any particular area, all disturbed ground where there will not be construction for longer than 21 days must be seeded with fast-germinating temporary seed and protected with mulch.

(b) Permanent Seeding - All areas at final grade must be seeded within 14 days after completion of the major construction activity

(c) Structural Controls – The stormwater runoff from the site will ultimately be to Onion Creek and Little Barton Creek after leaving the site via onsite batch detention water quality ponds.

B. Other Pollutant Controls

Control of sediments has been described previously. Other aspects of this SWPPP are listed below:

1. Dust Control - Construction traffic must enter and exit the site at the stabilized construction entrance. The purpose is to trap dust and mud that would otherwise be carried off-site by construction traffic.

   Water trucks will be used as needed during construction to reduce dust generated on the site. Dust control must be provided by the general contractor to a degree that is acceptable to the Construction Manager, and in compliance with applicable local and state dust control regulations. After construction, the site will be stabilized (as described elsewhere), which will reduce the potential for dust generation.

2. Solid Waste Disposal - No solid materials, including building materials, are allowed to be discharged from the site with storm water. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers will be emptied periodically by a contract trash disposal service and hauled away from the site.

   Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

3. Sanitary Facilities - All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities will be provided at the site throughout the construction phase. They must be utilized by all construction personnel

and will be serviced by a commercial operator.

4. Long-Term Pollutant Controls - Storm water pollutant control measures installed during construction, that will also provide benefits after construction, include permanent detention ponds, grass lined channels, rip-rapped outfalls, grass coverage, etc. Those sediment barriers that do not interfere with normal operations and appear to provide long-term benefits can be left in place after construction is completed.

C. Construction Phase "Best Management Practices"

During the construction phase, the general contractor will implement the following measures:

1. Material resulting from the clearing and grubbing operation will be stockpiled up slope from adequate sedimentation controls.

2. Use of detergents for large scale washing is prohibited (i.e., vehicles, pavement surfaces, etc.)

3. Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed at an approved solid waste or chemical disposal facility.

VI. LOCAL PLANS

In addition to this SWPPP, construction activities associated with this project must comply with any guidelines set forth by local regulatory agencies.

VII. INSPECTIONS AND SYSTEM MAINTENANCE

The general contractor may choose to use a third party to install erosion controls, conduct inspections and maintain the inspections log.

Between the time this SWPPP is implemented and final site stabilization is achieved, all disturbed areas and pollutant controls must be inspected every seven calendar days. The purpose of site inspections is to assess performance of pollutant controls. The general contractor's designated representative will conduct the inspections. Based on these inspections, the general contractor will decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via storm water runoff. The general contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

A. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction entrance will be constructed where vehicles enter and exit. This entrance will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.

B. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material excavated from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.

C. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.

D. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 70 percent density. The density of 70 percent or greater must be maintained to be considered as stabilized. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.

E. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

Based on inspection results, any modification necessary to increase effectiveness of this SWPPP to an acceptable level must be made within seven calendar days of the inspection. The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

The general contractor as an integral part of this SWPPP must keep inspection reports on file for at least three years from the date of completion of the project.

Ultimately, it is the responsibility of the general contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

APPENDIX A

PRE-CONSTRUCTION FORMS

Responsible Party Form Schedule
Responsible Party Form Certification

Big Sky Ranch Phase One
Northeast of intersection of Ranch Road 12 and Hwy 290
Dripping Springs, TX 78620

Responsible Party Form Schedule

Prevention Pollution Measure	**Responsible Party Company Name**											
BEST MANAGEMENT PRACTICES												
Silt fences												
Rock berms												
Drain inlet protection												
Gravel filter bags												
Vehicle exits (offsite tracking)												
Concrete washout pit (leaks, failure)												
Temporary vegetation												
Permanent vegetation												
Sediment control basin												
Other structural controls												
Material storage areas (leakage)												
Equipment areas (leaks, spills)												
Construction debris												
General site cleanliness												
Trash receptacles												
Natural vegetation buffer strips												
Inspections												
SWP3 Modification & Records												
POTENTIAL EROSION SOURCES												
Clearing												
Grading												
Excavation												
Drainage Construction												
Utility Construction												
Roadway or Parking Lot Construction												
Foundation Construction												
Building Construction												
Landscaping Activities												

Identify responsible parties and indicate responsible party for each pollution prevention item listed above by marking an X under the Responsible Party Name.

Big Sky Ranch Phase One
Northeast of intersection of Ranch Road 12 and Hwy 290
Dripping Springs, TX 78620

Responsible Party Form Certifications

"I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with construction activity from the construction site identified as part of this certification."

Company:		Phone:	
Name:		Responsible for:	General Contractor
Signed:		Date:	

Company:		Phone:	
Name:		Responsible for:	Earthwork
Signed:		Date:	

Company:		Phone:	
Name:		Responsible for:	Plumbing
Signed:		Date:	

Company:		Phone:	
Name:		Responsible for:	Paving
Signed:		Date:	

Company:		Phone:	
Name:		Responsible for:	Electrical
Signed:		Date:	

Company:		Phone:	
Name:		Responsible for:	
Signed:		Date:	

(Note: Use additional sheets if necessary)

Big Sky Ranch Phase One
Northeast of intersection of Ranch Road 12 and Hwy 290
Dripping Springs, TX 78620

Responsible Party Form Certifications

"I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with construction activity from the construction site identified as part of this certification."

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

Company: _____ Phone: _____
Name: _____ Responsible for: _____
Signed: _____ Date: _____

(Note: Use additional sheets if necessary)

APPENDIX B

INSPECTION REPORT (SAMPLE FORM)

Big Sky Ranch Phase One
Northeast of intersection of Ranch Road 12 and Hwy 290
Dripping Springs, TX 78620

Inspection Report

Prevention Pollution Measure	**Inspected in Compliance (Y/N)**	**Corrective Action Required**	
		Description (use additional sheet if necessary)	**Date Completed**
BEST MANAGEMENT PRACTICES			
Silt fences			
Rock berms			
Drain inlet protection			
Gravel filter bags			
Vehicle exits (offsite tracking)			
Concrete washout pit (leaks, failure)			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Other structural controls			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Construction debris			
General site cleanliness			
Trash receptacles			
Natural vegetation buffer strips			
EVIDENCE OF EROSION			
Site preparation			
Roadway or Parking Lot Construction			
Utility Construction			
Drainage Construction			
Building Construction			
MAJOR OBSERVATIONS			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

"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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Inspector's Name (Superintendent)	Inspector's Signature	Date
Name of Owner/Operator (Firm)	Authorized Signature	Date

Note: If there is a "NO" answer in the second column, the right columns will need to be completed and action is required within 7 days. Use additional sheets if necessary.

APPENDIX C

DELEGATION OF SIGNATORIES TO REPORTS

Executive Director
Texas Commission on Environmental Quality
Storm Water and Pretreatment Team
P.O. Box 13087, MC-148
Austin, TX 78711-3087

Subject: Delegation of Signatories to Reports

Facility/Company/Site Name: _____
TPDES Authorization Number: _____

Dear Executive Director:

This letter serves to designate the following people or positions as authorized personnel for signing reports, storm water pollution prevention plans, certifications or other information requested by the Executive Director or required by the general permit, as set forth by 30 TAC §305.128 (see page 2).

Name or Position	
Name or Position	
Name or Position	
Name or Position	

I understand that this authorization does not extend to the signing of a Notice of Intent for obtaining coverage under a storm water general permit.

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in 30 TAC §305.44 (see page 2).

Sincerely,

_____ _____ _____
Signature Title Date

_____ ( ) -
Printed Name Contact Number

RELEVANT PROVISIONS

305.128(a) All reports requested by permits and other information requested by the executive director shall be signed by a person described in §305.44(a) of this title (relating to Signatories to Applications) or by a duly authorized representative of that person. A person is a duly authorized representative only if:
(1) the authorization is made in writing by a person described in §305.44(a) of this title (relating to Signatories to Applications);

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity or for environmental matters for the applicant, such as the position of plant manager, operator of a well or well field, environmental manager, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(3) the written authorization is submitted to the executive director.

(b) If an authorization under this section is no longer accurate because of a change in individuals or position, a new authorization satisfying the requirements of this section must be submitted to the executive director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(c) Any person signing a report required by a permit shall make the certification set forth in §305.44(b) of this title (relating to Signatories to Applications).

305.44(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).

(b) A person signing an application shall make the following certification: "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."

APPENDIX D

RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITY DATES

SITE STABILIZATION and CONSTRUCTION

ACTIVITY DATES

A record of dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained until final site stabilization is achieved. The dates can be entered in the following form, or on a different form.

MAJOR GRADING ACTIVITIES

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

Description of Activity: _____
Begin (date): _____ Site Contractor: _____
Location: _____ End (date): _____

APPENDIX E

TPDES GENERAL CONSTRUCTION PERMIT NO. TXR150000
EFFECTIVE DATE MARCH 5, 2023

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

For the Commission

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

Table of Contents

Part I. Flow Chart and Definitions 5
Section A. Flow Chart to Determine Whether Coverage is Required 5
Section B. Definitions 6
Part II. Permit Applicability and Coverage 12
Section A. Discharges Eligible for Authorization 12
1. Stormwater Associated with Construction Activity 12
2. Discharges of Stormwater Associated with Construction Support Activities 12
3. Non-Stormwater Discharges 12
4. Other Permitted Discharges 13
Section B. Concrete Truck Wash Out 13
Section C. Limitations on Permit Coverage 13
1. Post Construction Discharges 13
2. Prohibition of Non-Stormwater Discharges 13
3. Compliance with Water Quality Standards 14
4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements 14
5. Discharges to the Edwards Aquifer Recharge or Contributing Zone 14
6. Discharges to Specific Watersheds and Water Quality Areas 15
7. Protection of Streams and Watersheds by Other Governmental Entities 15
8. Indian Country Lands 15
9. Exempt Oil and Gas Activities 15
10. Stormwater Discharges from Agricultural Activities 16
11. Endangered Species Act 16
12. Storage of High-Level Radioactive Waste 16
13. Other 17
Section D. Deadlines for Obtaining Authorization to Discharge 17
1. Large Construction Activities 17
2. Small Construction Activities 17
Section E. Obtaining Authorization to Discharge 17
1. Automatic Authorization for Small Construction Activities with Low Potential for Erosion 17
2. Automatic Authorization for Small Construction Activities 18

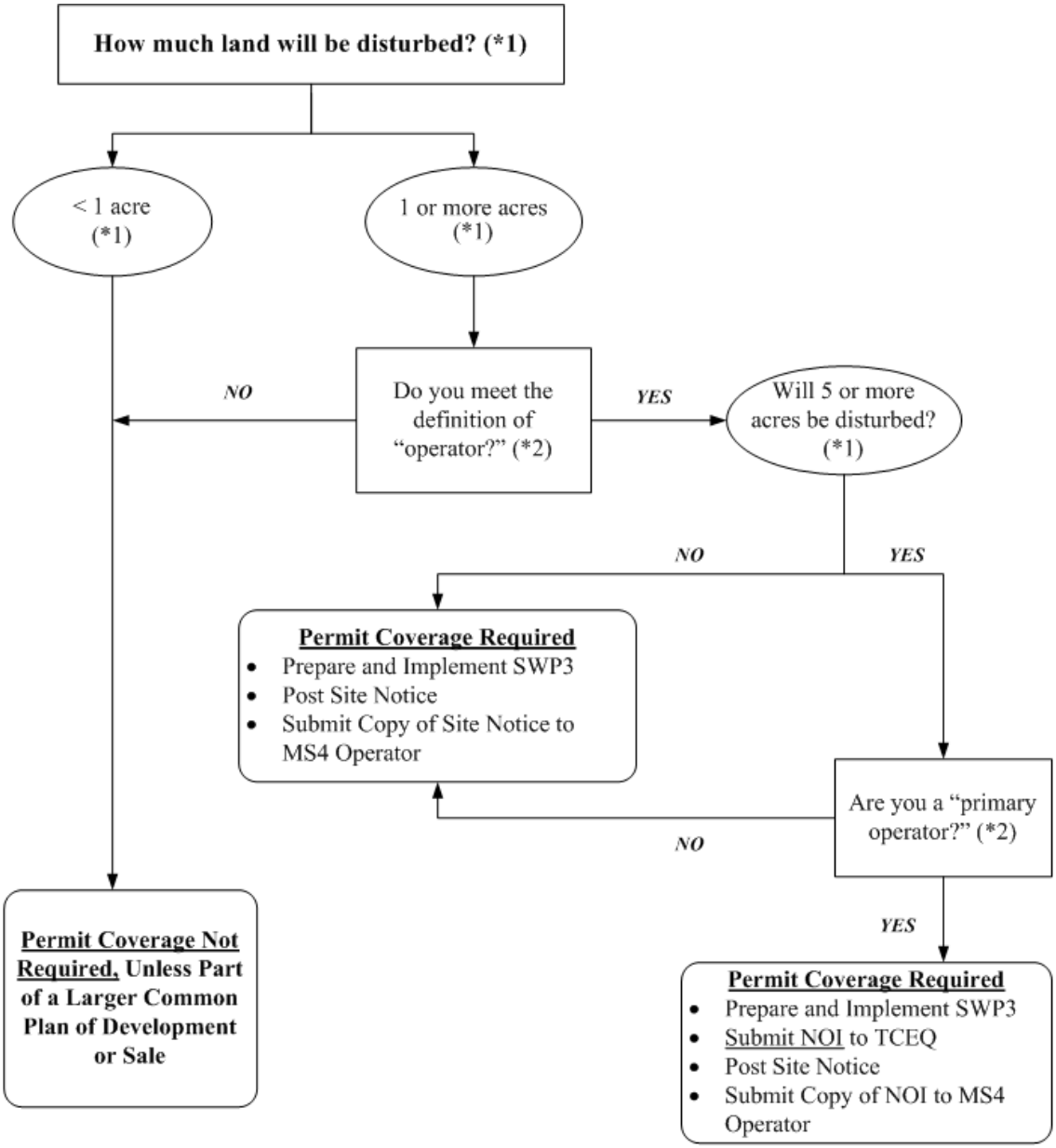
3. Authorization for Large Construction Activities 19
4. Waivers for Small Construction Activities: 21
5. Effective Date of Coverage 21
6. Contents of the NOI 22
7. Notice of Change (NOC) 22
8. Signatory Requirement for NOI Forms, NOT Forms, NOC Forms, and Construction Site Notices 23
Section F. Terminating Coverage 24
1. Notice of Termination (NOT) Required 24
2. Minimum Contents of the NOT 24
3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites 25
4. Transfer of Day-to-Day Operational Control 25
Section G. Waivers from Coverage 26
1. Waiver Applicability and Coverage 26
2. Steps to Obtaining a Waiver 27
3. Effective Date of an LREW 27
4. Activities Extending Beyond the LREW Period 28
Section H. Alternative TPDES Permit Coverage 28
1. Individual Permit Alternative 28
2. General Permit Alternative 28
3. Individual Permit Required 28
Section I. Permit Expiration 29
Part III. Stormwater Pollution Prevention Plans (SWP3) 29
Section A. Shared SWP3 Development 30
Section B. Responsibilities of Operators 30
1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications 30
2. Primary Operators with Day-to-Day Operational Control 31
Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance 31
Section D. Plan Review and Making Plans Available 31
Section E. Revisions and Updates to SWP3s 32
Section F. Contents of SWP3 32
Part IV. Erosion and Sediment Control Requirements Applicable to All Sites 43
Section A. Erosion and Sediment Controls 43
Section B. Soil Stabilization 44
Section C. Dewatering 44

Section D. Pollution Prevention Measures 44
Section E. Prohibited Discharges 45
Section F. Surface Outlets 45
Part V. Stormwater Runoff from Concrete Batch Plants 45
Section A. Benchmark Sampling Requirements 46
Section B. Best Management Practices (BMPs) and SWP3 Requirements 47
Section C. Prohibition of Wastewater Discharges 50
Part VI. Concrete Truck Wash Out Requirements 50
Part VII. Retention of Records 50
Part VIII. Standard Permit Conditions 51
Part IX. Fees 52
Appendix A: Automatic Authorization 53
Appendix B: Storm Erosivity (EI) Zones in Texas 55
Appendix C: Isoerodent Map 56
Appendix D: Erosivity Indices for EI Zones in Texas 57

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 (¼) 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.

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 (MHWM) 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 SWP3 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 SWP3.

(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 SWP3. 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 SWP3 shall include a description of controls utilized to control the generation of pollutants that could be discharged in stormwater from the site.

(b) The SWP3 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 SWP3 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 SWP3) 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 SWP3 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

1. 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

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
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 SWP3. 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 SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, 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 SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(f) Management of Runoff – The SWP3 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 SWP3 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 SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, 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 SWP3 (as required in Part V.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (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 SWP3 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 SWP3, 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

Archer: Dec. 15 - Feb. 14

Armstrong: Nov. 15 - Apr. 30

Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Baylor: Dec. 15 - Feb. 14

Borden: Nov. 15 - Apr. 30

Brewster: Nov. 15 - Apr. 30

Briscoe: Nov. 15 - Apr. 30

Brown: Dec. 15 - Feb. 14

Callahan: Dec. 15 - Feb. 14

Carson: Nov. 15 - Apr. 30

Castro: Nov. 15 - Apr. 30

Childress: Dec. 15 - Feb. 14

Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Coke: Dec. 15 - Feb. 14

Coleman: Dec. 15 - Feb. 14

Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Concho: Dec. 15 - Feb. 14

Cottle: Dec. 15 - Feb. 14

Crane: Nov. 15 - Apr. 30

Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Crosby: Nov. 15 - Apr. 30

Culberson: Nov. 1 - May 14

Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Dawson: Nov. 15 - Apr. 30

Deaf Smith: Nov. 15 - Apr. 30

Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Dimmit: Dec. 15 - Feb. 14

Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Eastland: Dec. 15 - Feb. 14

Ector: Nov. 15 - Apr. 30

Edwards: 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

Fisher: Dec. 15 - Feb. 14

Floyd: Nov. 15 - Apr. 30

Foard: Dec. 15 - Feb. 14

Gaines: Nov. 15 - Apr. 30

Garza: Nov. 15 - Apr. 30

Glasscock: Nov. 15 - Apr. 30

Hale: Nov. 15 - Apr. 30

Hall: Feb. 1 - Mar. 30

Hansford: Nov. 15 - Apr. 30

Hardeman: Dec. 15 - Feb. 14

Hartley: Nov. 15 - Apr. 30

Haskell: Dec. 15 - Feb. 14

Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Howard: Nov. 15 - Apr. 30

Hudspeth: Nov. 1 - May 14

Hutchinson: Nov. 15 - Apr. 30

Irion: Dec. 15 - Feb. 14

Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14

Jones: Dec. 15 - Feb. 14

Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30

Kerr: Dec. 15 - Feb. 14

Kimble: Dec. 15 - Feb. 14

King: Dec. 15 - Feb. 14

Kinney: Dec. 15 - Feb. 14

Knox: Dec. 15 - Feb. 14

Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Lubbock: Nov. 15 - Apr. 30

Lynn: Nov. 15 - Apr. 30

Martin: Nov. 15 - Apr. 30

Mason: Dec. 15 - Feb. 14

Maverick: Dec. 15 - Feb. 14

McCulloch: Dec. 15 - Feb. 14

Menard: Dec. 15 - Feb. 14

Midland: Nov. 15 - Apr. 30

Mitchell: 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

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

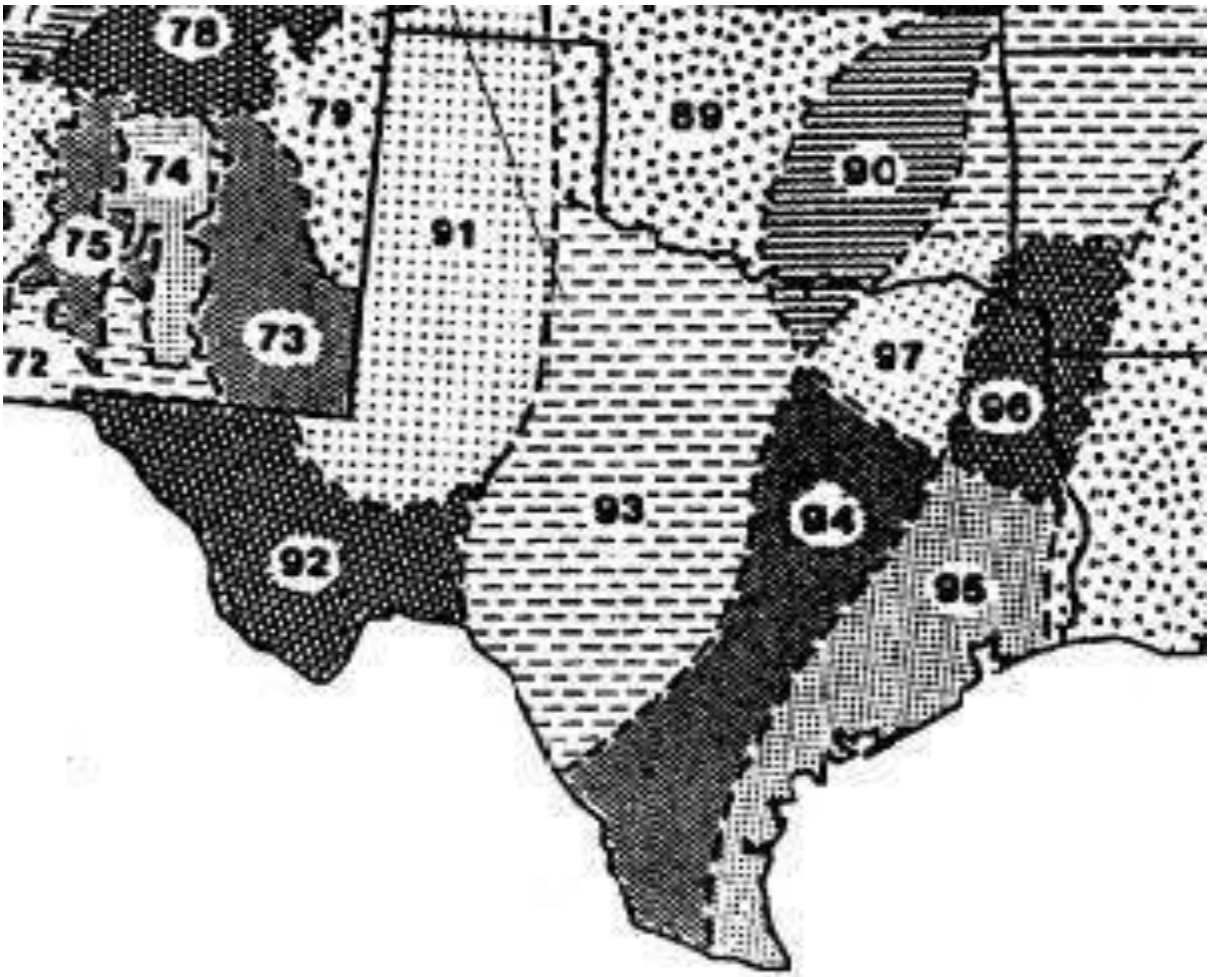


Figure B. EI Distribution Zones

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

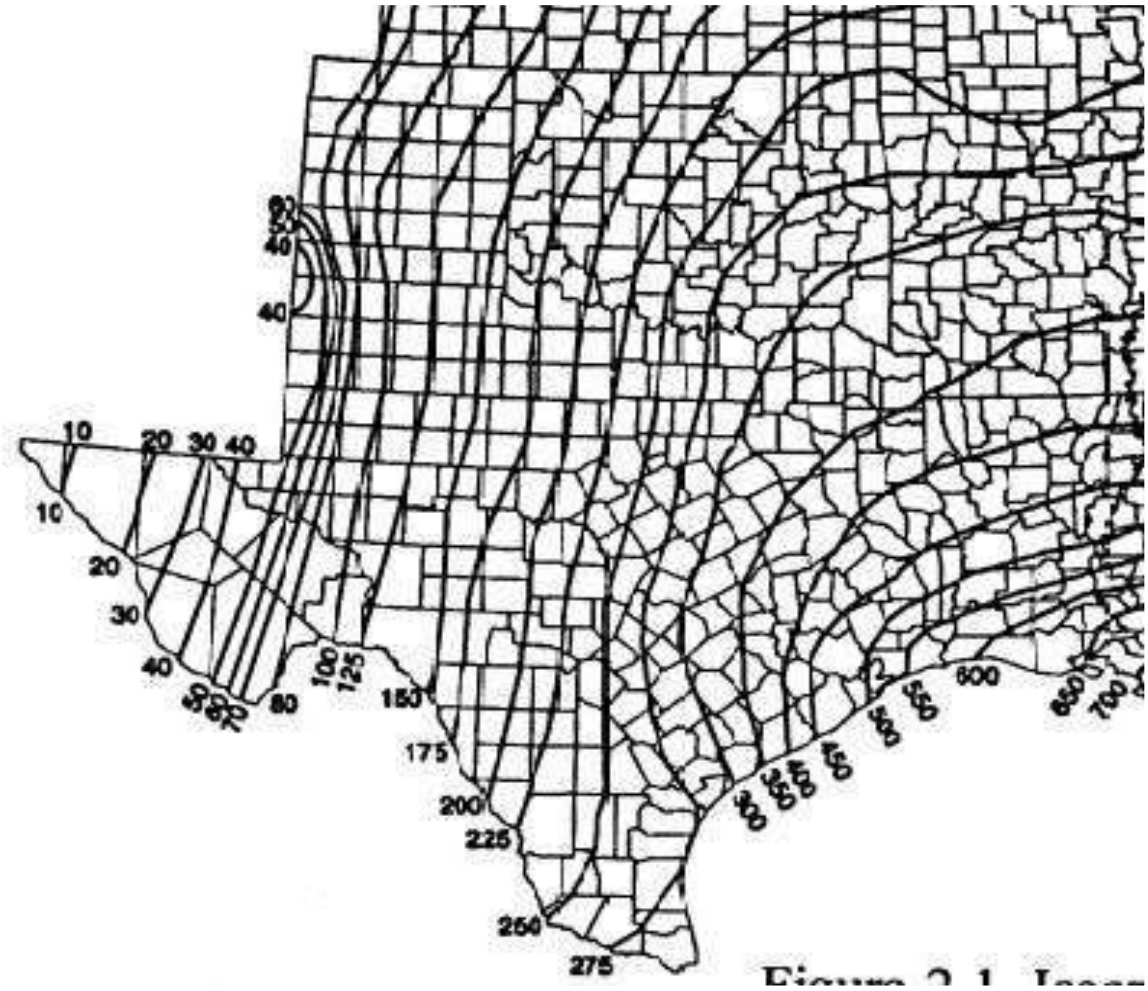


Figure C. Isoerodent Map of Texas. Units are hundreds ft*tonf*in(ac*h*yr)$^{-1}$

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.

APPENDIX F

PERMIT FORMS

NOTICE OF INTENT
CONSTRUCTION SITE NOTICE (LARGE)

TCEQ Office Use Only
Permit No.:
RN:
CN:
Region:

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

IMPORTANT:

- Use the INSTRUCTIONS to fill out each question in this form.
- Use the CHECKLIST to make certain you filled out all required information. Incomplete applications **WILL** delay approval or result in denial.
- Once processed your permit can be viewed at: http://www.tceq.texas.gov/goto/wq-dpa

ePERMITS: Sign up now for online NOI: https://www3.tceq.texas.gov/steers/
Pay a $225 reduced application fee by using ePermits.

APPLICATION FEE:

- You must pay the **$325** Application Fee to TCEQ for the paper application to be complete.
- Payment and NOI must be mailed to separate addresses.
- Did you know you can pay on line?
  - Go to http://www.tceq.texas.gov/goto/epay
  - Select Fee Type: GENERAL PERMIT CONSTRUCTION STORM WATER DISCHARGE NOI APPLICATION
- **Provide your payment information below, for verification of payment:**

☐ Mailed Check/Money Order Number: _____
Name Printed on Check: _____
Copy of check enclosed? ☐ Yes

☐ EPAY Voucher Number: _____
Is the Payment Voucher copy attached? ☐ Yes

RENEWAL: Is this NOI a Renewal of an existing General Permit Authorization? (Note: A permit cannot be renewed after June 3, 2013.)

☐ Yes The Permit number is: TXR15_____
(If a permit number is not provided, a new number will be assigned.)

☑ No

1) OPERATOR (Applicant)

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? You may search for your CN at: http://www.tceq.texas.gov/goto/cr-customer

CN 603298068

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

c) What is the contact information for the Operator (Responsible Authority)? The mailing address must be recognized by the US Postal Service (USPS). You may verify the address at: https://tools.usps.com/go/ZipLookupAction!input.action
Prefix (Mr. Ms. Miss): Mr
First/Last Name: Matthew Scrivener Suffix:
Title: Vice President of Land Development Credential:
Phone Number: (512) 615-6409 Ext: Fax Number:
E-mail:
Mailing Address: 8920 Business Park Drive, Suite 350
Internal Routing (Mail Code, Etc.):
City: Austin State: TX ZIP Code: 78759
If outside USA:
Territory: Country Code: Postal Code:

d) Indicate the type of Customer (The instructions will help determine your customer type):

- ☐ Individual
- ☐ Limited Partnership
- ☐ Sole Proprietorship-DBA
- ☐ Joint Venture
- ☐ General Partnership
- ☒ Corporation
- ☐ Trust
- ☐ Estate
- ☐ Federal Government
- ☐ State Government
- ☐ County Government
- ☐ City Government
- ☐ Other Government

e) Independent Operator? (If governmental entity, subsidiary, or part of a larger corporation, check "No".)
☐ Yes ☑ No

f) Number of Employees:
☐ 0-20; ☑ 21-100; ☐ 101-250; ☐ 251-500; or ☐ 501 or higher

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:
Federal Tax ID: 65-1308131
Texas Secretary of State Charter (filing) Number:
DUNS Number (if known):

2) APPLICATION CONTACT

If TCEQ needs additional information regarding this application, who should be contacted?

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

☐ Yes, go to Section 3).

☑ No, complete section below

Prefix (Mr. Ms. Miss): Mr.
First/Last Name: Tom Hegemier Suffix: _____
Title: Senior Project Engineer Credential: _____
Organization Name: Doucet & Associates, Inc.
Phone Number: (512) 583-2600 Ext: 2635 Fax Number: (512) 583-2601
E-mail: thegemier@doucetengineers.com
Mailing Address: 7401B Hwy. 71 W., Ste. 160
Internal Routing (Mail Code, Etc.): _____
City: Austin State: TX ZIP Code: 78735
Mailing Information if outside USA:
Territory: _____ Country Code: _____ Postal Code: _____

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

If the site of your business is part of a larger business site or if other businesses were located at this site before yours, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search TCEQ's Central Registry to see if the larger site may already be registered as a regulated site at:
http://www.tceq.texas.gov/goto/cr-searchrn

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

a) TCEQ issued RE Reference Number (RN): RN _____

b) Name of project or site (the name known by the community where located):
Big Sky Ranch Phase One

c) In your own words, briefly describe the primary business of the Regulated Entity: (Do not repeat the SIC and NAICS code):

single family residential subdivision

d) County (or counties if > 1)

Hays

e) Latitude: 30°11'55.4"N Longitude: 98° 04'44.0"W

f) Does the site have a physical address?

☐ Yes, complete Section A for a physical address.

☑ No, complete section B for site location information.

Section A: Enter the physical address for the site.
Verify the address with USPS. If the address is not recognized as a delivery address, provide the address as identified for overnight mail delivery, 911 emergency or other online map tools to confirm an address.

Physical Address of Project or Site:
Street Number: _____ Street Name: _____
City: _____ State: _____ ZIP Code: _____

Section B: Enter the site location information.
If no physical address (Street Number & Street Name), provide a written location access description to the site. (Example: located 2 miles west from intersection of Hwy 290 & IH35 accessible on Hwy 290 South)

Northeast of the intersection of Ranch Road 12 and Hwy 290, adjacent to Founders Park

City where the site is located or, if not in a city, what is the nearest city:
Dripping Springs

State: TX ZIP Code where the site is located: 78620

4) GENERAL CHARACTERISTICS

a) Is the project/site located on Indian Country Lands?

☐ Yes - If the answer is Yes, 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 - If the answer is Yes, you 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?
Primary SIC Code: 1520

d) If applicable, what is the Secondary SIC Code(s): _____

e) What is the total number of acres disturbed? 73.44

f) Is the project site part of a larger common plan of development or sale?

☑ Yes - If the answer is Yes, the total number of acres disturbed can be less than 5 acres.

☐ No - If the answer is No, the total number of acres disturbed must be 5 or more. If the total number of acres disturbed is less than 5 then the project site does not qualify for coverage through this Notice of Intent. Coverage will be denied. See the requirements in the general permit for small construction sites.

g) What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?

Onion Creek Watershed and Little Barton Creek

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

1427 and 1430B

i) Is the discharge into an MS4?

☐ Yes - If the answer is Yes, provide the name of the MS4 operator below.

_____

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

☑ No

j) Are any of the surface water bodies receiving discharges from the construction site on the latest EPA-approved CWA 303(d) List of impaired waters?

☑ Yes - If the answer is Yes, provide the name(s) of the impaired water body(s) below.
Onion Creek

☐ No

k) Is the discharge or potential discharge 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 - If the answer is Yes, complete certification below by checking "Yes."

☐ No

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

☑ Yes

5) CERTIFICATION

Check Yes to the certifications below. Failure to indicate Yes to ***ALL*** items may result in denial of coverage under the general permit.

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 general permit TXR150000. Note: For multiple operators who operate under 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. ☑ Yes

Operator Certification:

I, Matthew Scrivener (Typed or printed name) Vice President of Land Development (Title)

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: 10.10.18

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.

This checklist is for use by the operator to ensure a complete application. Missing information may result in denial of coverage under the general permit. (See NOI process description in the 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 or a copy of the voucher is attached.

PERMIT NUMBER:

- ☐ Permit number provided – if this application is for renewal of an existing authorization.

OPERATOR INFORMATION - Confirm each item is complete:

- ☐ Customer Number (CN) issued by TCEQ Central Registry
- ☐ Legal name as filed to do business in Texas (Call TX SOS 512/463-5555)
- ☐ Name and title of responsible authority signing the application
- ☐ Mailing address is complete & verifiable with USPS. www.usps.com
- ☐ Phone numbers/e-mail address
- ☐ Type of operator (entity type)
- ☐ 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 - Confirm each item is complete:

- ☑ Regulated Entity Reference Number (RN) (if site is already regulated by TCEQ)
- ☑ Site/project name/regulated entity
- ☑ Latitude and longitude http://www.tceq.texas.gov/gis/sqmaview.html
- ☑ County
- ☑ Site/project physical address. Do not use a rural route or post office box.
- ☑ Business description

GENERAL CHARACTERISTICS - Confirm each item is complete:

- ☑ Indian Country Lands –the facility is not on Indian Country Lands
- ☑ Construction activity related to facility associated to oil, gas, or geothermal resources
- ☑ Standard Industrial Classification (SIC) Code www.osha.gov/oshstats/sicser.html
- ☑ Acres disturbed is provided and qualifies for coverage through a NOI
- ☑ Common plan of development or sale
- ☑ Receiving water body(s)
- ☑ Segment number(s)
- ☑ Impaired water body(s)
- ☑ 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.

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

General Information and Instructions

GENERAL INFORMATION

Where to Send the Notice of Intent (NOI):

BY REGULAR U.S. MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact List:

Application – status and form questions:	512/239-3700, swpermit@tceq.texas.gov
Technical questions:	512/239-4671, 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:

1) **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(s) on the form must be verified with the US Postal service as receiving regular mail delivery. Never give an overnight/express mailing address.

2) **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.

3) **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 key word TXR150000.

General Permit Forms

The Notice of Intent (NOI), Notice of Termination (NOT), and Notice of Change (NOC) (including instructions) are available in Adobe Acrobat PDF format on the TCEQ web site http://www.tceq.texas.gov.

Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated entity 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.

You can find the information on the Central Registry web site at http://www15.tceq.texas.gov/crpub/. You can search by the Regulated Entity (RN), Customer Number (CN) or Name (Permittee), or by your permit number under the search field labeled "Program ID". Capitalize all letters in the permit number.

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 General Permits, a Notice of Change form must be submitted to the program area.

Fees associated with a 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).

Application Fee: This fee 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.

Mailed Payments:

Payment must be mailed under separate cover at one of the addresses below using the attached Application Fee submittal form. (DO NOT SEND A COPY OF THE NOI WITH THE APPLICATION FEE SUBMITTAL FORM)

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

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

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.

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.

1. Operator (Applicant)

a) Enter assigned 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 this customer has not been assigned a CN, leave the space for the CN blank.
If this customer has already been assigned this number, enter the permittee's CN.

b) Legal Name

Provide the current legal name of the permittee, as authorized to do business in Texas. 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. If filed in the county where doing business, provide a copy of the legal documents showing the legal name.

c) Operator Contact's (Responsible Authority) Contact Information and Mailing Address

Provide the first and last name, and the title of the person signing the Certification section of the application. This person must be an individual having signatory authority in accordance with 30 TAC Chapter §305.44. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. The address must be verifiable with the US Postal Service at https://tools.usps.com/go/ZipLookupAction!input.action for regular mail delivery (not overnight express mail). If you find that the address is not verifiable using the USPS web search, please indicate the address is used by the USPS for regular mail delivery.

The area code and phone number should provide contact to the operator. Leave Extension blank if not applicable.

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

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 a permit, registration or authorization.

Sole Proprietorship – DBA

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

- be under the person's name
- have its own name (doing business as or d.b.a.)
- 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).

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). A Limited Partnership or Limited Liability Partnership (Partnership) is required to file with the Texas Secretary of State. A General Partnership or Joint Venture is not required to register with the state.
- **Partnership (Limited Partnership or Limited Liability Partnership):** A limited partnership is defined in the Act as a partnership formed by two or more persons under the provisions of Section 3 of the Uniform Limited Partnership Act (Art. 6132a, Revised Civil Statutes of Texas) and having as members one or more general partners and one or more limited partners. The limited partners as such are not bound by the obligations of the partnership. Limited partners may not take part in the day-to-day operations of the business. A Limited Partnership must file with the Texas Secretary of State. A registered limited liability partnership is a general or limited partnership that is registered with the Texas Secretary of State. The partnership's name must contain the words "Registered Limited Liability Partnership" or the abbreviation "L.L.P." as the last words or letters of its name.
- **General Partnership:** A general partner may or may not invest, participates in running the partnership and is liable for all acts and debts of the partnership and any member of it. A General Partnership does not have limited partners. For a General Partnership, there is no registration with the state or even written agreement necessary for a general partnership to be formed. The legal definition of a partnership is generally stated as "an association of two or more persons to carry on as co-owners a business for profit" (Revised Uniform Partnership Act § 101 [1994]).
- **Joint Venture:** A joint venture is but another name for a special partnership. It might be distinguished from a general partnership in that the latter is formed for the transaction of a general business, while a joint venture is usually limited to a single transaction. That is, a joint venture is a special combination of persons in the nature of a partnership engaged in the joint prosecution of a particular transaction for mutual benefit or profit.

Corporation

A customer meets all of these conditions:

- is a legally incorporated entity under the laws of any state or country
- is recognized as a corporation by the Texas Secretary of State
- 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 should not be included as a part of the 'legal name' as applicant.

Trust or Estate

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

Other Government

A utility district, water district, tribal government, college district, council of governments, or river authority. Write in 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 this number here.

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.

2. APPLICATION CONTACT

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

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

a) Regulated Entity Reference Number (RN)

A number issued by TCEQ's Central Registry to sites (a location where a regulated activity occurs) regulated by TCEQ. This is not a permit number, registration number, or license number. 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, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search TCEQ's Central Registry to see if the larger site may already be registered as a regulated site at: http://www.tceq.texas.gov/goto/cr-searchrn

If the site is found, provide the assigned Regulated Entity Reference Number (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) Site/Project Name/Regulated Entity
Provide the name of the site 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
Identify the county or counties in which the regulated entity is located.

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/sqmaview.html or http://nationalmap.gov/ustopo

f) Site/Project (RE) Physical Address/Location Information
Enter the complete address for the site in Section A if the address can be validated through the US Postal Service. 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 (or house) number and street name, enter NO ADDRESS for the street name in Section A. In Section B provide a complete written location description. For example: "The site is located 2 miles west from intersection of Hwy 290 & IH35, located on the southwest corner of the Hwy 290 South bound lane."
Provide the city (or nearest city) and zip code of the facility location.

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 and may need to obtain authorization from EPA Region 6. For more information, see:
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

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 Railroad Commission's jurisdiction must be authorized by the EPA and the Railroad Commission of Texas, as applicable. Activities under Railroad Commission of Texas 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 Railroad Commission of Texas; 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 Railroad Commission of Texas 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 Railroad Commission of Texas. 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 Railroad Commission of Texas 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.

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 Bldgs. Other than Single Family Homes
- 1541 - Construction of Industrial Bldgs. and Warehouses

- 1542 - Construction of Non-residential Bldgs, other than Industrial Bldgs. 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, go to:
http://www.osha.gov/pls/imis/sicsearch.html

d) Secondary SIC Code
Secondary SIC Code(s) may be provided. Leave blank if not applicable. For help with SIC Codes, go to: http://www.osha.gov/pls/imis/sicsearch.html

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.

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 is a common plan of development?" go to:
www.tceq.texas.gov/permitting/stormwater/common_plan_of_development_steps.html

For further information, go to the TCEQ stormwater construction webpage at:
www.tceq.texas.gov/goto/construction and search for "Additional Guidance and Quick Links". If you have any further questions about this item, please call the stormwater technical staff at (512)239-4671.

g) 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.

h) Identify the segment number(s) of the classified water body(s)

Identify the classified segment number(s) receiving a discharge directly or indirectly. Go to the following link 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

You may also find the segment number in TCEQ publication GI-316: www.tceq.texas.gov/publications/gi/gi-316

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.

i) 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.

j) Surface Water bodies on list of impaired waters – Identify the impaired water body(s)

Indicate Yes or No if any surface water bodies receiving discharges from the construction site are on the latest EPA-approved CWA 303(d) List of impaired waters. Provide the name(s) of surface water bodies receiving discharges or potential discharges from the construction site that are on the latest EPA-approved CWA 303(d) List of impaired waters. The EPA-approved CWA 303(d) List of impaired waters in Texas can be found at: www.tceq.texas.gov/waterquality/assessment/305_303.html

NOTE: Do not use any "draft" documents.

k) Discharges to the Edwards Aquifer Recharge Zone and Certification

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 at: www.tceq.texas.gov/field/eapp/viewer.html

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. The certification must be answered "Yes" for coverage under the Construction General Permit. The TCEQ approved plan must be readily available for TCEQ staff to review at the time that the NOI is submitted.

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.

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.

5. CERTIFICATIONS

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: www.tceq.texas.gov/goto/construction

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 this 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.

Operator Certification:

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 Texas Commission on Environmental Quality'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.

- 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:

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/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 / Money Order Number: _____
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/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 ENTRIES.

   See Attached List of Sites (If more space is needed, you may attach a list.)

   Project/Site (RE) Name: _____

   Project/Site (RE) Physical Address:

   _____

Staple Check in This Space

LARGE CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Stormwater Program

TPDES GENERAL PERMIT TXR150000

"PRIMARY OPERATOR" NOTICE

This notice applies to construction sites operating under Part II.E.3. of the TPDES General Permit Number TXR150000 for discharges of stormwater runoff from construction sites equal to or greater than five acres, including the larger common plan of development. The information on this notice is required in Part III.D.2. of the general permit. Additional information regarding the TCEQ stormwater permit program may be found on the internet at:

http://www.tceq.state.tx.us/nav/permits/wq_construction.html

Site-Specific TPDES Authorization Number:	
Operator Name:	Meritage Homes of Texas, LLC
Contact Name and Phone Number:	Brandon Hammann - 512-610-4851
Project Description: *Physical address or description of the site's location, and estimated start date and projected end date, or date that disturbed soils will be stabilized.*	NE of intersection of Hwy 290 and RR12; adjacent to Founders Park
Location of Stormwater Pollution Prevention Plan:	Job Site Trailer

APPENDIX G

POST-CONSTRUCTION FORMS

NOTICE OF TERMINATION

TCEQ Office Use Only
Permit No:
CN:
RN:
Region:

Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

ePermits: This form is available on our online permitting system.
Sign up for online permitting at: https://www3.tceq.texas.gov/steers/

What is the permit number to be terminated?

TXR15 enter permit number here TXRCW enter permit number here

Section 1. OPERATOR (Permittee)

a) What is the Customer Number (CN) issued to this entity?

CN 603298068

b) What is the Legal Name of the current permittee?

Meritage Homes of Texas, LLC

c) Provide the contact information for the Operator (Responsible Authority).

Prefix (Mr. Ms. or Miss): Mr.

First and Last Name: Brandon Hammann Suffix: enter suffix here

Title: Vice President of Land Development Credentials: enter credentials

Phone Number: 512-610-4851 Fax Number: enter fax number here

Email: enter email address here

Mailing Address: 8920 Business Park Drive, Suite 350

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

Country Mailing Information, if outside USA: enter country mailing info here

Section 2. APPLICATION CONTACT

This is the person TCEQ will contact if additional information is needed regarding this application.

Is the application contact the same as the permittee identified above? Yes ☐ No ☒

If Yes, go to Section 3.

If No, complete section below

Prefix (Mr. Ms. or Miss): Mr.

First and Last Name: Jacob Harris, P.E. Suffix: enter suffix here

Title: Project Manager Credentials: enter credentials here

Phone Number: 512-583-2600 Fax Number: enter fax number here

Email: jacharris@kleinfelder.com

Mailing Address: 7401B Hwy71 W, Suite 160

City, State, and Zip Code: Austin, TX 78735

Country Mailing Information, if outside USA: enter country mailing info here

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

a) TCEQ issued RE Reference Number (RN): RN 603298068

b) Name of project or site as known by the local community: Big Sky Ranch Phase One

c) County, or counties if more than 1: Hays

d) Latitude: 30°11'55.4"N Longitude: 98°04'44.0"W

e) Site Address/Location:

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete Section 3A.

If the site does not have a physical address, provide a location description in Section 3B. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section 3A: Physical Address of Project or Site:

Street Number and Name: enter street number and name here

City, State, and Zip Code:

Section 3B: Site Location Description:

Location description: Northeast of the intersection of Ranch Road 12 and Hwy 290, adjacent to Founders Park

City where the site is located or, if not in a city, what is the nearest city: Dripping Springs, TX

Zip Code where the site is located: 78620

Section 4. REASON FOR TERMINATION

Check the reason for termination:

☒ Final stabilization has been achieved on all portions of the site that are the responsibility of the Operator and all silt fences and other temporary erosion controls have been removed, or scheduled for removal as defined in the SWP3.

☐ Another permitted Operator has assumed control over all areas of the site that have not been finally stabilized, and temporary erosion controls that have been identified in the SWP3 have been transferred to the new Operator.

☐ The discharge is now authorized under an alternate TPDES permit.

☐ The activity never began at this site that is regulated under the general permit.

Section 5. CERTIFICATION

Signatory Name: Brandon Hammann

Signatory Title: Vice President of Land Development

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.

Signature (use blue ink): _____Date: _____

Instructions for Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

GENERAL INFORMATION

Where to Send the Notice of Termination (NOT):

BY REGULAR U.S. MAIL:
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL:
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact List:

Application status and form questions:	512-239-3700, swpermit@tceq.texas.gov
Technical questions:	512-239-4671, 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 Termination Process:

A Notice of Termination is **effective on the date postmarked for delivery to TCEQ.**

When your NOT is received by the program, the form will be processed as follows:

1) Administrative Review: The form will be reviewed to confirm the following:
   - the permit number is provided;
   - the permit is active and has been approved;
   - the entity terminating the permit is the current permittee;
   - the site information matches the original permit record; and
   - the form has the required original signature with title and date.

2) Notice of Deficiency: If an item is incomplete or not verifiable as indicated above, a phone call will be made to the applicant to clear the deficiency. A letter will not be sent to the permittee if unable to process the form.

3) Confirmation of Termination: A Notice of Termination Confirmation letter will be mailed to the operator.

Change in Operator:

An authorization under the general permit is not transferable. If the operator of the regulated entity 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 not later than 10 days prior to the change in Operator status.

Annual Water Quality Fee:

This fee is assessed to permittees with an active authorization under the general permit on September 1 of each year. The designated billing contact will receive an invoice for payment of the annual fee in November of each year. The payment will be due 30 days from the invoice date. A 5% penalty will be assessed if the payment is not received by TCEQ by the due date. Annual fee assessments cannot be waived as long as the authorization under the general permit is active on September 1.

It is important for the permittees to submit a NOT when coverage under the general permit is no longer required. A NOT is effective on the postmarked date of mailing the form to TCEQ. It is recommended that the NOT be mailed using a method that documents the date mailed and received by TCEQ.

INSTRUCTIONS FOR FILLING OUT THE FORM

The majority of permit information related to the current operator and regulated entity are available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

Section 1. Operator (Current Permittee):

a) Customer Number (CN)
TCEQ's Central Registry assigns each customer a number that begins with CN, followed by nine digits. This is not a permit number, registration number, or license number. The Customer Number, for the current permittee, is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

b) Legal Name of Operator
The operator must be the same entity as previously submitted on the original Notice of Intent for the permit number provided. The current operator name, as provided on the current authorization, is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

c) Contact Information for the Operator (Responsible Authority)
Provide information for person signing the NOT 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. Update the address if different than previously submitted for the Notice of Intent or Notice of Change. 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 operator.

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

Section 2. Application Contact:

Provide the name, title and contact information of 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 Reference Number (RN)
A number issued by TCEQ's Central Registry to sites where an activity regulated by TCEQ. This is not a permit number, registration number, or license number. The Regulated Entity Reference Number is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

b) Name of the Project or Site
Provide the name of the site as known by the public in the area where the site is located.

c) County
Identify the county or counties in which the regulated entity is located.

d) Latitude and Longitude
Enter the latitude and longitude of the site in degrees, minutes, and seconds or decimal form. The latitude and longitude as provided on the current authorization is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

e) Site/Project (RE) Physical Address/Location Information
The physical address/location information, as provided on the current authorization, is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

Section 3A. If a site has an address that includes a street number and street name, enter the complete address for the site. 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 the 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.

Section 3B. If a site does not have an address that includes a street number and street name, provide a complete written location description. 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 facility location.

Section 4. Reason for Termination:

The Notice of Termination form is only for use to terminate the authorization (permit). The Permittee must indicate the specific reason for terminating by checking one of the options. If the reason is not listed then provide an attachment that explains the reason for termination.

Please read your general permit carefully to determine when to terminate your permit. Permits will not be reactivated after submitting a termination form. The termination is effective on the date postmarked for delivery to TCEQ.

Section 5. Certification:

The certification must bear an original signature of a person meeting the signatory

requirements specified under 30 Texas Administrative Code §305.44.

IF YOU ARE A CORPORATION:
The regulation that controls who may sign an application form is 30 Texas Administrative
Code §305.44(a), which is provided 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), which is provided 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 statutes 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 Texas Commission on Environmental Quality'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).

SECTION 4

COPY OF NOTICE OF INTENT

(NOI)

TCEQ Office Use Only
Permit No.:
RN:
CN:
Region:

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

IMPORTANT:

- Use the INSTRUCTIONS to fill out each question in this form.
- Use the CHECKLIST to make certain you filled out all required information. Incomplete applications **WILL** delay approval or result in denial.
- Once processed your permit can be viewed at: http://www.tceq.texas.gov/goto/wq-dpa

ePERMITS: Sign up now for online NOI: https://www3.tceq.texas.gov/steers/
Pay a $225 reduced application fee by using ePermits.

APPLICATION FEE:

- You must pay the **$325** Application Fee to TCEQ for the paper application to be complete.
- Payment and NOI must be mailed to separate addresses.
- Did you know you can pay on line?
  - Go to http://www.tceq.texas.gov/goto/epay
  - Select Fee Type: GENERAL PERMIT CONSTRUCTION STORM WATER DISCHARGE NOI APPLICATION
- **Provide your payment information below, for verification of payment:**

☐ Mailed Check/Money Order Number: _____
Name Printed on Check: _____
Copy of check enclosed? ☐ Yes

☐ EPAY Voucher Number: _____
Is the Payment Voucher copy attached? ☐ Yes

RENEWAL: Is this NOI a Renewal of an existing General Permit Authorization? (Note: A permit cannot be renewed after June 3, 2013.)

☐ Yes The Permit number is: TXR15_____
(If a permit number is not provided, a new number will be assigned.)

☑ No

1) OPERATOR (Applicant)

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? You may search for your CN at: http://www.tceq.texas.gov/goto/cr-customer

CN 603298068

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

c) What is the contact information for the Operator (Responsible Authority)? The mailing address must be recognized by the US Postal Service (USPS). You may verify the address at: https://tools.usps.com/go/ZipLookupAction!input.action
Prefix (Mr. Ms. Miss): Mr
First/Last Name: Matthew Scrivener Suffix:
Title: Vice President of Land Development Credential:
Phone Number: (512) 615-6409 Ext: Fax Number:
E-mail:
Mailing Address: 8920 Business Park Drive, Suite 350
Internal Routing (Mail Code, Etc.):
City: Austin State: TX ZIP Code: 78759
If outside USA:
Territory: Country Code: Postal Code:

d) Indicate the type of Customer (The instructions will help determine your customer type):

- ☐ Individual
- ☐ Limited Partnership
- ☐ Sole Proprietorship-DBA
- ☐ Joint Venture
- ☐ General Partnership
- ☒ Corporation
- ☐ Trust
- ☐ Estate
- ☐ Federal Government
- ☐ State Government
- ☐ County Government
- ☐ City Government
- ☐ Other Government

e) Independent Operator? (If governmental entity, subsidiary, or part of a larger corporation, check "No".)
☐ Yes ☑ No

f) Number of Employees:
☐ 0-20; ☑ 21-100; ☐ 101-250; ☐ 251-500; or ☐ 501 or higher

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:
Federal Tax ID: 65-1308131
Texas Secretary of State Charter (filing) Number:
DUNS Number (if known):

2) APPLICATION CONTACT

If TCEQ needs additional information regarding this application, who should be contacted?

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

☐ Yes, go to Section 3).

☑ No, complete section below

Prefix (Mr. Ms. Miss): Mr.
First/Last Name: Tom Hegemier Suffix: _____
Title: Senior Project Engineer Credential: _____
Organization Name: Doucet & Associates, Inc.
Phone Number: (512) 583-2600 Ext: 2635 Fax Number: (512) 583-2601
E-mail: thegemier@doucetengineers.com
Mailing Address: 7401B Hwy. 71 W., Ste. 160
Internal Routing (Mail Code, Etc.): _____
City: Austin State: TX ZIP Code: 78735
Mailing Information if outside USA:
Territory: _____ Country Code: _____ Postal Code: _____

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

If the site of your business is part of a larger business site or if other businesses were located at this site before yours, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search TCEQ's Central Registry to see if the larger site may already be registered as a regulated site at:
http://www.tceq.texas.gov/goto/cr-searchrn

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

a) TCEQ issued RE Reference Number (RN): RN _____

b) Name of project or site (the name known by the community where located):
Big Sky Ranch Phase One

c) In your own words, briefly describe the primary business of the Regulated Entity: (Do not repeat the SIC and NAICS code):

single family residential subdivision

d) County (or counties if > 1)

Hays

e) Latitude: 30°11'55.4"N Longitude: 98° 04'44.0"W

f) Does the site have a physical address?

☐ Yes, complete Section A for a physical address.

☑ No, complete section B for site location information.

Section A: Enter the physical address for the site.
Verify the address with USPS. If the address is not recognized as a delivery address, provide the address as identified for overnight mail delivery, 911 emergency or other online map tools to confirm an address.

Physical Address of Project or Site:
Street Number: _____ Street Name: _____
City: _____ State: _____ ZIP Code: _____

Section B: Enter the site location information.
If no physical address (Street Number & Street Name), provide a written location access description to the site. (Example: located 2 miles west from intersection of Hwy 290 & IH35 accessible on Hwy 290 South)

Northeast of the intersection of Ranch Road 12 and Hwy 290, adjacent to Founders Park

City where the site is located or, if not in a city, what is the nearest city:
Dripping Springs

State: TX ZIP Code where the site is located: 78620

4) GENERAL CHARACTERISTICS

a) Is the project/site located on Indian Country Lands?

☐ Yes - If the answer is Yes, 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 - If the answer is Yes, you 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?
Primary SIC Code: 1520

d) If applicable, what is the Secondary SIC Code(s): _____

e) What is the total number of acres disturbed? 73.44

f) Is the project site part of a larger common plan of development or sale?

☑ Yes - If the answer is Yes, the total number of acres disturbed can be less than 5 acres.

☐ No - If the answer is No, the total number of acres disturbed must be 5 or more. If the total number of acres disturbed is less than 5 then the project site does not qualify for coverage through this Notice of Intent. Coverage will be denied. See the requirements in the general permit for small construction sites.

g) What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?

Onion Creek Watershed and Little Barton Creek

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

1427 and 1430B

i) Is the discharge into an MS4?

☐ Yes - If the answer is Yes, provide the name of the MS4 operator below.

_____

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

☑ No

j) Are any of the surface water bodies receiving discharges from the construction site on the latest EPA-approved CWA 303(d) List of impaired waters?

☑ Yes - If the answer is Yes, provide the name(s) of the impaired water body(s) below.
Onion Creek

☐ No

k) Is the discharge or potential discharge 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 - If the answer is Yes, complete certification below by checking "Yes."

☐ No

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

☑ Yes

5) CERTIFICATION

Check Yes to the certifications below. Failure to indicate Yes to ***ALL*** items may result in denial of coverage under the general permit.

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 general permit TXR150000. Note: For multiple operators who operate under 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. ☑ Yes

Operator Certification:

I, Matthew Scrivener (Typed or printed name) Vice President of Land Development (Title)

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: 10.10.18

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.

This checklist is for use by the operator to ensure a complete application. Missing information may result in denial of coverage under the general permit. (See NOI process description in the 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 or a copy of the voucher is attached.

PERMIT NUMBER:

- ☐ Permit number provided – if this application is for renewal of an existing authorization.

OPERATOR INFORMATION - Confirm each item is complete:

- ☐ Customer Number (CN) issued by TCEQ Central Registry
- ☐ Legal name as filed to do business in Texas (Call TX SOS 512/463-5555)
- ☐ Name and title of responsible authority signing the application
- ☐ Mailing address is complete & verifiable with USPS. www.usps.com
- ☐ Phone numbers/e-mail address
- ☐ Type of operator (entity type)
- ☐ 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 - Confirm each item is complete:

- ☑ Regulated Entity Reference Number (RN) (if site is already regulated by TCEQ)
- ☑ Site/project name/regulated entity
- ☑ Latitude and longitude http://www.tceq.texas.gov/gis/sqmaview.html
- ☑ County
- ☑ Site/project physical address. Do not use a rural route or post office box.
- ☑ Business description

GENERAL CHARACTERISTICS - Confirm each item is complete:

- ☑ Indian Country Lands –the facility is not on Indian Country Lands
- ☑ Construction activity related to facility associated to oil, gas, or geothermal resources
- ☑ Standard Industrial Classification (SIC) Code www.osha.gov/oshstats/sicser.html
- ☑ Acres disturbed is provided and qualifies for coverage through a NOI
- ☑ Common plan of development or sale
- ☑ Receiving water body(s)
- ☑ Segment number(s)
- ☑ Impaired water body(s)
- ☑ 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.

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

General Information and Instructions

GENERAL INFORMATION

Where to Send the Notice of Intent (NOI):

BY REGULAR U.S. MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact List:

Application – status and form questions:	512/239-3700, swpermit@tceq.texas.gov
Technical questions:	512/239-4671, 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:

1) **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(s) on the form must be verified with the US Postal service as receiving regular mail delivery. Never give an overnight/express mailing address.

2) **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.

3) **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 key word TXR150000.

General Permit Forms

The Notice of Intent (NOI), Notice of Termination (NOT), and Notice of Change (NOC) (including instructions) are available in Adobe Acrobat PDF format on the TCEQ web site http://www.tceq.texas.gov.

Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated entity 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.

You can find the information on the Central Registry web site at http://www15.tceq.texas.gov/crpub/. You can search by the Regulated Entity (RN), Customer Number (CN) or Name (Permittee), or by your permit number under the search field labeled "Program ID". Capitalize all letters in the permit number.

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 General Permits, a Notice of Change form must be submitted to the program area.

Fees associated with a 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).

Application Fee: This fee 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.

Mailed Payments:

Payment must be mailed under separate cover at one of the addresses below using the attached Application Fee submittal form. (DO NOT SEND A COPY OF THE NOI WITH THE APPLICATION FEE SUBMITTAL FORM)

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

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

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.

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.

1. Operator (Applicant)

a) Enter assigned 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 this customer has not been assigned a CN, leave the space for the CN blank.
If this customer has already been assigned this number, enter the permittee's CN.

b) Legal Name

Provide the current legal name of the permittee, as authorized to do business in Texas. 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. If filed in the county where doing business, provide a copy of the legal documents showing the legal name.

c) Operator Contact's (Responsible Authority) Contact Information and Mailing Address

Provide the first and last name, and the title of the person signing the Certification section of the application. This person must be an individual having signatory authority in accordance with 30 TAC Chapter §305.44. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. The address must be verifiable with the US Postal Service at https://tools.usps.com/go/ZipLookupAction!input.action for regular mail delivery (not overnight express mail). If you find that the address is not verifiable using the USPS web search, please indicate the address is used by the USPS for regular mail delivery.

The area code and phone number should provide contact to the operator. Leave Extension blank if not applicable.

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

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 a permit, registration or authorization.

Sole Proprietorship – DBA

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

- be under the person's name
- have its own name (doing business as or d.b.a.)
- 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).

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). A Limited Partnership or Limited Liability Partnership (Partnership) is required to file with the Texas Secretary of State. A General Partnership or Joint Venture is not required to register with the state.
- **Partnership (Limited Partnership or Limited Liability Partnership):** A limited partnership is defined in the Act as a partnership formed by two or more persons under the provisions of Section 3 of the Uniform Limited Partnership Act (Art. 6132a, Revised Civil Statutes of Texas) and having as members one or more general partners and one or more limited partners. The limited partners as such are not bound by the obligations of the partnership. Limited partners may not take part in the day-to-day operations of the business. A Limited Partnership must file with the Texas Secretary of State. A registered limited liability partnership is a general or limited partnership that is registered with the Texas Secretary of State. The partnership's name must contain the words "Registered Limited Liability Partnership" or the abbreviation "L.L.P." as the last words or letters of its name.
- **General Partnership:** A general partner may or may not invest, participates in running the partnership and is liable for all acts and debts of the partnership and any member of it. A General Partnership does not have limited partners. For a General Partnership, there is no registration with the state or even written agreement necessary for a general partnership to be formed. The legal definition of a partnership is generally stated as "an association of two or more persons to carry on as co-owners a business for profit" (Revised Uniform Partnership Act § 101 [1994]).
- **Joint Venture:** A joint venture is but another name for a special partnership. It might be distinguished from a general partnership in that the latter is formed for the transaction of a general business, while a joint venture is usually limited to a single transaction. That is, a joint venture is a special combination of persons in the nature of a partnership engaged in the joint prosecution of a particular transaction for mutual benefit or profit.

Corporation

A customer meets all of these conditions:

- is a legally incorporated entity under the laws of any state or country
- is recognized as a corporation by the Texas Secretary of State
- 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 should not be included as a part of the 'legal name' as applicant.

Trust or Estate

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

Other Government

A utility district, water district, tribal government, college district, council of governments, or river authority. Write in 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 this number here.

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.

2. APPLICATION CONTACT

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

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

a) Regulated Entity Reference Number (RN)

A number issued by TCEQ's Central Registry to sites (a location where a regulated activity occurs) regulated by TCEQ. This is not a permit number, registration number, or license number. 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, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search TCEQ's Central Registry to see if the larger site may already be registered as a regulated site at: http://www.tceq.texas.gov/goto/cr-searchrn

If the site is found, provide the assigned Regulated Entity Reference Number (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) Site/Project Name/Regulated Entity
Provide the name of the site 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
Identify the county or counties in which the regulated entity is located.

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/sqmaview.html or http://nationalmap.gov/ustopo

f) Site/Project (RE) Physical Address/Location Information
Enter the complete address for the site in Section A if the address can be validated through the US Postal Service. 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 (or house) number and street name, enter NO ADDRESS for the street name in Section A. In Section B provide a complete written location description. For example: "The site is located 2 miles west from intersection of Hwy 290 & IH35, located on the southwest corner of the Hwy 290 South bound lane."
Provide the city (or nearest city) and zip code of the facility location.

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 and may need to obtain authorization from EPA Region 6. For more information, see:
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

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 Railroad Commission's jurisdiction must be authorized by the EPA and the Railroad Commission of Texas, as applicable. Activities under Railroad Commission of Texas 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 Railroad Commission of Texas; 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 Railroad Commission of Texas 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 Railroad Commission of Texas. 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 Railroad Commission of Texas 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.

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 Bldgs. Other than Single Family Homes
- 1541 - Construction of Industrial Bldgs. and Warehouses

- 1542 - Construction of Non-residential Bldgs, other than Industrial Bldgs. 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, go to:
http://www.osha.gov/pls/imis/sicsearch.html

d) Secondary SIC Code
Secondary SIC Code(s) may be provided. Leave blank if not applicable. For help with SIC Codes, go to: http://www.osha.gov/pls/imis/sicsearch.html

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.

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 is a common plan of development?" go to:
www.tceq.texas.gov/permitting/stormwater/common_plan_of_development_steps.html

For further information, go to the TCEQ stormwater construction webpage at:
www.tceq.texas.gov/goto/construction and search for "Additional Guidance and Quick Links". If you have any further questions about this item, please call the stormwater technical staff at (512)239-4671.

g) 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.

h) Identify the segment number(s) of the classified water body(s)

Identify the classified segment number(s) receiving a discharge directly or indirectly. Go to the following link 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

You may also find the segment number in TCEQ publication GI-316: www.tceq.texas.gov/publications/gi/gi-316

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.

i) 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.

j) Surface Water bodies on list of impaired waters – Identify the impaired water body(s)

Indicate Yes or No if any surface water bodies receiving discharges from the construction site are on the latest EPA-approved CWA 303(d) List of impaired waters. Provide the name(s) of surface water bodies receiving discharges or potential discharges from the construction site that are on the latest EPA-approved CWA 303(d) List of impaired waters. The EPA-approved CWA 303(d) List of impaired waters in Texas can be found at: www.tceq.texas.gov/waterquality/assessment/305_303.html

NOTE: Do not use any "draft" documents.

k) Discharges to the Edwards Aquifer Recharge Zone and Certification

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 at: www.tceq.texas.gov/field/eapp/viewer.html

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. The certification must be answered "Yes" for coverage under the Construction General Permit. The TCEQ approved plan must be readily available for TCEQ staff to review at the time that the NOI is submitted.

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.

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.

5. CERTIFICATIONS

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: www.tceq.texas.gov/goto/construction

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 this 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.

Operator Certification:

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 Texas Commission on Environmental Quality'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.

- 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:

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/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 / Money Order Number: _____
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/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 ENTRIES.

   See Attached List of Sites (If more space is needed, you may attach a list.)

   Project/Site (RE) Name: _____

   Project/Site (RE) Physical Address:

   _____

Staple Check in This Space

SECTION 5

AGENT AUTHORIZATION FORM

(TCEQ-0599)

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I **Brandon Hammann, P.E.**,
Print Name

Vice President of Land Development,
Title - Owner/President/Other

of **Meritage Homes of Texas, LLC**,
Corporation/Partnership/Entity Name

have authorized **Jacob Harris, P.E.**
Print Name of Agent/Engineer

of **Doucet, A Kleinfelder Company**
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:

Brandon Hammann
Applicant's Signature

6/3/25
Date

THE STATE OF TEXAS §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared BRANDON HAMMANN 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 3 day of JUNE, 2025.

Annette Hermiston
NOTARY PUBLIC

ANNETTE HERMISTON
Notary ID #133033420
My Commission Expires
April 13, 2029

ANNETTE HERMISTON
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 4.13.29

SECTION 6

APPLICATION FEE FORM

(TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Big Sky Ranch Phase One
Regulated Entity Location: NE of intersection of RR 12 and Hwy 290, adjacent to Founders Park
Name of Customer: Meritage Homes of Texas, LLC
Contact Person: Jacob Harris, P.E. Phone: 512-583-2600
Customer Reference Number (if issued):CN 603298068
Regulated Entity Reference Number (if issued):RN 110564440

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
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
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	70.44 Acres	$ 6,500
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
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: 4/24/2025

TCEQ-0574 (Rev. 02-24-15)

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

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

SECTION 7

COPY OF CHECK FOR FEES

SECTION 8

CORE DATA FORM

(TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing 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.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☒ 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 603298068		**RN 110564440**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* *If new Customer, enter previous Customer below:*

Meritage Homes of Texas, LLC

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☐ **Yes** ☒ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:								
	8920 Business Park Drive, Suite 350							
	ATTN: Brandon Hammann, VP of Land Development							
	City	Austin	**State**	TX	**ZIP**	78759	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	brandon.hammann@meritagehomes.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 610-4851		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Big Sky Ranch Phase One

23. Street Address of the Regulated Entity: *(No PO Boxes)*								
	City	Dripping Springs	**State**	TX	**ZIP**	78620	**ZIP + 4**	
24. County	Hays							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	Northeast of the intersection of Hwy 290 and RR12, adjacent to Founders Park

26. Nearest City	State	Nearest ZIP Code
Dripping Springs	TX	78620

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:		30.205000	28. Longitude (W) In Decimal:		-98.0077333
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	12	18	-98	4.24	24

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)
6552	1521	237210	236117

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Single-family residential development

34. Mailing Address:	**8920 Business Park Road, Suite 350**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78759**	**ZIP + 4**	

35. E-Mail Address:	**brandon.hammann@meritagehomes.com**

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(512) 610-4851		**( ) -**

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.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jacob Harris, P.E.	**41. Title:**	Project Manager
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 583-2600		**( ) -**	jacharris@kleinfelder.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:	Doucet, A Kleinfelder Company	**Job Title:**	Project Manager
Name *(In Print):*	Jacob Harris, P.E.	**Phone:**	**(** 512 **)** 583- **2600**
Signature:		**Date:**	4/24/2025

SECTION 9

OPTIONAL ENHANCED MEASURES

(TCEQ RG-348A)

OPTIONAL ENHANCED MEASURES REPORT
TABLE OF CONTENTS

1.0 Introduction

2.0 Site Planning

- 2.1 Sensitive Features
- 2.2 Sensitive Features Identified During Construction
- 2.3 Caves & Gate Construction
- 2.4 Stream Buffers

3.0 Construction

4.0 Permanent BMP Implementation

- 4.1 Hazardous Materials Traps (HMT)
- 4.2 Total Suspended Solids Removal

5.0 Measures to Protect Stream Morphology

6.0 Maintenance Requirements

7.0 Appendix

- 7.1 Geologic Assessment for the Approximately 200-acre Big Sky Ranch Tract
- 7.2 Critical Environmental Feature Survey Report for the Approximately 13-acre Portion
- 7.3 Exhibit 1 – TCEQ TSS Loading Summary
- 7.4 Table 2-1
- 7.5 Figures 2-1 and 2-2
- 7.6 Figures 2-3 and 2-4
- 7.7 Figure 2-5
- 7.8 Buffer Technical Memo

Section 1.0: Introduction

The proposed Big Sky Ranch Subdivision is an approximately 212.6-acre residential development that will contain 804 single family residential lots. This development is located northeast of the intersection of Ranch Road 12 and Hwy 290, adjacent and east of Founders Park. The entire residential portion of the subdivision is located within the ETJ of Dripping Springs, Hays County, Texas.

Section 2.0: Site Planning

As described in Appendix A to RG-348, considerations for storm water treatment are important when site planning a project. This portion of the report will address the various considerations covered in the subsections of Section 2.0.

2.1 Sensitive Features

A Geologic Assessment was performed by aci Group, LLC in February 2018. Per the GA, karst features, as defined in TCEQ-0585 were not observed on the subject property. However, geologic features were noted on the property. See appendix.

2.2 Sensitive Features Identified During Construction

If encountered, sensitive features encountered during construction (not identified during the GA phase), but discovered by excavation during utility trenching, pond excavation, etc. will be protected as described in Section 2.1, Table 2-1 of the OEM. Table 2-1 and Figures 2-1 through 2-5 are included in the appendix for reference should any features be encountered during construction.

2.3 Caves & Gate Construction

A Geologic Assessment was completed in February 2018 and a Critical Environmental Feature Survey Report was completed in April 2021 by aci Group, LLC. No caves were observed on the subject property. See Appendix.

2.4 Stream Buffers

Per the TCEQ Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer, buffers are required for each tributary that receives more than 5 acres of runoff. This buffer increases in size as the drainage areas increase. The required setbacks are as follows:

- 25' for a drainage area of 5-40 acres
- 50' for a drainage area of 40-128 acres
- 100' for a drainage area of 128-320 acres
- 200' for a drainage area of 320-640 acres
- 300' for a drainage area greater than 640 acres

For Phase One, a buffer zone was identified for the Tributary that contains constructed Pond 2, however the buffer begins within the batch detention basins, thus, it does not influence the proposed development plan. A second buffer zone was identified for the Tributary that drains to Pond 5. The buffer begins at the southern property boundary and no development will occur in it. Per the TCEQ OEM, storm water treatment systems can be constructed for drainage areas of less than 128 acres. Thus, Outfalls 1, 2, 3, and 5 are shown on the Drainage Area Map of the Construction Plans and are in a drainage area greater than 5 acres and would require a tributary buffer but have constructed water quality ponds. See Appendix for the tech memo regarding potential stream buffer locations.

Section 3.0: Construction

Temporary Best Management Practices for erosion control during construction have been designed to be in compliance with the standard Edwards Aquifer Protection Program rules.
For this project, the use of silt fence, inlet protection, and rock check dams will prevent sediment from leaving the site. The proposed water quality BMP's areas will be excavated and rough cut to serve as temporary sedimentation pond during construction. Siltation collected by the control measures will be cleaned from trap, fences, berms, etc. on a routine schedule as outlined in the SWPPP and contract specifications.

The total disturbed area is approximately 212.6 acres. There is some off-site upstream water running through the property from the south which is routed through constructed Pond 5.

During construction, surface water may also be affected by a spill of hydrocarbons or other hazardous substances used in construction. The most likely instances of a spill of hydrocarbons or hazardous substances are:

1. Refueling construction equipment.

2. Performing operator-level maintenance, including adding petroleum, oils, or lubricants.

3. Unscheduled or emergency repairs, such as hydraulic fluid leaks.

Every effort will be taken to be cautious and prevent spills. In the event of a fuel or hazardous substance spill as defined by the Reportable Quantities Table 1 (page 3) of the TCEQ's Small-Business Handbook for Spill Response (RG-285, June 1997), the contractor is required to clean up the spill and notify TCEQ as required in RG-285. During business hours report spills to the TCEQ's Austin Regional Office at 512-339-2929, after business hours call 1-800-832-8224, the Environmental Response Hotline or 512-463-7727, the TCEQ Spill Reporting Hotline, which is also answered 24 hours a day. See the Contributing Zone Plan application for more information on temporary BMPs during construction.

Section 4.0: Permanent BMP Implementation

The storm water design intends to implement and integrate into the design and layout of the project the use of a stormwater system that mimics the natural state of storm water runoff. The intent of this design concept is to reduce the amount of runoff to allow more infiltration and evaporation. An extended detention pond and four batch detention water quality ponds were constructed during Phases One and Two and an extended detention pond and vegetative filter strip are proposed during future development of Phase Three. At final development, the minimum required TSS removal for the entire site across all phases will be met.

4.1 Hazardous Materials Traps (HMT)

The project site will not create over 25,000 daily vehicle trips and therefore will not be required to construct a hazardous materials trap.

4.2 Total Suspended Solids (TSS) Removal

Reduction of 80% of the TSS load in storm water runoff is required and is provided. Please refer to Attachment K of the Contributing Zone Plan for TSS treatment calculations for the proposed BMP's.

Section 5.0: Measures to Protect Stream Morphology

Please refer to the provided drainage calculations on the Drainage Area Map sheets of the Construction Plans that adequately demonstrate no increase in discharge will occur as a result of the proposed development for the 2-, 10-, 25-, and 100-yr. storm events. The 2-year post developed peak is less than 50% of the existing pre-developed peak.

Section 6.0: Maintenance Requirements

Maintenance of Permanent BMPs is an important component to water quality. The CZP

applications include a maintenance document for the vegetative filter strip, extended detention ponds, and batch detention water quality ponds. Additional maintenance measures are required by the OEM are described as follows:

1. Keep maintenance records of the most recent 3-year period of any and all maintenance activities performed and make these available to TCEQ upon request.

2. Install a legible sign in plain view of the public providing the name of the owner/operator, Edwards Aquifer Program ID for the project, and a telephone number where the party responsible for maintenance of the BMP can be contacted.

3. Per the standard CZP requirements, a Texas licensed professional engineer will certify in writing that the permanent BMPs or measures are constructed as designed. This certification will be provided to TCEQ and a copy maintained with the maintenance records and made available to TCEQ upon request.

7.1 GEOLOGIC ASSESSMENT

aci consulting
austin • denver

GEOLOGIC ASSESSMENT
FOR
THE APPROXIMATELY 200-ACRE
BIG SKY RANCH TRACT

Hays County, Texas

February 15, 2018

Submitted to:
Meritage Homes of Texas , LLC
Austin Division
8920 Business Park Drive, Suite 250
Austin, Texas 78759

Prepared by:
aci Group, LLC
1001 Mopac Circle
Austin, Texas 78746
TBPG Firm License No. 50260

aci project #: 22-15-013G

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), 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. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Mark T. Adams Date: 02/15/2018

Telephone: 512-347-9000

Fax: 512-306-0974

Representing: aci Group LLC TBPG License No. 5[illegible] (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1835
LICENSED
PROFESSIONAL GEOSCIENTIST

Regulated Entity Name: Big Sky Ranch

Project Information

1. Date(s) Geologic Assessment was performed: 01/29&30/2018
2. Type of Project: **Contributing Zone Plan**

   ☒ WPAP ☐ AST
   ☒ SCS ☐ UST
3. Location of Project:

   ☐ Recharge Zone
   ☐ Transition Zone
   ☒ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
See	Attachement	E

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1”: 400'

   Applicant's Site Plan Scale: 1" = 200'
   Site Geologic Map Scale: 1" = 200'
   Site Soils Map Scale (if more than 1 soil type): 1" = 600'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☒ The wells are in use and comply with 16 TAC Chapter 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☒ 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. The copies must be submitted to the appropriate regional office.

TABLE OF CONTENTS

1.0 INTRODUCTION **2**

2.0 PROJECT INFORMATION **2**

3.0 INVESTIGATION METHODS **3**

4.0 SUMMARY OF FINDINGS **3**

5.0 RECOMMENDATIONS **3**

6.0 REFERENCES **4**

LIST OF ATTACHMENTS

Attachment A –Geologic Assessment Table 5
Attachment B – Stratigraphic Column 7
Attachment C – Site Geology 9
Attachment D – Site Maps 24
Attachment E – Site Soils 29
Attachment F – Historical Aerial Photographs 31

February 15, 2018

Geologic Assessment for the Big Sky Ranch located in Hays County, Texas

1.0 INTRODUCTION

The purpose of this assessment is to identify karst or non-karst features and their recharge potential. This report complies with the requirements of Title 30, Texas Administrative Code (TAC) Chapter 213 relating to the protection of the Edwards aquifer recharge zone.

The Big Sky Ranch hereafter referred to as the subject area or site, is located at the northern end of Cannon Ranch Road, north of State Highway 290 (SH-290) in the Extraterritorial Jurisdiction (ETJ) of Dripping Springs, Hays County, Texas (**Attachment D, Figure 1**).

2.0 PROJECT INFORMATION

Pedestrian investigations of the subject area were performed on January 29th and 30th, 2018 by Mark Adams, P.G.; Ben Milford, P.G.; Luke Rome, G.I.T.; and Chris Francke with **aci consulting**.

This report is intended to satisfy the requirements for a Geologic Assessment, which shall be included as a component of the Contributing Zone Plan (CZP), a constituent of the Optional Enhanced Measures (OEM) for the protection of the Water Quality in the Edwards aquifer. The proposed site use is for low-density, single-family, residential development. The scope of the report consists of a desktop review, field survey, and review of existing data and reports. Features identified during the field survey were ranked utilizing the Texas Commission on Environmental Quality (TCEQ) matrix for Edwards aquifer recharge zone features. The ranking of the features will determine their viability as "sensitive" features.

According to Edwards aquifer zone maps, the entire subject area is within the northern segment of the Edwards aquifer Contributing Zone (TCEQ 2005).

3.0 INVESTIGATION METHODS

The following investigation methods and activities were used to develop this report:

- Review of existing files and literature to determine the regional geology and any known caves associated with the project area;
- Review of past geological field reports, cave studies, and correspondence regarding the existing geologic features on the project area, if available;
- Site reconnaissance by a registered professional geologist to identify and examine caves, recharge features, and other significant geological structures;
- Evaluation of collected field data and a ranking of features using the TCEQ Ranking Table 0585 for the Edwards Aquifer Recharge Zone; and
- Review of historic aerial photographs to determine if there are any structural features present, and to determine any past disturbances on the subject property.

4.0 SUMMARY OF FINDINGS

This report documents the findings of a geologic assessment conducted by **aci consulting** personnel on January 29th and 30th, 2018. Following an extensive survey of the surface of the subject property, no sensitive karst features were identified.

5.0 RECOMMENDATIONS

No sensitive karst features were identified during this Geologic Assessment therefore there are no recommendations pertaining to the protection of the Edwards Aquifer.

6.0 REFERENCES

Barnes, V.E. (Project Director) et. al., 1982. Geologic Atlas of Texas, San Antonio Sheet. The University of Texas at Austin, Bureau of Economic Geology. Scale 1:250,000

Batte, C.d., et. al. 1984. Soil Survey of Comal and Hays Counties, Texas. United States Department of Agriculture, Soil Conservation Service (SCS) in cooperation of Texas Agriculture Experiment Station.

(TCEQ) Texas Commission on Environmental Quality. 2004. Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones. October 1, 2004. Austin, Texas.

(TCEQ) Texas Commission on Environmental Quality. 2005. "Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone within the Transition Zone." Map. Digital data. September 1, 2005. Austin, Texas.

(USDA NRCS) U.S. Department of Agriculture Natural Resources Conservation Service. 2018. WebSoilSurvey.com. Soil Survey Area: Williamson County, Texas. Date accessed: January 26, 2018.

ATTACHMENT A
Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Big Sky Ranch

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-01	30.20325	-98.070683	MB	30	Kgr(u)	30	20	4	-		-	-	F	10	40		X		X	Drainage
S-02	30.20097	-98.070008	MB	30	Kgr(u)	150	90	10	-		-	-	F	10	40		X		X	Drainage
S-03	30.198289	-98.072824	MB	30	Kgr(u)	75	35	5	-		-	-	F	10	40		X	X		Drainage
S-04	30.198098	-98.072070	MB	30	Kgr(u)	25	20	5	-		-	-	F	10	40		X	X		Drainage
S-05	30.203509	-98.079753	SC	20	Kgr(u)	0.5	0.5	0.5	-		-	-	O,F	12	32	X		X		Hillside
S-06	30.203087	-98.079402	SF	20	Kgr(u)	2	2	0.30	140		-	-	C, O	15	35	X		X		Hilltop
S-07	30.203442	-98.072689	MB	30	Kgr(u)	0.25	0.25	-			-	-	N	10	40		X	X		Hilltop
S-08	30.202791	-98.078632	SH	20	Kgr(u)	10	8	0.25			-	-	F	10	30	X		X		Hilltop
S-09	30.202575	-98.078868	O	5	Kgr(u)	1	0.75	0.5	-		-	-	O,F	5	10	X		X		Hillside
S-10	30.202423	-98.076955	MB	30	Kgr(u)	60	40	4	-		-	-	F	10	40		X		X	Drainage
S-11	30.199251	-98.076681	MB	30	Kgr(u)	4	3.5	18			-	-	N	10	40		X	X		Hillside
S-12	30.200015	-98.073981	MB	30	Kgr(u)	-	-	-			-	-	N	10	40		X	X		Hillside

* DATUM:_____NAD 1983. 4204_____

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Date: 02/15/2018

Sheet __1____ of __1____

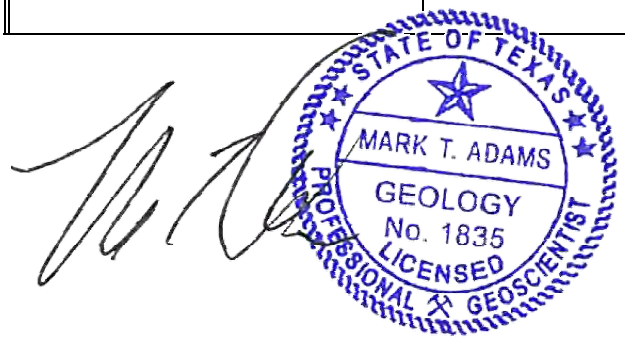
STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1835
LICENSED
PROFESSIONAL GEOSCIENTIST

TCEQ-0585-Table (Rev. 10-01-04)

ATTACHMENT B
Stratigraphic Column

200-acre Big Sky Ranch, Williamson County

Formation	Members	Thickness
Upper Glen Rose - Kgr(u)	NA	~120 feet (on site)



ATTACHMENT C
Site Geology

Based on the site assessment, the subject area is located in the Upper Glen Rose Formation [Kgr(u)] (**Attachment D, Figure 3**). The stratigraphy, structure, and karstic characteristics of the Upper Glen Rose and regional geologic formations are discussed below.

Karstic Characteristics

In limestone terrains, karst is expressed by erratically developed cavernous porosity and the manifestations of sinkholes, voids, and erratic surface drainage. Karst landscapes are typical of the Edwards Limestone, occurring across a vast region of Central Texas, west of the Balcones Escarpment, and these processes are critical to understanding the Edwards aquifer within its various segments. The TCEQ requires protective strategies within these areas to maintain quantity and quality of recharge prior to, during, and upon completion of construction activities.

Stratigraphy and Structure

The geologic strata associated with the Edwards aquifer include the Georgetown Formations overlying the Edwards Limestone Group, interfingering with the Comanche Peak Formation. These rocks are underlain by the Walnut Formation, which has members including the Whitestone Member, Keys Valley Marl Member, the Cedar Park Member, the Bee Cave Member and the Bull Creek Member. The Glen Rose Formation, another marine limestone stratum, is located below the Walnut Formation and is considered the confining unit of the Edwards aquifer.

The Glen Rose formation is described by Barnes as "limestone and marl as alternating resistant and recessive beds forming stair-step topography; limestone, aphanitic to fine grained, hard to soft and marly, light gray to yellowish gray; dolomite, fine grained, porous, yellowish brown; marine megafossils include, molluscan, steinkerns, rudistids, oysters, and echinoids. Upper part, Kgr(u), relatively thinner bedded, more dolomitic, and less fossiliferous; thickness about 400 feet".

No evidence of faulting was observed on the subject property during the site visit. Regionally, the dominant structural trend of the area is 45°, as evidenced by the distant mapped fault patterns to the north and east of the subject property (**Attachment D, Figure 2**). The stair-step topography of the subject area demonstrated characteristic Glen Rose structure.

No sensitive karst features were identified during site investigations. Four non-sensitive features and eight manmade features in bedrock were identified during the assessment and are displayed in **Attachment D, Figure 3**.

Soils discussed are delineated in **Attachment D, Figure 4** and are further described in **Attachment E.**

S-01

GPS: N. 30.20325 W. -98.070683

This feature is a manmade feature in bedrock (Stock Pond) with a length, width, and depth of 30 feet, 20 feet, and 4 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned adjacent to a drainage. The infill material consists of clays and aquatic vegetation. There was water present in the feature during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area of greater than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-01

S-02

GPS: N. 30.20097 W. -98.0700

This feature is a manmade feature in bedrock (Stock Pond) with a length, width, and depth of 150 feet, 90 feet, and 10 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned adjacent to a drainage. The infill material consists of compacted clays and grasses. There was no water present in the feature during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area of greater than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-02

S-03

GPS: N. 30.198289 W. -98.072824

This feature is a manmade feature in bedrock (Stock Pond) with a length, width, and depth of 75 feet, 35 feet, and 5 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned adjacent to a drainage. The infill material consists of clays and aquatic vegetation. There was water present in the feature during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area of less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-03

S-04

GPS: N. 30.198098 W. -98.07207

This feature is a manmade feature in bedrock (Stock Pond) with a length, width, and depth of 25 feet, 20 feet, and 5 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned adjacent to a drainage. The infill material consists of compacted clays and organics (grasses, leaves, fallen trees). There was no water present in the feature during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area of less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-04

S-05

GPS: N. 30.203509 W. -98.079753

This feature is a solution cavity with a 6-inch radius to a depth 6 inches, respectively. The feature is located in the upper Glen Rose Formation and is positioned on a hillside. The infill material consists of clays and organic materials (leaves and stick). There is an apparent "throw pile" outside the opening of the feature that is likely due to animal burrowing. The feature does not warrant a trend, and has a drainage area of less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature have in infiltration rate of 12 points due to its hard-packed clay lining.

Recommendation: No further action is recommended for this feature.

Photo of S-05

S-06

GPS: N. 30.203087 W. -98.079402

This feature appears to be a solution enlarged fracture limited to the surface with a length, width, and depth of 2 feet, 2 feet, and 0.3 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned on a hilltop. The infill material consists of a compacted clay lining along with organic debris and thrown soil around the perimeter that indicate burrowing activities. The feature has a trend of 320˚ and has a drainage area of less than 1.6 acres. The feature was lightly excavated by hand where it was discovered that the solution enlarged fracture was limited to 4 inches below the surface indicating that this feature is likely epikarst confined to the shallow subsurface, and thus lacking any subsurface development. In using Figure 1 in Instructions to Geologists, it was determined that this feature to have a low infiltration rate of 15 points due to its moderately compacted clay lining.

Recommendation: No further action is recommended for this feature.

Photo of S-06 after excavation.

S-07

GPS: N. 30.203442 W. -98.072689

This feature is a manmade feature in bedrock (capped pipe) with a 3-inch diameter to an unknown depth. The feature is located in the upper Glen Rose Formation and is positioned along a hillside. Infill material is unknown. The feature does not warrant a trend, and has a catchment area that is less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-07

S-08

GPS: N. 30.202791 W. -98.078632

From the surface, this feature had structural similarities of a sinkhole with the low area having a length, width, and depth of 10 feet, 8 feet, and 0.3 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned along a hilltop. The infill material consists of cobbles overlying compacted clays typical of the Glen Rose region. The feature does not warrant a trend, and has a drainage area of less than 1.6 acres. S-08 was lightly excavated to understand the structure and positioning of the exposed limestone rocks. Cobbles and boulders were removed from the surface revealing the underlying roots (Ashe juniper and live oak) and moderately compacted soils above compacted clay rich soils. In using Figure 1 in Instructions to Geologists, it was determined that this feature be awarded an infiltration rate of 10 points due to its clay rich soil lining.

Recommendation: No further action is recommended for this feature.

Photo of S-08

S-09

GPS: N. 30.202575 W. -98.078868

S-09 is a "creature feature" and was marked to denote that it had been investigated. The animal burrow has a length, width, and depth of 1 foot, 0.75 feet, and 0.5 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned on a hillside. The infill material consists of organic matter, straw and other bedding materials on top of a hard-packed clay lining. The feature does not warrant a trend, and has a drainage area that is less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be awarded an infiltration rate of 5 points due to its origin as an animal burrow with a hard-packed clay lining

Recommendation: No further action is recommended for this feature.

Photo of S-09

S-10

GPS: N. 30.202423 W. -98.0770

This feature is a manmade feature in bedrock (Stock Pond) with a length, width, and depth of 60 feet, 40 feet, and 4 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned adjacent to a drainage. The infill material consists of damp clay rich soil. There was no water present in the feature during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area of greater than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-10

S-11

GPS: N. 30.20325 W. -98.070683

This feature is a manmade feature in bedrock (Cistern) with a length, width, and depth of 4 feet, 3.5 feet, and 18 feet, respectively. The feature is located in the upper Glen Rose Formation and is positioned on a hillside. Sidewalls of the cistern consisted of limestone boulders. Water was present at a depth of nine feet from the surface during the time of the site reconnaissance. The feature does not warrant a trend, and has a drainage area that is less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-11

S-12

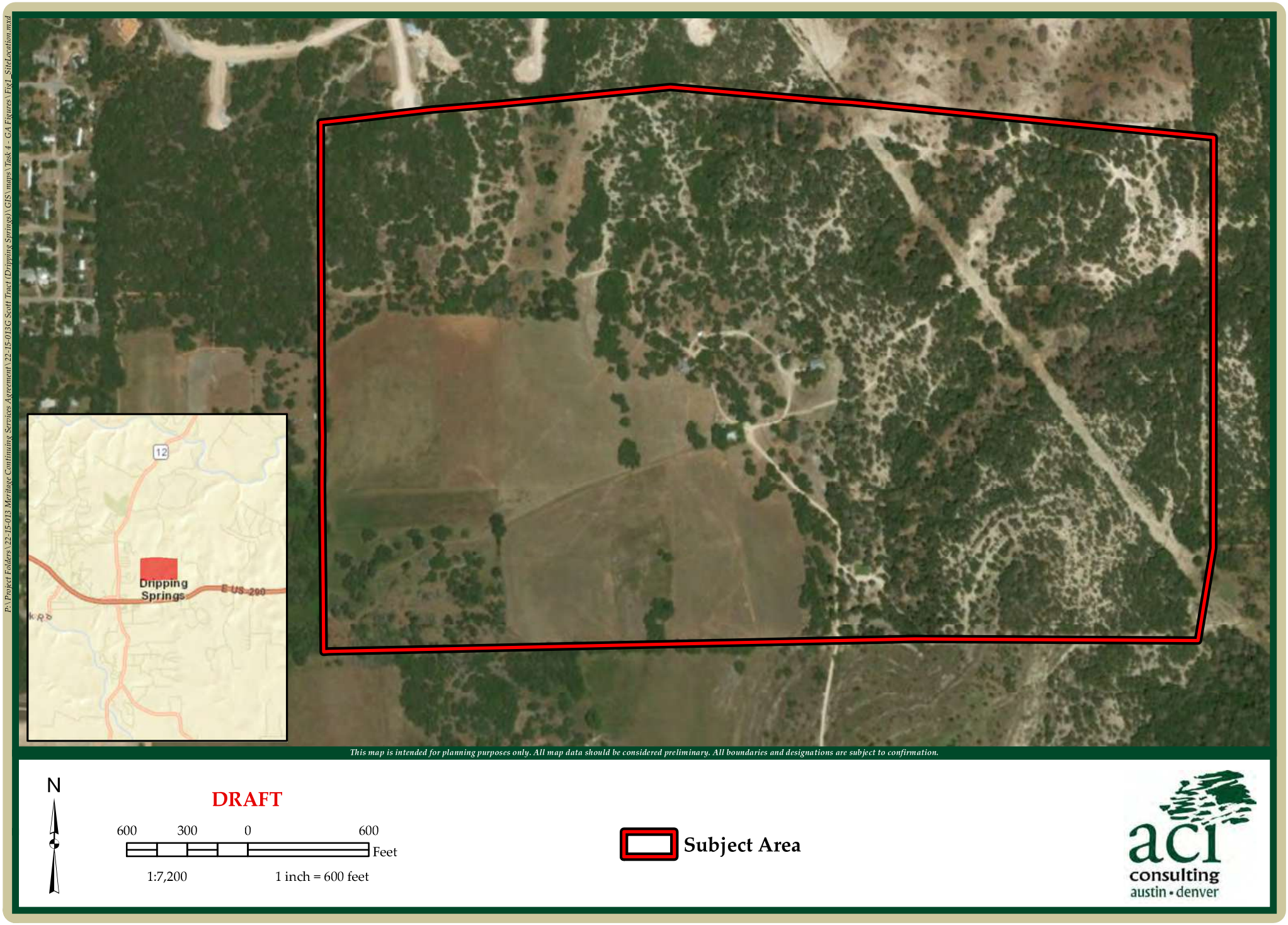
GPS: N. 30.20325 W. -98.070683

This feature is a manmade feature in bedrock (water well). The dimensions of the actual well pipe are unknown since it was hidden by the well house. The feature is located in the upper Glen Rose Formation and is positioned on a hillside. The well is currently being used. The feature does not warrant a trend, and has a drainage area that is less than 1.6 acres. In using Figure 1 in Instructions to Geologists, it was determined that this feature be considered sensitive due to it being of manmade origin so it was awarded an infiltration rate of 10 points.

Recommendation: This feature needs to be brought to the attention of the engineer.

Photo of S-12

ATTACHMENT D
Site Maps

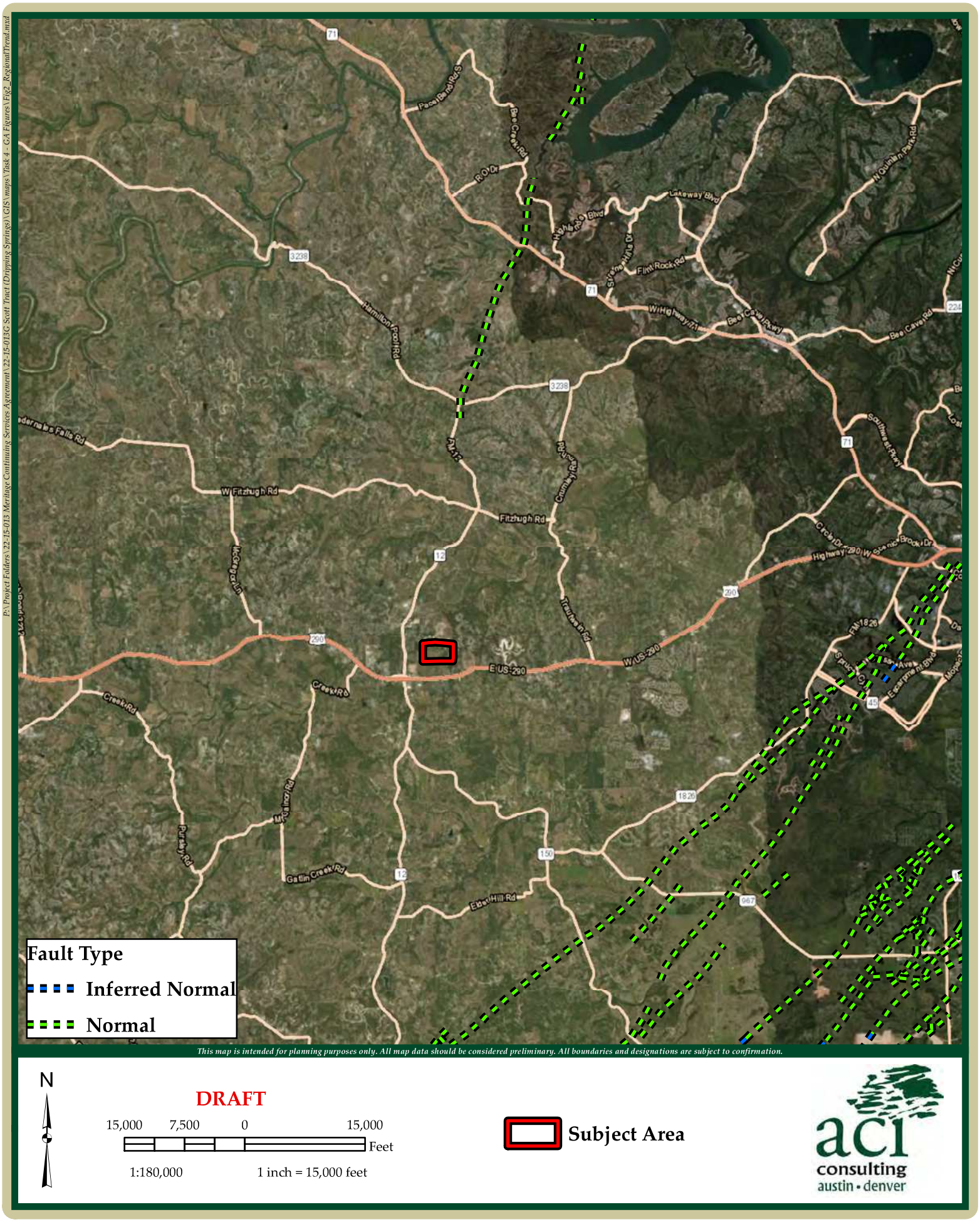


Big Sky Ranch

Figure 1: Site Location

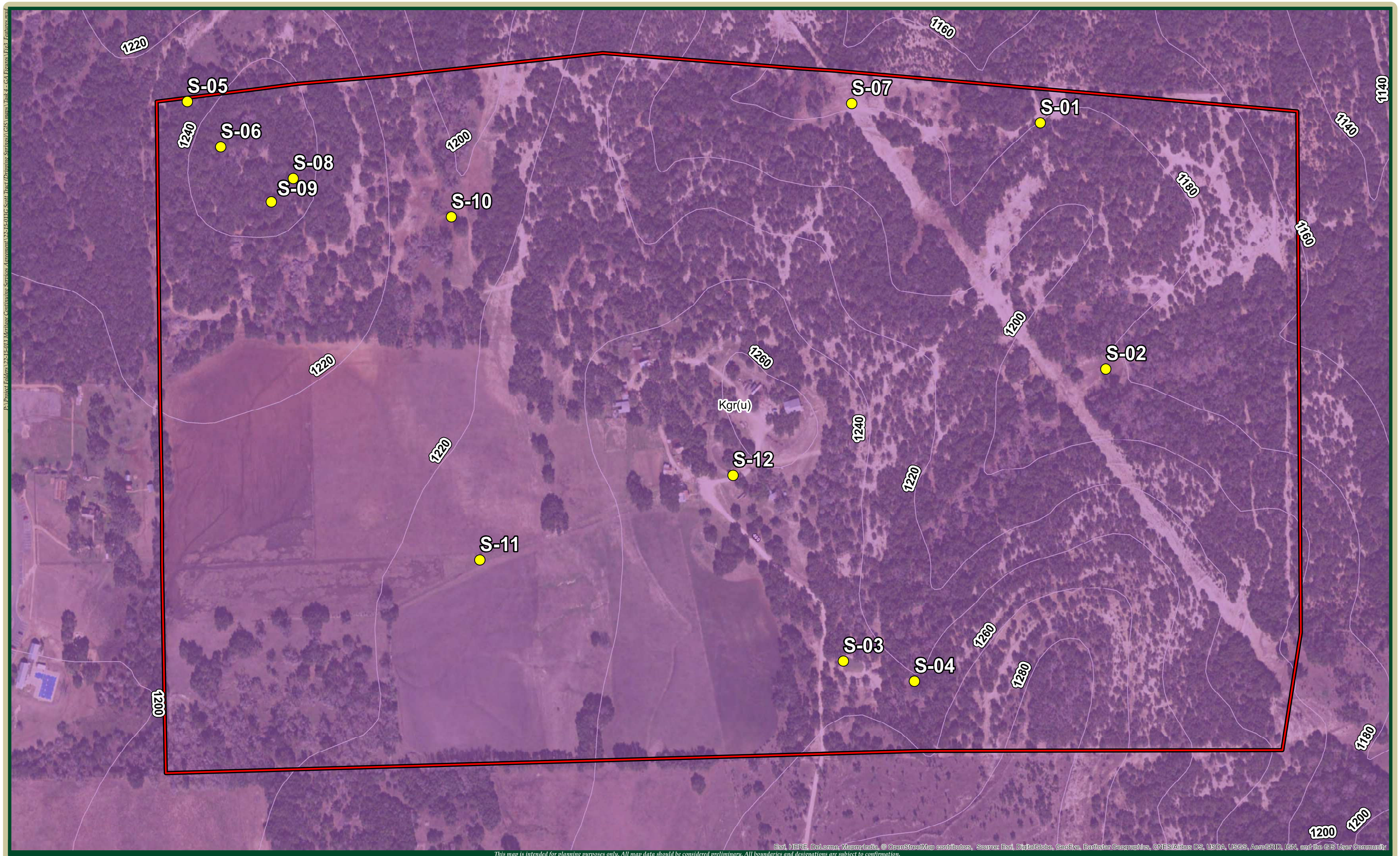
aci Project No.: 22-15-013G

February 2018



Big Sky Ranch **aci Project No.: 22-15-013G**

Figure 2: Regional Trend **February 2018**



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

N

DRAFT

200 100 0 200 Feet

1:2,400 1 inch = 200 Feet

Subject Area

Kgr(u)

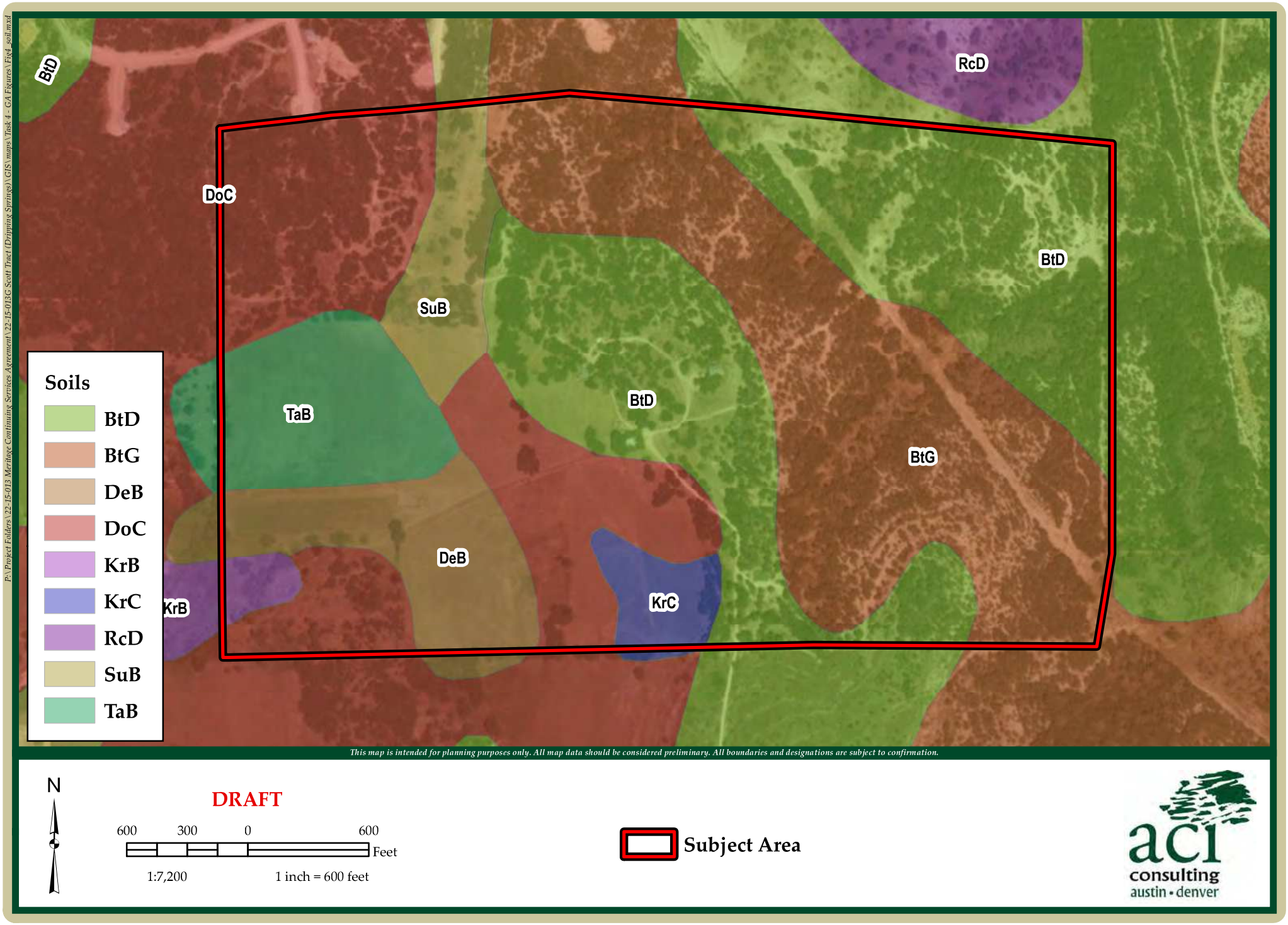
Features

STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1835
LICENSED
PROFESSIONAL GEOSCIENTIST

aci consulting
austin • denver

Big Sky Ranch
Figure 3: Features

aci Project No.: 22-15-013G
February 2018



Big Sky Ranch

Figure 4: Soils

aci Project No.: 22-15-013G

February 2018

ATTACHMENT E
Site Soils

Site Soils

Soil Name	Group	Thickness (Feet)
Brackett-Rock outcrop-Comfort complex, 1 to 8 % slopes (BtD)	D	5.16
Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes (BtG)	D	5
Denton silty clay, 1 to 3 percent slopes (DeB)	D	6.67
Doss silty clay, moist, 1 to 5 percent slopes (DoC)	D	6.67
Krum clay, 1 to 3 percent slopes (KrB)	C	6.67
Krum clay, 3 to 5 percent slopes (KrC)	C	6.67
Sunev clay loam, 1 to 3 percent slopes (SuB)	B	3.75
Tarpley clay, 1 to 3 percent slopes (TaB)	D	5

ATTACHMENT F
Historical Aerial Photographs

Prepared for:

ACI CONSULTING
1001 Mopac Circle
Austin TX 78746

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Historical Aerial Photographs

Scott Tract

Hays County, TX

PO #: 22-15-013G

ES-124913

Wednesday, July 12, 2017

Date: 2016
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA

Date: 2012
Source: USDA

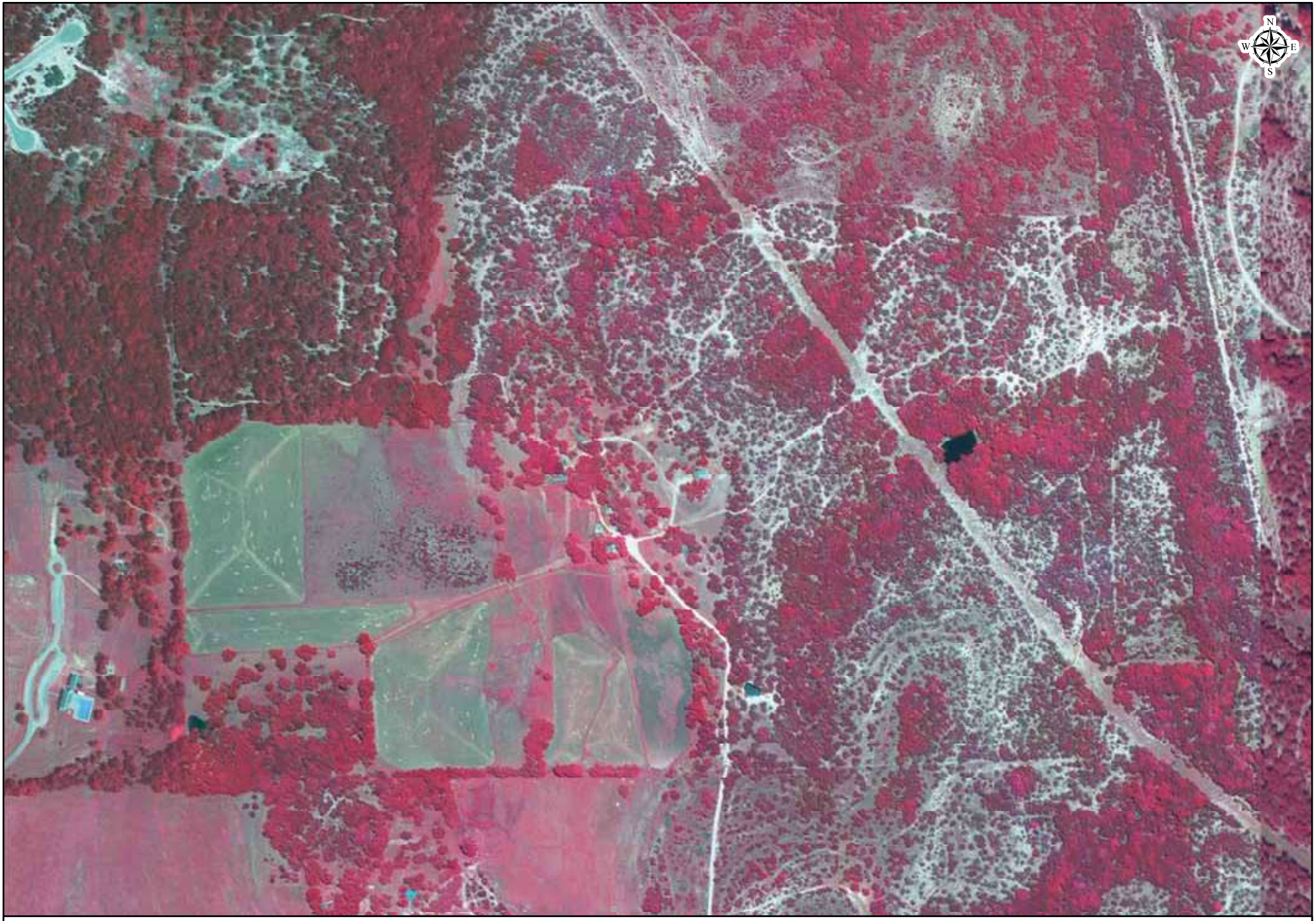
0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA

Date: 2008
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA



Date: 2004
Source: USDA

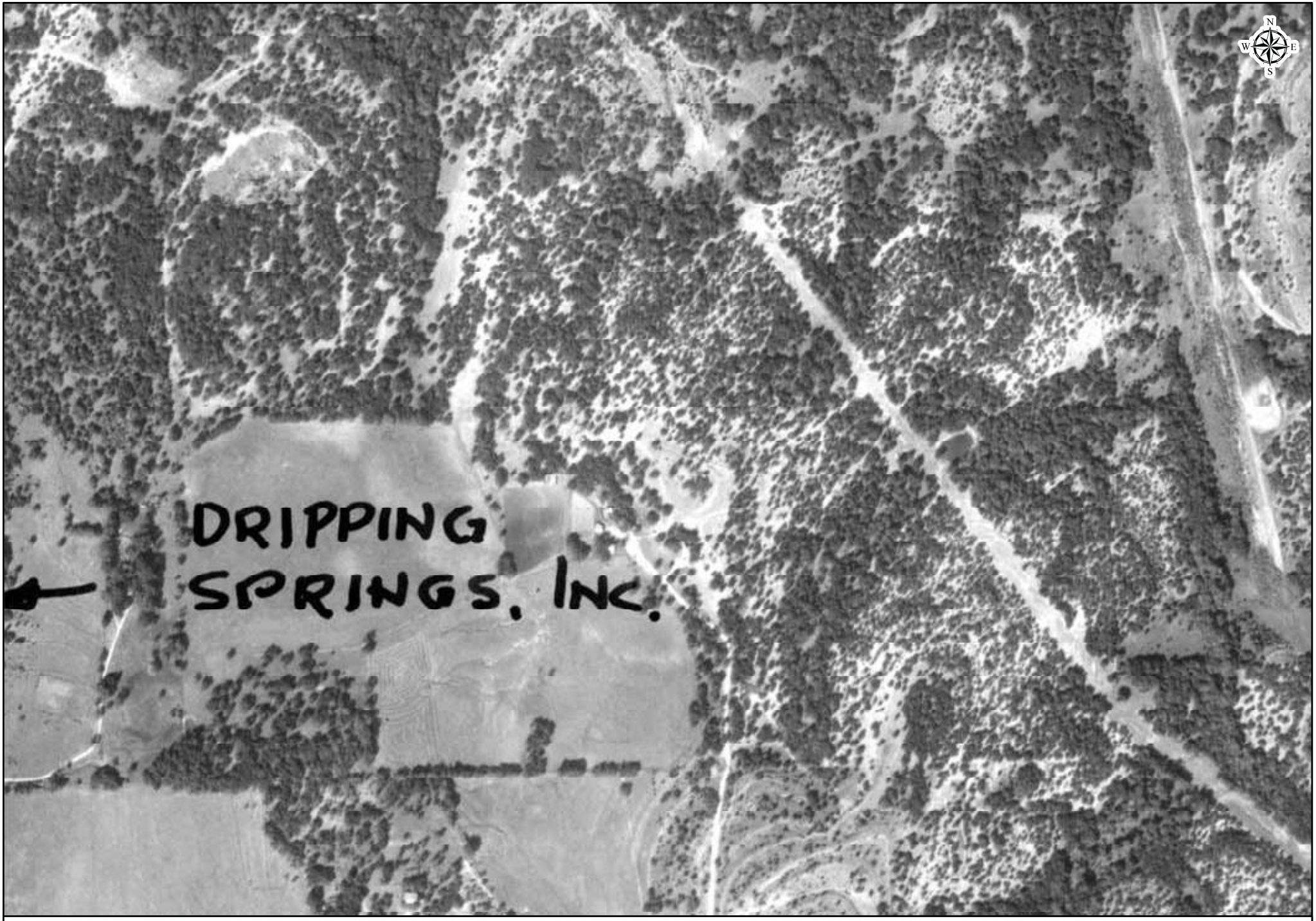
0 250 500 1,000 Feet

BANKS
ENVIRONMENTAL DATA

Date: 1995
Source: USGS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA



Date: 1980
Source: TXDOT

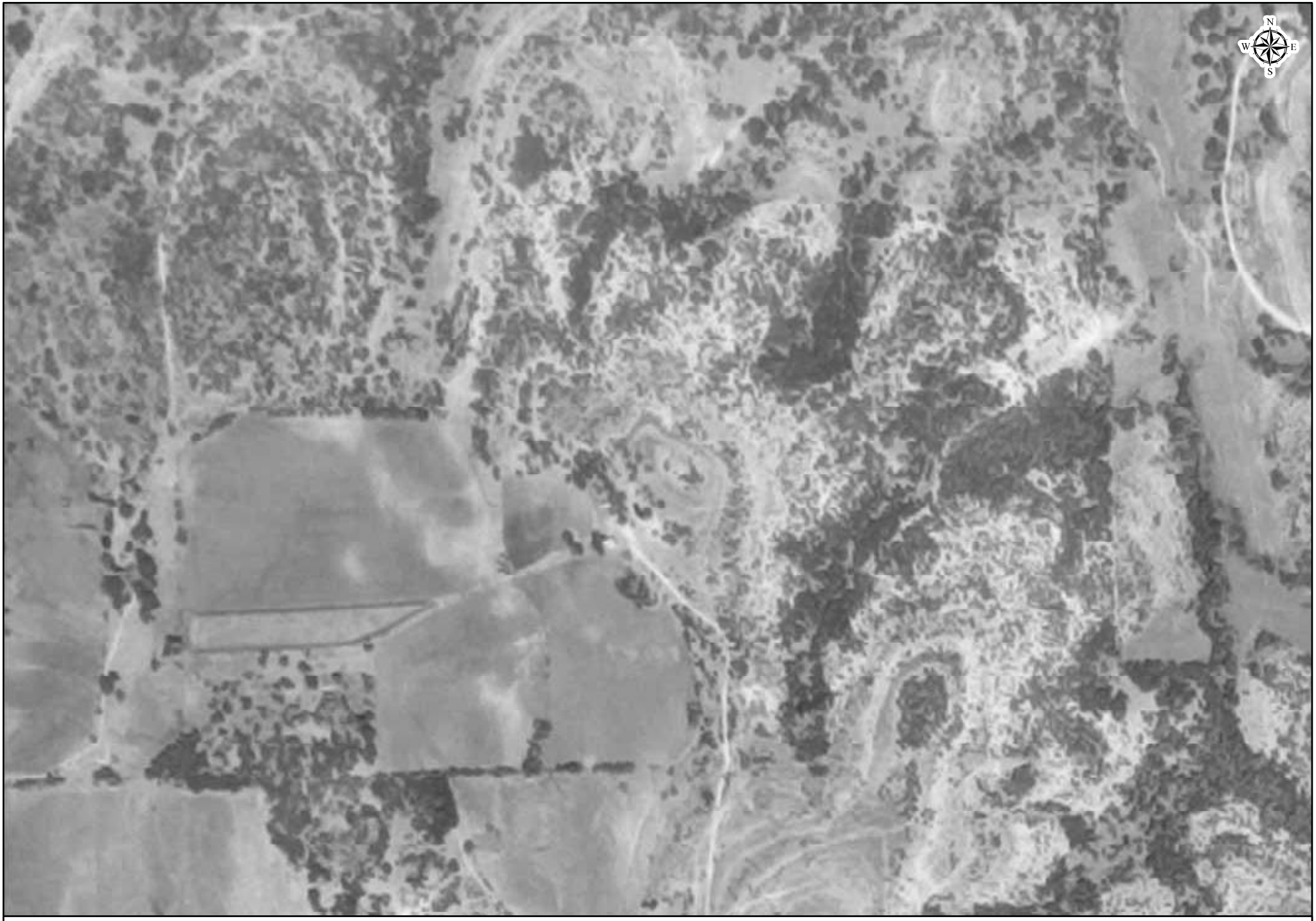
0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA

Date: 1974
Source: TXDOT

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA



Date: 1962
Source: USGS

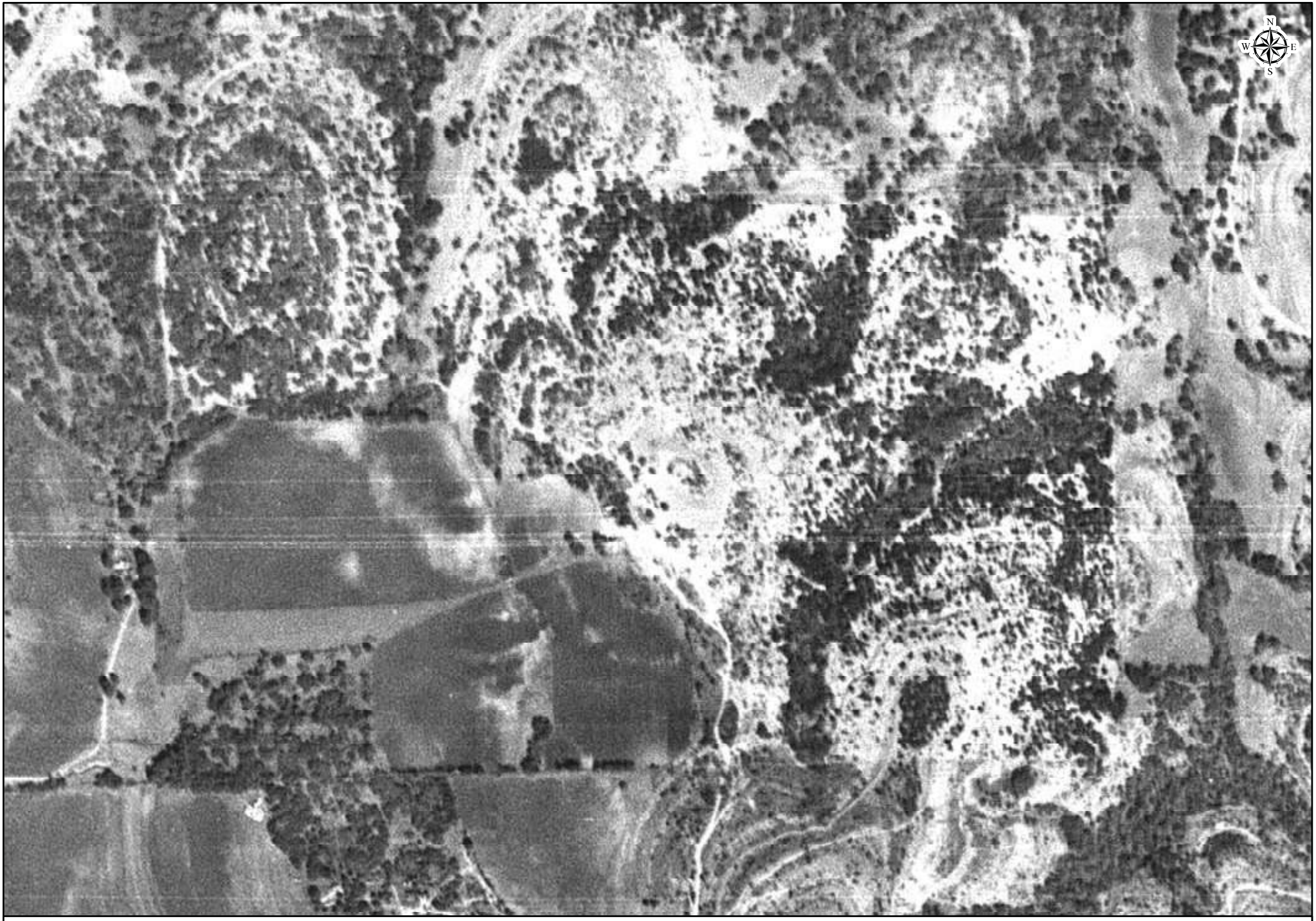
0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA

Date: 1958
Source: USAF

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA



Date: 1953
Source: AMS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

AERIAL SOURCE DEFINITIONS

Acronym	Agency
AerialOK	Aerial Oklahoma
AMS	Army Mapping Service
ASCS	Agricultural Stabilization & Conservation Service
EDAC	Earth Data Analysis Center
Fairchild	Fairchild Aerial Surveys
LDOT	Louisiana Department of Transportation
TXDOT	Texas Department of Transportation
USNavy	United States Navy
USAF	United States Air Force
USCOE	United States Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WALLACE	Wallace-Zingery Aerial Surveys
WSDOT	Washington State Department of Transportation

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

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7.2 CRITICAL ENVIRONMENTAL FEATURE REPORT

aci consulting
austin • denver

CRITICAL ENVIRONMENTAL FEATURE SURVEY REPORT
13-ACRE PORTION OF THE WILD RIDGE TRACT

Hays County, Texas

April 2021

Submitted to:
Rob Archer, P.E,
Meritage Homes
8920 Business Park Drive, Suite 350
Austin, Texas 78759

Prepared By:
aci Group, LLC
1001 Mopac Circle
Austin, Texas 78746
TBPG Firm License No. 50260

aci Project No.: 22-15-013L

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PROJECT INFORMATION 1

3.0 INVESTIGATION METHODS 1

4.0 SOILS AND GEOLOGY 2

4.1 SOILS 2
4.2 GEOLOGIC STRUCTURE 3
4.3 REVIEW OF HISTORIC AERIALS 3

5.0 SUMMARY OF FINDINGS 4

6.0 REFERENCES 5

LIST OF ATTACHMENTS

ATTACHMENT A: Site Maps
ATTACHMENT B: Historic Aerial Photographs

aci consulting
austin • denver

Critical Environmental Feature Survey Report for a 13-acre portion of the larger Wild Ridge Tract, Hays County, Texas

April 2021

1.0 INTRODUCTION

The City of Dripping Springs, Texas has required a Critical Environmental Feature (CEF) investigation and report of a 13-acre portion of the Wild Ridge Tract, hereafter referred to as the subject area or site. The development rule does not specifically define CEFs or an investigation method. As such, definitions and methods used by the Texas Commission on the Environmental Quality (TCEQ) over the Edwards Aquifer and the City of Austin (CoA) Environmental Resource Inventory (ERI) were used to direct the survey.

The purpose of this report is to identify CEFs as described in the aforementioned programs and provide a report completed by a Geologist licensed according to the Texas Geoscience Practice Act.

2.0 PROJECT INFORMATION

The approximately 13-acre site is located north of State Highway (SH) 290, east of the Big Sky development, in Hays County, Texas (**Attachment A, Figure 1**). Pedestrian investigations of the subject area were performed on March 30, 2021, under the supervision of Mark Adams, P.G. with **aci consulting**.

3.0 INVESTIGATION METHODS

The following investigation methods and activities were used to develop this report:

- Review of existing files and literature to determine the regional geology and any known caves associated with the project area;
- Review of past geological field reports, cave studies, and correspondence regarding the existing geologic features on the project area, if available;
- Site reconnaissance by a registered professional geologist to identify and examine caves, recharge features, and other critical environmental features;

- Evaluation of collected field data and a ranking of features using the TCEQ Ranking Table 0585 for the Edwards Aquifer Recharge Zone; and
- Review of historic aerial photographs to determine if there are any structural features present, and to determine any past disturbances on the subject property.

4.0 Soils and Geology

The following section includes a site-specific description of the soils, geologic stratigraphy, geologic structure, and karstic characteristics. Also included in this section is a review of historic aerials for presence of geologic changes or changes to manmade features in bedrock.

4.1 Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2021), two soil units occur within the project alignment (**Attachment A, Figure 2**):

- Brackett-Rock outcrop-Comfort complex, 1 to 8 percent slopes (BtD)

The Brackett component makes up 50 percent of the map unit. Slopes are 1 to 8 percent. This component is on ridges on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria. Hydric Soil Group: D. Rock outcrop (20%), Comfort (15%), Doss (5%), Purves (5%), and Bolar (5%) soils make up the remaining 50 percent of the soil components. These do not meet hydric criteria.

- Brackett-Rock outcrop-Real complex, 8 to 30 percent slopes (BtG)

The Brackett component makes up 38 percent of the map unit. Slopes are 8 to 30 percent. This component is on stair stepped ridges on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or

restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria. Hydric Soil Group: D. Rock outcrop (25%), Real (22%), Eckrant (10%), and Volente (5%) soils make up the remaining 62 percent of the soil components. These do not meet hydric criteria.

4.2 Geologic Structure

According to USGS Texas Geology Web Map (2021) the subject area lies within the Llano Sheet and corresponds to one geologic unit:

Table 1: Site-Specific Stratigraphic Column

Formation	Members	Thickness (Garner, 1992)
Glen Rose Kgr	Upper Glen Rose Kgr(u)	~400 feet

The geologic strata associated with the Glen Rose Formation is interbedded competent limestone with interbedded marls and cache beds resulting in the "stairstep" topography. The dip is gently to the southeast and truncates at the surface along the Balcones Fault Escarpment to the east, a zone of en echelon normal faults downthrown to the southeast.

The Glen Rose formation is described by Barnes *et. al.* (1991) as "limestone and marl as alternating resistant and recessive beds forming stair-step topography; limestone, aphanitic to fine grained, hard to soft and marly, light gray to yellowish gray; dolomite, fine grained, porous, yellowish brown; marine megafossils include, molluscan, steinkerns, rudistids, oysters, and echinoids. Upper part, Kgr(u), relatively thinner bedded, more dolomitic, and less fossiliferous; thickness about 400 feet."

4.3 Review of Historic Aerials

Aerial photographs were reviewed for the project area and are presented in **Attachment B**. The site appears to be undeveloped land aside from individual residence and other related out buildings.

Aerial photographs were reviewed for the site and adjoining properties from 1951, 1958, 1962, 1974, 1983, 1995, 2004, 2008, 2012, and 2019. Review of historic aerials suggests that the site was used as undeveloped or agricultural land with an associated rural residence and ancillary structures since before the first aerial dated 1951. The 1958 aerial shows that some new, unpaved roads have been installed in various locations across the site. The cinderblock structure in the southeast corner of the site also first appears in this aerial. The 1974 aerial shows a linear disturbance near the western site boundary. This could potentially be an air landing strip related to the US Government testing work. Further to the west, beyond the site boundary, is a linear disturbance related to the installation of a natural gas pipeline. There are no other apparent changes to the subject area up to the 2019 aerial. The 2019 aerial shows development of a residential neighborhood to the south of the subject area along US-290.

5.0 SUMMARY OF FINDINGS

No Critical Environmental Features were identified during the survey.

6.0 References

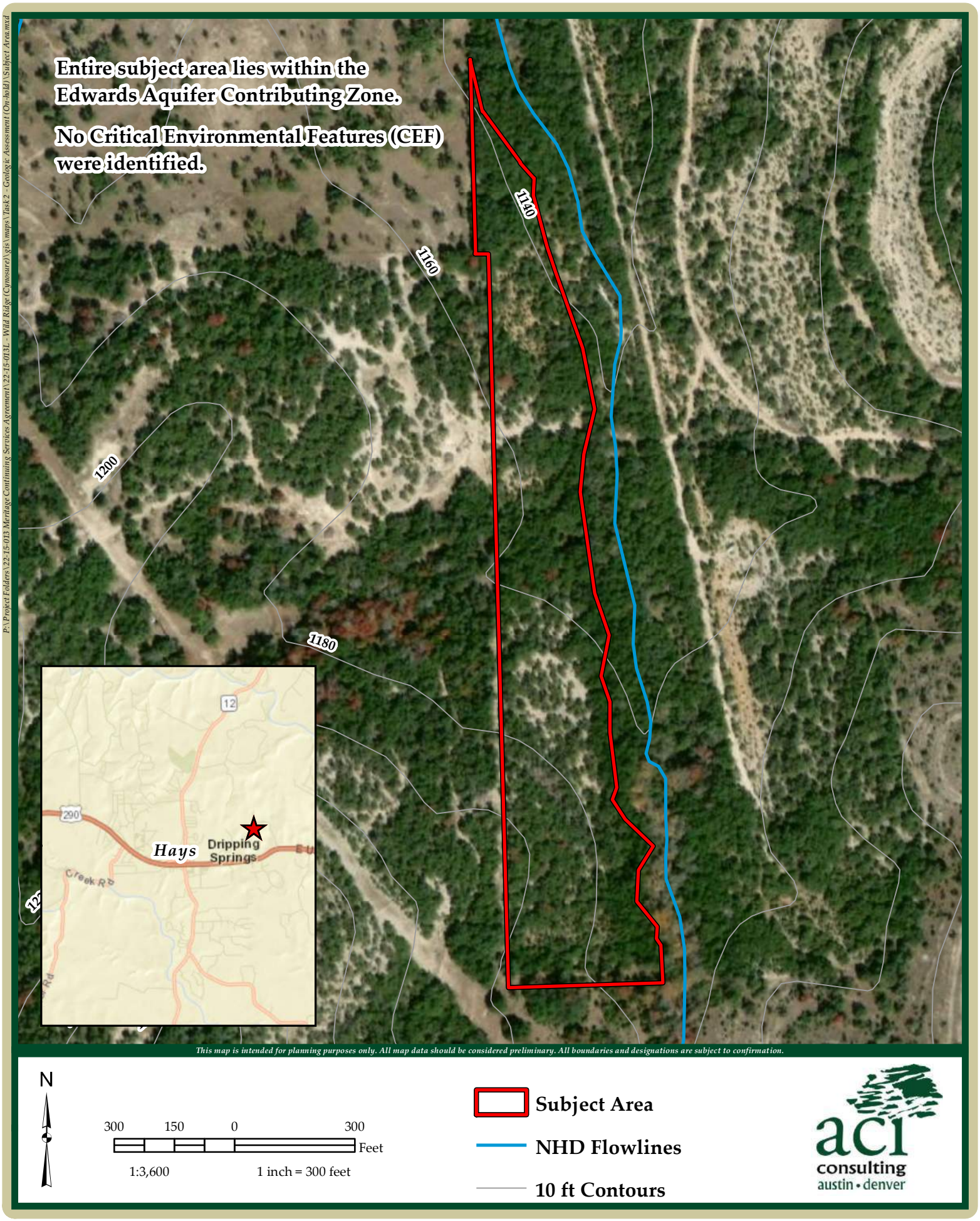
Barnes, V.E. (project director) et. al., 1981. Geologic Atlas of Texas, Austin Sheet. The University of Texas at Austin, Bureau of Economic Geology. Scale 1:250,000

(USDA NRCS) U.S. Department of Agriculture - Natural Resources Conservation Service. 2021. Web Soil Survey. Accessed: March 26, 2021.
http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

(USGS) U.S. Geologic Survey. 1986. Dripping Springs, 7.5-minute Quadrangle. USGS - Department of the Interior: Denver, Colorado.

ATTACHMENT A

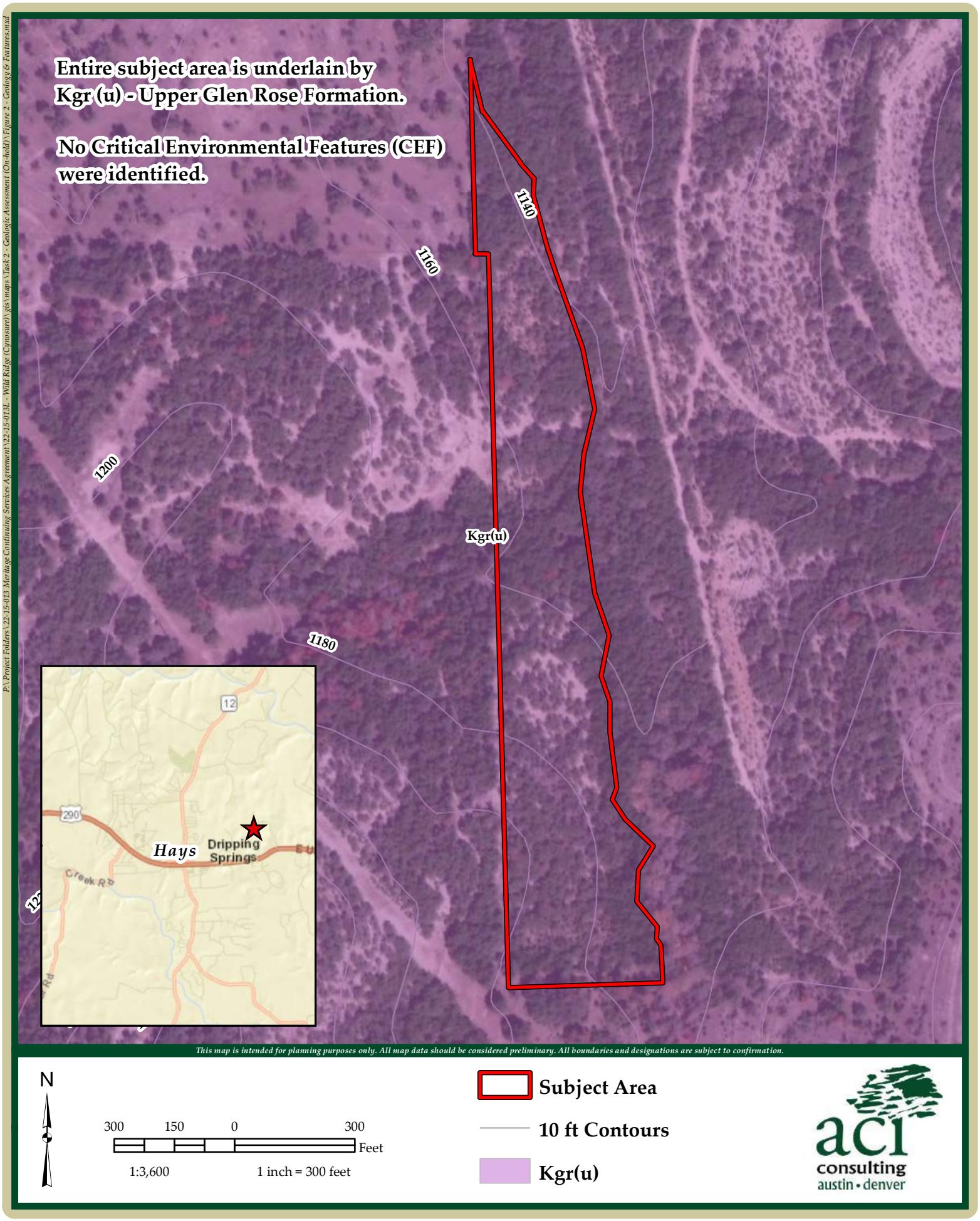
Site Maps



P:\Project Folders\22-15-013 Meritage Continuing Services Agreement\22-15-013L - Wild Ridge (Cynosure)\gis\maps\Task2 - Geologic Assessment (On-hold)\Subject Area.mxd

13-acre Wild Ridge Tract **aci Project No.: 22-15-013L**

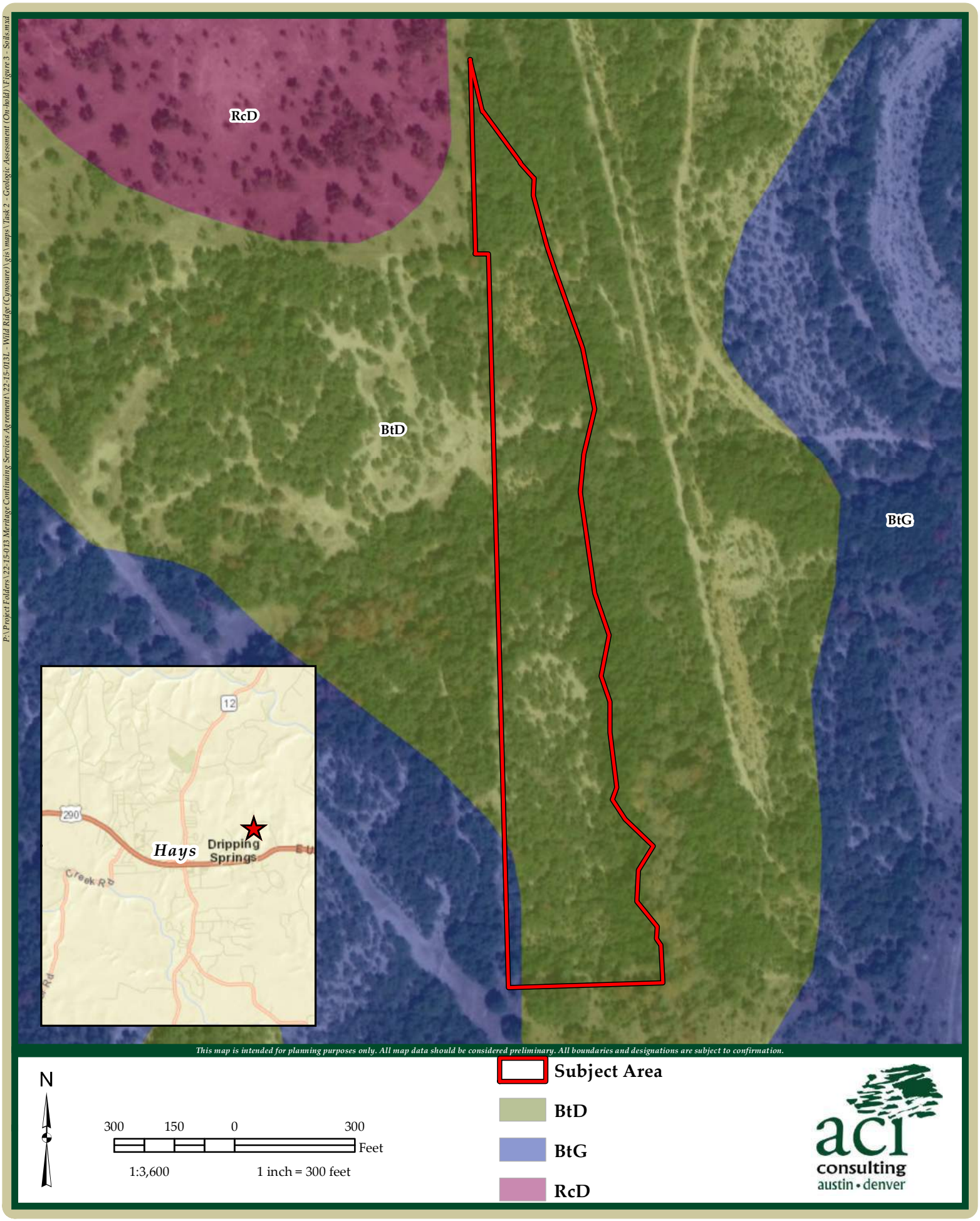
Figure 1: Site Location **April 2021**



P:\ Project Folders \ 22-15-013 Meritage Continuing Services Agreement \ 22-15-013L - Wild Ridge (Cynosure) \ gis \ maps \ Task 2 - Geologic Assessment (On-hold) \ Figure 2 - Geology & Features.mxd

13-acre Wild Ridge Tract **aci Project No.: 22-15-013L**

Figure 2: Geology and Feature Map **April 2021**



P:\Project Folders\22-15-013 Meritage Continuing Services Agreement\22-15-013L - Wild Ridge (Cynosure)\gis\maps\Task 2 - Geologic Assessment (On-hold)\Figure 3 - Soils.mxd

13-acre Wild Ridge Tract **aci Project No.: 22-15-013L**

Figure 3: Soils Map **April 2021**

ATTACHMENT B

Historic Aerial Photographs

Prepared for:

ACI CONSULTING
1001 Mopac Circle
Austin TX 78746

Historical Aerial Photographs

Cynosure Tract

Hays County, TX

PO #: 22-15-013L

ES-133456

Tuesday, March 17, 2020

Date: 2019
Source: TNRIS

0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 2012
Source: USDA

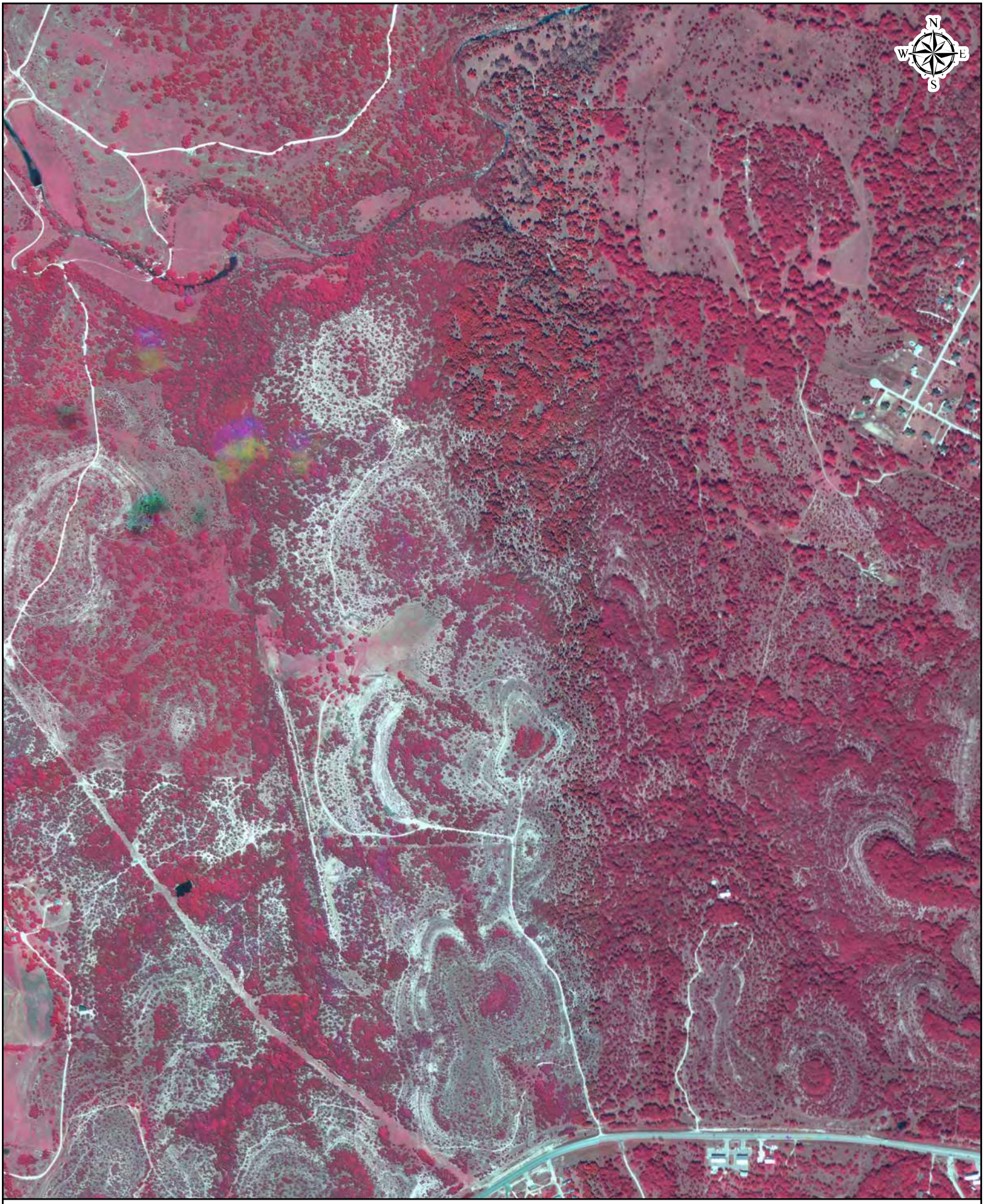
0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 2008
Source: USDA

0 500 1,000 2,000 Feet

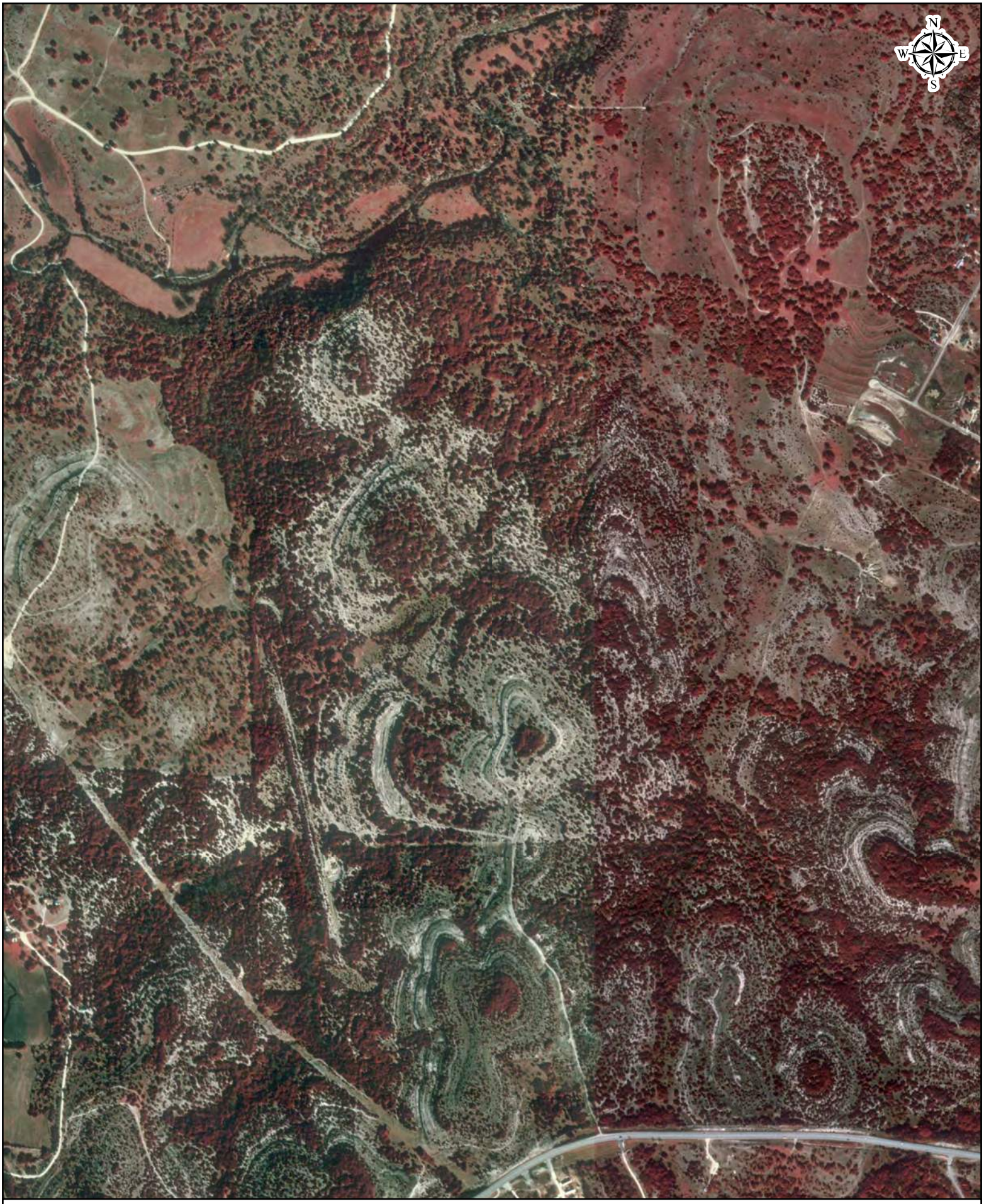
BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Date: 2004
Source: USDA

0 500 1,000 2,000 Feet

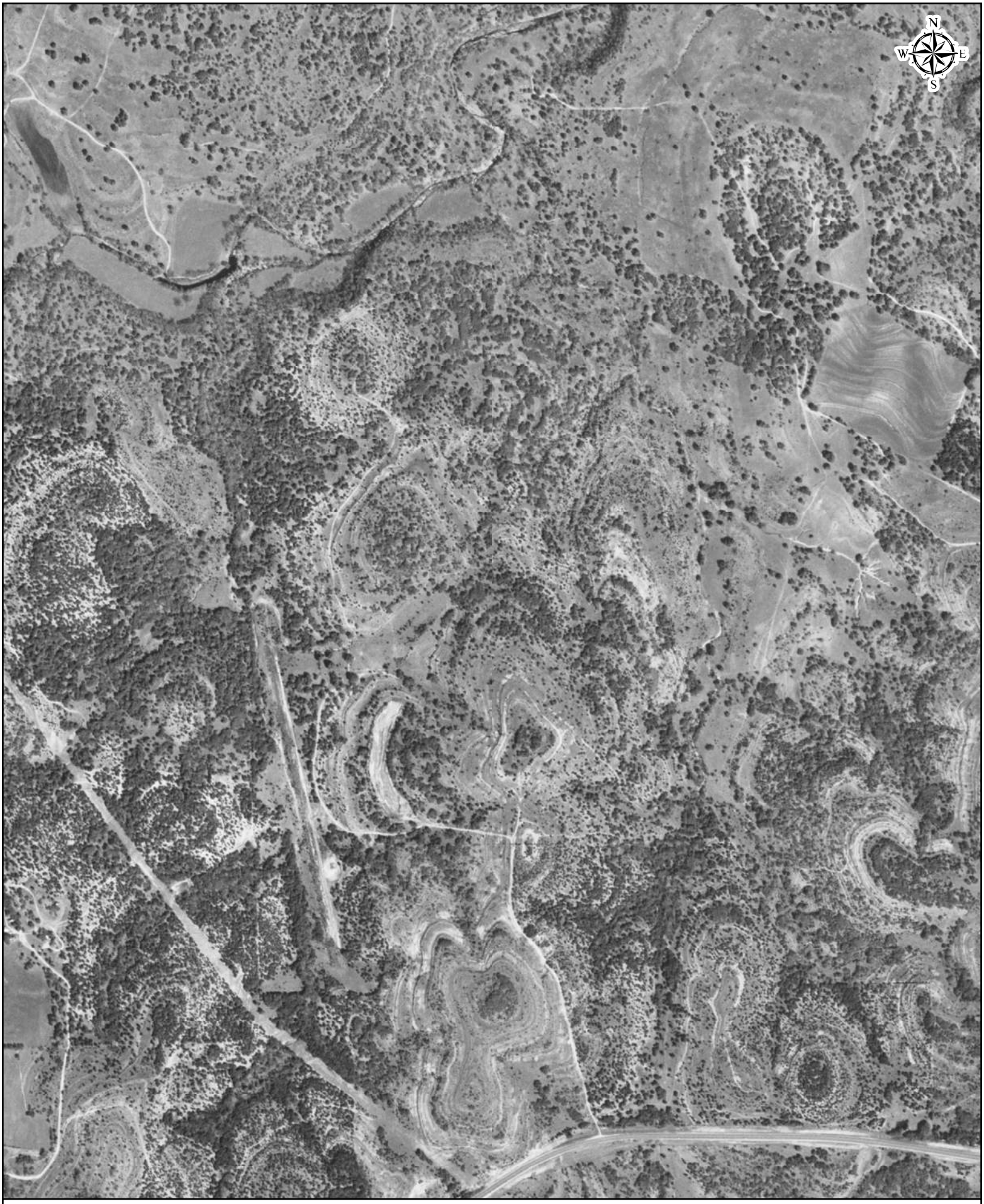
BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Date: 1995
Source: USGS

0 500 1,000 2,000 Feet

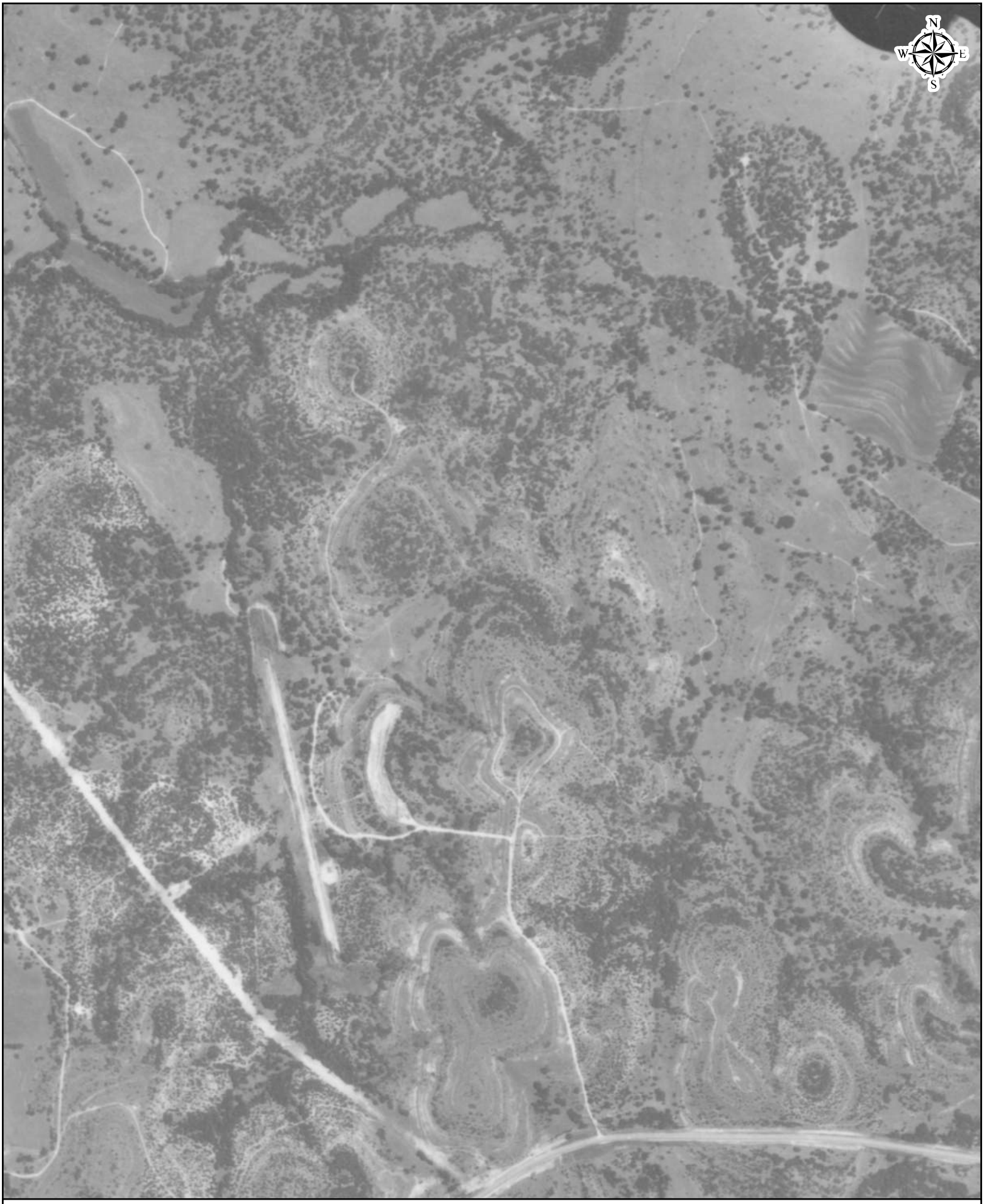
BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Date: 1983
Source: USGS

0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Date: 1974
Source: TXDOT

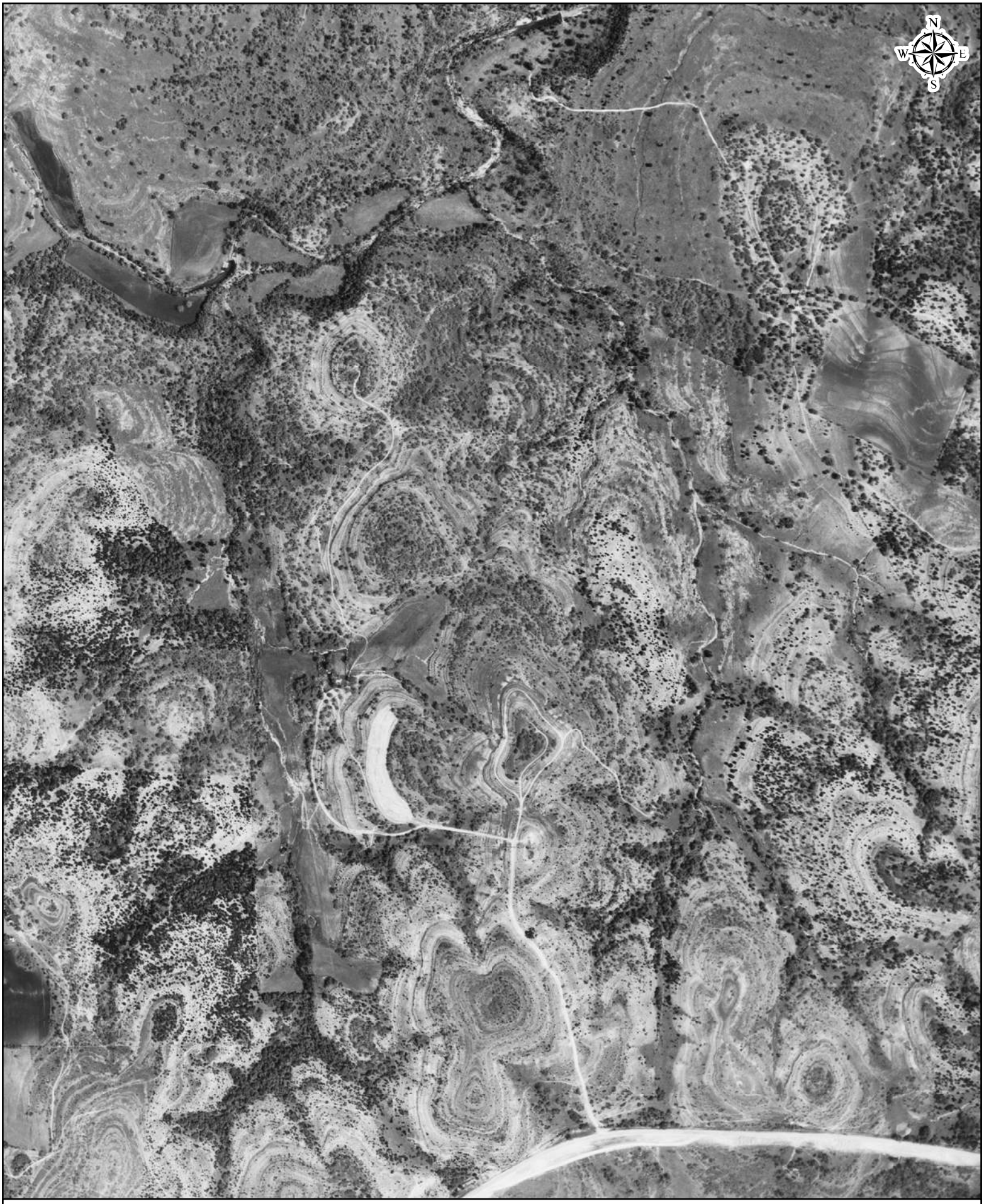
0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1962
Source: USGS

0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Date: 1958
Source: USAF

0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
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Date: 1951
Source: ASCS

0 500 1,000 2,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

AERIAL SOURCE DEFINITIONS

Acronym	Agency
NASA	National Aeronautics & Space Administration
AMS	Army Mapping Service
ASCS	Agricultural Stabilization & Conservation Service
SCS	Soil Conservation Service
MD	McDonnell Douglas Aerospace Company
Fairchild	Fairchild Aerial Surveys
TXDOT	Texas Department of Transportation
BLM	Bureau of Land Management
USAF	United States Air Force
USCOE	United States Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WALLACE	Wallace-Zingery Aerial Surveys
TNRIS	Texas Natural Resources Information System

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7.3 EXHIBIT 1 – TCEQ TSS LOADING SUMMARY

TCEQ Enhanced Method TSS Treatment Summary

	Phase 1 (Ponds 1-3)		Phase 2 (Ponds 4-5)		Phase 3 (Pond 6 and VFS)		Untreated Areas (Ponds 5-6 and VFS)		GRAND TOTAL	
Total area in BMP catchment=	115.46	acres	67.05	acres	20.93	acres	15.12	acres	**218.56**	acres*
Pre-developed Impervious=	0	acres	0	acres	0	acres	0	acres	**0**	acres
Post-developed Impervious in BMP catchment area=	46.79	acres	20.30	acres	7.72	acres	3.63	acres	**78.44**	acres
Total post-development impervious cover fraction =	0.41		0.30		0.37		0.24		**0.36**	
P=	33	inches	33	inches	33	inches	33	inches	**33**	inches
Lm required in drainage basin=	42,771	lbs.	21,077	lbs.	7,852	lbs.	**	lbs	**71,700**	lbs
Lm provided=	44,966	lbs.	20,583	lbs.	6,228	lbs.	0	lbs	**71,777**	lbs

Notes: *Area includes 5.81 Acres of Offsite area. Total Onsite area is 212.75 acres

**Lm required is accounted for within each drainage basin

Calculations were obtained from Appendix A of the RG-348, *Complying with the Edwards Aquifer Rules.*

Required WQV includes the 20% additional storage for sedimentation.

7.4 TABLE 2-1

Table 2-1. Minimum Protective Standards for Sewer and Storm Drain Trenches

(from Table 5-1 Edwards Aquifer Guidance Document RG-348, Revised July 2005)				
Case	**Description**	**Concern**	**Treatment**	**Notification/ Approval**
1	Sensitive feature is less than or equal to six (6) inches in all directions and is located above the embedment of the pipe. All rock within and surrounding the feature is sound.	Not environmental nor pipe integrity	No abatement required.	None required.
2	Sensitive feature is either larger than six (6) inches in at least one direction or is located within the level of the pipe embedment. No portion of the sensitive feature may intersect the plane of trench floor. All rock within and surrounding the feature is sound.	Environmental	The sensitive feature shall be filled with concrete. Gravel to "fist sized" rock or sacks of gravel may be placed in feature prior to placement of the concrete as long as a minimum of eighteen (18) inches of concrete is used to close the feature).	Requires notification and prior **written** approval from the TCEQ.
3	Sensitive feature intersects the plane of the trench floor is less than four (4) feet in any direction. All rock within and surrounding the feature is sound.	Environmental	Sensitive feature shall be filled with concrete. Gravel to "fist sized" rock or sacks of gravel may be placed in feature prior to placement of concrete at least eighteen (18) inches of concrete is used to close the feature. The sewer line or storm sewer lines shall be concrete encased for width of the sensitive feature plus a minimum of five (5) feet on either end. The encasement shall provide a minimum of six (6) inches of concrete on all sides of the pipe and shall have compression strength of at least 2,500 psi (28-day strength). The concrete may be steel reinforced.	Requires notification and prior **written** approval from the TCEQ.
4	Sensitive feature intersects the plane of the trench floor and any opening in trench floor is greater than four (4) feet in any direction or the trench floor is unstable.	Environmental & Structural	Requires an engineered resolution at least as protective as Case 3 above. Additional protective measures, including rerouting of line, may be required.	Requires notification and prior **written** approval from the TCEQ.

7.5 FIGURES 2-1 AND 2-2

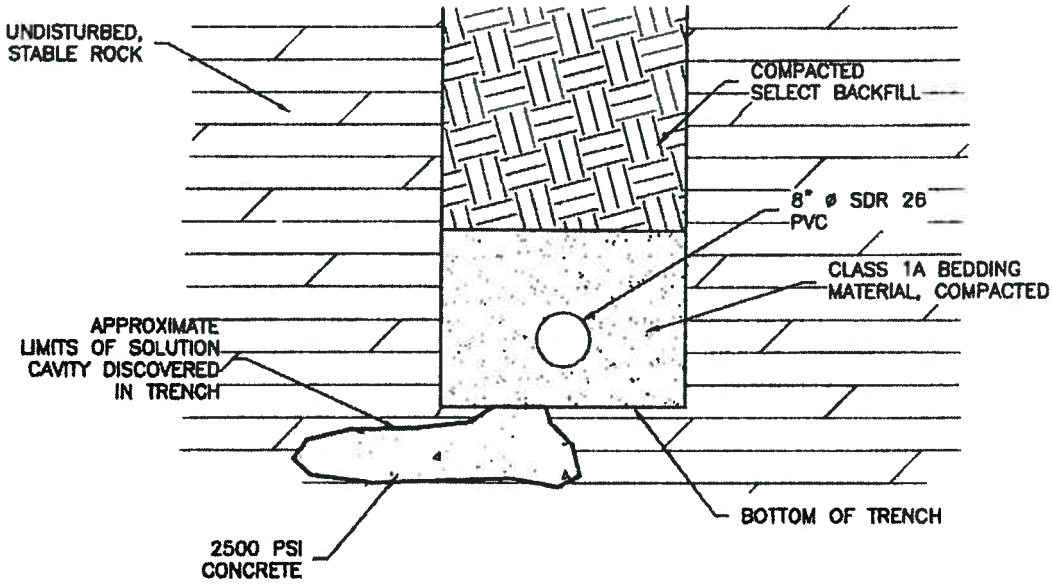

Figure 2-1. Filled Solution Feature (courtesy Kathryn Woodlee)

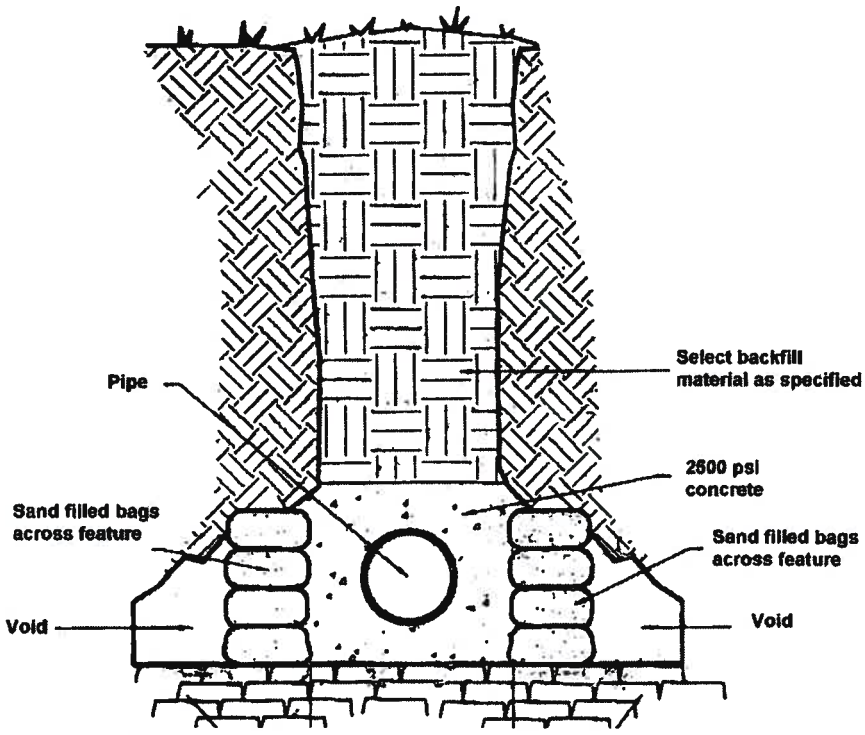

Figure 2-2. Example of Filled Void in Trench Excavation (courtesy Donald Bayes)

7.6 FIGURES 2-3 AND 2-4

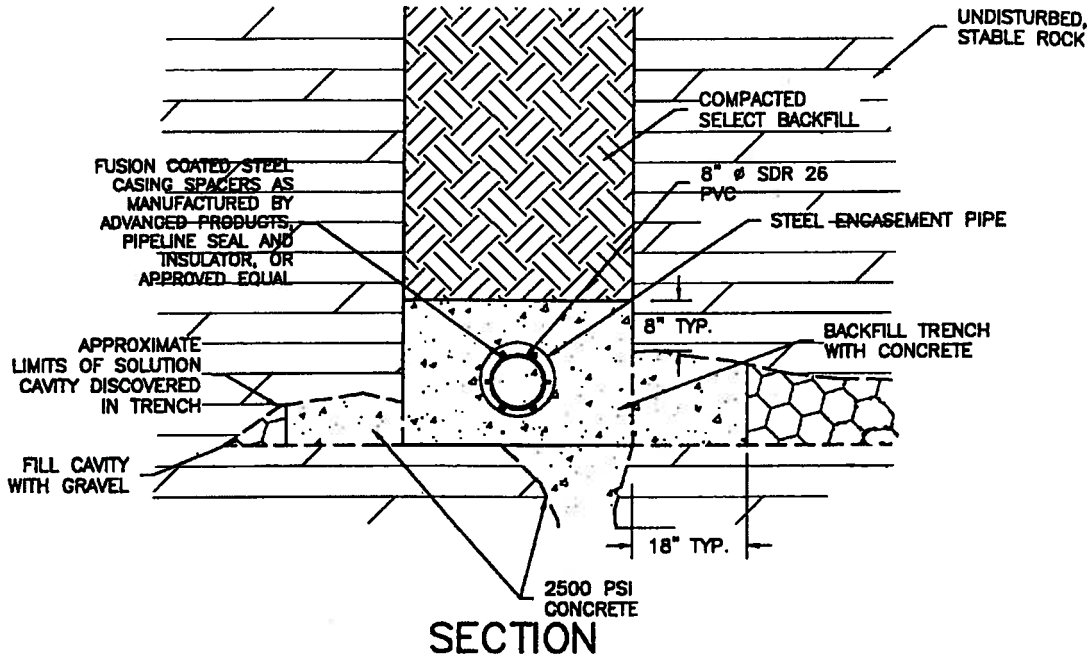

Figure 2-3. Utility Pipe Encased in External Steel Pipe (courtesy of Kathryn Woodlee)

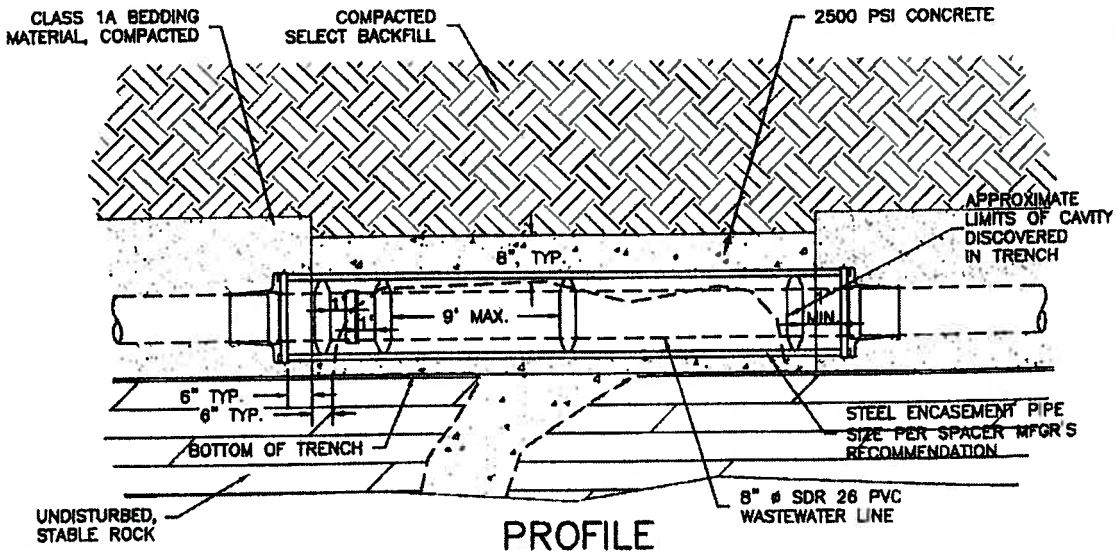

Figure 2-4. Profile View of Encased Utility Pipe (courtesy of Kathryn Woodlee)

7.7 FIGURE 2-5

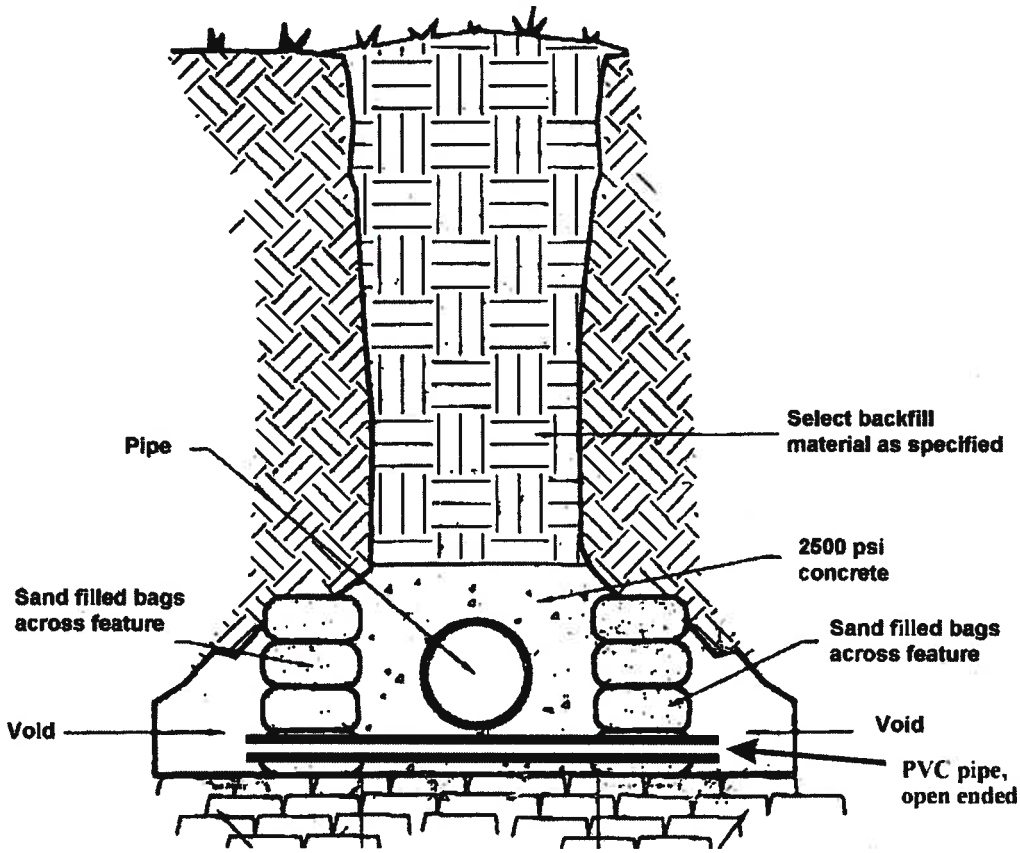

Figure 2-5. Cavity Fill with Pipe to Preserve Hydrologic Connectivity

7.8 BUFFER TECHNICAL MEMO

DOUCET+CHAN
Division of Doucet & Associates, Inc.
TBPE Firm #3937
State of Texas Surveying Firm Certification #10105800

7401B Highway 71 West, Suite 160
Austin, TX 78735
Office: 512.583.2600
Fax: 512.583.2601
Doucetengineers.com

TECHNICAL MEMOORANDUM

Scott Tract – Conceptual Development Plan
TCEQ Optional Enhanced Measures – Potential Stream Buffer Limits

Date: September 26, 2017

Prepared For: Zach Lanfear, TCEQ

Prepared By: Tom Hegemier, PE, D.WRE, CFM

Doucet and Associates is supporting the planning and design of a potential subdivision east of Dripping Springs located in the Edwards Aquifer Contributing Zone and will most likely obtain water from the Dripping Springs Water Supply Corporation. Thus, the project will be designed to comply with the TCEQ Optional Enhanced Measures (OEMs). One component of the OEMs is the inclusion of stream buffers.

Per the email communication dated September 14, 2017, I am providing on-site photographs and Google Earth images to illustrate the potential beginning of stream buffers on the above referenced planned subdivision development. My understanding of the previous communications is that a stream buffer applies to natural drainage ways where flow begins to concentrate.

Figure 1 is attached to illustrate the locations of potential streams and the beginning of their associated buffers. Several hill tops are located within the subject tract and lead to multiple waterways ways draining from the site to adjacent properties. Thus, there are several potential headwater systems where buffer zones could begin at a drainage area of five acres per the OEM if they are found to be natural function as a defined channel that concentrates stormwater runoff.

Below, photographs and descriptions are provided for each potential stream buffer area.

We appreciate your willingness to review the information from a conceptual level to aid in the subdivision conceptual planning process and welcome your feedback. If you would like to perform a site visit, we would be happy to facilitate this effort.

Area 1 – Southwest Corner

Multiple low-level swales enter the site from the south. Years ago, the land owner as part of his farming and ranching activities excavated a channel that is parallel to the property line and flows from east to west. The field area that was protected by this constructed channel has been graded and manipulated over the years for farming purposes. A berm was created that diverts flow in many directions. Downstream of this berm and rock wall are multiple small channels that form and then fade away after several hundred feet. A consistent flowing channel was noted with an “X” on Figure 1 and shown in photo 3194 and drains toward an existing stock tank.

Photo 3173 – constructed channel along property line

Photo 3176 – constructed channel along property line

Photo 3180 – looking west towards berm and rock wall

Photo 3188 – looking east across the meadow

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EXPERIENCE YOU NEED.
PEOPLE YOU TRUST.

Photo 3194 – proposed beginning of stream and stream buffer

Area 1 – March 2013, cultivated field

Area 2 - West End

This area has been under continuous grading and manipulation over the years to grow hay. The Google Earth image illustrates land grading in the recent past. An erosion feature has formed and meanders around the field but is not a natural channel. No natural channel was identified in this area thus a stream buffer is not suggested at this location.

Photo 3197 looking towards the north across the field, slight depressed area in foreground

Photo 3198 – looking north across the field

Area 2 – Tilled field in March 2013

Area 3 – Northwest Corner

An existing stock tank is at the upper end of this drainage. Downstream of the tank as shown in photo 3200, no discernable channel was found amongst the woody material on the ground. Photo 3201 illustrates the beginning of a defined channel that concentrates flow and is continuous to the north as it drains from the property. See the "X" on Figure 1 for the approximate beginning of a stream and associated buffers.

Photo 3200 looking upstream towards an existing stock tank

Photo 3201 indicating the beginning of a defined natural channel and stream buffers

<u>Area 4 – Northside Area</u>

A broad flat area depicted in photo 3202 slopes toward the north property line. No defined channel was found until a point adjacent to the property line and depicted in photo 3203.

Photo 3202 looking upstream at broad area of shallow flow

Photo 3202 looking downstream towards the beginning of a defined natural channel

<u>Area 5 – Northeast Corner</u>

A broad flat area depicted in photo 3204 slopes toward the north property line. No defined channel was found on the Scott Tract at this location. Photo 3206 is at the property line looking north and no evidence of a channel was found.

Photo 3204 – looking upstream at broad shallow area without a defined channel

Photo 3205 looking downstream toward the property line, no defined channel

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Photo 3206 – shallow flow area at the north property line, no defined channel

Area 6 – Southeast Corner

This stream begins at the southern property boundary and flows north/northeast across the property. The drainage area at the southern property line is greater than 5 acres and a defined channel was shown in photo 3211. A stream buffer 50 feet in width will begin at the southern property boundary and will expand to 100 feet in width near the crossing of the existing gas easement where the drainage area exceeds 40 acres. Thus, a stream buffer will be provided for this entire stream length.

Photo 3211 looking upstream at the southern property line where a defined channel is noted

Photo 3210 – defined channel found, will have a stream buffer

Photo 3209 - defined channel near the existing gas easement, stream buffer will be provided

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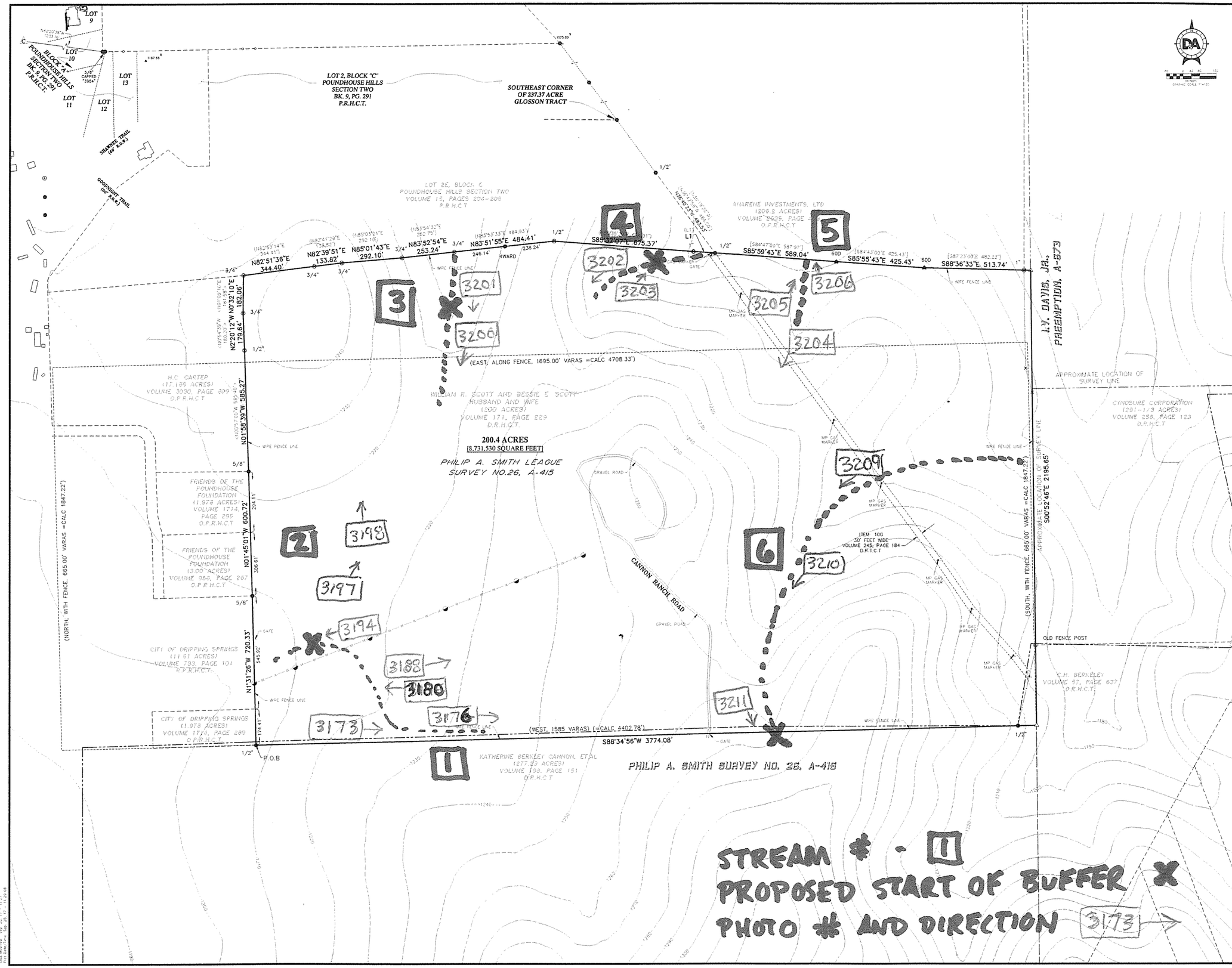

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W., Suite 160
Austin, Texas 78735 Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

DRAINAGE AREA MAP

SCOTT TRACT
DRIPPING SPRINGS, TEXAS

Scale:	AS NOTED
Designed:	JG
Drawn:	JB
Reviewed:	JG
Date:	08-17-2017

SHEET 1 OF 1

Project No: 1691-001

SECTION 10

BIG SKY RANCH – PHASE 1
CONSTRUCTION PLANS

PHASE ONE CONSTRUCTION PLANS
for
BIG SKY RANCH
DRIPPING SPRINGS, TX

OWNER/DEVELOPER: MERITAGE HOMES OF TEXAS, LLC
8920 BUSINESS PARK DRIVE,
SUITE. 350
AUSTIN, TEXAS 78759
(512)610-4851

CONTACT: BRANDON HAMMANN, P.E.

ENGINEER: DOUCET & ASSOCIATES
7401 B HWY. 71 WEST, SUITE 160
AUSTIN, TEXAS 78735
(512) 583-2600

CONTACT: JACOB HARRIS, P.E. – MANAGING ENGINEER

LAND SURVEY: DOUCET & ASSOCIATES, INC.
7401 B HWY. 71 WEST, SUITE 160
AUSTIN, TEXAS 78735
(512) 583-2600

CONTACT: CHRIS TERRY, R.P.L.S.

LEGAL DESCRIPTION: A 200.4-ACRE [8,731,530 SQUARE FEET] TRACT OF LAND OUT OF THE PHILIP A. SMITH LEAGUE, SURVEY NUMBER 26, ABSTRACT NUMBER 415, HAYS COUNTY, TEXAS, SAID TRACT BEING THAT CALLED 200-ACRE TRACT DESCRIBED TO WILLIAM R. SCOTT AND BESSIE E. SCOTT, HUSBAND AND WIFE AS RECORDED IN VOLUME 171, PAGE 229 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS [D.R.H.C.T.]

SITE AREA: 200.4 ACRES (OVERALL)
70.14 ACRES (PHASE ONE)

ZONING: P.D.D. #10

BENCHMARK: 1/2-INCH ROD FOUND IN THE NORTH LINE OF THAT CALLED 277.23-ACRE TRACT DESCRIBED TO KATHERINE BERKLEY CANNON, ET. AL. IN VOLUME 198, PAGE 151 D.R.T.C.T., FOR THE SOUTHEAST CORNER OF THAT CALLED 1.978-ACRE TRACT DESCRIBED TO CITY OF DRIPPING SPRINGS AS RECORDED IN VOLUME 1714, PAGE 289 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS [O.P.R.H.C.T.]
NORTHING = 13985329.0597
EASTING = 2258839.0762
ELEVATION = 1189.32'

WATERSHED: ONION CREEK
BARTON CREEK

UTILITY PROVIDERS: ELECTRIC: PEDERNALES ELECTRIC COOPERATIVE
TELEPHONE: FRONTIER COMMUNICATIONS
WATER: DRIPPING SPRINGS WATER SUPPLY CORPORATION
WASTEWATER: CITY OF DRIPPING SPRINGS

THIS PROJECT IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP FOR HAYS COUNTY, TEXAS, COMMUNITY PANEL NUMBER 48209C0105F, DATED SEPTEMBER 2, 2005. NO PORTIONS OF THIS SUBDIVISION ARE LOCATED WITHIN THE 100-YEAR FLOOD PLAIN.

SUBMITTED BY: _____
JACOB HARRIS, P.E.

ORIGINAL SUBMITTAL DATE: OCTOBER 3, 2018

APPROVED BY:

_____ DATE: _____
CHAD GILPIN, P.E.
CITY OF DRIPPING SPRINGS, CITY ENGINEER

_____ DATE: _____
MICHELLE FISHER
CITY OF DRIPPING SPRINGS, CITY ADMINISTRATOR

_____ DATE: _____
ROBERT CALLEGARI, P.E.
CITY OF DRIPPING SPRINGS, WASTEWATER ENGINEER

_____ DATE: _____
DILLON POLK
EMERGENCY SERVICES DISTRICT #6

_____ DATE: _____
KYLE DANNHAUS
DRIPPING SPRINGS WATER SUPPLY CORPORATION, GENERAL MANAGER

SITE DEVELOPMENT PERMIT NUMBER: _____ DATE: _____

SUBDIVISION FILE NUMBER: SUB-2018-0054

DRIPPING SPRINGS
Pop 1,033
SITE LOCATION
OUTSIDE ETJ
OUTSIDE ETJ
Wallace Mountain
Phillips Cemetery
ONION CREEK
BUTLER RANCH
OAKVIEW
OAK GROVE
GREENRIDGE
HILLSIDE
MISTY SLOPES
MEADOW
SPRINGLAKE
ROCKWOOD
DODSON
SUMMIT
WILLOW CREEK
EMERALD LAKE
Founders Park
GRAND GRANDE
RIDGE
SPANISH OAK
SPRINGCREST
Burton
Cram
Hamilton
Creek
Barton
Creek
Pedernales
River
HOMESTEAD
PARKWAY
DR
ROCKY OAK
LAUREL
RIDGE
RAMIREZ
CREEK
OAK VILLAGE
MAYFIELD
RANCH
PARKWAY
DR
DRIPPING SPRINGS
DR
SUNSET
RIDGE
DR
SUNSET
RIDGE
DR
DRIPPING SPRINGS
DR
SUNSET
RIDGE
DR
SUNSET
RIDGE
DR
SUNSET
RIDGE

PHASE ONE CONSTRUCTION PLANS

for

BIG SKY RANCH

DRIPPING SPRINGS, TX

OWNER/DEVELOPER: MATTHEW SCRIVENER
MERITAGE HOMES
8920 BUSINESS PARK DRIVE, SUITE 350
AUSTIN, TEXAS 78759
(512)615-6409

CONTACT: MATTHEW SCRIVENER

ENGINEER: DOUCET & ASSOCIATES
7401 B HWY. 71 WEST, SUITE 160
AUSTIN, TEXAS 78735
(512) 583-2600

CONTACT: JENNIFER PAISLEY, P.E. - MANAGING ENGINEER

LAND SURVEY: DOUCET & ASSOCIATES, INC.
7401 B HWY. 71 WEST, SUITE 160
AUSTIN, TEXAS 78735
(512) 583-2600

CONTACT: EDWARD PRINCE, R.P.L.S.

LEGAL DESCRIPTION: A 200.4-ACRE (8,731,530 SQUARE FEET) TRACT OF LAND OUT OF THE PHILIP A. SMITH LEAGUE, SURVEY NUMBER 26, ABSTRACT NUMBER 415, HAYS COUNTY, TEXAS, SAID TRACT BEING THAT CALLED 200-ACRE TRACT DESCRIBED TO WILLIAM R. SCOTT AND BESSIE E. SCOTT, HUSBAND AND WIFE AS RECORDED IN VOLUME 171, PAGE 229 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS [D.R.H.C.T.]

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WATER: DRIPPING SPRINGS WATER SUPPLY CORPORATION
WASTEWATER: CITY OF DRIPPING SPRINGS

THIS PROJECT IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP FOR HAYS COUNTY, TEXAS, COMMUNITY PANEL NUMBER 48209C0105F, DATED SEPTEMBER 2, 2005. NO PORTIONS OF THIS SUBDIVISION ARE LOCATED WITHIN THE 100-YEAR FLOOD PLAIN.

SUBMITTED BY: Jennifer Paisley
JENNIFER J. PAISLEY, P.E.

STATE OF TEXAS — JENNIFER J. PAISLEY — 91109 — LICENSED — PROFESSIONAL ENGINEER — 2 MAY 2019

ORIGINAL SUBMITTAL DATE: OCTOBER 3, 2018

APPROVED BY: Chad Gulpin DATE: 5-2-19
CHAD GULPIN, P.E.
CITY OF DRIPPING SPRINGS, CITY ENGINEER

Michelle Fischer DATE: 5/3/2019
MICHELLE FISHER Fischer
CITY OF DRIPPING SPRINGS, CITY ADMINISTRATOR

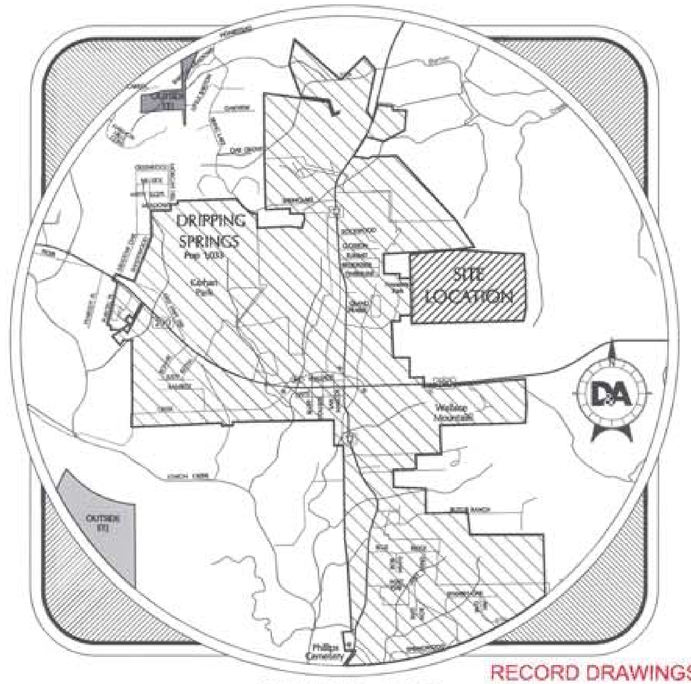
DATE: 5-2-19
ROBERT CALLEGARI, P.E.
CITY OF DRIPPING SPRINGS, WASTEWATER ENGINEER

DATE: 5/3/19
DILLON POLK
EMERGENCY SERVICES DISTRICT #6

Kyle DATE: 5/2/19
KYLE DANNHAUS
DRIPPING SPRINGS WATER SUPPLY CORPORATION, GENERAL MANAGER

SITE DEVELOPMENT PERMIT NUMBER: SUB2018-0054 CP DATE: 5/3/19

SUBDIVISION FILE NUMBER: SUB-2018-0054, Revision #1 SUB2019-0035



VICINITY MAP

D&A DOUCET & ASSOCIATES
Civil Engineering • Entitlements • GIS/Mapping
(South) Austin, TX - (North) Austin, TX - San Marcos, TX
San Antonio, TX - Houston, TX - Easthampton, MA
www.DoucetEngineers.com

RECORD DRAWINGS
NOTE:
THESE "RECORD" DRAWINGS WERE PREPARED FROM INFORMATION SUPPLIED BY THE CONTRACTOR. IN PREPARING THESE PLANS THE ENGINEER HAS TO THE BEST OF HIS KNOWLEDGE ACCURATELY PRESENTED THE AS-BUILT CONDITION OF THE PROJECT. HOWEVER, THE ENGINEER CANNOT GUARANTEE THE ACCURACY OF THE INFORMATION PROVIDED BY THE CONTRACTOR.

ALL RESPONSIBILITY FOR ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY MUST RELY UPON THE ADEQUACY OF WORK OF THE DESIGN ENGINEER.

REVISIONS:

NO.	DESCRIPTION	REVISE (R)/ADD (A) SHEET NOTE	TOTAL # SHEET IN PLAN SET	NET CHANGE IMP. COVER	SITE IMP. COVER	% SITE IMP. COVER	APPROVED DATE
1	Updated WWLN A & WWLN H, updated water and wastewater service exhibits	R	175	0	0	0	5-30-19

File #SUB2019-0035

NOTES:
1. THIS SITE IS SUBJECT TO ORDINANCE 2018-24 PPD No. 10 BIG SKY (OCT 9, 2018)
2. OWNER/OPERATOR OF STORMWATER UTILITIES AND PONDS: MERITAGE HOMES.

SITE DATA TABLE

	SITE AREA (AC)	Type A RESIDENTIAL LOTS	Type B RESIDENTIAL LOTS	Type C RESIDENTIAL LOTS	RESIDENTIAL LOTS	COLLECTOR ROAD (LF)	LOCAL ROAD (LF)	ALLEYS (LF)	IMPERVIOUS COVER: STREET/SIDEWALK I.C. (AC)	Type A LOTS I.C. (AC)	Type B LOTS I.C. (AC)	Type C LOTS I.C. (AC)	Amenity Center & Misc.	IMPERVIOUS COVER (AC)	IMPERVIOUS COVER (%)	PARKLAND: Public Parkland	Private Open Space	Private Parkland	Parkland Swap	TOTAL (non-credit) (AC)
REQUIRED	200.40																			31.20
ALLOWABLE					780					(0.55x50%x1.10)	(0.65x50%x1.10)	(0.80x50%x1.10)		100.20	50.00%		(credit for 50%)	(credit for 50%)	(credit for 0%)	
PHASE ONE	70.12	98	88	70	256	1580	10158	2557	11.55	4.89	6.55	5.67	0.70	28.86	41.13%	6.41	7.54	0.00	4.15	7.96
PHASE TWO (Future)	35.92	130	58	0	188	1980	4740	2530	7.99	6.69	4.30	0.00	1.70	20.68	57.58%	1.80	0.00	3.51	0.00	3.56
PHASE THREE (Future)	69.45	0	206	79	285	525	3290	0	3.26	0.00	7.86	6.40	0.00	17.52	25.23%	16.74	7.10	0.00	0.00	23.29
PHASE FOUR (Future)	24.91	48	87	0	135	0	7495	1126	6.18	2.40	6.45	0.00	0.00	15.03	60.33%	1.90	0.00	0.00	0.00	1.90
OVERALL	200.4				764									81.87	40.85%	27.85	14.64	3.51	4.15	
																27.85	7.14	3.76	0.00	36.73

Sheet List Table

#	Sheet Description
1	COVER SHEET
2	GENERAL NOTES 1
3	GENERAL NOTES 2
4	GENERAL NOTES 3
5	STREET SECTIONS
6	FINAL PLAT NOTES
7	FINAL PLAT
8	FINAL PLAT
9	FINAL PLAT
10	FINAL PLAT
11	FINAL PLAT
12	EXISTING CONDITIONS
13	EXISTING DRAINAGE AREA MAP
14	PROPOSED DRAINAGE AREA MAP
15	INTERMEDIATE DRAINAGE AREA MAP
16	STORM SEWER CALCULATIONS
17	STORM SEWER CALCULATIONS
18	STORM SEWER CALCULATIONS
19	TRAFFIC CONTROL NOTES
20	TRAFFIC CONTROL PLAN – PHASE 1
21	TRAFFIC CONTROL PLAN – PHASE 2
22	TRAFFIC CONTROL DETAILS
23	OVERALL TREE PROTECTION PLAN
24	TREE PROTECTION PLAN I
25	TREE PROTECTION PLAN II
26	TREE PROTECTION PLAN III
27	TREE PROTECTION PLAN IV
28	TREE LIST I
29	TREE LIST II
30	OVERALL EROSION & SEDIMENTATION CONTROL PLAN
31	EROSION & SEDIMENTATION CONTROL PLAN I
32	EROSION & SEDIMENTATION CONTROL PLAN II
33	EROSION & SEDIMENTATION CONTROL PLAN III
34	EROSION & SEDIMENTATION CONTROL PLAN IV
35	OVERALL GRADING PLAN
36	GRADING PLAN I
37	GRADING PLAN II
38	GRADING PLAN III
39	GRADING PLAN IV
40	OVERALL POND PLAN
41	POND 1 PLAN VIEW AND SECTIONS
42	POND 2 PLAN VIEW AND SECTIONS
43	POND 3 PLAN VIEW AND SECTIONS
44	POND DETAILS OUTLET STRUCTURES
45	POND DETAILS HEADWALL DETAILS
46	POND DETAILS SMART BATCH
47	POND CALCULATION SHEET
48	POND DETAILS OUTLET STRUCTURES
49	POND DETAILS OUTLET STRUCTURES
50	POND DETAILS OUTLET STRUCTURES
51	OVERALL ROAD LAYOUT
52	OVERALL STRIPING & SIGNAGE PLAN
53	FOUNDERS PARK ROAD PLAN & PROFILE
54	LONE PEAK WAY PLAN & PROFILE A
55	LONE PEAK WAY PLAN & PROFILE B
56	McKITTRICK RIDGE STREET PLAN & PROFILE A
57	McKITTRICK RIDGE STREET PLAN & PROFILE B
58	DOME PEAK TERRACE PLAN & PROFILE
59	SAWTOOTH MOUNTAIN WAY PLAN & PROFILE A
60	SAWTOOTH MOUNTAIN WAY PLAN & PROFILE B
61	SAWTOOTH MOUNTAIN WAY PLAN & PROFILE C
62	MOUNT LOCKE ROAD PLAN & PROFILE
63	FORT SUMNER STREET PLAN & PROFILE
64	DELAWARE MOUNTAIN TERRACE PLAN & PROFILE
65	LOST PEAK LANE PLAN & PROFILE
66	GLASS MOUNTAINS WAY PLAN & PROFILE A
67	GLASS MOUNTAINS WAY PLAN & PROFILE B
68	BEACH MOUNTAIN ROAD PLAN & PROFILE A
69	BEACH MOUNTAIN ROAD PLAN & PROFILE B
70	LEONARD MOUNTAIN DRIVE PLAN & PROFILE
71	SIERRA BLANCA ROAD PLAN & PROFILE A
72	SIERRA BLANCA ROAD PLAN & PROFILE B
73	EAGLE MOUNTAIN TRAIL PLAN & PROFILE A
74	EAGLE MOUNTAIN TRAIL PLAN & PROFILE B
75	EAGLE MOUNTAIN TRAIL PLAN & PROFILE C
76	BARTLETT PEAK LANE PLAN & PROFILE
77	ALLEY 1 PLAN & PROFILE
78	ALLEY 2 PLAN & PROFILE
79	ALLEY 6 PLAN & PROFILE
80	ALLEY 8 PLAN & PROFILE
81	ALLEY 9 PLAN & PROFILE
82	ALLEY 10 PLAN & PROFILE
83	ALLEY 11 PLAN & PROFILE
84	OVERALL STORM SEWER LAYOUT PLAN

Sheet List Table

#	Sheet Description
85	STORM SEWER LAYOUT I
86	STORM SEWER LAYOUT II
87	STORM SEWER LAYOUT III
88	STORM SEWER LINE PLAN & PROFILE SSLN A
89	STORM SEWER LINE PLAN & PROFILE SSLN B
90	STORM SEWER LINE PLAN & PROFILE SSLN B
91	STORM SEWER LINE PLAN & PROFILE SSLN B
92	STORM SEWER LINE PLAN & PROFILE SSLN B-2
93	STORM SEWER LINE B LATERAL PROFILES
94	STORM SEWER LINE PLAN & PROFILE SSLN C
95	STORM SEWER LINE PLAN & PROFILE SSLN C
96	STORM SEWER LINE PLAN & PROFILE SSLN C-6
97	STORM SEWER LINE C LATERAL PROFILES
98	STORM SEWER LINE PLAN & PROFILE SSLN D
99	STORM SEWER LINE D LATERAL PROFILES
100	STORM SEWER LINE PLAN & PROFILE SSLN E
101	STORM SEWER LINE PLAN & PROFILE SSLN E
102	STORM SEWER LINE PLAN & PROFILE SSLN E-17
103	STORM SEWER LINE E LATERAL PROFILES A
104	STORM SEWER LINE E LATERAL PROFILES
105	STORM SEWER LINE PLAN & PROFILE SSLN G
106	STORM SEWER LINE PLAN & PROFILE SSLN G-3
107	STORM SEWER LINE G LATERAL PROFILES
108	STORM SEWER LINE PLAN & PROFILE SSLN H
109	STORM SEWER LINE H LATERAL PROFILES
110	STORM SEWER LINE PLAN & PROFILE SSLN I
111	STORM SEWER LINE PLAN & PROFILE SSLN I
112	STORM SEWER LINE I LATERAL PROFILES
113	OVERALL WASTEWATER LAYOUT PLAN
114	WASTEWATER LAYOUT PLAN I
115	WASTEWATER LAYOUT PLAN II
116	WASTEWATER LAYOUT PLAN III
117	WASTEWATER PLAN & PROFILE WWLN-A
118	WASTEWATER PLAN & PROFILE WWLN-A
119	WASTEWATER PLAN & PROFILE WWLN-B
120	WASTEWATER PLAN & PROFILE WWLN-C
121	WASTEWATER PLAN & PROFILE WWLN-C
122	WASTEWATER PLAN & PROFILE WWLN-D
123	WASTEWATER PLAN & PROFILE WWLN-D
124	WASTEWATER PLAN & PROFILE WWLN-E
125	WASTEWATER PLAN & PROFILE WWLN-F
126	WASTEWATER PLAN & PROFILE WWLN-L
127	WASTEWATER PLAN & PROFILE WWLN-M
128	WASTEWATER PLAN & PROFILE WWLN-N
129	WASTEWATER PLAN & PROFILE WWLN-O
130	WASTEWATER PLAN & PROFILE WWLN-P
131	WASTEWATER PLAN & PROFILE WWLN-R
132	WASTEWATER PLAN & PROFILE WWLN-R
133	WASTEWATER PLAN & PROFILE WWLN-S
134	WASTEWATER PLAN & PROFILE WWLN-T
135	WASTEWATER PLAN & PROFILE WWLN-T
136	WASTEWATER PLAN & PROFILE WWLN-GG
137	WASTEWATER PLAN & PROFILE WWLN-HH
138	WASTEWATER PLAN & PROFILE WWLN-II
139	LIFT STATION PLAN
140	LIFT STATION MECHANICAL DETAILS
141	LIFT STATION ODOR CONTROL DETAILS
142	LIFT STATION DETAILS
143	OVERALL WATER LAYOUT PLAN
144	WATER LAYOUT I
145	WATER LAYOUT II
146	WATER LAYOUT III
147	WATER LAYOUT IV
148	WATER LAYOUT V
149	WATER LAYOUT VI
150	WATER LINE WLN-A PLAN & PROFILE A
151	WATER LINE WLN-A PLAN & PROFILE B
152	EROSION CONTROL DETAILS
153	EROSION CONTROL DETAILS
154	PAVEMENT DETAILS
155	PAVEMENT DETAILS
156	PAVEMENT DETAILS
157	UTILITY DETAILS
158	UTILITY DETAILS
159	UTILITY DETAILS
160	UTILITY DETAILS
161	UTILITY DETAILS
162	UTILITY DETAILS
163	UTILITY DETAILS
164	UTILITY DETAILS
165–175	LIFTSTATION ELECTRICAL PLANS

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 2937

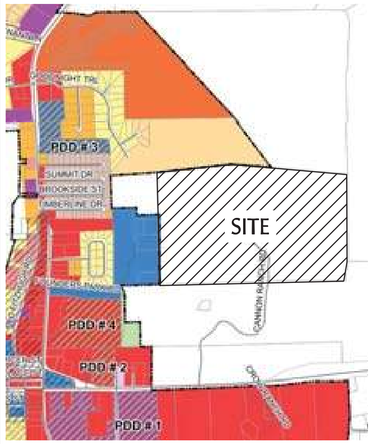
COVER SHEET

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 1 OF 175

Project No: 1691-002



Legend

City Limits, Limited Purpose, Historic Overlay, PDD Overlay, AG, PP, SF-1, SF-2, SF-3, SF-4, MF, MH, O, LR, GR, GLI, CS, LI, Industrial

NOTES:

1. Owner/Developer Information:

Company: Meritage Homes
Address: 211 Cannon Ranch Road
8920 Business Park Drive, Suite. 350
Austin, Texas 78759

Phone: (512) 615–6409

Owner's representative responsible for plan alterations:

Name: Doucet & Associates, Inc.
Address: 7401 B Highway 71 West, Suite 160
Austin, TX 78735
Phone: (512) 583–2600

Person or firm responsible for erosion/sedimentation control maintenance:

Name: CC Carlton
Address: 2620 Brushy Creek Loop, Bldg A
Cedar Park, TX 78613
Phone: (512) 476–4282

Person for firm responsible for tree/natural area protection maintenance:

Name: CC Carlton
Address: 2620 Brushy Creek Loop, Bldg A
Cedar Park, TX 78613
Phone: (512)476–4282

2. The contractor shall give 48 hour notice to Engineer prior to tests.
3. All disturbed areas within this project shall be revegetated and all permenant erosion/sedimentation controls completed prior to the issuance of occupancy permits.
4. Additionally, any area within the limit of construction of the project which is not adequately revegetated shall be brought into compliance prior to release.

GRADING NOTES:

1. CHANNEL DRAINAGE SLOPES SHALL BE NO STEEPER THAN 3:1 UNLESS OTHERWISE NOTED.
2. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
3. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
5. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND NOT FLATTER THAN 2% AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS, ITEM 132.
6. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.
7. CONTRACTOR WILL PROVIDE A GRADING OF 3:1 MAX FROM PROPOSED CURB TO NATURAL GROUND ELEVATION.

AS-BUILT NOTE:

AS-BUILT ELEVATION SHOTS WILL NEED TO BE PROVIDED TO THE CITY OF DRIPPING SPRINGS BY THE CONTRACTOR TO CONFIRM POND DEPTH, EMBANKMENT HEIGHT, AND GRADING FOR WATER QUALITY AND DETENTION PONDS.

GENERAL WATERLINE CONSTRUCTION NOTES
DRIPPING SPRINGS WSC
OCTOBER, 2018

1. Waterlines shall be designed to be installed between 36 inches minimum bury depth and 60 inches maximum, any waterline designed to be buried deeper than 5 feet must have approval from Dripping Springs WSC staff and its engineers.
2. All waterlines should cross above storm sewer, any waterline designed to cross under storm sewer must have approval from Dripping Springs WSC staff and its engineers.
3. All gas, electric, telecommunication and wastewater lines must cross below water lines, any line that cannot cross under will require approval from Dripping Springs WSC staff and engineers
4. Waterlines shall be constructed so the Dripping Springs WSC can perform maintenance on them when necessary this includes.
   a. No walls constructed over or within six feet of a waterline without prior approval from the Dripping Springs WSC staff or its engineers.
   b. No signs constructed over or within six feet of a waterline without prior approval from Dripping Springs WSC staff or its engineers.
   c. Nothing can be built or placed within the Dripping Springs WSC easements that cannot be easily moved by WSC staff to perform maintenance
   d. All waterlines must be constructed out of the flow line of other utility trenches, unless crossing at least a 45 degrees angle.
   e. No waterline will be constructed in the flowline of a drainage ditch.
5. All water distribution lines shall be C–900 DR–18 or DR 14 PVC pipe manufactured in the United States
6. All water system materials shall fully comply with TCEQ and AWWA standards. All construction shall fully comply with The Dripping Springs WSC current Construction standards.
7. All service lines shall be SDR–9 P.E. pipe 250 psi.
8. All fittings shall be ductile iron manufactured in the United States of America with mechanical joints (MJ) and have EBBA Iron, Inc. restraint at each MJ. Each C900 PVC pipe shall have EBBA iron, Inc. Series 1500 bell restraint harness when located within the Dimensions specified on plans from D.I. fittings, gate valves, fire hydrants, and dead end lines, and wrapped in 8 mil polyethylene film.
9. All Fire hydrant leads to be constructed with Ductile Iron Pipe manufactured in the United States of America and wrapped in 8 mil polyethylene film.
10. Gate Valves shall conform to AWWA standard C515 and shall be American Flow Control, Kennedy Valve, East Jordan Iron Works or Mueller Company.
11. Valve Boxes shall be cast iron with adjustable barrel height set plumb with 24" x 24" x 5" concrete pad, Valve boxes in road or sidewalk shall be constructed with a traffic bearing boot six inch ductile iron pipe and paving ring.
12. Brass fitting shall be Ford Brass unless otherwise approved by the Dripping Springs WSC staff and engineer.
13. If conflict between project specifications and water distribution system construction standards of the Dripping Springs WSC, the WSC construction standards shall govern, including omitted items from the project specifications
14. Contractor shall schedule a preconstruction meeting prior to beginning work, the Dripping Springs WSC shall be notified a minimum of 2 business days in advance of meeting.
15. Contractor shall provide submittal information to the Dripping Springs WSC on all materials proposed to be installed for review and to determine conformance with the Dripping Springs WSC construction standards.
16. Pipe embedment shall be # 5 Topping Rock from either Chanas Aggregate Blanco LLC (washed crushed rock) or West Henley Quarry Aggregate with sample provided to and approved by the Dripping Springs WSC staff. There shall be a minimum of 12 inches embedment material over the pipe and 6 inches embedment material under the pipe.
17. Fire Hydrants shall conform to AWWA standard C502 and shall be American Darling 5 ¼ " B–84–B, Kennedy Valve Guardian k81–D, East Jordan Iron Works Master 5CD250 or Mueller Super Centurion 250 with hose openings and 5" storz quick connect pumper nozzle with a cast pentagon operating nut. The 2 4" discharge outlets must be national hose thread. A blue, double sided; reflective marker must be affixed to the roadway directly in line with the fire hydrant. Hydrants shall have a red or silver paint coating. Hydrants shall be placed so they are readily accessible with no obstructions within 4 feet of hydrant. Do not place hydrant within or adjacent to a drainage structure.
18. Each service saddle shall be Smith Blair epoxy coated with dual stainless steel bands completely wrapped with 8 mil polyethylene film.
19. Top of the meter box shall be 2 inches above finished grade
20. Pipes crossing under street or driveway pavement shall be backfilled using crushed limestone base 6 inch maximum lifts to 95% standard proctor above the pipe embedment material, flowable fill or such other backfill as may be required by the City of Dripping Springs and or Hays County.
21. Meter Boxes must be Plastic. All traffic bearing boxes must be made of poly
22. State highway bore shall be in compliance with TXDot permit requirements
23. All new waterline construction must be disinfected, pass a pressure test and pass bacteriological samples.
24. Any underground electric conduit/conductors or gas line crossing the Dripping Springs WSC line shall be located a minimum of 12 inches under the waterline at near 90 degrees and be encased with a minimum 4 inch thick concrete for a length not less than 24 inches on each side of the O.D. of the waterline.
25. All Fire lines will have the appropriate Backflow preventer installed and be placed inside of a precast vault at or near the property line unless there is a dedicated easement provided Dripping Springs WSC, the Dripping Springs WSCs maintenance ends at the first flange on the first gate valve going into the backflow preventer.
26. Meters 3 inch and larger will be placed in a precast vault at or near the property line unless a dedicated easement is provided to the Dripping Springs WSC.
27. The Dripping Springs WSC maintenance or repair responsibility shall end at each service meter within the meter box.
28. All service connections that exceed 65 PSI, the Dripping Springs WSC recommends a Pressure Reducing Valve be installed and maintained by the customer.
29. Paralleling waterlines must be reviewed by The Dripping Springs WSC staff and engineer prior to approval.
30. Pressure reducing valves built in the distribution systems must be constructed with a bypass line for maintenance.
31. Meters 1 ½ inch and larger must be built with a bypass line so the meter can be maintained without the interruption of service.
32. Valves shall be installed so to limit the number of customers with interrupted service during an outage, Valves shall be placed at all runs of tees unless otherwise approved by the Dripping Springs WSC staff and engineer.
33. All capped or plugged lines must bushing down to a 2" with a blow off valve to relieve pressure.
34. All easements dedicated to the Dripping Springs WSC must be at least 15 feet wide unless otherwise approved by the Dripping Springs WSC staff and its engineer.
35. New subdivisions will be required to construct at least one additional service connection for the Corporation to install a dedicated sample site, additional service connection must be noted on plans and location approved by the Dripping Springs WSC staff and its engineer.
36. Water and Wastewater line separation distances shall meet the requirements of 30 TAC, Chapter 290. 44 (e)(4).
37. When groundwater is encountered during construction recommendations on bedding and backfill shall be provided by a Geotechnical Engineer before proceeding with construction. All recommendations shall be approved by the Dripping Springs WSC staff and engineer.

GEOTECHNICAL REPORTS:

- GEOTECHNICAL FEASIBILITY EVALUATION
  MLA LABS #17101175.01 DATED 7/27/17
- GEOTECHNICAL ENGINEERING LETTER REPORT
  ECS SOUTHWEST, LLP #17-5066 DATED 11/26/18

CITY OF DRIPPING SPRINGS
STANDARD WASTEWATER UTILITY CONSTRUCTION NOTES
FEBRUARY 2017

1. ALL WASTEWATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN AND TCEQ 30 TAC, CHAPTER 217 REQUIREMENTS.

2. CONTRACTOR SHALL GUARANTEE THE WORK AGAINST DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE CITY OF DRIPPING SPRINGS.

3. BEDDING FOR GRAVITY WASTEWATER LINES, FORCE MAINS, AND TREATED EFFLUENT LINES SHALL BE ¾" TO 1" ROCK WITH A 6 OUNCE NONWOVEN GEOTEXTILE FABRIC, MEETING EITHER TXDOT DMS 6200 OR TYPE 1 COA 620S, PLACED OVER THE BEDDING. CONTRACTOR SHALL PROVIDE A MINIMUM 5 GALLON BUCKET SAMPLE OF THE PROPOSED BEDDING MATERIAL FOR CITY OF DRIPPING SPRINGS APPROVAL.

4. WHEN GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, RECOMMENDATIONS ON BEDDING AND BACKFILL SHALL BE PROVIDED BY A GEOTECHNICAL ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ALL RECOMMENDATIONS SHALL BE APPROVED BY THE CITY OF DRIPPING SPRINGS.

5. CONTRACTOR SHALL ADHERE TO CITY OF AUSTIN STANDARD 1100S–1 FOR WASTEWATER MANHOLE RING ADJUSTMENTS IN PAVED AREAS.

6. GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 ASTM D3034 IF LOCATED GREATER THAN 9 FEET FROM A WATERLINE. IF LESS THAN 9 FEET (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) FROM ANY WATER LINE, PIPE SHALL BE PVC SDR 26 ASTM D2241 PRESSURE RATED PIPE.

7. FORCE MAINS SHALL BE MINIMUM PVC SDR 26 ASTM D2241 PRESSURE RATED PIPE IN BROWN POLY BAG.

8. TREATED EFFLUENT LINES SHALL BE MINIMUM PVC SDR 21 ASTM D2241 PURPLE PRESSURE RATED PIPE.

9. ALL WASTEWATER MANHOLES ARE TO BE COATED WITH CEMENTITIOUS LINING (SEWPERCOAT¼ OR APPROVED EQUAL) PER CITY OF AUSTIN REQUIREMENTS. EXISTING MANHOLES WHERE CONNECTIONS ARE MADE TO THE CITY SEWER SYSTEM SHALL BE COATED OR RECOATED AFTER CONNECTIONS ARE MADE.

10. ENGINEER AND CONTRACTOR SHALL COORDINATE WITH THE DRIPPING SPRINGS WSC REGARDING WATER LINE AND WATER SERVICE LINE CROSSINGS.

11. CONTRACTOR SHALL INSTALL BOLTED MANHOLE LIDS ON ALL MANHOLES OUTSIDE PAVEMENT.

12. WASTEWATER MANHOLE LIDS SHALL HAVE "SANITARY SEWER" CAST IN THE LID.

13. CITY OF DRIPPING SPRINGS' INSPECTOR SHALL OBSERVE INSTALLATION OF ALL TAPS ONTO WASTEWATER LINES.

14. CITY OF DRIPPING SPRINGS' INSPECTOR SHALL BE NOTIFIED 48 HOURS PRIOR TO ALL UTILITY LINE TESTING BY CALLING THE CITY 512–858–4725 OR THE DESIGNATED INSPECTOR IDENTIFIED AT THE PRECONSTRUCTION MEETING.

15. CONTRACTOR SHALL PERFORM THE FOLLOWING TESTING ON ALL TYPES OF WASTEWATER IMPROVEMENTS AT HIS EXPENSE:

A. GRAVITY WASTEWATER LINES AND SERVICES – LOW PRESSURE AIR TEST.

B. GRAVITY WASTEWATER LINES – MANDREL DEFLECTION TESTING AFTER 30 DAYS OF FINAL BACKFILL.

C. GRAVITY WASTEWATER LINES – TELEVISED UPON COMPLETION OF CONSTRUCTION AND PRIOR TO PAVING. CONTRACTOR SHALL PROVIDE THE VIDEOS OF THE PIPES TO THE CITY OF DRIPPING SPRINGS PRIOR TO ACCEPTANCE.

D. WASTEWATER MANHOLES – VACUUM TEST @ 10 PSI FOR 3 MINUTES. NO VACUUM TESTING WILL BE ACCEPTED BY THE CITY OF DRIPPING SPRINGS UNTIL COMPLETION OF MINIMUM FIRST COURSE OF BASE IS INSTALLED.

E. FORCE MAINS AND TREATED EFFLUENT LINES – HYDROSTATICALLY TEST TO A MINIMUM OF 1.5 TIMES WORKING PRESSURE FOR 24 HOURS.

F. EXISTING WASTEWATER FACILITIES – PRETEST AND POSTTEST EXISTING LINES AND MANHOLES WHEN CONNECTING TO EXISTING FACILITIES."

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S "TRENCH SAFETY SYSTEMS" OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS..
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25' OF LATERAL TRAVEL.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTIVE FENCING PRIOR TO ANY WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE CITY OF DRIPPING SPRINGS OR CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL AS REFERENCED AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE 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 THE CITY OF DRIPPING SPRINGS REPRESENTATIVES AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTION MEASURES AND PRIOR TO BEGINNING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE CITY OF DRIPPING SPRINGS AT LEAST THREE (3) DAYS PRIOR TO THE MEETING DATE.
5. 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 INCHES.

GENERAL NOTES:

1. SAW CUT AND MATCH ALL EXISTING PAVEMENT.
2. NO BLASTING IS ALLOWED.
3. SPEED LIMIT SIGNS ARE REQUIRED AND SHALL INDICATE A SPEED OF NO LESS THAN 30 MPH.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF DRIPPING SPRINGS STANDARD SPECIFICATIONS AND THE CITY OF AUSTIN DRAINAGE CRITERIA MANUAL AND TRANSPORTATION CRITERIA MANUAL AS REFERENCED.
5. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
6. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.
7. MANHOLES, FRAMES, COVERS, VALVES, CLEAN–OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
8. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE CITY OF DRIPPING SPRINGS STANDARD SPECIFICATION 602S FOR SODDING OR 604S FOR SEEDING, AT THE CONTRACTOR'S DISCRETION. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION UNLESS OTHERWISE REQUESTED BY THE PROPERTY OWNER.
9. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONVENE A PRE–CONSTRUCTION CONFERENCE WITH THE CITY OF DRIPPING SPRINGS, HIMSELF, THE ENGINEER, OTHER UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE CITY OR THE ENGINEER MAY REQUIRE.
10. THE CONTRACTOR AND THE ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF DRIPPING SPRINGS ACCURATE "RECORD" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "RECORD" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE PUBLIC WORKS DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
11. THE CITY OF DRIPPING SPRINGS SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
12. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER.
13. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
14. DENSITY TESTING FOR TRENCH BACKFILL IS TO BE DONE IN 12" LIFTS AT ONE TEST PER 500' OR EACH LINE SEGMENT.
15. A STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT.
16. SIDEWALKS ARE REQUIRED ON ONE SIDE OF ALL STREETS INCLUDING CUL–DE–SACS. AS INDICATED ON THE PLANS, CONTRACTOR TO INSTALL SIDEWALKS ON ALL OPEN SPACE AND PUBLIC LOTS. REMAINDER OF SIDEWALKS IN FRONT OF RESIDENTIAL LOTS SHALL BE CONSTRUCTED BY HOME BUILDER.
17. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE STATE LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436–C) AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES WHEN OPERATING EQUIPMENT IN THE VICINITY OF ELECTRICAL LINES. IF THE CONTRACTOR CHOOSES TO USE EQUIPMENT WITH THE POTENTIAL OF COMING WITHIN THE DISTANCE PRESCRIBED BY THE STATUTE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE WORK WITH THE APPROPRIATE ELECTRIC UTILITY COMPANY.
18. CONTRACTOR SHALL NOTIFY THE CITY OF DRIPPING SPRINGS ENGINEERING INSPECTION DEPARTMENT AT 512–858–4699 PRIOR TO CONSTRUCTING DRAINAGE IMPROVEMENTS IN EASEMENTS OR RIGHTS–OF–WAY. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S ROW MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
19. ALL STREET SIGNS SHALL INCLUDE BLOCK NUMBERS. ALL TEXT IS TO BE WHITE ON GREEN BACKGROUND.
20. INLET COVERS ARE TO BE SECURED TO INLETS WITH CHAINS.
21. A MINIMUM OF 6" TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND THE RIGHT–OF–WAY AND IN ALL DRAINAGE CHANNELS (EXCEPT ROCK).
22. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
23. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, IS TO BE TYPE II (WATER BASED). STOP BARS REQUIRE TYPE I THERMOPLASTIC.
24. NO STREET LIGHTS OR SIGNS OF ANY KIND ARE TO BE PLACED WITHIN ANY SIDEWALKS.
25. DEPTH OF COVER FOR WASTEWATER AND WATER LINES SHALL BE 36" UNDER NATURAL GROUND AND 42" UNDER PAVED AREAS. STORM SEWER LINES SHALL BE 24" UNDER NATURAL GROUND AND 36" UNDER PAVED AREAS.
26. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TV, ETC. SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
27. THIS DEVELOPMENT SHALL COMPLY WITH ALL APPLICABLE ITEMS REGARDING THE 2012 INTERNATIONAL FIRE CODE (IFC) AND AS AMENDED BY THE CITY OF DRIPPING SPRING'S DEVELOPMENTAL ORDINANCE.

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GENERAL NOTES 1

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_CVR.dwg
User: JBANISTER
Last Modified: Apr. 16, 19 – 15:07
Plot Date/Time: Apr. 26, 19 – 18:56:22

STREET AND DRAINAGE NOTES:

1. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF DRIPPING SPRINGS AFTER COMPLETION. THE CONTRACTOR SHALL NOTIFY THE CITY OF DRIPPING SPRINGS NO LESS THAN 48 HOURS PRIOR TO ANY TESTING.
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANTLIFE.
3. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF 1/4" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED. HOWEVER IN NO CASE SHALL THE WIDTH OF THE RIGHT-OF-WAY AT 1/4" PER FOOT SLOPE BE LESS THAN 10 FEET UNLESS A SPECIFIC REQUEST FOR AN ALTERNATE GRADING SCHEME IS MADE TO AND ACCEPTED BY THE CITY OF DRIPPING SPRINGS.
4. BARRICADES BUILT TO THE CITY OF DRIPPING SPRINGS STANDARDS SHALL BE ERECTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB AND PUBLIC SAFETY.
5. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE MINIMUM CLASS III.
6. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE CONSTRUCTION PLANS.
7. MOISTURE CONDITIONED SUBGRADE: THE SUBGRADE SHOULD BE SCARIFIED TO A DEPTH OF 6 INCHES AND MOISTURE ADJUSTED TO BETWEEN OPTIMUM AND +4 PERCENT OF OPTIMUM MOISTURE CONTENT. THE SUBGRADE SHOULD THEN BE RECOMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698. CARE SHOULD BE TAKEN TO INSURE THAT THE SUBGRADE DOES NOT DRY OUT OR BECOME SATURATED PRIOR TO PAVEMENT CONSTRUCTION.
8. WHENEVER SOIL INVESTIGATION OR EXCAVATION SHOWS MORE THAN 2 FEET OF EXPANSIVE SUBGRADE, WITH P.I. GREATER THAN 25, THE GEOTECHNICAL ENGINEER OF RECORD SHALL BE CONSULTED FOR ALTERNATIVE PAVEMENT DESIGN MEASURES.
9. AT INTERSECTIONS WHICH HAVE VALLEY DRAINAGE, THE CROWNS OF THE INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40 FEET FROM INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
10. A CURB LAYDOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.
11. ALL MACHINE LAID CURB SHALL HAVE EXPANSION JOINTS AT 40' INTERVALS.
12. WHEN USING LIME FOR STABILIZATION OF THE SUBGRADE, IT SHALL BE PLACED IN SLURRY OR PELLET FORM. NO DRY LIME PLACEMENT IS PERMITTED.
13. ALL CURB SHALL BE REINFORCED WITH THREE #3 REBAR. INCLUDE DETAIL IN THE PLANS.
14. A LICENSE AGREEMENT FOR LANDSCAPING MAINTENANCE AND IRRIGATION IN STREET RIGHT-OF-WAYS SHALL BE EXECUTED BY THE DEVELOPER IN PARTY WITH THE CITY OF DRIPPING SPRINGS PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.

SPOIL SITE NOTES:

1. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN ON THE EROSION CONTROL PLAN. THE DEPTH OF SPOIL WILL NOT EXCEED 10 FEET IN ANY AREA.
2. NO PERMANENT SPOILS DISPOSAL ON-SITE EXCEPT AS SHOWN ON THE PLANS.

CONSTRUCTION SEQUENCE:

CALL CITY OF DRIPPING SPRINGS AT 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL 8-1-1 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN TXDOT OR CITY OF DRIPPING SPRINGS R.O.W.

THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROL AND TREE PROTECTION MEASURES AS SHOWN WITHIN THESE PLANS.

THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE.

INSTALL TRAFFIC CONTROL PHASE ONE

DELIVER STORM SEWER CUT SHEETS TO THE CITY OF DRIPPING SPRINGS.

INSTALL CULVERT EAST OF ROB SHELTON AND ROUGH GRADE ROADWAY FOR ACCESS TO BIG SKY PHASE ONE.

UPDATE TRAFFIC CONTROL TO PHASE TWO. (ROAD CLOSURE RR12 TO ROB SHELTON)

DEMOLISH EXISTING PAVEMENT

WITH THE APPROVAL OF ALL AFFECTED PARTIES, THE CONTRACTOR MAY BEGIN CLEARING AND GRUBBING.

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. SEE ADDITIONAL NOTES ON SHEET 29.

DELIVER APPROVED ROUGH CUT & STORM SEWER SHEETS TO THE CITY OF DRIPPING SPRINGS PRIOR TO CLEARING AND GRUBBING.

ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME, EXCEPT AS REQUIRED FOR UTILITY CONSTRUCTION. GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE AND REQUIRED BASE THICKNESS.

DELIVER WATER CUT SHEETS TO CITY OF DRIPPING SPRINGS AND DSWSC.

INSTALL ALL UTILITIES TO BE LOCATED ACCORDING TO PLAN. SEE STREET SECTIONS.

BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS. INSTALL INLET PROTECTION AS PER PLANS.

DELIVER FINAL GRADE CUT SHEETS TO CITY OF DRIPPING SPRINGS.

REGRADE STREETS TO SUBGRADE.

ENSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL SHEETS.

INSTALL CURB

LAY FINAL BASE COURSE ON ALL STREETS.

LAY ASPHALT.

COMPLETE ALL ROUGH GRADING AND UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.

COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.

REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL, INCLUDING CONSTRUCTION SPOILS AREA.

COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED.

IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY RE-VEGETAION, MULCH, TARP OR REVEGETATION MATTING.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. Construction for public water systems must always, at a minimum, meet TCEQ's "Rules and Regulations for Public Water Systems.
2. An appointed engineer shall notify in writing the local TCEQ's Regional Office when construction will start. Please keep in mind that upon completion of the water works project, the engineer or owner shall notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the work has been completed essentially according to the plans and change orders on file with the commission as required in 30 TAC §290.39(h)(3).
3. All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI, as required by 30 TAC §290.44(a)(1).
4. Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF-pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less, as required by 30 TAC §290.44(a)(2).
5. 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, as required by 30 TAC §290.44(a)(3).
6. Water transmission and distribution lines shall 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, as required by 30 TAC §290.44(a)(4).
7. Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.
   - The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

     Where:
     $$Q = \frac{LD \cdot P}{148{,}000}$$
     - Q = the quantity of makeup water in gallons per hour,
     - L = the length of the pipe section being tested, in feet,
     - D = the nominal diameter of the pipe in inches, and
     - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).
   - The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

     Where:
     $$Q = \frac{SD \cdot P}{148{,}000}$$
     - L = the quantity of makeup water in gallons per hour,
     - S = the length of the pipe section being tested, in feet,
     - D = the nominal diameter of the pipe in inches, and
     - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).
8. The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures to 0.25 percent.
9. The system must be designed to maintain a minimum pressure of 35 psi at all points within the distribution network at flow rates of at least 1.5 gallons per minute per connection. When the system is intended to provide firefighting capability, it must also be designed to maintain a minimum pressure of 20 psi under combined fire and drinking water flow conditions as required by 30 TAC §290.44(d).
10. The contractor shall install appropriate air release devices in the distribution system at all points where topography or other factors may create air locks in the lines. All vent openings to the atmosphere shall be covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent as required by 30 TAC §290.44(d)(1).
11. Pursuant to 30 TAC §290.44(d)(4), accurate water meters shall be provided. Service connections and meter locations should be shown on the plans.
12. Pursuant to 30 TAC §290.44(d)(5), sufficient valves and blowoffs to make repairs. The engineering report shall establish criteria for this design.
13. Pursuant to 30 TAC §290.44(d)(6), the system shall be designed to afford effective circulation of water with a minimum of dead ends. All dead-end mains shall be provided with acceptable flush valves and discharge piping. All dead-end lines less than two inches in diameter will not require flush valves if they end at a customer service. Where dead ends are necessary as a stage in the growth of the system, they shall be located and arranged to ultimately connect the ends to provide circulation.
14. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes and septic tank drainfields. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet 30 TAC §290.44(e)(1-4) of the current rules.
15. Pursuant to 30 TAC §290.44(e)(5), the separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five-foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant.
16. Pursuant to 30 TAC §290.44(e)(6), fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction.
17. Pursuant to 30 TAC §290.44(e)(7), suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line.
18. Pursuant to 30 TAC §290.44(e)(8), waterlines shall not be installed closer than ten feet to septic tank drainfields.
19. Pursuant to 30 TAC §290.44(f)(1), the contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation.
20. Pursuant to 30 TAC §290.44(f)(2), when waterlines are laid under any flowing or intermittent stream or semi-permanent body of water the water main shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested.
21. The contractor shall disinfect the new water mains in accordance with AWWA Standard C-651 and then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed water line will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer, in accordance with 30 TAC §290.44(f)(3).

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES
TCEQ-0592A (REV. 07/15/2015)

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE THE NAME OF THE APPROVED PROJECT, THE ACTIVITY START DATE, AND THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED..
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE HE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTION OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
    - A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMP) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES AND DIVERSIONARY STRUCTURES.
    - B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED.
    - C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
    - D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS UNDEVELOPED.

AUSTIN REGIONAL OFFICE 12100 PARK 35 CIRCLE, BUILDING A AUSTIN, TEXAS 78753-1808 PHONE (512) 339-2929 FAX (512) 339-3795	SAN ANTONIO REGIONAL OFFICE 14250 JUDSON ROAD SAN ANTINIO, TEXAS 78233-4480 PHONE (210) 490-3096 FAX (210) 545-4329

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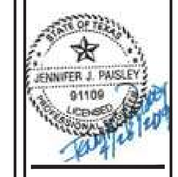
Firm Registration Number: 3937

GENERAL NOTES 2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_CVR.dwg
User: JBANISTER
Last Modified: Apr. 16, 19 - 15:07
Plot Date/Time: Apr. 26, 19 - 18:56:32

Texas Commission on Environmental Quality
Organized Sewage Collection System (SCS)
General Construction Notes

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §§213.5(C) AND 217.51 – 217.70 AND 30 TAC CHAPTER 217, SUBCHAPTER D, AND THE CITY OF DRIPPING SPRINGS STANDARD SPECIFICATIONS.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SEWAGE COLLECTION SYSTEM PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

3. NO LATER THAN 48 HOURS PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE AUSTIN REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.

6. THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON UTILITY DETAILS SHEETS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §§217.53(C) AND 217.65.

   GRAVITY LINES MUST HAVE A SDR 26 OR LESS. PRESSURIZED SEWER SYSTEMS MUST HAVE PIPE WITH A MINIMUM WORKING PRESSURE RATING OF 150 PSI.

   THE ASTM, ANSI, OR AWWA SPECIFICATION NUMBERS FOR THE PIPE(S) AND JOINTS ARE C-900 DR-14.

   THE PIPE MATERIAL, THE PRESSURE CLASSES, AND THE SDR AND/OR DR DESIGNATIONS ARE SDR 26 WITH PRESSURE RATING OF AT LEAST 150 psi OR A STANDARD DIMENSION RATIO OF 26 OR LESS.

7. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING WITHIN TWO WORKING DAYS. THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

8. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES.

9. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

10. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

    THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET 36 OF 37 DETAILS.

    IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

11. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(d) (PIPE DESIGN) AND 30 TAC §290.44(e) (WATER DISTRIBUTION).

12. ~~WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SWERER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER:~~ _____ (N/A)
    ~~IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED:~~ _____ (N/A)
    ~~SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.~~

13. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.
    ~~IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERAL IS SHOWN IN THE DETAIL ON THE PLAN SHEET ___ OF ___ (FOR POTENTIAL FUTURE LATERALS).~~ (N/A)

    THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET 23 OF 41 AND MARKED AFTER BACKFILLING AS SHOWN IN THE PLAN SHEET DETAILS.

14. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

15. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).

16. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:

a. FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
   - (1) LOW PRESSURE AIR TEST.
     - (A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(II) OF THIS PARAGRAPH.
     - (B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
       - (i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.
       - (ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

EQUATION C.3 $$T = \frac{0.085 D K}{Q}$$

WHERE:

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

       - (C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

Pipe Diameter (inches)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.308
30	1700	80	21.368
33	1870	72	25.856

       - (D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
       - (E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
       - (F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
       - (G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.
   - (2) INFILTRATION/EXFILTRATION TEST.
     - (A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.
     - (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
     - (C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL,WHICHEVER IS GREATER.
     - (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARGRAPH (C) OF THIS PARAGRAPH.
     - (E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.

b. IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED THE FOLLOWING PROCEDURES MUST BE FOLLOWED:
   - (1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.
     - (A) MANDREL SIZING.
       - (i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
       - (ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD,THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
       - (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
     - (B) MANDREL DESIGN.
       - (i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
       - (ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.
       - (iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.
       - (iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.
     - (C) METHOD OPTIONS.
       - (i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.
       - (i) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
       - (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
   - (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
   - (3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
   - (4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
   - (5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
   - (6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

17. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
    - 17.a. ALL MANHOLES MUST PASS A LEAKAGE TEST.
    - 17.b. AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE,SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
      - (1) HYDROSTATIC TESTING.
        - (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
        - (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALLWASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE
        - (C) WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
        - (D) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
      - (2) VACUUM TESTING.
        - (A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
        - (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
        - (C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
        - (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
        - (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
        - (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
        - (G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
        - (H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

18. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(c)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

GENERAL NOTES 3

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 4 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_CVR.dwg
User: JBANISTER
Last Modified: Apr. 16, 19 – 15:07
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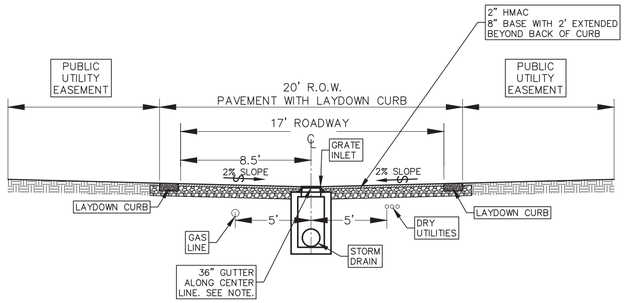
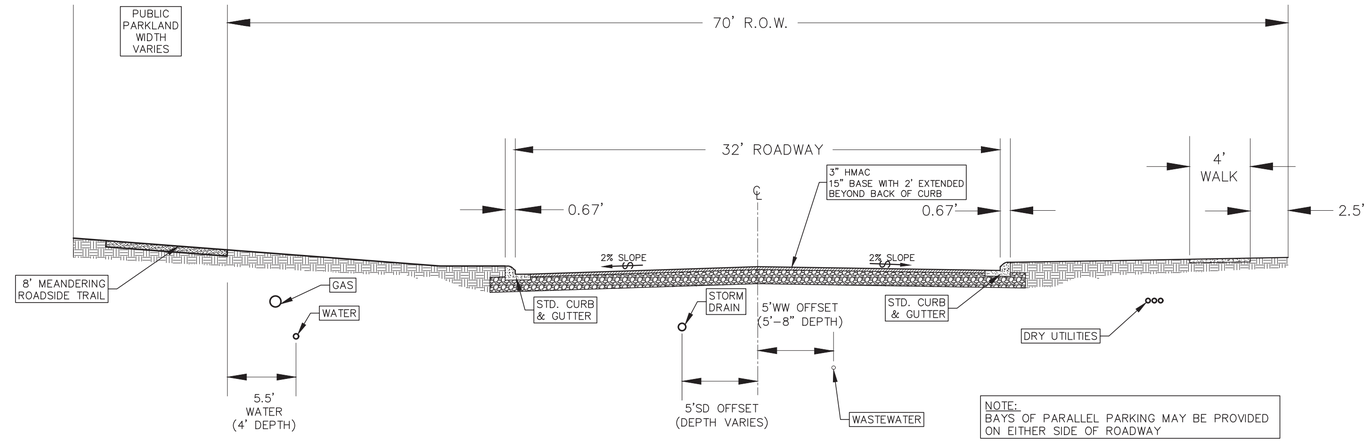


20' R.O.W. ALLEY TYPICAL SECTION

N.T.S.

NOTE:
36" ALLEY GUTTER – 7" CLASS A CONCRETE, COA ITEM 403S "CONCRETE FOR STRUCTURES". REINFORCEMENT SHALL BE #4 BARS N CHAIRS AT MID–DEPTH OF SLAB. BAR SPACING @ 6"X6", WITH 3" OFFSET FROM EDGE.

ALLEY PAVEMENT ALTERNATIVES:
1. CONCRETE PAVEMENT IN CONFORMANCE WITH CITY OF AUSTIN STANDARD SPECIFICATION #360S.

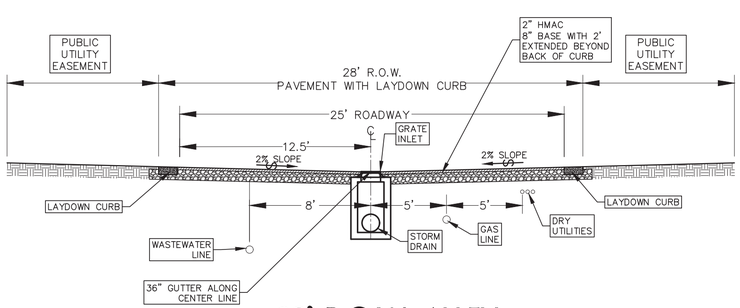


NOTE:
BAYS OF PARALLEL PARKING MAY BE PROVIDED ON EITHER SIDE OF ROADWAY

70' R.O.W. COLLECTOR STREET TYPICAL SECTION

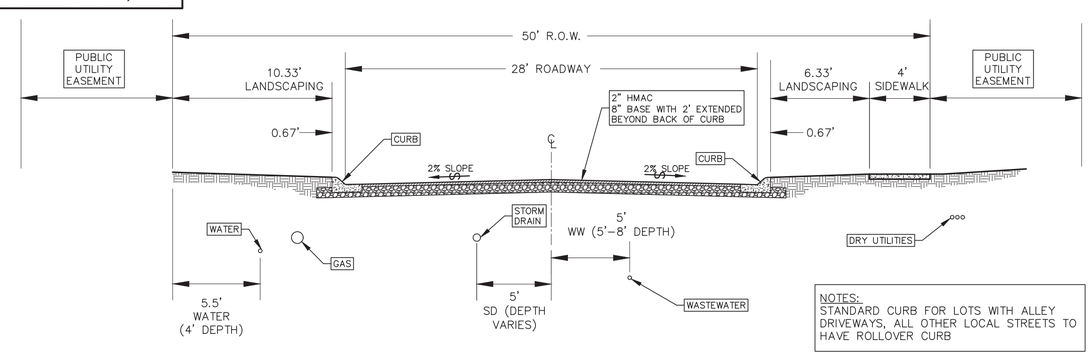
N.T.S.

NOTES:
1. ALL STREET PAVEMENT SHALL UTILIZE HOT MIX ASPHALT CONCRETE, TYPE D, CITY OF AUSTIN ITEM 340S.
2. ALL STREET BASE MATERIAL SHALL UTILIZE EITHER CITY OF AUSTIN 210S FLEXIBLE BASE OR TXDOT ITEM 247 GRADE 1/2 FLEXIBLE BASE. STREET BASE SHALL BE CONSISTENT FOR ALL LOCAL AND COLLECTOR ROADWAYS.
3. SUBBASE SHALL BE COMPACTED IN CONFORMANCE IWTH CITY OF AUSTIN STANDARD SPECIFICATION ITEM 210S.
4. THE FOLLOWING STREETS WILL USE TXDOT DMS–6240, TYPE 2 GEOGRID TO REMEDIATE EXPANSIVE SOILS BENEATH PROPOSED BASE: BARTLETT PEAK LANE, McKITTRICK RIDGE STREET, AND FOUNDERS PARK ROAD.
5. THE STRIPPING AND REMOVAL OPERATIONS SHOULD EXTEND TO AT LEAST 2 FEET BEYOND THE EDGE OF THE PROPOSED IMPROVEMENTS. AFTER STRIPPING AND ANY REQUIRED CUTS HAVE BEEN COMPLETED, THE SUBGRADE SOILS SHOULD BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TXDOT 114–E TO A DEPTH OF AT LEAST 8 INCHES. THE SOILS SHOULD BE MOISTURE CONDITIONED TO BETWEEN OPTIMUM AND PLUS FOUR (+4) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT JUST PRIOR TO COMPACTION.
6. GEOTECHNICAL PAVING RECOMMENDATIONS REPORT #17–5066 ESC SOUTHWEST, LLP DATED NOV 26, 2018.



28' R.O.W. ALLEY TYPICAL SECTION

N.T.S.



NOTES:
STANDARD CURB FOR LOTS WITH ALLEY DRIVEWAYS, ALL OTHER LOCAL STREETS TO HAVE ROLLOVER CURB

50' R.O.W. STREET TYPICAL SECTION

N.T.S.

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STREET SECTIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_DT-PV.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 – 18:48
Plot Date/Time: Apr. 26, 19 – 18:56:46

20003093 PLAT Total Pages: 8
Filed and Recorded: 01/27/2020 11:41:46 AM

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS

OWNER'S ACKNOWLEDGMENT:

THE STATE OF TEXAS }
THE COUNTY OF TRAVIS }

KNOW ALL ME BY THESE PRESENTS:

THAT MERITAGE HOMES OF TEXAS, LLC, AN ARIZONA LIMITED LIABILITY COMPANY, BEING THE OWNER OF 186.25 ACRES IN THE PHILLIP A. SMITH SURVEY NUMBER 26, ABSTRACT NUMBER 415 IN HAYS COUNTY, TEXAS, CONVEYED BY DEED OF RECORD IN DOCUMENT NO. 18036374 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS;

DO HEREBY SUBDIVIDE 69.820 ACRES IN ACCORDANCE WITH THE MAP OR PLAT ATTACHED HERETO, TO BE KNOWN AS

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS

SUBJECT TO ANY EASEMENTS AND/OR RESTRICTIONS HERETOFORE GRANTED AND NOT RELEASED, AND DO HEREBY DEDICATE TO THE PUBLIC USE OF THE STREETS AND EASEMENTS SHOWN HEREON.

WITNESS MY HAND THIS THE 11TH DAY OF DECEMBER A.D. 2019.

MATTHEW SCRIVENER
MERITAGE HOMES

THE STATE OF TEXAS }
THE COUNTY OF TRAVIS }

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND THE STATE, ON THIS DAY PERSONALLY APPEARED MATTHEW SCRIVENER, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.
GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE 11TH DAY OF DECEMBER A.D. 2019.

NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

MERANDA S. PERKINS
Notary Public, State of Texas
Comm. Expires 08-06-2020
Notary ID 125013430

OWNER'S ACKNOWLEDGMENT:

THE STATE OF TEXAS }
THE COUNTY OF HAYS }

KNOW ALL ME BY THESE PRESENTS:

THAT THE CITY OF DRIPPING SPRINGS, BEING THE OWNER OF 4.15 ACRES IN THE PHILLIP A. SMITH SURVEY NUMBER 26, ABSTRACT NUMBER 415 IN HAYS COUNTY, TEXAS, CONVEYED BY DEED OF RECORD IN DOCUMENT NO. 19049310 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS;

SUBJECT TO ANY EASEMENTS AND/OR RESTRICTIONS HERETOFORE GRANTED AND NOT RELEASED, AND DO HEREBY DEDICATE TO THE PUBLIC USE OF THE STREETS AND EASEMENTS SHOWN HEREON.

WITNESS MY HAND THIS THE 12 DAY OF December A.D. 2019.

TODD PURCELL
MAYOR, CITY OF DRIPPING SPRINGS

THE STATE OF TEXAS }
THE COUNTY OF HAYS }

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND THE STATE, ON THIS DAY PERSONALLY APPEARED TODD PURCELL, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.
GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE 12 DAY OF December A.D. 2019.

NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

ANDREA CUNNINGHAM
My Notary ID # 131603237
Expires June 13, 2022

FINAL PLAT NOTES:

1. THIS FINAL PLAT IS LOCATED WITHIN THE CITY OF DRIPPING SPRINGS CITY LIMITS.
2. THIS PLAT LIES WITHIN THE BOUNDARIES OF THE EDWARDS AQUIFER CONTRIBUTING ZONE.
3. NO PORTION OF THIS PLAT LIES WITHIN THE BOUNDARIES OF THE EDWARDS AQUIFER RECHARGE ZONE.
4. THIS PLAT IS LOCATED WITHIN THE DRIPPING SPRINGS INDEPENDENT SCHOOL DISTRICT.
5. ACCESS TO AND FROM CORNER LOTS SHALL ONLY BE PERMITTED FROM ONE STREET.
6. NO PORTION OF THIS PROPERTY IS LOCATED WITHIN A DESIGNATED 100 YEAR FLOOD PLAIN AS DELINEATED ON MAP NUMBER 48209C0105F, DATED SEPTEMBER 2, 2005, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
7. WATER SERVICE WILL BE PROVIDED TO EACH LOT BY THE DRIPPING SPRINGS WATER SUPPLY CORPORATION.
8. ORGANIZED WASTEWATER SERVICE WILL BE PROVIDED TO EACH LOT BY THE CITY OF DRIPPING SPRINGS.
9. ELECTRIC SERVICE WILL BE PROVIDED BY THE PEDERNALES ELECTRIC COOPERATIVE.
10. TELEPHONE SERVICE WILL BE PROVIDED BY SPECTRUM.
11. GAS SERVICE WILL BE PROVIDED BY TEXAS GAS SERVICES.
12. MINIMUM FRONT SETBACK SHALL BE 10'
13. MINIMUM REAR SETBACK SHALL BE 10'
14. MINIMUM INTERIOR SIDE YARD SETBACKS SHALL BE 5'
15. MINIMUM SIDE YARD SETBACKS ADJACENT TO A PUBLIC STREET SHALL BE 7.5'
16. ALL STREETS SHALL BE DESIGNED IN ACCORDANCE WITH APPLICABLE CITY OF DRIPPING SPRINGS AND HAYS COUNTY DEVELOPMENT REGULATIONS AS AMENDED BY PPD NO.10 .
17. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A STATE-APPROVED COMMUNITY WATER SYSTEM.
18. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A STATE-APPROVED ORGANIZED WASTEWATER SYSTEM.
19. NO CONSTRUCTION OR OTHER DEVELOPMENT WITHIN THIS SUBDIVISION MAY BEGIN UNTIL ALL DEVELOPMENT AUTHORIZATION REQUIREMENTS HAVE BEEN SATISFIED ACCORDING TO THE CITY OF DRIPPING SPRINGS.
20. NO STRUCTURE SHALL BE OCCUPIED UNTIL A CERTIFICATE OF OCCUPANCY IS ISSUED BY THE CITY OF DRIPPING SPRINGS.
21. IN ORDER TO PROMOTE SAFE USE OF ROADWAYS AND TO PRESERVE THE CONDITIONS OF PUBLIC ROADWAYS, NO DRIVEWAY CONSTRUCTED ON ANY LOT WITHIN THIS SUBDIVISION SHALL BE PERMITTED ACCESS ONTO A PUBLIC ROADWAY UNLESS (A) A PERMIT FOR USE OF THE CITY RIGHT-OF-WAY HAS BEEN ISSUED.
22. DEVELOPMENT AND RESTRICTIONS WITHIN THE CITY OF DRIPPING SPRINGS AND TCEQ WATER QUALITY BUFFER ZONES ARE LIMITED TO THOSE LISTED IN THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ'S) OPTIONAL ENHANCED MEASURES FOR THE PROTECTION OF WATER QUALITY IN THE EDWARDS AQUIFER (REVISED) OR AS PERMITTED BY THE TCEQ AND IN COMPLIANCE WITH THE CITY OF DRIPPING SPRINGS WATER QUALITY PROTECTION ORDINANCE.
23. TWO SHADE TREES WILL BE REQUIRED FOR EACH RESIDENTIAL LOT PER THE CITY OF DRIPPING SPRINGS LANDSCAPE ORDINANCE.
24. THE HOMEOWNERS ASSOCIATION FOR THE DEVELOPMENT WILL TAKE OWNERSHIP OF AND BE RESPONSIBLE FOR MAINTENANCE OF THE PRIVATE PARK.
25. THE HOMEOWNERS ASSOCIATION FOR THE DEVELOPMENT WILL TAKE OWNERSHIP OF AND BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF ALL STORM WATER DETENTION AND WATER QUALITY PONDS.
26. THIS DEVELOPMENT IS SUBJECT TO DRIPPING SPRINGS ORDINANCE 2018-24, PLANNED DEVELOPMENT DISTRICT NO. 10-BIG SKY.
27. ALL PROPOSED COLLECTOR STREETS WITHIN THIS SUBDIVISION SHALL HAVE A MIN. 4' WIDE CONCRETE SIDEWALK ALONG BOTH SIDES OF THE STREET.
28. ALL PROPOSED LOCAL STREETS WITHIN THIS SUBDIVISION SHALL HAVE A MIN. 4' WIDE CONCRETE SIDEWALK ALONG ONE SIDE OF THE STREET.
29. OWNERSHIP AND MAINTENANCE OF ALL NON-SINGLE FAMILY LOTS AND DRAINAGE EASEMENTS (EXCLUDING PUBLIC PARKLANDS) WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION.
30. A 10 FT. PUBLIC UTILITY EASEMENT ADJACENT TO ALL PUBLIC STREETS IS HEREBY DEDICATED.
31. NO OBJECTS, INCLUDING BUT NOT LIMITED TO BUILDINGS, FENCES, OR LANDSCAPING, THAT OBSTRUCT OR LIMIT FLOW SHALL BE ALLOWED IN A DRAINAGE EASEMENT.
32. THE PROPERTY OWNER SHALL PROVIDE ACCESS TO DRAINAGE AND UTILITY EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS FOR INSPECTION, OPERATION AND MAINTENANCE.
33. ALL DRAINAGE EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS/HER ASSIGNS.
34. STREET LIGHTING WILL COMPLY WITH LIGHTING ORDINANCE [SRDA 3.11].
35. PARKLAND DEDICATION REQUIREMENTS HAVE BEEN SATISFIED WITHIN THIS DEVELOPMENT THROUGH A COMBINATION OF PRIVATE AND PUBLIC PARK LAND AND OPEN SPACE.
36. ALL ELECTRICAL, CABLE TELEVISION, AND TELEPHONE SUPPORT EQUIPMENT (TRANSFORMERS, AMPLIFIERS, SWITCHING DEVICES, ETC.) NECESSARY FOR UNDERGROUND INSTALLATIONS IN SUBDIVISIONS SHALL BE PAD MOUNTED OR PLACE UNDERGROUND IN A PUBLIC UTILITY EASEMENT.
37. 30' LANDSCAPE BUFFER EASEMENT ALONG LOTS 14, 15, 17 BLOCK 6, LOTS 1, 3, 4, 5 BLOCK 8, LOTS 9, 10, 11, 21, 22 BLOCK 53, IS TO REMAIN UNTOUCHED NATIVE VEGETATION.
38. LOT 8, BLOCK 1, IS DEEDED TO THE CITY OF DRIPPING SPRINGS AS DEDICATED PARKLAND TO MEET THE TEXAS PARKS AND WILDLIFE DEPARTMENT CONVERSION REQUIREMENTS, AS AGREED TO IN THE BIG SKY RANCH DEVELOPMENT AGREEMENT PER DOC NO. 18028627 O.P.R.H.C.T.

DEVELOPMENT NOTE:

THIS DEVELOPMENT IS SUBJECT TO ORDINANCE 2018-24 PPD No. 10 BIG SKY (OCT 9, 2018)

ENVIRONMENTAL NOTE:

NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO AN INDIVIDUAL WATER SUPPLY OR A STATE APPROVED COMMUNITY WATER SYSTEM. DUE TO DECLINING WATER SUPPLIES AND WATER QUALITY, PROSPECTIVE PROPERTY OWNERS ARE CAUTIONED BY THE CITY TO QUESTION THE SELLER CONCERNING GROUND WATER AVAILABILITY; RAIN WATER COLLECTION IS ENCOURAGED AND IN SOME AREAS MAY OFFER THE BEST RENEWABLE WATER SOURCE. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A PUBLIC SANITARY SEWER SYSTEM OR TO AN INDIVIDUAL ON-SITE SEWAGE FACILITY WHICH HAS BEEN APPROVED AND PERMITTED BY THE CITY OF DRIPPING SPRINGS ENVIRONMENTAL HEALTH DEPARTMENT. NO CONSTRUCTION OR OTHER DEVELOPMENT WITHIN THIS SUBDIVISION MAY BEGIN UNTIL ALL CITY OF DRIPPING SPRINGS DEVELOPMENT PERMIT REQUIREMENTS HAVE BEEN MADE.

CHAD GILPIN — 12-11-19
CHAD GILPIN — DATE
CITY ENGINEER

STATE OF TEXAS }
CITY OF DRIPPING SPRINGS }
HAYS COUNTY, TEXAS }

BIG SKY RANCH PHASE ONE, HAS BEEN SUBMITTED AND CONSIDERED BY THE CITY OF DRIPPING SPRINGS AS A FINAL PLAT OF ADMINISTRATIVE APPROVAL PURSUANT TO ORDINANCE 1230.09, AND IS HEREBY APPROVED ADMINISTRATIVELY.

12/12/19
MICHELLE FISCHER, CITY ADMINISTRATOR OF DRIPPING SPRINGS

STATE OF TEXAS }
COUNTY OF TRAVIS }

KNOW BY ALL MEN THESE PRESENTS:
THAT I, THE UNDERSIGNED, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, HEREBY CERTIFY THAT THIS PLAT COMPLIES WITH THE SURVEY RELATED REQUIREMENTS OF THE CITY OF DRIPPING SPRINGS, TEXAS AND FURTHER CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE AND IS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY SUPERVISION ON THE GROUND THAT THE CORNER MONUMENTS WERE PROPERLY PLACED UNDER MY SUPERVISION.

12/11/19
GARRETT CAVAIUOLO — DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6714
DOUCET & ASSOCIATES, INC.
GCAVAIUOLO@ DOUCETENGINEERS.COM

STATE OF TEXAS REGISTERED GARRETT CAVAIUOLO 6714 PROFESSIONAL LAND SURVEYOR

STATE OF TEXAS }
COUNTY OF TRAVIS }

I, JENNIFER J. PAISLEY, A LICENSED PROFESSIONAL ENGINEER, DO HEREBY CERTIFY THAT NO PORTION OF THIS PROPERTY IS LOCATED WITHIN A DESIGNATED 100 YEAR FLOOD ZONE AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 48209C 0105F, EFFECTIVE DATE SEPTEMBER 2, 2005, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. ADDITIONALLY, CHANNELIZED AND CONCENTRATED STORM WATER RUNOFF FROM THE 100 YEAR STORM EVENT SHALL BE CONTAINED WITHIN THE DRAINAGE FACILITIES TO BE LOCATED WITHIN THE RIGHTS-OF-WAY AND/OR DRAINAGE EASEMENTS AND DRAINAGE LOTS SHOWN ON THE ATTACHED PLAT.

11 DECEMBER 2019
JENNIFER J. PAISLEY — DATE
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS NO. 91109

STATE OF TEXAS JENNIFER J. PAISLEY 91109 LICENSED PROFESSIONAL ENGINEER

STATE OF TEXAS }
COUNTY OF HAYS }

I, ELAINE HANSON CARDENAS COUNTY CLERK OF HAYS COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR

RECORD IN MY OFFICE ON THE 27 DAY OF January A.D. 2020 AT 11:41 O'CLOCK A.M. IN THE PLAT RECORDS OF HAYS COUNTY, TEXAS, IN
CFN: 20003093

WITNESS MY SEAL OF OFFICE, THIS THE 27 DAY OF January A.D. 2020.

Elain H. Cardenas by Ane S. Min, Deputy
ELAINE HANSON CARDENAS, MBA, PHD, COUNTY CLERK
HAYS COUNTY, TEXAS

DRIPPING SPRINGS, HAYS COUNTY, TEXAS

D&A DOUCET & ASSOCIATES
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7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
TBPLS Firm #10105800 / TBPE Firm #3937

Date:	12/11/2019
Scale:	
Drawn by:	JWF
Reviewer:	GC
Project:	1691-002
Sheet:	1 OF 7
Field Book:	–
Party Chief:	JSM
Survey Date:	01-30-2018

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Firm Registration Number: 3937

FINAL PLAT NOTES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS JENNIFER J. PAISLEY 91109 LICENSED PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 6 OF 175

Project No.: 1691-002

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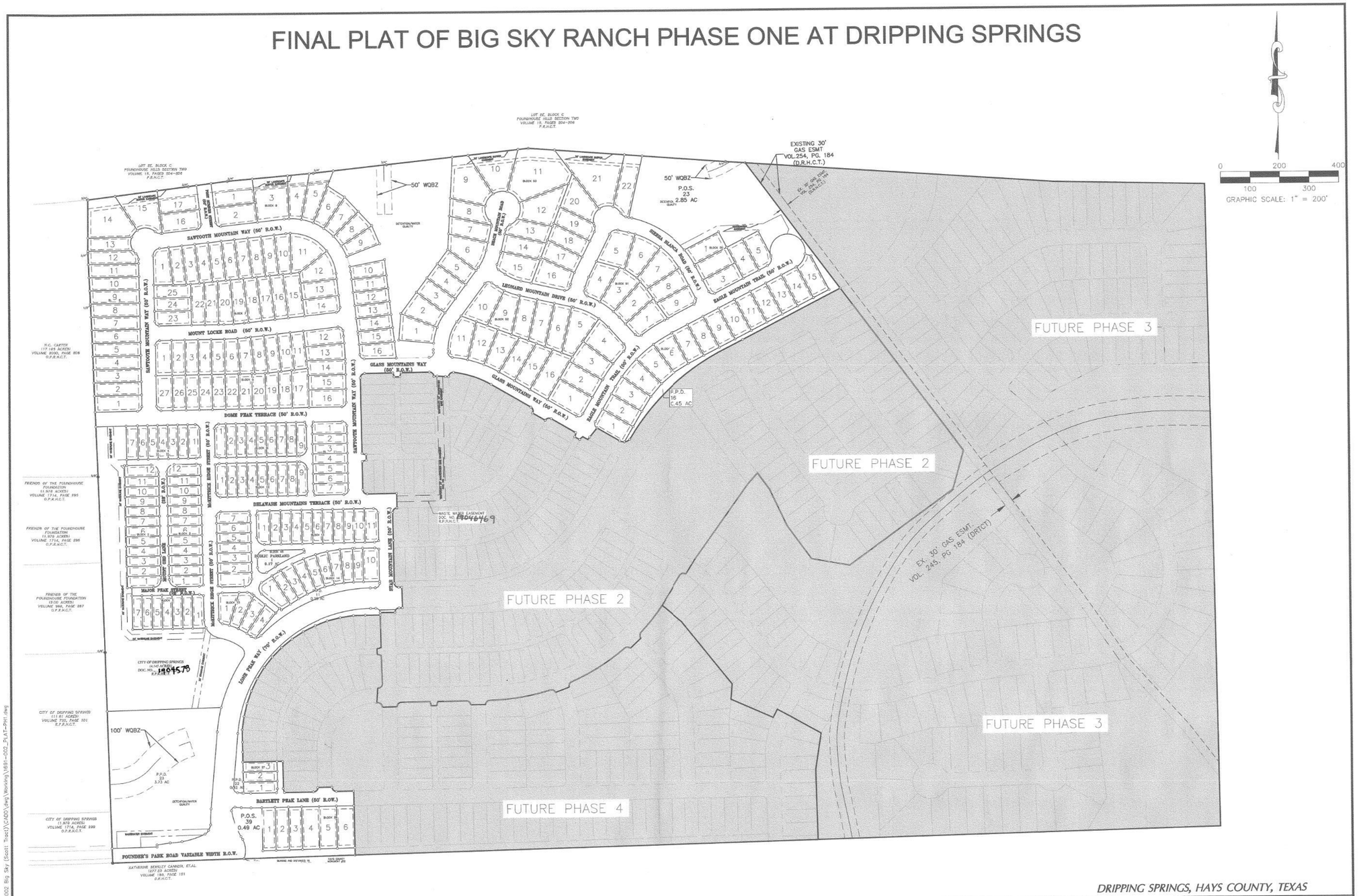
User: JBANISTER
Last Modified: Apr. 12, 19 - 09:49
Plot Date/Time: Apr. 26, 19 - 18:56:54

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS



DRIPPING SPRINGS, HAYS COUNTY, TEXAS

SITE DATA TABLE

	SITE AREA (AC)	Type A RESIDENTIAL LOTS	Type B RESIDENTIAL LOTS	Type C RESIDENTIAL LOTS	RESIDENTIAL LOTS	COLLECTOR ROAD (LF)	LOCAL ROAD (LF)	ALLEYS (LF)	STREET/SIDEWALK I.C. (AC)	L.U.E.'s	LOTS I.C. (AC)	Amenity Center & Misc.	IMPERVIOUS COVER (AC)	IMPERVIOUS COVER (%)	Public Parkland	Private Open Space	Private Parkland	Parkland Swap	TOTAL (not including SWAP)
										Average Lot Size									31.20
REQUIRED	200.40									6,641 SF (0.15 AC)			100.20	50.00%		(credit for 50%)	(credit for 50%)	(credit for 0%)	
ALLOWABLE					780														
PHASE ONE	69.82	98	88	70	256	1580	10158	2557	11.55	256	17.09	0.20	28.84		4.11	7.14	0.00	4.15	7.58
TOTAL	200.40												28.84	14.39%	4.11	7.14	0.00	4.15	7.58

IMPERVIOUS COVER

PARKLAND

D&A DOUCET & ASSOCIATES
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Date: 12/11/2019
Scale: 1"=200'
Drawn by: JWF
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Sheet: 2 OF 7
Field Book: –
Party Chief: JSM
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FINAL PLAT

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
01109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

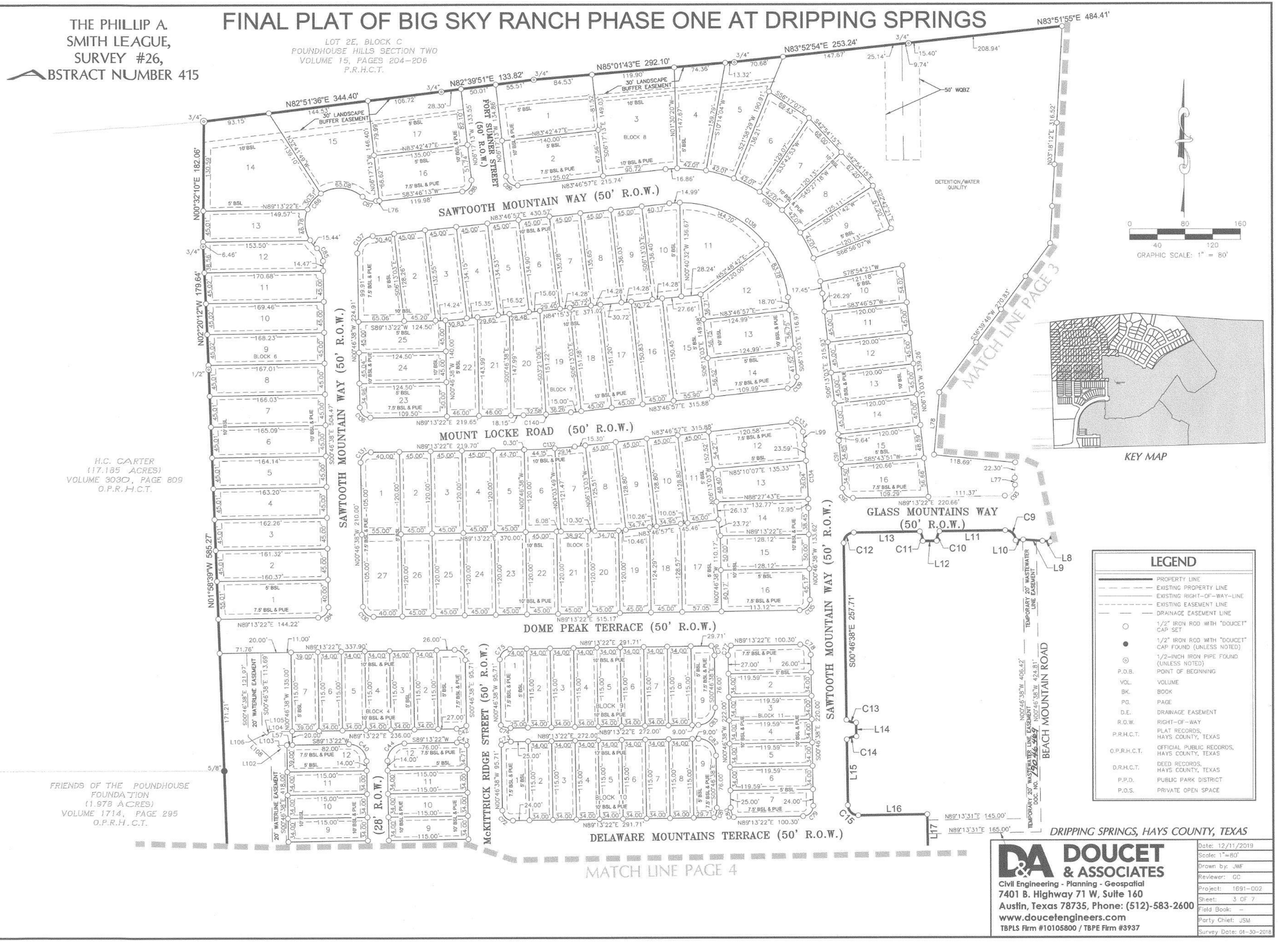
SHEET
7
OF 175

Project No: 1691-002

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS

THE PHILLIP A. SMITH LEAGUE, SURVEY #26, ABSTRACT NUMBER 415

LOT 2E, BLOCK C
POUNDHOUSE HILLS SECTION TWO
VOLUME 15, PAGES 204-206
P.R.H.C.T.



LEGEND

	PROPERTY LINE
	EXISTING PROPERTY LINE
	EXISTING RIGHT-OF-WAY-LINE
	EXISTING EASEMENT LINE
	DRAINAGE EASEMENT LINE
○	1/2" IRON ROD WITH "DOUCET" CAP SET
●	1/2" IRON ROD WITH "DOUCET" CAP FOUND (UNLESS NOTED)
⊙	1/2-INCH IRON PIPE FOUND (UNLESS NOTED)
P.O.B.	POINT OF BEGINNING
VOL.	VOLUME
BK.	BOOK
PG.	PAGE
D.E.	DRAINAGE EASEMENT
R.O.W.	RIGHT-OF-WAY
P.R.H.C.T.	PLAT RECORDS, HAYS COUNTY, TEXAS
O.P.R.H.C.T.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS
D.R.H.C.T.	DEED RECORDS, HAYS COUNTY, TEXAS
P.P.D.	PUBLIC PARK DISTRICT
P.O.S.	PRIVATE OPEN SPACE

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Date:	12/11/2019
Scale:	1"=80'
Drawn by:	JWF
Reviewer:	GC
Project:	1691-002
Sheet:	3 OF 7
Field Book:	–
Party Chief:	JSM
Survey Date:	01-30-2018

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

FINAL PLAT

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
01109
LICENSED
PROFESSIONAL ENGINEER
12/9/2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET
8
OF 175

Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\GD\Phase 1\FINAL PLAT.dwg
User: JBANISTER
Last Modified: Apr. 12, 19 – 09:49
Plot Date/Time: Apr. 26, 19 – 18:57:03
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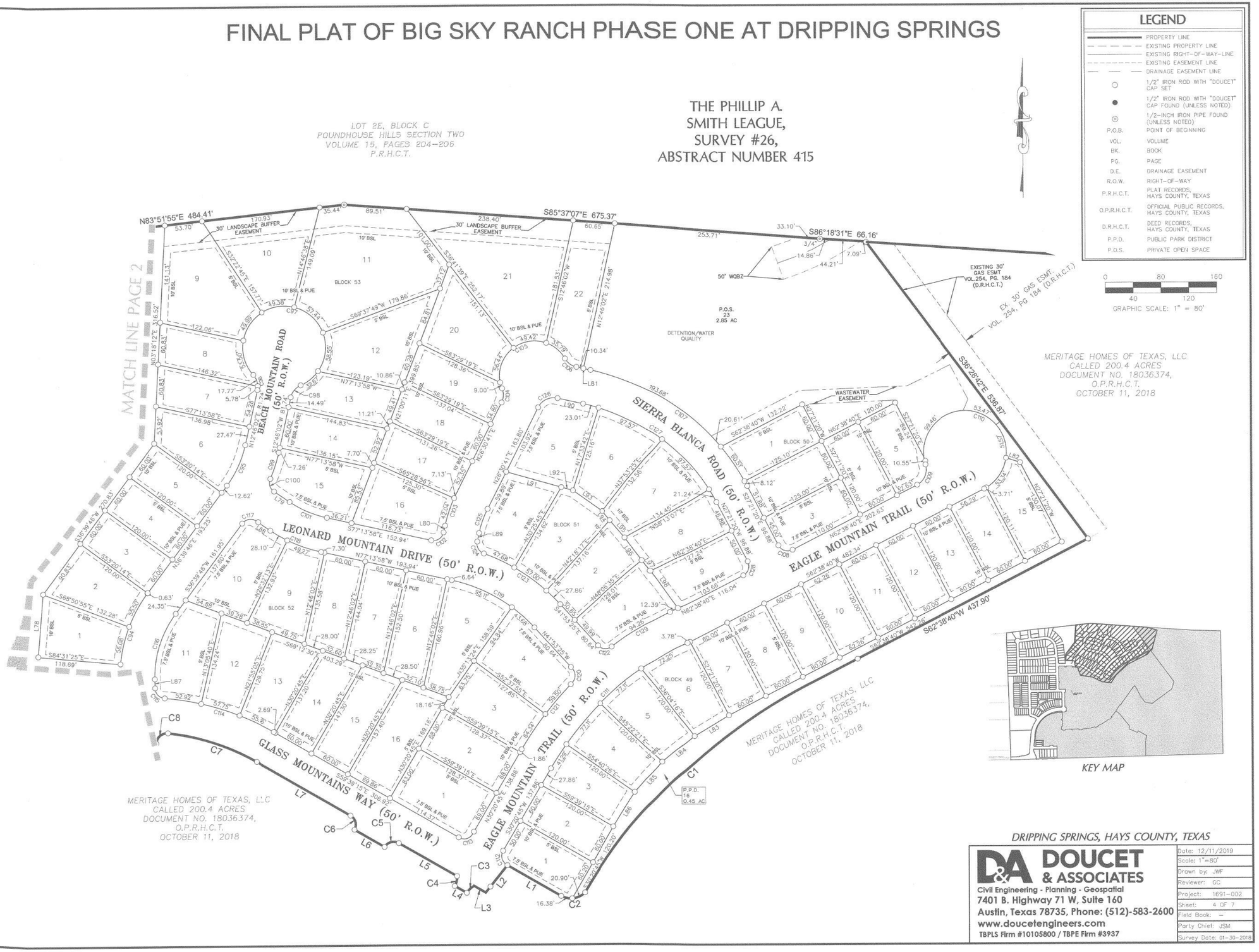
FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS



LEGEND

	PROPERTY LINE
	EXISTING PROPERTY LINE
	EXISTING RIGHT-OF-WAY-LINE
	EXISTING EASEMENT LINE
	DRAINAGE EASEMENT LINE
○	1/2" IRON ROD WITH "DOUCET" CAP SET
●	1/2" IRON ROD WITH "DOUCET" CAP FOUND (UNLESS NOTED)
⊙	1/2-INCH IRON PIPE FOUND (UNLESS NOTED)
P.O.B.	POINT OF BEGINNING
VOL.	VOLUME
BK.	BOOK
PG.	PAGE
D.E.	DRAINAGE EASEMENT
R.O.W.	RIGHT-OF-WAY
P.R.H.C.T.	PLAT RECORDS, HAYS COUNTY, TEXAS
O.P.R.H.C.T.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS
D.R.H.C.T.	DEED RECORDS, HAYS COUNTY, TEXAS
P.P.D.	PUBLIC PARK DISTRICT
P.O.S.	PRIVATE OPEN SPACE

DRIPPING SPRINGS, HAYS COUNTY, TEXAS

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TBPLS Firm #10105800 / TBPE Firm #3937

Date:	12/11/2019
Scale:	1"=80'
Drawn by:	JWF
Reviewer:	GC
Project:	1691-002
Sheet:	4 OF 7
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Party Chief:	JSM
Survey Date:	01-30-2018

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FINAL PLAT

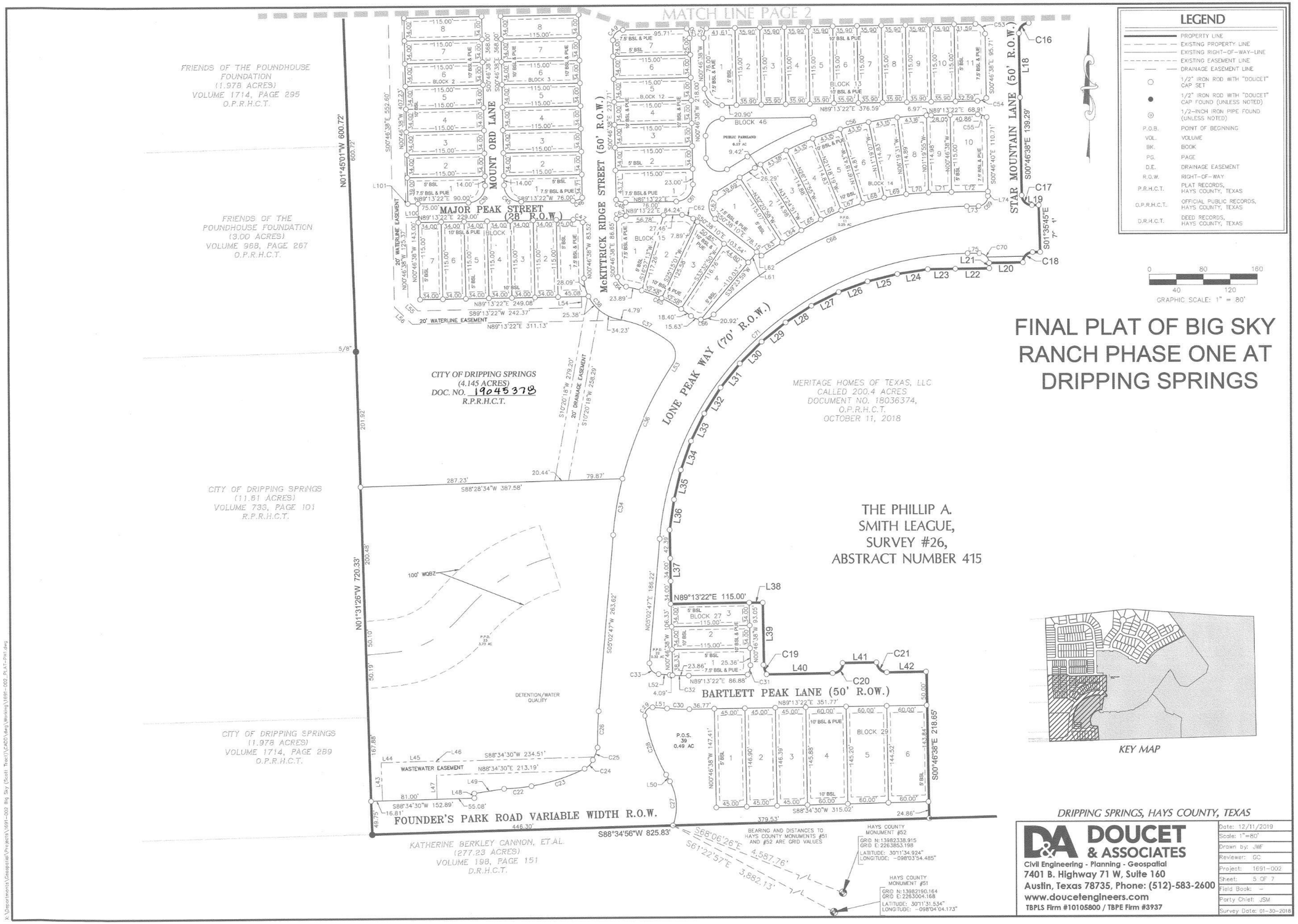
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 9 OF 175

Project No.: 1691-002



KEY MAP

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\FINAL PLAT.dwg
User: JBANISTER
Last Modified: Apr. 12, 19 – 09:49
Plot Date/Time: Apr. 26, 19 – 18:57:13

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D&A DOUCET & ASSOCIATES
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Firm Registration Number: 3937

FINAL PLAT

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
61109
LICENSED
PROFESSIONAL ENGINEER
12/11/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
10
OF 175

Project No:
1691-002

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS

Curve Table					
Curve	Length	Radius	Delta	Chord Direction	Chord Length
C1	461.33'	787.53'	33.56'	S47°09'13"W	454.76'
C2	37.26'	28.24'	75.61'	S81°49'44"W	34.61'
C3	14.86'	25.00'	34.06'	S47°22'26"W	14.64'
C4	14.86'	25.00'	34.06'	N13°19'05"E	14.64'
C5	23.56'	15.00'	90.00'	S75°20'45"W	21.21'
C6	23.56'	15.00'	90.00'	N14°39'15"W	21.21'
C7	135.21'	325.00'	23.84'	N71°34'20"W	134.24'
C8	25.47'	15.00'	97.29'	S47°51'58"W	22.52'
C9	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C10	14.86'	25.00'	34.06'	S16°15'02"W	14.64'
C11	14.86'	25.00'	34.06'	N17°48'19"W	14.64'
C12	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C13	14.86'	25.00'	34.06'	S73°44'58"E	14.64'
C14	14.86'	25.00'	34.06'	S72°11'41"W	14.64'
C15	23.56'	15.00'	90.00'	S45°46'38"E	21.21'
C16	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C17	23.58'	14.95'	90.40'	S45°46'38"E	21.21'
C18	23.34'	15.00'	89.14'	S43°47'29"W	21.05'
C19	14.86'	25.00'	34.06'	S17°48'19"E	14.64'
C20	23.56'	15.00'	90.00'	N44°13'22"E	21.21'
C21	23.56'	15.00'	90.00'	S45°46'38"E	21.21'
C22	40.65'	282.81'	8.24'	N84°36'21"E	40.61'
C23	83.01'	284.36'	16.73'	N72°07'29"E	82.72'
C24	18.21'	25.96'	40.19'	S43°40'00"W	17.84'
C25	19.95'	73.64'	15.52'	S20°49'13"W	19.89'
C26	54.37'	535.00'	5.82'	N02°08'07"E	54.34'
C27	67.96'	79.84'	48.77'	N03°28'59"W	65.93'
C28	93.78'	262.13'	20.50'	N19°10'52"W	93.28'
C29	19.20'	10.89'	101.04'	N41°35'12"E	16.80'
C30	33.03'	325.00'	5.82'	S87°51'56"E	33.02'
C31	14.86'	25.00'	34.06'	N16°15'02"E	14.64'
C32	27.95'	275.00'	5.82'	N87°51'56"W	27.94'
C33	23.56'	15.00'	90.00'	N39°57'13"W	21.21'
C34	85.04'	534.65'	9.11'	N09°35'36"E	84.95'
C35	185.18'	585.26'	18.13'	N24°04'50"E	184.40'
C37	81.88'	175.00'	26.81'	S65°55'13"E	81.14'
C38	87.70'	63.97'	78.54'	S40°04'20"E	80.99'
C39	39.27'	25.00'	90.00'	N44°13'22"E	35.36'
C40	39.27'	25.00'	90.00'	N45°46'38"W	35.36'
C41	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C42	14.86'	25.00'	34.06'	N72°11'41"E	14.64'
C43	14.86'	25.00'	34.06'	N73°44'58"W	14.64'
C44	39.27'	25.00'	90.00'	S44°13'22"W	35.36'

Curve Table					
Curve	Length	Radius	Delta	Chord Direction	Chord Length
C45	39.27'	25.00'	90.00'	S45°46'38"E	35.36'
C46	14.86'	25.00'	34.06'	N72°11'41"E	14.64'
C47	14.86'	25.00'	34.06'	N73°44'58"W	14.64'
C48	14.86'	25.00'	34.06'	S73°44'58"E	14.64'
C49	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C50	14.86'	25.00'	34.06'	N17°48'19"W	14.64'
C51	14.86'	25.00'	34.06'	S16°15'02"W	14.64'
C52	39.27'	25.00'	90.00'	S45°46'38"E	35.36'
C53	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C54	14.86'	25.00'	34.06'	N72°11'41"E	14.64'
C55	14.86'	25.00'	34.06'	S73°44'58"E	14.64'
C56	275.52'	500.00'	31.57'	N73°26'12"E	272.05'
C61	39.27'	25.00'	90.00'	N44°13'22"E	35.36'
C62	17.51'	25.00'	40.14'	N70°42'24"W	17.16'
C63	14.86'	25.00'	34.06'	S72°11'41"W	14.64'
C64	20.51'	15.00'	78.35'	S39°57'13"E	18.95'
C65	107.46'	225.00'	27.36'	S65°26'53"E	106.44'
C66	36.54'	25.00'	83.75'	N86°21'27"E	33.38'
C67	47.25'	25.00'	108.29'	S03°30'26"W	40.52'
C68	417.77'	535.00'	44.74'	N66°51'07"E	407.24'
C69	23.56'	15.00'	90.00'	N44°13'22"E	21.21'
C70	23.24'	15.22'	87.52'	S46°14'25"E	21.05'
C71	683.16'	465.00'	84.18'	N47°08'04"E	623.35'
C72	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C73	14.86'	25.00'	34.06'	N72°11'41"E	14.64'
C74	14.86'	25.00'	34.06'	N73°44'58"W	14.64'
C75	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C76	14.86'	25.00'	34.06'	N17°48'19"W	14.64'
C77	14.86'	25.00'	34.06'	N16°15'02"E	14.64'
C78	23.56'	15.00'	90.00'	S45°46'38"E	21.21'
C79	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C80	14.86'	25.00'	34.06'	N17°48'19"W	14.64'
C81	14.86'	25.00'	34.06'	S16°15'02"W	14.64'
C82	39.27'	25.00'	90.00'	S45°46'38"E	35.36'
C83	39.27'	25.00'	90.00'	S44°13'22"W	35.36'
C84	23.56'	15.00'	90.00'	N44°13'22"E	21.21'
C85	21.03'	25.00'	48.19'	N24°52'20"W	20.41'
C86	157.90'	50.00'	180.94'	N41°30'09"E	100.00'
C87	21.01'	25.32'	47.54'	N72°07'22"W	20.41'
C88	23.58'	15.00'	90.07'	S38°44'52"W	21.23'
C89	23.54'	15.00'	89.93'	N51°15'08"W	21.20'
C90	322.01'	205.00'	90.00'	S51°13'03"E	289.91'
C91	69.35'	1,025.00'	3.88'	S04°16'45"E	69.34'

Curve Table					
Curve	Length	Radius	Delta	Chord Direction	Chord Length
C92	23.15'	15.00'	88.44'	N46°33'33"W	20.92'
C93	22.39'	14.02'	91.50'	N45°43'49"E	20.08'
C94	133.89'	205.00'	37.42'	N17°57'09"E	131.52'
C95	64.64'	155.00'	23.90'	N24°42'54"E	64.18'
C96	23.55'	25.00'	53.97'	N14°13'00"W	22.69'
C97	301.53'	60.00'	287.94'	S77°13'58"E	70.59'
C98	23.55'	25.00'	53.97'	S39°45'05"W	22.69'
C99	39.88'	205.00'	11.15'	S18°20'27"W	39.82'
C100	20.82'	15.00'	79.52'	S15°50'52"E	19.19'
C101	58.50'	155.00'	21.62'	S66°25'17"E	58.15'
C102	23.56'	15.00'	90.00'	N57°46'02"E	21.21'
C103	49.18'	205.00'	13.74'	N19°38'22"E	49.06'
C104	21.03'	25.00'	48.19'	N02°24'59"E	20.41'
C105	150.65'	50.00'	172.64'	N64°38'22"E	99.79'
C106	21.03'	25.00'	48.19'	S53°08'16"E	20.41'
C107	282.92'	325.00'	49.88'	S52°17'39"E	274.07'
C108	23.56'	15.00'	90.00'	S72°21'20"E	21.21'
C109	34.83'	25.00'	79.84'	N22°43'35"E	32.08'
C110	272.10'	60.00'	259.84'	S67°16'25"E	92.04'
C111	267.76'	475.00'	32.30'	S46°29'43"W	264.23'
C112	23.56'	15.00'	90.00'	N14°39'15"W	21.21'
C113	21.99'	14.00'	90.00'	N75°20'45"E	19.80'
C114	165.83'	375.00'	25.34'	S72°19'21"E	164.48'
C115	22.05'	15.00'	84.21'	S42°53'03"E	20.12'
C116	101.29'	155.00'	37.44'	S17°56'34"W	99.49'
C117	22.97'	15.00'	87.73'	S80°31'35"W	20.79'
C118	77.36'	205.00'	21.62'	N66°25'17"W	76.91'
C119	138.79'	225.00'	35.34'	N59°33'41"W	136.60'
C120	22.45'	14.99'	85.85'	N00°59'09"E	20.41'
C121	123.84'	525.00'	13.52'	N37°06'14"E	123.56'
C122	22.45'	15.00'	85.75'	N84°45'58"W	20.41'
C123	132.54'	275.00'	27.61'	S55°41'50"E	131.26'
C124	21.54'	15.00'	82.27'	S28°22'06"E	19.74'
C125	37.18'	155.00'	13.74'	S19°38'22"W	37.09'
C126	33.27'	25.00'	76.26'	S64°38'22"W	30.87'
C127	239.39'	275.00'	49.88'	N52°17'39"W	231.91'
C128	23.56'	15.00'	90.00'	N17°38'40"E	21.21'
C129	94.26'	525.00'	10.29'	S57°30'04"W	94.13'
C130	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C131	23.56'	15.00'	90.07'	N44°13'22"E	21.21'
C132	73.59'	775.00'	5.44'	N86°30'09"E	73.56'
C133	23.56'	15.00'	90.00'	S51°13'03"E	21.21'
C134	92.58'	975.00'	5.44'	S03°29'51"E	92.54'

Curve Table					
Curve	Length	Radius	Delta	Chord Direction	Chord Length
C135	23.56'	15.00'	90.00'	S44°13'22"W	21.21'
C136	23.56'	15.00'	90.00'	N45°46'38"W	21.21'
C137	36.90'	25.00'	84.56'	N41°30'09"E	33.64'
C138	243.47'	155.00'	90.00'	S51°13'03"E	219.20'
C139	23.56'	15.00'	90.00'	S38°46'57"W	21.21'
C140	68.84'	725.00'	5.44'	N86°30'09"E	68.81'

DRIPPING SPRINGS, HAYS COUNTY, TEXAS

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Date:	12/11/2019
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Drawn by:	JMF
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Project:	1691-002
Sheet:	6 OF 7
Field Book:	
Party Chief:	JSM
Survey Date:	01-30-2018

FINAL PLAT OF BIG SKY RANCH PHASE ONE AT DRIPPING SPRINGS

Parcel Line Table		
Line	Length	Direction
L1	89.03'	N59°39'15"W
L2	50.51'	S38°28'34"W
L3	19.14'	N59°39'15"W
L4	20.00'	N59°39'15"W
L5	95.71'	N59°39'15"W
L6	50.00'	N59°39'15"W
L7	155.92'	N59°39'15"W
L8	11.06'	N84°53'31"W
L9	28.10'	N85°56'23"W
L10	11.05'	S84°01'42"W
L11	95.71'	S89°13'22"W
L12	20.00'	S89°13'22"W
L13	95.71'	S89°13'22"W
L14	20.00'	S00°46'38"E
L15	95.71'	S00°46'38"E
L16	100.00'	N89°13'22"E
L17	50.00'	S00°46'38"E
L18	95.71'	S00°46'38"E
L19	10.01'	N89°13'22"E
L20	50.00'	S89°13'22"W
L21	8.01'	S00°46'38"E
L22	51.20'	S89°29'02"W
L23	40.89'	S89°13'22"W
L24	45.57'	S81°14'09"W
L25	45.52'	S76°03'26"W
L26	45.52'	S69°46'12"W
L27	45.52'	S63°28'58"W
L28	45.52'	S57°11'44"W
L29	45.52'	S50°54'31"W
L30	45.52'	S44°37'17"W
L31	45.52'	S38°20'03"W
L32	45.52'	S32°02'49"W
L33	45.52'	S25°45'35"W
L34	45.52'	S19°28'21"W
L35	45.52'	S13°11'07"W
L36	45.61'	S08°31'51"W
L37	110.39'	S00°46'38"E
L38	20.00'	S89°44'34"E
L39	93.00'	S00°46'38"E
L40	97.98'	N89°13'22"E
L41	50.00'	N89°13'22"E
L42	58.33'	N89°13'22"E
L43	57.00'	S01°25'30"E
L44	19.67'	S88°34'30"W
L45	61.33'	S88°34'30"W
L46	1.04'	N01°25'30"W
L47	35.96'	N01°25'30"W
L48	7.00'	S00°05'49"E
L49	44.67'	S81°29'06"W
L50	11.43'	N29°25'50"W

Parcel Line Table		
Line	Length	Direction
L51	21.59'	S84°57'13"E
L52	16.60'	N84°57'13"W
L53	2.27'	S34°07'02"W
L54	16.50'	N00°46'38"W
L55	19.98'	S45°46'38"E
L56	36.55'	S45°46'38"E
L57	8.00'	S89°13'22"W
L61	20.00'	S39°21'50"W
L62	8.55'	N50°38'10"W
L63	36.22'	S57°29'43"W
L64	33.84'	N57°36'43"E
L65	33.11'	S61°04'52"W
L66	33.13'	S66°04'22"W
L67	33.13'	S71°03'58"W
L68	33.13'	N76°03'34"E
L69	33.13'	S81°03'10"W
L70	33.13'	S86°02'46"W
L71	33.90'	S89°10'39"W
L72	54.86'	S89°13'21"W
L73	17.49'	N89°13'22"E
L74	6.51'	S00°46'13"E
L75	17.49'	N90°00'00"E
L76	4.47'	S84°06'32"W
L77	12.25'	S00°03'01"E
L78	91.13'	S04°49'01"W
L79	27.15'	S55°36'36"E
L80	10.00'	N12°46'02"E
L81	20.87'	S77°13'58"E
L82	21.17'	N71°58'55"W
L83	57.72'	S58°24'19"W
L84	57.57'	S49°16'42"W
L85	57.57'	S39°58'37"W
L86	58.70'	S31°39'15"W
L87	12.98'	S00°46'38"E
L88	24.90'	N55°36'36"W
L89	12.64'	S12°46'02"W
L90	37.52'	N77°13'58"W
L91	81.75'	N73°56'49"W
L92	17.43'	N73°56'49"W
L93	52.09'	S54°13'59"E
L94	17.07'	N39°49'11"W
L95	32.91'	S39°49'11"E
L96	39.75'	S34°52'46"W
L97	18.48'	S34°52'46"E
L98	65.56'	S34°52'46"E
L99	18.95'	S06°13'03"E
L100	18.00'	N89°13'22"E
L101	3.00'	N89°13'22"E
L102	15.23'	S45°46'38"E
L103	13.77'	S89°13'22"W

Parcel Line Table		
Line	Length	Direction
L104	31.56'	N89°13'22"E
L105	7.22'	N44°13'22"E
L106	9.07'	S45°46'38"E

BLOCK 1	
PARCEL	ACREAGE
1	0.104
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.090
BLOCK 2	
PARCEL	ACREAGE
1	0.090
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.090
8	0.090
9	0.090
10	0.090
11	0.090
12	0.100
BLOCK 3	
PARCEL	ACREAGE
1	0.099
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.090
8	0.090
9	0.090
10	0.090
11	0.090
12	0.099
BLOCK 4	
PARCEL	ACREAGE
1	0.107
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.103
BLOCK 5	
PARCEL	ACREAGE
1	0.266
2	0.124
3	0.124
4	0.124
5	0.124
6	0.132
7	0.132
8	0.133
9	0.133
10	0.133
11	0.133
12	0.173
13	0.161
14	0.151
15	0.147
16	0.176
17	0.171
18	0.131
19	0.126
20	0.124
21	0.124
22	0.124
23	0.124
24	0.124
25	0.124
26	0.124
27	0.150

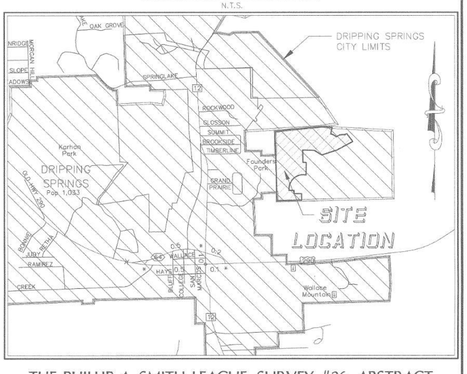
BLOCK 6	
PARCEL	ACREAGE
1	0.201
2	0.166
3	0.167
4	0.168
5	0.169
6	0.170
7	0.171
8	0.172
9	0.173
10	0.174
11	0.176
12	0.172
13	0.153
14	0.425
15	0.336
16	0.206
17	0.251
BLOCK 7	
PARCEL	ACREAGE
1	0.167
2	0.135
3	0.138
4	0.139
5	0.139
6	0.140
7	0.140
8	0.140
9	0.141
10	0.152
11	0.252
12	0.197
13	0.163
14	0.161
15	0.193
16	0.156
17	0.156
18	0.156
19	0.165
20	0.163
21	0.154
22	0.150
23	0.142
24	0.129
25	0.129
BLOCK 8	
PARCEL	ACREAGE
1	0.266
2	0.216
3	0.386
4	0.202
5	0.239
6	0.167
7	0.155
8	0.152
9	0.152
10	0.135
11	0.124
12	0.124
13	0.124
14	0.124
15	0.128
16	0.147
BLOCK 9	
PARCEL	ACREAGE
1	0.101
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.090
8	0.090
9	0.086

BLOCK 10	
PARCEL	ACREAGE
1	0.101
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.090
8	0.090
9	0.086
BLOCK 11	
PARCEL	ACREAGE
1	0.111
2	0.093
3	0.093
4	0.093
5	0.093
6	0.093
7	0.106
BLOCK 12	
PARCEL	ACREAGE
1	0.123
2	0.090
3	0.090
4	0.090
5	0.090
6	0.090
7	0.101
BLOCK 13	
PARCEL	ACREAGE
1	0.118
2	0.095
3	0.095
4	0.095
5	0.095
6	0.095
7	0.095
8	0.095
9	0.095
10	0.095
11	0.121
BLOCK 14	
PARCEL	ACREAGE
1	0.140
2	0.092
3	0.101
4	0.101
5	0.101
6	0.101
7	0.101
8	0.101
9	0.091
10	0.144
BLOCK 15	
PARCEL	ACREAGE
1	0.131
2	0.119
3	0.114
4	0.102
BLOCK 27	
PARCEL	ACREAGE
1	0.103
2	0.090
3	0.090
BLOCK 29	
PARCEL	ACREAGE
1	0.152
2	0.151
3	0.151
4	0.200
5	0.200
6	0.199

BLOCK 49	
PARCEL	ACREAGE
1	0.177
2	0.165
3	0.177
4	0.187
5	0.187
6	0.185
7	0.165
8	0.165
9	0.165
10	0.172
11	0.165
12	0.165
13	0.165
14	0.165
15	0.180
BLOCK 50	
PARCEL	ACREAGE
1	0.176
3	0.171
4	0.165
5	0.161
BLOCK 51	
PARCEL	ACREAGE
1	0.204
2	0.200
3	0.227
4	0.214
5	0.252
6	0.223
7	0.228
8	0.190
9	0.182
BLOCK 52	
PARCEL	ACREAGE
1	0.244
2	0.200
3	0.217
4	0.258
5	0.260
6	0.216
7	0.204
8	0.193
9	0.220
10	0.258
11	0.228
12	0.204
13	0.206
14	0.196
15	0.210
16	0.262
BLOCK 53	
PARCEL	ACREAGE
1	0.207
2	0.208
3	0.165
4	0.165
5	0.165
6	0.233
7	0.196
8	0.180
9	0.382
10	0.349
11	0.638
12	0.315
13	0.191
14	0.194
15	0.238
16	0.232
17	0.182
18	0.185
19	0.190
20	0.251
21	0.608
22	0.275

VICINITY MAP

N.T.S.



THE PHILLIP A. SMITH LEAGUE, SURVEY #26, ABSTRACT NUMBER 415

BEARING BASIS:

ALL BEARINGS ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NAD83 (2011). ALL DISTANCES ARE ADJUSTED TO SURFACE USING A SURFACE ADJUSTMENT FACTOR OF 1.00007936.

UTILITY NOTE:

THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

SURVEY CONTROL:

STATE PLANE GRID CONTROL FOR THIS SURVEY IS BASED ON A 1/2" IRON ROD WITH "DOUCET CONTROL" CAP SET. GRID COORDINATES SHOWN HEREON WERE DERIVED FROM GPS STATIC OBSERVATIONS ON JANUARY 18, 2007. STATIC DATA PROCESSED BY O.P.U.S. AND TIED TO HAYS COUNTY MONUMENT #202.

ENGINEER:

DOUCET AND ASSOCIATES
7401 B HIGHWAY 71 WEST, SUITE 160
AUSTIN, TX 78735

SURVEYOR:

DOUCET AND ASSOCIATES
7401 B HIGHWAY 71 WEST, SUITE 160
AUSTIN, TX 78735

DRIPPING SPRINGS, HAYS COUNTY, TEXAS

DOUCET & ASSOCIATES
Civil Engineering - Planning - Geospatial
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
TBPLS Firm #10105800 / TBPE Firm #3937

Date:	12/11/2019
Scale:	
Drawn by:	JMF
Reviewer:	GC
Project:	1691-002
Sheet:	7 OF 7
Field Book:	
Party Chief:	JSM
Survey Date:	01-30-2018

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

FINAL PLAT

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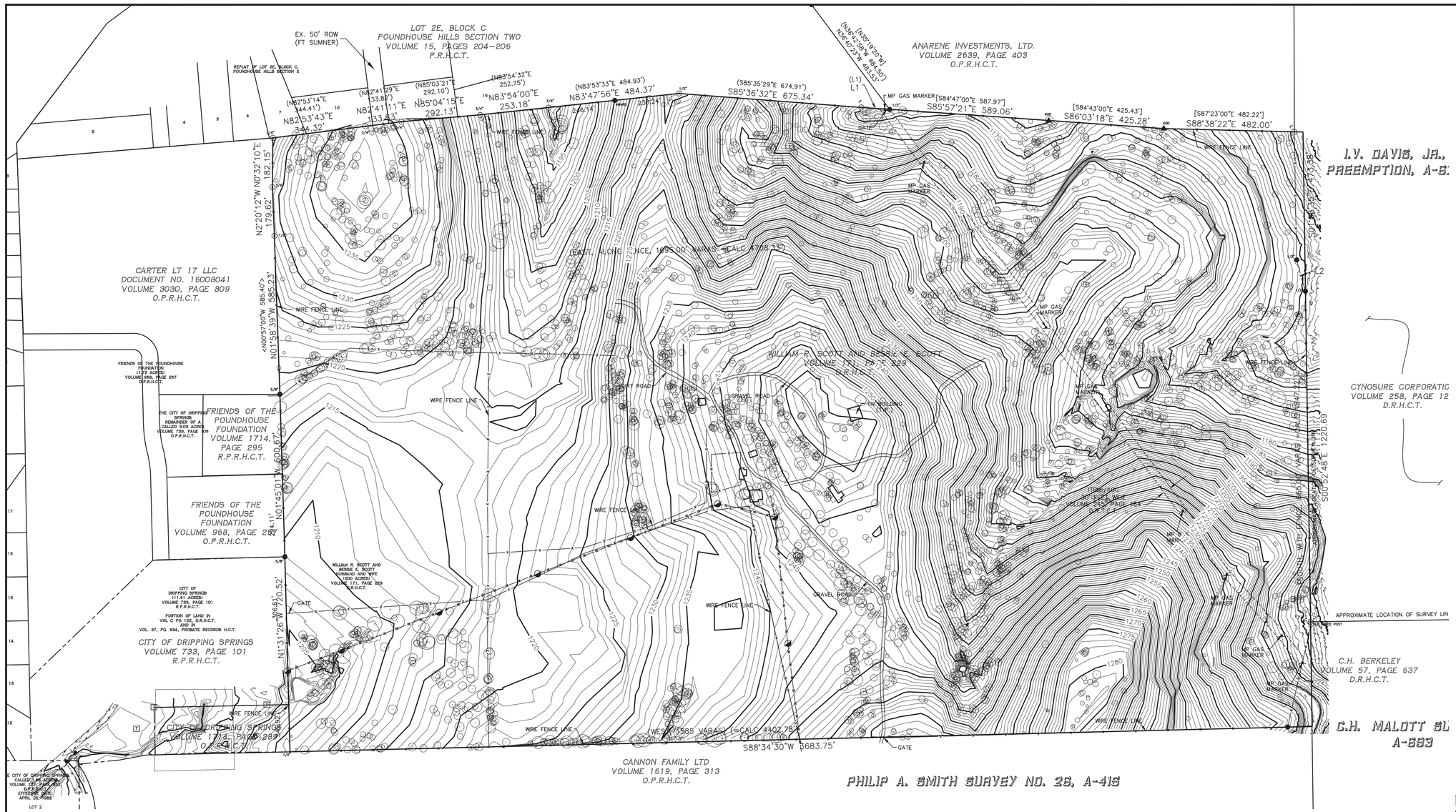
Firm Registration Number: 3937



LEGEND

- IRON ROD FOUND (SIZE NOTED)
- IRON PIPE FOUND (SIZE NOTED)
- BENCHMARK FOUND
- CALCULATED POINT
- COTTON SPINDLE FOUND
- NAIL FOUND
- FENCE POST OCCUPIES PROPERTY CORNER
- MONUMENT FOUND
- CONCRETE MARKER FOUND
- CO CLEAN OUT
- BOLLARD (SIZE NOTED)
- ELECTRIC PULL BOX
- E ELECTRIC METER
- ET ELECTRIC TRANSFORMER
- E ELECTRIC MANHOLE
- FIRE HYDRANT
- G GAS METER
- GV GATE VALVE
- HANDICAP PARKING
- LIGHT POLE
- MAILBOX
- T TELEPHONE MANHOLE
- TELEPHONE SERVICE BOX
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL
- VALVE
- WATER VALVE
- W WATER METER
- S STORM SEWER MANHOLE
- WW WASTEWATER MANHOLE
- W WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OE OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT

NOTES:

2 FT CONTOUR TOPOGRAPHY PER DOUCET & ASSOCIATES, SEPTEMBER 15, 2017

SEE ZONING MAP ON SHEET 2

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EXISTING CONDITIONS

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 12 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-EC.dwg
User: JBANISTER
Last Modified: Dec. 05, 18 - 16:31
Plot Date/Time: Apr. 26, 19 - 18:58:39

100 0 50 100 200
(IN FEET)
GRAPHIC SCALE 1"=200'

LEGEND

- IRON ROD FOUND
- ELECTRIC PULL BOX
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC MANHOLE
- FIRE HYDRANT
- GAS METER
- TELEPHONE MANHOLE
- TELEPHONE SERVICE BOX
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN
- POWER POLE
- DOWN GUY
- FLOW ARROW
- CONCRETE
- BUILDING
- BOUNDARY LINE
- LOT LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- DRAINAGE AREA BOUNDARY

Existing Flow Chart

Drainage Name	2-Year	10-Year	25-Year	100-Year
DA 1	93.8	191.5	237.5	321.6
DA 2	45.3	103.2	131.3	183.4
DA 3	31.3	66.2	82.7	113.0
DA 4	28.6	60.4	75.3	103.0
DA 5	84.8	179.1	223.6	305.4
DA 6	8.1	17.1	21.3	29.1
DA 7	16.3	34.4	42.9	58.6
OS-1	80.2	166.0	206.3	280.1
Outfall 1	161.2	332.2	412.7	560.7
Outfall 2	45.3	103.2	131.3	183.4
Outfall 3	31.3	66.2	82.7	113.0
Outfall 4	28.6	60.4	75.3	103.0
Outfall 5	96.3	204.0	254.8	348.2
Outfall 6	8.1	17.1	21.3	29.1

Big Sky Ranch
Existing Impervious Cover and CN Calculations

Drainage Name	Drainage Area (SF)	Drainage Area (Sq. Mi.)	Impervious Area (SF)	Impervious Cover (%)	CN Value
DA 1	2766496	0.09923	0	0%	82
DA 2	1S50300	0.05S61	0	0%	76
DA 3	813701	0.02919	0	0%	80
DA 4	7S3S88	0.02703	0	0%	80
DA S	2491196	0.08936	0	0%	80
DA 6	20S603	0.00738	0	0%	80
DA 7	37374S	0.01341	0	0%	80
OS-1	1927969	0.06916	0	0%	81

Big Sky Ranch
Existing "Tc" Value Calculations

Drainage Area	Sheet Flow 1					Shallow Concentrated Flow 1 (Unpaved)					Channel Flow			Time of Concentration	Lag Time (min)
	Length	N	ΔElev	Slope	Sub Tc	Length	ΔElev	Slope	Velocity	Sub Tc	Length	Velocity	Sub Tc		
DA 1	200	0.2	10.5	0.0525	14.08	2989	114.5	0.038	3.16	15.78	0	0	0	29.85	17.91
DA 2	200	0.2	9	0.045	14.97	1768	69.15	0.039	3.19	9.23	0	0	0	24.21	14.53
DA 3	200	0.2	12	0.06	13.35	1226	79	0.064	4.10	4.99	0	0	0	18.34	11.00
DA 4	200	0.2	10	0.05	14.36	1200	82.3	0.069	4.23	4.73	0	0	0	19.09	11.45
DA 5	200	0.2	13	0.065	12.93	2832	152	0.054	3.74	12.63	0	0	0	25.55	15.33
DA 6	200	0.2	9	0.045	14.97	586	40	0.068	4.22	2.32	0	0	0	17.29	10.37
DA 7	200	0.2	25	0.125	9.95	589	55.4	0.094	4.95	1.98	0	0	0	11.93	7.16
OS-1	100	0.2	5	0.05	8.25	1780	88	0.049	3.59	8.27	0	0	0	16.51	9.91

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Plot Date/Time: Apr. 26, 19 – 18:59:55

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Firm Registration Number: 3937

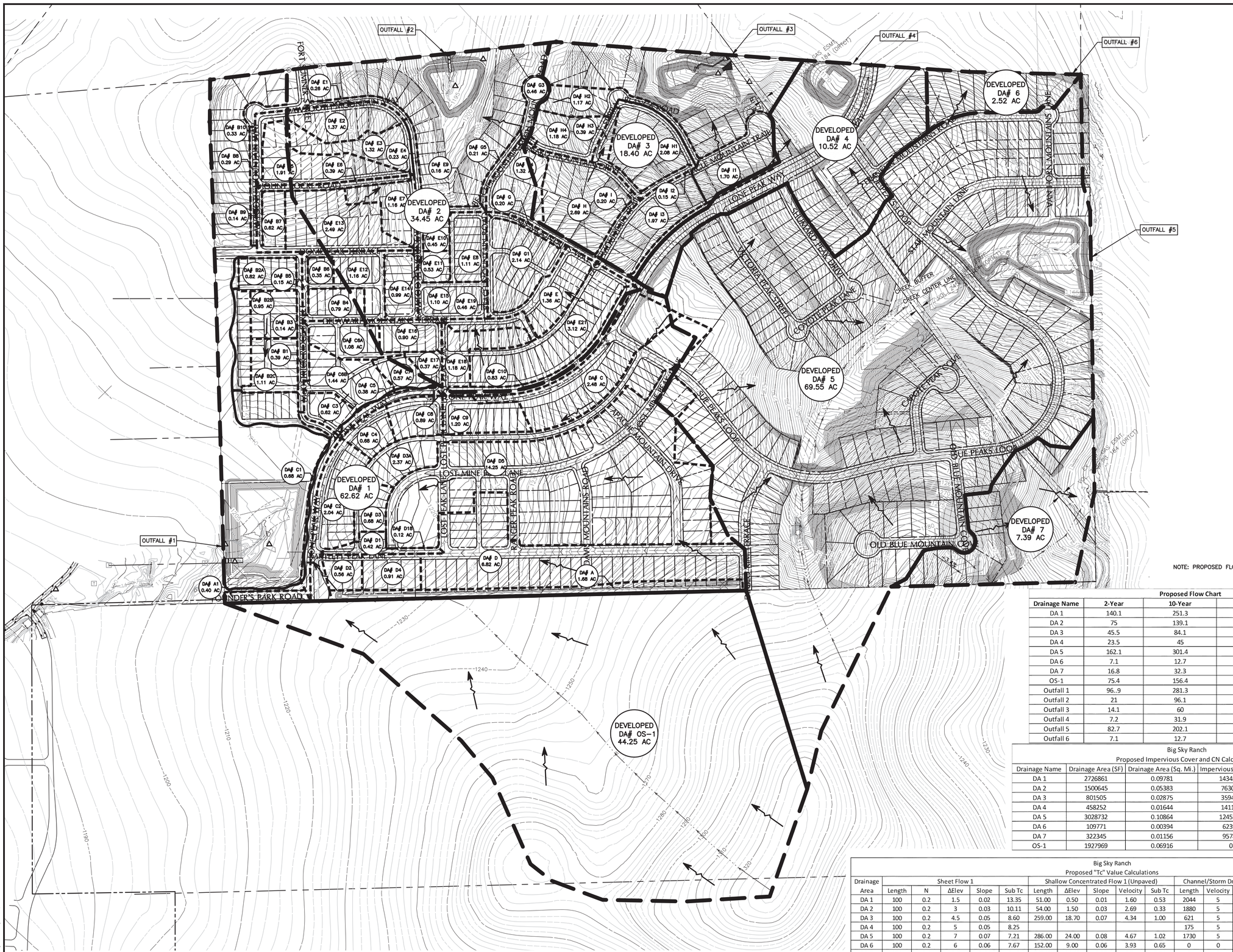
EXISTING DRAINAGE AREA MAP

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002



NOTE: PROPOSED FLOWS CALCULATED USING SCS METHOD

LEGEND

- IRON ROD FOUND
- ELECTRIC PULL BOX
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC MANHOLE
- FIRE HYDRANT
- GAS METER
- TELEPHONE MANHOLE
- TELEPHONE SERVICE BOX
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN
- POWER POLE
- DOWN GUY
- FLOW ARROW
- CONCRETE
- BUILDING
- BOUNDARY LINE
- LOT LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- DRAINAGE AREA BOUNDARY

100 0 50 100 200
(IN FEET)
GRAPHIC SCALE 1"=200'

Proposed Flow Chart

Drainage Name	2-Year	10-Year	25-Year	100-Year
DA 1	140.1	251.3	303	397.6
DA 2	75	139.1	169.4	225.1
DA 3	45.5	84.1	102.1	135.1
DA 4	23.5	45	55	73.4
DA 5	162.1	301.4	366.5	485.9
DA 6	7.1	12.7	15.3	20.1
DA 7	16.8	32.3	39.5	52.8
OS-1	75.4	156.4	194.4	264.1
Outfall 1	96..9	281.3	376.1	536.5
Outfall 2	21	96.1	128.6	182.5
Outfall 3	14.1	60	78.6	109.8
Outfall 4	7.2	31.9	38.8	61.8
Outfall 5	82.7	202.1	248.5	320.6
Outfall 6	7.1	12.7	15.3	20.1

Big Sky Ranch
Proposed Impervious Cover and CN Calculations

Drainage Name	Drainage Area (SF)	Drainage Area (Sq. Mi.)	Impervious Area (SF)	Impervious Cover (%)	CN Value
DA 1	2726861	0.09781	1434509	53%	82
DA 2	1500645	0.05383	763094	51%	76
DA 3	801505	0.02875	359466	45%	80
DA 4	458252	0.01644	141106	31%	80
DA 5	3028732	0.10864	1245366	42%	80
DA 6	109771	0.00394	62395	57%	80
DA 7	322345	0.01156	95780	30%	80
OS-1	1927969	0.06916	0	0%	81

Big Sky Ranch
Proposed "Tc" Value Calculations

Drainage	Sheet Flow 1					Shallow Concentrated Flow 1 (Unpaved)					Channel/Storm Drain Flow			Time of	Lag Time (min)
Area	Length	N	ΔElev	Slope	Sub Tc	Length	ΔElev	Slope	Velocity	Sub Tc	Length	Velocity	Sub Tc	Concentration	
DA 1	100	0.2	1.5	0.02	13.35	51.00	0.50	0.01	1.60	0.53	2044	5	6.81	20.69	12.41
DA 2	100	0.2	3	0.03	10.11	54.00	1.50	0.03	2.69	0.33	1880	5	6.27	16.72	10.03
DA 3	100	0.2	4.5	0.05	8.60	259.00	18.70	0.07	4.34	1.00	621	5	2.07	11.67	7.00
DA 4	100	0.2	5	0.05	8.25						175	5	0.58	13.06	7.83
DA 5	100	0.2	7	0.07	7.21	286.00	24.00	0.08	4.67	1.02	1730	5	5.77	13.99	8.40
DA 6	100	0.2	6	0.06	7.67	152.00	9.00	0.06	3.93	0.65	0	0	0.00	8.31	4.99
DA 7	100	0.2	3.7	0.04	9.30	749.00	64.40	0.09	4.73	2.64	0	0	0.00	11.94	7.16
OS-1	100	0.2	5	0.05	8.25	1780.00	88.00	0.05	3.59	8.27	972	5	3.24	19.75	11.85

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PROPOSED DRAINAGE AREA MAP

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 14 OF 175

Project No.: 1691-002

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Last Modified: Mar. 25, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:00:14

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Firm Registration Number: 3937

INTERMEDIATE DRAINAGE AREA MAP

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 15 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_DA.dwg
User: JBANISTER
Last Modified: Mar. 25, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:00:34

PROPOSED IMPERVIOUS COVER CALCULATIONS

	2-year	10-year	25-year	100-year
C value for impervious surfaces-concrete	0.75	0.83	0.88	0.97
C value for impervious surfaces-asphalt	0.73	0.81	0.86	0.95
C value for pervious surfaces-grass	(Reference COA Drainage Criteria Manual)			
PF: Poor condition, flat slope, 0-2%	0.32	0.37	0.40	0.47
PA: Poor condition, average slope, 2-7%	0.37	0.43	0.46	0.53
PS: Poor condition, steep slope, >7%	0.40	0.45	0.49	0.55
FF: Fair condition, flat slope, 0-2%	0.25	0.30	0.34	0.41
FA: Fair condition, average slope, 2-7%	0.33	0.38	0.42	0.49
FS: Fair condition, steep slope, >7%	0.37	0.42	0.46	0.53
GF: Good condition, flat slope, 0-2%	0.21	0.25	0.29	0.36
GA: Good condition, average slope, 2-7%	0.29	0.35	0.39	0.46
GS: Good condition, steep slope, >7%	0.34	0.40	0.44	0.51

Drainage	Area	Area	Area	Impervious Cover		Impervious Cover Composite C Value				Percent	Pervious	Pervious C Value				Composite C Value			
Area	(sf)	(Acres)	(Sq. Mi.)	Concrete (%)	Asphalt (%)	2-year	10-year	25-year	100-year	Impervious	Classification	2-year	10-year	25-year	100-year	2-year	10-year	25-year	100-year
D	297184	6.822	0.010660	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
D18	5379	0.123	0.000193	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
D5	620914	14.254	0.022272	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
D4	39437	0.905	0.001415	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
D3	29544	0.678	0.001060	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
D3A	103183	2.369	0.003701	0.00	100.00	0.73	0.81	0.86	0.95	90%	GA	0.29	0.35	0.39	0.46	0.69	0.76	0.81	0.90
D2	24555	0.564	0.000881	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
D1	18057	0.415	0.000648	0.00	100.00	0.73	0.81	0.86	0.95	70%	GA	0.29	0.35	0.39	0.46	0.60	0.67	0.72	0.80
B	8499	0.195	0.000305	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
B10	14429	0.331	0.000518	0.00	100.00	0.73	0.81	0.86	0.95	80%	GA	0.29	0.35	0.39	0.46	0.64	0.72	0.77	0.85
B9	6240	0.143	0.000224	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
B8	12964	0.298	0.000465	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
B7	27072	0.621	0.000971	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
B6	15013	0.345	0.000539	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
B5	6548	0.150	0.000235	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
B4	34436	0.791	0.001235	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
B3	6161	0.141	0.000221	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
B2A	35499	0.815	0.001273	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
B2B	41529	0.953	0.001490	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
B2C	48145	1.105	0.001727	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
B1	17079	0.392	0.000613	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
I1	74210	1.704	0.002662	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
I2	6691	0.154	0.000240	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
I3	85746	1.968	0.003076	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
I	8873	0.204	0.000318	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
H1	90402	2.075	0.003243	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
H2	51108	1.173	0.001833	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
H3	17345	0.398	0.000622	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
H4	51340	1.179	0.001842	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
H	117051	2.687	0.004199	0.00	100.00	0.73	0.81	0.86	0.95	15%	GA	0.29	0.35	0.39	0.46	0.36	0.42	0.46	0.53
G5	9193	0.211	0.000330	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
G4	57281	1.315	0.002055	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
G3	20040	0.460	0.000719	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
G1	93049	2.136	0.003338	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
G	8898	0.204	0.000319	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
E	59392	1.363	0.002130	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
E1	11399	0.262	0.000409	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
E2	59792	1.373	0.002145	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E3	57480	1.320	0.002062	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
E4	10130	0.233	0.000363	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
E5	82993	1.905	0.002977	0.00	100.00	0.73	0.81	0.86	0.95	30%	GA	0.29	0.35	0.39	0.46	0.42	0.49	0.53	0.61
E6	16982	0.390	0.000609	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E7	50572	1.161	0.001814	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
E8	48394	1.111	0.001736	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E9	7095	0.163	0.000254	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
E10	19374	0.445	0.000695	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E11	23063	0.529	0.000827	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E12	50637	1.162	0.001816	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E13	108443	2.490	0.003890	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
E14	43357	0.995	0.001555	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
E15	48013	1.102	0.001722	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
E16	39167	0.899	0.001405	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E17	16165	0.371	0.000580	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E18	51270	1.177	0.001839	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
E19	20156	0.463	0.000723	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
E21	135995	3.122	0.004878	0.00	100.00	0.73	0.81	0.86	0.95	30%	GA	0.29	0.35	0.39	0.46	0.42	0.49	0.53	0.61
C1	29564	0.679	0.001060	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
C2	87740	2.014	0.003147	0.00	100.00	0.73	0.81	0.86	0.95	50%	GA	0.29	0.35	0.39	0.46	0.51	0.58	0.63	0.71
C3	27075	0.622	0.000971	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C4	29750	0.683	0.001067	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C5	16391	0.376	0.000588	0.00	100.00	0.73	0.81	0.86	0.95	90%	GA	0.29	0.35	0.39	0.46	0.69	0.76	0.81	0.90
C6A	47237	1.084	0.001694	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C6B	62753	1.441	0.002251	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C7	24725	0.568	0.000887	0.00	100.00	0.73	0.81	0.86	0.95	20%	GA	0.29	0.35	0.39	0.46	0.38	0.44	0.48	0.56
C8	38895	0.893	0.001395	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C9	51365	1.179	0.001842	0.00	100.00	0.73	0.81	0.86	0.95	40%	GA	0.29	0.35	0.39	0.46	0.47	0.53	0.58	0.66
C	108034	2.480	0.003875	0.00	100.00	0.73	0.81	0.86	0.95	30%	GA	0.29	0.35	0.39	0.46	0.42	0.49	0.53	0.61
A	73311	1.683	0.002630	0.00	100.00	0.73	0.81	0.86	0.95	0%	GA	0.29	0.35	0.39	0.46	0.29	0.35	0.39	0.46
A1	17248	0.396	0.000619	0.00	100.00	0.73	0.81	0.86	0.95	100%	GA	0.29	0.35	0.39	0.46	0.73	0.81	0.86	0.95
OS-1	1927969	44.260	0.069156	0.00	100.00	0.73	0.81	0.86	0.95	0%	GA	0.29	0.35	0.39	0.46	0.29	0.35	0.39	0.46

Total Avg. I.C. 54%

NOTE: STORM SEWER CALCULATIONS BASED OFF RATIONAL METHOD

PROPOSED - HYDROLOGY CALCULATIONS

Drainage Area	Area Acres	T_c min	I_2	I_{10}	I_{25}	I_{100}	C_2	C_{10}	C_{25}	C_{100}	Q_2 cfs	Q_{10} cfs	Q_{25} cfs	Q_{100} cfs
D	6.82	6.81	5.28	7.86	9.31	11.66	0.51	0.58	0.63	0.71	18.4	31.1	39.7	56.1
D18	0.12	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	0.5	0.8	1.0	1.4
D5	14.25	6.81	5.28	7.86	9.31	11.66	0.51	0.58	0.63	0.71	38.4	65.0	82.9	117.1
D4	0.91	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	2.2	3.8	4.9	6.9
D3	0.68	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	1.7	2.8	3.6	5.2
D3A	2.37	6.81	5.28	7.86	9.31	11.66	0.69	0.76	0.81	0.90	8.6	14.2	17.9	24.9
D2	0.56	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	1.4	2.4	3.0	4.3
D1	0.41	6.81	5.28	7.86	9.31	11.66	0.60	0.67	0.72	0.80	1.3	2.2	2.8	3.9
B	0.20	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	0.8	1.2	1.6	2.2
B10	0.33	6.81	5.28	7.86	9.31	11.66	0.64	0.72	0.77	0.85	1.1	1.9	2.4	3.3
B9	0.14	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	0.6	0.9	1.1	1.6
B8	0.30	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	1.1	1.9	2.4	3.3
B7	0.62	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	1.2	2.2	2.8	4.0
B6	0.34	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	0.7	1.2	1.6	2.2
B5	0.15	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	0.6	1.0	1.2	1.7
B4	0.79	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	1.6	2.7	3.6	5.1
B3	0.14	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	0.5	0.9	1.1	1.6
B2A	0.81	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	1.6	2.8	3.7	5.3
B2B	0.95	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	1.9	3.3	4.3	6.2
B2C	1.11	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	2.7	4.6	5.9	8.5
B1	0.39	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	1.5	2.5	3.1	4.3
I1	1.70	5.00	5.76	8.57	10.11	12.54	0.51	0.58	0.63	0.71	5.0	8.5	10.8	15.1
I2	0.15	5.00	5.76	8.57	10.11	12.54	0.73	0.81	0.86	0.95	0.6	1.1	1.3	1.8
I3	1.97	5.00	5.76	8.57	10.11	12.54	0.38	0.44	0.48	0.56	4.3	7.5	9.6	13.8
I	0.20	5.00	5.76	8.57	10.11	12.54	0.73	0.81	0.86	0.95	0.9	1.4	1.8	2.4
H1	2.08	5.00	5.76	8.57	10.11	12.54	0.38	0.44	0.48	0.56	4.5	7.9	10.2	14.5
H2	1.17	5.00	5.76	8.57	10.11	12.54	0.47	0.53	0.58	0.66	3.1	5.4	6.9	9.7
H3	0.40	5.00	5.76	8.57	10.11	12.54	0.51	0.58	0.63	0.71	1.2	2.0	2.5	3.5
H4	1.18	5.00	5.76	8.57	10.11	12.54	0.38	0.44	0.48	0.56	2.6	4.5	5.8	8.3
H	2.69	5.00	5.76	8.57	10.11	12.54	0.36	0.42	0.46	0.53	5.5	9.6	12.5	18.0
G5	0.21	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	0.8	1.4	1.7	2.4
G4	1.31	6.27	5.41	8.06	9.53	11.91	0.38	0.44	0.48	0.56	2.7	4.7	6.1	8.7
G3	0.46	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	1.8	3.0	3.8	5.2
G1	2.14	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	5.9	10.0	12.7	17.9
G	0.20	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	0.8	1.3	1.7	2.3
E	1.36	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	3.8	6.4	8.1	11.4
E1	0.26	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	1.0	1.7	2.1	3.0
E2	1.37	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	3.5	5.9	7.6	10.7
E3	1.32	6.27	5.41	8.06	9.53	11.91	0.38	0.44	0.48	0.56	2.7	4.7	6.1	8.8
E4	0.23	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	0.9	1.5	1.9	2.6
E5	1.91	6.27	5.41	8.06	9.53	11.91	0.42	0.49	0.53	0.61	4.4	7.5	9.6	13.8
E6	0.39	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	1.0	1.7	2.1	3.0
E7	1.16	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	3.2	5.4	6.9	9.7
E8	1.11	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	2.8	4.8	6.1	8.7
E9	0.16	6.27	5.41	8.06	9.53	11.91	0.73	0.81	0.86	0.95	0.6	1.1	1.3	1.8
E10	0.44	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	1.1	1.9	2.4	3.5
E11	0.53	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	1.3	2.3	2.9	4.1
E12	1.16	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	2.9	5.0	6.4	9.1
E13	2.49	6.27	5.41	8.06	9.53	11.91	0.38	0.44	0.48	0.56	5.1	8.9	11.5	16.5
E14	1.00	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	2.7	4.7	5.9	8.4
E15	1.10	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	3.0	5.2	6.6	9.3
E16	0.90	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	2.3	3.9	5.0	7.0
E17	0.37	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	0.9	1.6	2.0	2.9
E18	1.18	6.27	5.41	8.06	9.53	11.91	0.51	0.58	0.63	0.71	3.2	5.5	7.0	9.9
E19	0.46	6.27	5.41	8.06	9.53	11.91	0.47	0.53	0.58	0.66	1.2	2.0	2.5	3.6
E21	3.12	6.27	5.41	8.06	9.53	11.91	0.42	0.49	0.53	0.61	7.1	12.3	15.8	22.6
C1	0.68	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	2.6	4.3	5.4	7.5
C2	2.01	6.81	5.28	7.86	9.31	11.66	0.51	0.58	0.63	0.71	5.4	9.2	11.7	16.6
C3	0.62	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	1.5	2.6	3.3	4.8
C4	0.68	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	1.7	2.9	3.7	5.2
C5	0.38	6.81	5.28	7.86	9.31	11.66	0.69	0.76	0.81	0.90	1.4	2.3	2.8	4.0
C6A	1.08	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	2.7	4.6	5.8	8.3
C6B	1.44	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	3.5	6.0	7.7	11.0
C7	0.57	6.81	5.28	7.86	9.31	11.66	0.38	0.44	0.48	0.56	1.1	2.0	2.6	3.7
C8	0.89	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	2.2	3.7	4.8	6.8
C9	1.18	6.81	5.28	7.86	9.31	11.66	0.47	0.53	0.58	0.66	2.9	5.0	6.3	9.0
C	2.48	6.81	5.28	7.86	9.31	11.66	0.42	0.49	0.53	0.61	5.5	9.5	12.3	17.5
A	1.68	6.81	5.28	7.86	9.31	11.66	0.29	0.35	0.39	0.46	2.6	4.6	6.1	9.0
A1	0.40	6.81	5.28	7.86	9.31	11.66	0.73	0.81	0.86	0.95	1.5	2.5	3.2	4.4
OS-1	44.26	19.75	3.39	5.10	6.10	7.92	0.29	0.35	0.39	0.46	43.5	79.0	105.4	161.3

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STORM SEWER CALCULATIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

100 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
SSLN B	170	36	0.013	0.01	48.68	10.18	1,204.65	1,203.00	1,206.92	1,204.92	1.92
SSLN B	170	30	0.013	0.005	49.13	10.43	1,206.00	1,205.15	1,210.00	1,207.44	FULL
SSLN B	107.9	30	0.013	0.011	45.59	9.29	1,207.30	1,206.10	1,211.46	1,210.12	2.2
SSLN B	31.5	30	0.013	0.006	28.21	5.75	1,207.60	1,207.40	1,211.70	1,211.55	1.79
SSLN B	243.1	30	0.013	0.006	27.48	5.6	1,209.17	1,207.60	1,212.91	1,211.82	1.74
SSLN B4	131	18	0.013	0.016	5.2	2.94	1,212.33	1,210.17	1,213.21	1,213.01	0.65
SSLN B	38.2	24	0.013	0.018	22.84	7.27	1,210.36	1,209.67	1,213.32	1,212.93	1.29
SSLN B	116.7	24	0.013	0.01	21.53	6.85	1,212.47	1,211.30	1,214.58	1,213.52	1.56
SSLN B	163	24	0.013	0.005	19.75	6.29	1,213.38	1,212.57	1,215.83	1,214.59	FULL
SSLN B	141	24	0.013	0.007	20.01	6.37	1,214.41	1,213.48	1,217.01	1,215.91	FULL
SSLN B7	10.9	18	0.013	0.053	8.39	9.11	1,219.26	1,218.68	1,220.38	1,219.46	0.61
SSLN B	34	18	0.013	0.008	12.14	6.87	1,215.17	1,214.91	1,217.48	1,217.03	FULL
SSLN B	14.1	18	0.013	0.008	12.15	6.88	1,215.28	1,215.17	1,217.95	1,217.76	FULL
SSLN B	30	18	0.013	0.007	12.18	6.89	1,215.50	1,215.28	1,218.62	1,218.22	FULL
SSLN B	236.6	18	0.013	0.031	7.63	4.32	1,222.90	1,215.60	1,223.97	1,218.71	0.67
SSLN B	54.4	18	0.013	0.063	7.65	12.42	1,226.45	1,223.00	1,227.52	1,223.57	0.55
SSLN B10	9.8	18	0.013	0.05	5.75	8.12	1,230.14	1,229.65	1,231.07	1,230.28	0.51
SSLN B	247	18	0.013	0.012	2.17	1.78	1,229.46	1,226.55	1,230.02	1,227.53	0.44
SSLN B	46	18	0.013	0.038	2.17	7.52	1,231.30	1,229.56	1,231.86	1,229.89	0.33
SSLN B8	19.5	18	0.013	0.191	3.32	1.88	1,219.32	1,215.60	1,220.01	1,218.71	0.27
SSLN B9	9.9	18	0.013	0.05	1.59	6.4	1,219.32	1,218.83	1,219.79	1,219.13	0.27
SSLN B6	12	18	0.013	0.008	2.23	1.26	1,213.17	1,213.07	1,214.63	1,214.63	0.49
SSLN B6	128	18	0.013	0.009	2.27	1.29	1,214.27	1,213.17	1,214.84	1,214.64	0.49
SSLN B5	23.2	18	0.013	0.127	1.67	0.95	1,214.25	1,211.30	1,214.74	1,213.52	0.22
SSLN B3	24.5	18	0.013	0.126	1.57	0.89	1,211.70	1,208.60	1,212.17	1,211.82	0.21
SSLN B2	149	24	0.013	0.009	18.84	6	1,209.27	1,207.89	1,212.89	1,211.86	1.44
SSLN B2	219.4	18	0.013	0.009	13.08	7.4	1,211.74	1,209.77	1,216.49	1,213.08	FULL
SSLN B2	217.7	18	0.013	0.015	7.26	4.11	1,215.02	1,211.84	1,217.67	1,216.63	0.81
SSLN B1	12.2	18	0.013	0.049	4.37	7.98	1,210.60	1,210.00	1,211.40	1,210.52	0.44
SSLN C	107.1	42	0.013	0.005	96.7	10.92	1,203.54	1,203.00	1,207.25	1,206.03	FULL
SSLN C	51.3	36	0.013	0.005	74.9	10.6	1,204.29	1,204.04	1,207.99	1,207.34	FULL
SSLN C	132	36	0.013	0.007	75.43	10.67	1,205.28	1,204.39	1,209.74	1,208.05	FULL
SSLN C	49	36	0.013	0.007	71.25	10.08	1,205.61	1,205.28	1,210.74	1,210.18	FULL
SSLN C	113.1	36	0.013	0.005	60.18	8.51	1,206.28	1,205.72	1,211.79	1,210.87	FULL
SSLN C	114	30	0.013	0.032	42.28	8.61	1,210.50	1,206.88	1,213.13	1,211.92	1.36
SSLN C	156	30	0.013	0.016	35.79	7.29	1,213.03	1,210.50	1,215.06	1,213.17	1.52
SSLN C	76	24	0.013	0.014	35.95	11.58	1,214.56	1,213.53	1,217.42	1,215.46	FULL
SSLN C	36.1	24	0.013	0.017	26.93	8.57	1,215.28	1,214.66	1,218.02	1,217.51	1.5
SSLN C	18.6	24	0.013	0.017	17.75	5.65	1,215.60	1,215.28	1,218.15	1,218.03	1.11
SSLN C9	38	18	0.013	0.011	9.13	5.17	1,215.59	1,215.16	1,218.12	1,217.83	1.03
SSLN C8	16.2	18	0.013	0.097	6.92	3.91	1,213.18	1,211.60	1,214.20	1,213.20	0.47
SSLN C6	68	30	0.013	0.005	20.7	4.22	1,207.22	1,206.88	1,212.36	1,212.19	1.56
SSLN C6	98	30	0.013	0.005	20.98	4.27	1,207.81	1,207.32	1,212.66	1,212.40	1.58
SSLN C6	24.1	18	0.013	0.021	21.01	11.89	1,209.32	1,208.81	1,213.71	1,212.75	FULL
SSLN C7	182.6	18	0.013	0.016	3.52	1.99	1,212.25	1,209.42	1,214.53	1,214.32	0.53
SSLN C6	127	18	0.013	0.005	7.56	4.28	1,210.03	1,209.42	1,214.91	1,214.26	1.29
SSLN C5	28.9	18	0.013	0.095	7.31	4.14	1,209.97	1,207.22	1,211.17	1,211.13	0.48
SSLN C4	9.6	18	0.013	0.05	5.29	2.99	1,209.73	1,209.25	1,211.19	1,211.17	0.48
SSLN C3	78	18	0.013	0.032	4.8	2.72	1,209.28	1,206.78	1,210.15	1,210.18	0.52
SSLN C3	4	18	0.013	0.03	4.8	3.89	1,209.40	1,209.28	1,210.24	1,210.27	0.53
SSLN C2	13.9	18	0.013	0.084	16.78	9.5	1,206.70	1,205.54	1,208.14	1,207.28	0.8
SSLN C1	24.4	18	0.013	0.033	7.57	4.28	1,206.35	1,205.54	1,207.42	1,207.34	0.66

NOTE: STORM SEWER CALCULATIONS BASED OFF RATIONAL METHOD

25 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
55LN I	206	24	0.013	0.029	25.16	13.05	1,175.96	1,170.00	1,175.73	1,171.36	1.36
55LN I	102	18	0.013	0.08	25.27	18.38	1,185.13	1,176.46	1,186.32	1,175.46	0.97
55LN I1	93	18	0.013	0.045	14.95	13.18	1,189.83	1,185.73	1,191.23	1,186.41	0.86
55LN I	74	18	0.013	0.05	11.14	6.33	1,188.63	1,185.23	1,189.91	1,186.40	0.73
55LN I	14.2	18	0.013	0.05	11.15	6.31	1,189.34	1,188.63	1,190.62	1,190.18	0.73
55LN I	104	18	0.013	0.05	11.21	6.35	1,194.52	1,189.34	1,195.80	1,190.90	0.73
55LN I	205	18	0.013	0.06	11.34	14.14	1,207.00	1,194.62	1,208.29	1,195.32	0.7
55LN I3	12.9	18	0.013	0.087	9.64	11.06	1,213.15	1,212.03	1,214.35	1,212.77	0.57
55LN I2	20.8	18	0.013	0.049	0.75	6.04	1,213.05	1,212.03	1,213.37	1,212.21	0.18
55LN I	117.8	18	0.013	0.076	1.28	0.84	1,216.10	1,207.10	1,216.52	1,208.31	0.21
55LN I	110.4	18	0.013	0.042	1.3	6.75	1,220.89	1,216.20	1,221.32	1,216.45	0.25
55LN I	16.3	18	0.013	0.042	1.3	2.65	1,221.58	1,220.89	1,222.01	1,221.37	0.25
55LN I	29.9	18	0.013	0.042	1.31	2.65	1,222.85	1,221.58	1,223.28	1,222.06	0.25
55LN I	21.7	18	0.013	0.074	1.31	8.04	1,224.56	1,222.95	1,224.99	1,223.17	0.22
55LN A	268	48	0.013	0.005	118.41	10.74	1,184.34	1,183.00	1,188.30	1,186.28	FULL
55LN A	214	42	0.013	0.027	118.97	12.37	1,190.60	1,184.84	1,193.84	1,188.32	2.2
55LN A	185	42	0.013	0.027	119.45	17.86	1,195.78	1,190.70	1,199.02	1,192.99	2.19
SSLN A1	13.8	18	0.013	0.049	3.2	7.7	1,201.93	1,201.25	1,202.61	1,201.68	0.38
55LN A	271	42	0.013	0.028	118.06	18.65	1,203.60	1,195.88	1,206.83	1,198.07	2.15
55LN A	227	42	0.013	0.037	118.59	20.17	1,212.00	1,203.70	1,212.24	1,206.07	1.99
55LN H	40	24	0.013	0.005	38.09	12.23	1,171.20	1,171.00	1,174.12	1,172.94	FULL
55LN H	87.3	24	0.013	0.15	38.18	12.15	1,184.40	1,171.30	1,186.34	1,174.35	0.92
55LN H	120.3	24	0.013	0.05	20.58	15.08	1,194.40	1,188.40	1,196.03	1,189.30	0.89
55LN H	48	18	0.013	0.055	20.63	14.4	1,197.55	1,194.90	1,199.02	1,196.03	1.05
SSLN H	57.8	18	0.013	0.055	18.16	10.28	1,200.74	1,197.55	1,202.19	1,199.56	0.96
55LN H	119.5	18	0.013	0.055	12.54	7.1	1,207.35	1,200.74	1,208.69	1,202.61	0.76
55LN H	102	18	0.013	0.065	12.61	14.92	1,214.07	1,207.45	1,215.41	1,208.17	0.72
SSLN H4	10.4	18	0.013	0.172	5.77	3.27	1,202.52	1,200.74	1,203.45	1,202.61	0.37
55LN H3	20	18	0.013	0.043	2.56	1.45	1,198.41	1,197.55	1,199.55	1,199.56	0.35
55LN H2	8.8	18	0.013	0.049	6.94	8.25	1,195.76	1,195.33	1,196.78	1,196.05	0.56
55LN H1	23.6	18	0.013	0.05	11.22	10.89	1,195.26	1,194.08	1,196.54	1,194.93	0.73

100-YEAR SUMP CURB INLET CALCULATIONS

Drainage Area	Q_{100} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	Maximum Depth of flow, y_0 (ft)	W (ft)	Actual Inlet Length, L_a (ft)	Q_{cap} (cfs)	Q_{int} (cfs)	Qpass
D2	4.31	1.16	5.47	0.50	1.50	10	10.33	5.47	0.00
D1	3.88	0.00	3.88	0.50	1.50	10	10.33	3.88	0.00
B	2.16	0.00	2.16	0.50	1.50	10	10.33	2.16	0.00
B4	5.14	1.00	6.14	0.50	1.50	10	10.33	6.14	0.00
B9	1.59	0.00	1.59	0.50	1.50	10	10.33	1.59	0.00
B8	3.30	0.00	3.30	0.50	1.50	10	10.33	3.30	0.00
I1	15.07	1.68	16.74	0.50	1.50	20	18.46	16.74	0.00
G5	2.39	0.00	2.39	0.50	1.50	10	10.33	2.39	0.00
G4	8.74	0.00	8.74	0.50	1.50	10	10.33	8.74	0.00
G3	5.20	0.00	5.20	0.50	1.50	10	10.33	5.20	0.00
H	17.98	0.00	17.98	0.50	1.50	20	18.46	17.98	0.00
H1	14.53	0.78	15.30	0.50	1.50	20	18.46	15.30	0.00
H2	9.66	0.21	9.87	0.50	1.50	10	10.33	9.87	0.00
E3	8.77	0.43	9.19	0.50	1.50	10	10.33	9.19	0.00
E4	2.63	0.07	2.70	0.50	1.50	10	10.33	2.70	0.00
E5	13.77	0.00	13.77	0.50	1.50	15	14.39	13.77	0.00
E6	3.05	0.83	3.88	0.50	1.50	10	10.33	3.88	0.00
E9	1.84	0.00	1.84	0.50	1.50	10	10.33	1.84	0.00
E10	3.47	0.00	3.47	0.50	1.50	10	10.33	3.47	0.00
E13	16.54	0.00	16.54	0.50	1.50	20	18.46	16.54	0.00
E16	7.02	0.96	7.98	0.50	1.50	10	10.33	7.98	0.00
C1	7.52	0.25	7.77	0.50	1.50	10	10.33	7.77	0.00
C2	16.55	0.50	17.06	0.50	1.50	20	18.46	17.06	0.00
A	9.02	0.00	9.02	0.50	1.50	20	18.46	9.02	0.00

4 SIDED

Required Inlet Length from TxDoT Hydraulic Manual Equation 10-15 $L = \frac{Q}{C_w y^{3/2}} - 1.8W$

Qcap is equation 4-1 from Austin DCM

100-YEAR SUMP GRATE INLET CALCULATIONS

Drainage Area	Q_{100} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	RF %	Depth (ft)	Open Area (square ft)	Q_{cap} (Orifice) (cfs)	Q_{cap} (cfs)	Q_{int} (cfs)	Q_{pass}
C6B	11.02	0.00	11.02	65%	0.33	6.78	20.93	13.60	11.02	0.00

100-YEAR ON GRADE CURB INLET CALCULATIONS

Drainage Area	Q_{100} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	n	S_L (ft/ft)	Gutter Depression, a (in)	S_x (ft/ft)	Depth of flow, y_0 (ft)	Spread, T (ft)	W/T	Ratio of Frontal Flow to Total Gutter Flow, E_0	S_w (ft/ft)	S_e (ft/ft)	Required Inlet Length, L (ft)	Actual Inlet Length, L_a (ft)	Efficiency, E	Q_{int} (cfs)	Q_{pass} (cfs)	Bypass Inlet
D18	1.37	0.00	1.37	0.016	2.11%	5.00	2.00%	0.14	7.03	0.21	0.70	0.28	0.21	6.48	10	1.00	1.37	0.00	
D4	6.92	0.00	6.92	0.016	1.99%	5.00	2.00%	0.26	13.06	0.11	0.45	0.28	0.15	15.90	10	0.83	5.76	1.16	D2
B10	3.29	0.00	3.29	0.016	1.02%	5.00	2.00%	0.22	11.20	0.13	0.45	0.28	0.15	9.52	10	1.00	3.29	0.00	B9
B7	4.04	0.00	4.04	0.016	0.12%	5.00	2.00%	0.36	18.07	0.08	0.25	0.28	0.09	7.30	10	1.00	4.04	0.00	
B5	1.66	0.00	1.66	0.016	1.91%	5.00	2.00%	0.15	7.71	0.19	0.65	0.28	0.20	7.11	10	1.00	1.66	0.00	
B3	1.57	0.00	1.57	0.016	0.88%	5.00	2.00%	0.17	8.72	0.17	0.65	0.28	0.20	5.49	10	1.00	1.57	0.00	
B1	4.34	0.00	4.34	0.016	1.26%	5.00	2.00%	0.24	11.94	0.13	0.60	0.28	0.19	9.79	10	1.00	4.34	0.00	
I2	1.83	0.00	1.83	0.016	4.60%	5.00	2.00%	0.14	6.78	0.22	0.75	0.28	0.23	8.91	10	1.00	1.83	0.00	
I3	13.78	0.00	13.78	0.016	4.60%	5.00	2.00%	0.29	14.45	0.10	0.40	0.28	0.13	29.00	20	0.88	12.10	1.68	I1
I	2.43	0.00	2.43	0.016	3.73%	5.00	2.00%	0.16	7.84	0.19	0.65	0.28	0.20	10.18	10	1.00	2.43	0.00	
H3	3.52	0.00	3.52	0.016	5.87%	5.00	2.00%	0.17	8.27	0.18	0.40	0.28	0.13	17.59	10	0.78	2.75	0.78	H1
H4	8.25	0.00	8.25	0.016	5.08%	5.00	2.00%	0.23	11.70	0.13	0.75	0.28	0.23	17.27	15	0.97	8.04	0.21	H2
G	2.31	0.00	2.31	0.016	4.13%	5.00	2.00%	0.15	7.55	0.20	0.65	0.28	0.20	10.28	10	1.00	2.31	0.00	
E1	2.96	0.00	2.96	0.016	4.13%	5.00	2.00%	0.17	8.28	0.18	0.65	0.28	0.20	11.41	10	0.98	2.89	0.07	E4
E2	10.72	0.00	10.72	0.016	3.83%	5.00	2.00%	0.27	13.61	0.11	0.45	0.28	0.15	23.25	20	0.97	10.41	0.31	E3
E7	9.75	0.83	10.58	0.016	0.61%	5.00	2.00%	0.38	19.11	0.08	0.30	0.28	0.10	16.33	15	0.99	10.46	0.12	V.G. TO E3
E11	4.14	0.00	4.14	0.016	0.69%	5.00	2.00%	0.26	13.13	0.11	0.45	0.28	0.15	9.32	10	1.00	4.14	0.00	
E14	8.36	0.00	8.36	0.016	0.49%	5.00	2.00%	0.36	18.22	0.08	0.30	0.28	0.10	13.85	10	0.90	7.52	0.83	V.G. TO E7
E18	9.88	0.00	9.88	0.016	1.31%	5.00	2.00%	0.32	16.14	0.09	0.30	0.28	0.10	19.96	15	0.92	9.07	0.81	V.G. TO E16
E19	3.61	0.00	3.61	0.016	3.76%	5.00	2.00%	0.18	9.08	0.17	0.65	0.28	0.20	12.06	10	0.96	3.46	0.15	V.G. TO E16
C3	4.75	0.00	4.75	0.016	0.75%	5.00	2.00%	0.27	13.62	0.11	0.45	0.28	0.15	10.13	10	1.00	4.75	0.00	
C4	5.22	0.89	6.11	0.016	1.58%	5.00	2.00%	0.26	13.01	0.12	0.50	0.28	0.16	13.33	10	0.92	5.61	0.50	C2
C5	3.95	0.00	3.95	0.016	1.58%	5.00	2.00%	0.22	11.05	0.14	0.45	0.28	0.15	11.73	10	0.97	3.83	0.13	V.G. TO C1
C8	6.83	0.00	6.83	0.016	1.58%	5.00	2.00%	0.27	13.57	0.11	0.45	0.28	0.15	14.75	10	0.87	5.94	0.89	C4
A1	4.38	0.00	4.38	0.016	2.04%	5.00	2.00%	0.22	10.95	0.14	0.60	0.28	0.19	11.36	15	1.00	4.38	0.00	

:0 from Figure 4-17 in Austin DCM

100 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
55LN D	149	54	0.013	0.005	220.84	14.39	1,203.74	1,203.00	1,209.24	1,207.16	FULL
55LN D	131	48	0.013	0.026	213.77	17.01	1,207.46	1,204.04	1,212.17	1,209.27	3.03
55LN D	30	48	0.013	0.005	184.18	14.66	1,207.71	1,207.56	1,212.71	1,212.22	FULL
55LN D	138	48	0.013	0.005	178.36	14.19	1,208.50	1,207.81	1,214.88	1,212.76	FULL
55LN D	21	36	0.013	0.021	60.55	8.57	1,209.95	1,209.50	1,215.14	1,214.97	1.71
55LN D18	23	18	0.013	0.195	1.37	0.78	1,215.93	1,211.45	1,216.37	1,215.42	0.18
55LN D	72.1	36	0.013	0.021	59.51	8.42	1,211.50	1,209.95	1,216.00	1,215.42	1.69
55LN D5	45	42	0.013	0.005	118.74	12.34	1,209.22	1,209.00	1,215.95	1,215.32	FULL
55LN D4	12	18	0.013	0.157	7.01	3.97	1,212.19	1,210.31	1,213.22	1,213.00	0.42
55LN D3	15.1	30	0.013	0.014	29.93	6.1	1,209.27	1,209.06	1,212.59	1,212.51	1.42
55LN D3	61.8	30	0.013	0.014	30.12	6.14	1,210.12	1,209.27	1,213.14	1,212.81	1.43
55LN D3	63	24	0.013	0.006	25.02	7.97	1,211.01	1,210.62	1,213.92	1,213.15	FULL
55LN D1	23.6	18	0.013	0.099	3.9	2.2	1,208.88	1,206.54	1,209.64	1,209.51	0.35
55LN D2	15.9	18	0.013	0.148	4.37	2.47	1,208.90	1,206.54	1,209.70	1,209.47	0.33
55LN E	52.8	42	0.013	0.028	182.46	19.61	1,191.46	1,190.00	1,195.33	1,193.46	FULL
55LN E	167.2	42	0.013	0.028	151.53	16.35	1,196.23	1,191.56	1,199.81	1,195.72	2.69
55LN E1	45	18	0.013	0.183	13.83	20.11	1,206.96	1,198.73	1,208.34	1,199.35	0.57
55LN E1	26.9	18	0.013	0.106	2.98	1.82	1,209.90	1,207.06	1,210.56	1,208.37	0.3
55LN E2	19.7	18	0.013	0.12	10.86	6.62	1,209.42	1,207.06	1,210.68	1,208.37	0.56
55LN E	96	42	0.013	0.019	139.88	15.1	1,198.09	1,196.23	1,202.05	1,200.05	3
55LN E	80	42	0.013	0.005	130.17	14.05	1,198.59	1,198.19	1,203.54	1,202.09	FULL
55LN E	50	42	0.013	0.005	115.39	12.46	1,198.94	1,198.69	1,204.32	1,203.61	FULL
55LN E	132	42	0.013	0.005	107.35	11.59	1,199.70	1,199.04	1,206.00	1,204.38	FULL
55LN E	19.7	36	0.013	0.005	94.78	13.93	1,200.30	1,200.20	1,206.53	1,206.10	FULL
55LN E	132.4	36	0.013	0.034	91.58	13.46	1,204.90	1,200.40	1,209.38	1,206.69	1.98
55LN E	41.8	36	0.013	0.018	68.47	10.06	1,205.75	1,205.00	1,209.93	1,209.45	2.02
55LN E	96.6	36	0.013	0.005	61.24	9	1,206.35	1,205.85	1,210.83	1,209.96	FULL
55LN E	172	36	0.013	0.005	53.45	7.86	1,207.24	1,206.35	1,212.34	1,211.15	FULL
55LN E	110	30	0.013	0.01	47.23	10	1,208.79	1,207.74	1,214.20	1,212.63	FULL
55LN E	20.2	24	0.013	0.035	15.18	4.85	1,210.09	1,209.39	1,214.41	1,214.32	0.83
55LN E19	16.5	18	0.013	0.138	3.66	2.07	1,212.87	1,210.59	1,214.52	1,214.50	0.31
55LN E	14.2	24	0.013	0.041	11.6	3.69	1,210.67	1,210.09	1,214.54	1,214.50	0.69
55LN E17	41.4	30	0.013	0.006	33.23	7.03	1,209.15	1,208.89	1,214.97	1,214.68	2.23
55LN E17	94.6	30	0.013	0.007	24.21	5.12	1,209.77	1,209.15	1,215.52	1,215.16	1.62
55LN E21	18.3	24	0.013	0.037	22.82	7.26	1,211.45	1,210.77	1,215.94	1,215.75	1.03
55LN E21	5	24	0.013	0.04	22.83	7.27	1,211.65	1,211.45	1,216.29	1,216.24	1.01
55LN E17	22.4	18	0.013	0.005	2.78	1.64	1,210.89	1,210.77	1,215.76	1,215.74	0.64
55LN E17	139.2	18	0.013	0.016	2.94	1.66	1,213.12	1,210.89	1,215.88	1,215.77	0.48
55LN E18	14.9	18	0.013	0.157	10.02	5.67	1,212.49	1,210.15	1,215.30	1,215.16	0.5
55LN E16	14.1	18	0.013	0.065	7.11	4.02	1,209.67	1,208.75	1,212.47	1,212.40	0.53
55LN E15	34.5	18	0.013	0.023	9.38	5.31	1,208.65	1,207.85	1,211.42	1,211.15	0.82
55LN E14	15.2	18	0.013	0.112	8.47	4.79	1,208.55	1,206.85	1,210.20	1,210.10	0.5
55LN E12	38.6	24	0.013	0.013	25.66	8.17	1,207.00	1,206.50	1,210.48	1,209.99	1.64
55LN E12	104.1	18	0.013	0.024	9.17	5.19	1,210.02	1,207.50	1,211.19	1,210.56	0.8
55LN E12	14.1	18	0.013	0.024	9.18	5.37	1,210.36	1,210.02	1,211.53	1,211.41	0.81
55LN E12	19	18	0.013	0.024

25 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
SSLN B	170	36	0.013	0.01	28.19	8.94	1,204.65	1,203.00	1,206.37	1,204.37	1.37
SSLN B	170	30	0.013	0.005	28.61	7.46	1,206.00	1,205.15	1,208.02	1,206.97	2.02
SSLN B	107.9	30	0.013	0.011	26.09	6.42	1,207.30	1,206.10	1,209.04	1,208.03	1.4
SSLN B	31.5	30	0.013	0.006	14.14	4.11	1,207.60	1,207.40	1,209.01	1,209.05	1.15
SSLN B	243.1	30	0.013	0.006	13.46	4.36	1,209.17	1,207.60	1,210.40	1,209.11	1.11
SSLN B4	131	18	0.013	0.016	3.57	6.44	1,212.33	1,210.17	1,213.05	1,210.70	0.53
SSLN B	38.2	24	0.013	0.018	10.35	8.12	1,210.36	1,209.67	1,211.51	1,210.52	0.8
SSLN B	116.7	24	0.013	0.01	9.38	6.86	1,212.47	1,211.30	1,213.56	1,212.20	0.9
SSLN B	163	24	0.013	0.005	8.16	5.11	1,213.38	1,212.57	1,214.40	1,213.58	1.01
SSLN B	141	24	0.013	0.007	8.29	5.7	1,214.41	1,213.48	1,215.44	1,214.42	0.94
SSLN B7	10.9	18	0.013	0.053	2.8	7.38	1,219.26	1,218.68	1,219.90	1,219.08	0.34
SSLN B	34	18	0.013	0.008	5.72	5.48	1,215.17	1,214.91	1,216.09	1,215.77	0.86
SSLN B	14.1	18	0.013	0.008	5.73	4.26	1,215.28	1,215.17	1,216.20	1,216.24	0.85
SSLN B	30	18	0.013	0.007	5.75	4.27	1,215.50	1,215.28	1,216.43	1,216.35	0.87
SSLN B	236.6	18	0.013	0.031	2.48	2.47	1,222.90	1,215.60	1,223.50	1,216.43	0.37
SSLN B	54.4	18	0.013	0.063	2.49	9.4	1,226.45	1,223.00	1,227.05	1,223.31	0.31
SSLN B10	9.8	18	0.013	0.05	1.03	5.89	1,230.14	1,229.65	1,230.52	1,229.88	0.21
SSLN B	247	18	0.013	0.012	1.57	3.04	1,229.46	1,226.55	1,229.93	1,227.05	0.38
SSLN B	46	18	0.013	0.038	1.57	6.84	1,231.30	1,229.56	1,231.77	1,229.84	0.28
SSLN B8	19.5	18	0.013	0.191	2.41	2.38	1,219.32	1,215.60	1,219.91	1,216.43	0.23
SSLN B9	9.9	18	0.013	0.05	1.15	6.02	1,219.32	1,218.83	1,219.72	1,219.08	0.23
SSLN B6	12	18	0.013	0.008	1.52	2.86	1,213.17	1,213.07	1,213.63	1,213.58	0.4
SSLN B6	128	18	0.013	0.009	1.56	2.83	1,214.27	1,213.17	1,214.74	1,213.69	0.41
SSLN B5	23.2	18	0.013	0.127	1.21	9.72	1,214.25	1,211.30	1,214.66	1,211.49	0.18
SSLN B3	24.5	18	0.013	0.126	1.14	2.18	1,211.70	1,208.60	1,212.10	1,209.11	0.18
SSLN B2	149	24	0.013	0.009	13.36	7.28	1,209.27	1,207.89	1,210.59	1,209.03	1.13
SSLN B2	219.4	18	0.013	0.009	10.09	6.54	1,211.74	1,209.77	1,212.99	1,210.99	1.25
SSLN B2	217.7	18	0.013	0.015	6.02	4.11	1,215.02	1,211.84	1,215.97	1,213.00	0.73
SSLN B1	12.2	18	0.013	0.049	3.17	7.52	1,210.60	1,210.00	1,211.28	1,210.43	0.37
SSLN C	107.1	42	0.013	0.005	68.1	8.93	1,203.54	1,203.00	1,206.27	1,205.59	2.73
SSLN C	51.3	36	0.013	0.005	52.15	8.79	1,204.29	1,204.04	1,206.90	1,206.39	FULL
SSLN C	132	36	0.013	0.007	52.68	8.3	1,205.28	1,204.39	1,207.64	1,206.91	2.36
SSLN C	49	36	0.013	0.007	49.66	7.48	1,205.61	1,205.28	1,208.08	1,207.94	2.23
SSLN C	113.1	36	0.013	0.005	44.64	7.45	1,206.28	1,205.72	1,208.62	1,208.09	2.33
SSLN C	114	30	0.013	0.032	29.69	13.56	1,210.50	1,206.88	1,212.36	1,208.02	1.11
SSLN C	156	30	0.013	0.016	25.19	6.38	1,213.03	1,210.50	1,214.74	1,212.37	1.22
SSLN C	76	24	0.013	0.014	25.33	9.48	1,214.56	1,213.53	1,216.33	1,215.12	1.57
SSLN C	36.1	24	0.013	0.017	18.99	6.73	1,215.28	1,214.66	1,216.85	1,216.34	1.16
SSLN C	18.6	24	0.013	0.017	12.34	4.66	1,215.60	1,215.28	1,216.86	1,216.85	0.9
SSLN C9	38	18	0.013	0.011	6.42	4.14	1,215.59	1,215.16	1,216.57	1,216.39	0.82
SSLN C8	16.2	18	0.013	0.097	4.86	10.73	1,213.18	1,211.60	1,214.03	1,212.06	0.39
SSLN C6	68	30	0.013	0.005	15.74	4.23	1,207.22	1,206.88	1,208.68	1,208.66	1.31
SSLN C6	98	30	0.013	0.005	15.92	5.83	1,207.81	1,207.32	1,209.16	1,208.68	1.32
SSLN C6	24.1	18	0.013	0.021	15.95	9.56	1,209.32	1,208.81	1,210.74	1,210.15	1.3
SSLN C7	182.6	18	0.013	0.016	2.56	1.51	1,212.25	1,209.42	1,212.86	1,210.79	0.45
SSLN C6	127	18	0.013	0.005	5.9	3.51	1,210.03	1,209.42	1,211.11	1,210.78	1.03
SSLN C5	28.9	18	0.013	0.095	2.05	1.86	1,209.97	1,207.22	1,210.51	1,208.11	0.26
SSLN C4	9.6	18	0.013	0.05	3.72	7.44	1,209.73	1,209.25	1,210.47	1,209.74	0.4
SSLN C3	78	18	0.013	0.032	3.39	2.3	1,209.28	1,206.78	1,209.98	1,207.94	0.43
SSLN C3	4	18	0.013	0.03	3.39	3.52	1,209.40	1,209.28	1,210.10	1,210.08	0.44
SSLN C2	13.9	18	0.013	0.084	11.92	11.64	1,206.70	1,205.54	1,208.01	1,206.38	0.65
SSLN C1	24.4	18	0.013	0.033	5.48	8.3	1,206.35	1,205.54	1,207.25	1,206.14	0.55

NOTE: STORM SEWER CALCULATIONS BASED OFF RATIONAL METHOD

25 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
SSLN I	206	24	0.013	0.029	25.16	13.05	1,175.96	1,170.00	1,177.73	1,171.18	1.18
SSLN I	108.8	18	0.013	0.08	25.27	18.38	1,185.13	1,176.46	1,186.62	1,177.55	1.06
SSLN I1	92	18	0.013	0.045	14.95	13.18	1,189.83	1,185.73	1,191.23	1,186.65	0.9
SSLN I	68	18	0.013	0.05	11.14	6.33	1,188.63	1,185.23	1,189.91	1,186.70	0.73
SSLN I	14.2	18	0.013	0.05	11.15	6.31	1,189.34	1,188.63	1,190.62	1,190.18	0.73
SSLN I	104	18	0.013	0.05	11.21	6.35	1,194.52	1,189.34	1,195.80	1,190.90	0.73
SSLN I	205	18	0.013	0.06	11.34	14.14	1,207.00	1,194.62	1,208.29	1,195.32	0.7
SSLN I3	12.9	18	0.013	0.087	9.64	11.06	1,213.15	1,212.03	1,214.35	1,212.77	0.57
SSLN I2	20.8	18	0.013	0.049	0.75	6.04	1,213.05	1,212.03	1,213.37	1,212.21	0.18
SSLN I	117.8	18	0.013	0.076	1.28	0.84	1,216.10	1,207.10	1,216.52	1,208.31	0.21
SSLN I	110.4	18	0.013	0.042	1.3	6.75	1,220.89	1,216.20	1,221.32	1,216.45	0.25
SSLN I	16.3	18	0.013	0.042	1.3	2.65	1,221.58	1,220.89	1,222.01	1,221.37	0.25
SSLN I	29.9	18	0.013	0.042	1.31	2.65	1,222.85	1,221.58	1,223.28	1,222.06	0.25
SSLN I	21.7	18	0.013	0.074	1.31	8.04	1,224.56	1,222.95	1,224.99	1,223.17	0.22
SSLN A	268	48	0.013	0.005	118.41	10.74	1,184.34	1,183.00	1,188.30	1,186.28	FULL
SSLN A	214	42	0.013	0.027	118.97	12.37	1,190.60	1,184.84	1,193.84	1,188.32	2.2
SSLN A	185	42	0.013	0.027	119.45	17.86	1,195.78	1,190.70	1,199.02	1,192.99	2.19
55LN A1	13.8	18	0.013	0.049	3.2	7.7	1,201.93	1,201.25	1,202.61	1,201.68	0.38
SSLN A	271	42	0.013	0.028	118.06	18.65	1,203.60	1,195.88	1,206.83	1,198.07	2.15
SSLN A	227	42	0.013	0.037	118.59	20.17	1,212.00	1,203.70	1,212.24	1,206.07	1.99
55LN H	40	24	0.013	0.005	38.09	12.23	1,171.20	1,171.00	1,174.12	1,172.94	FULL
SSLN H	87.3	24	0.013	0.15	38.18	12.15	1,184.40	1,171.30	1,186.34	1,174.35	0.92
SSLN H	120.3	24	0.013	0.05	20.58	15.08	1,194.40	1,188.40	1,196.03	1,189.30	0.89
SSLN H	48	18	0.013	0.055	20.63	14.4	1,197.55	1,194.90	1,199.02	1,196.03	1.05
55LN H	57.8	18	0.013	0.055	18.16	10.28	1,200.74	1,197.55	1,202.19	1,199.56	0.96
SSLN H	119.5	18	0.013	0.055	12.54	7.1	1,207.35	1,200.74	1,208.69	1,202.61	0.76
SSLN H	102	18	0.013	0.065	12.61	14.92	1,214.07	1,207.45	1,215.41	1,208.17	0.72
55LN H4	10.4	18	0.013	0.172	5.77	3.27	1,202.52	1,200.74	1,203.45	1,202.61	0.37
SSLN H3	20	18	0.013	0.043	2.56	1.45	1,198.41	1,197.55	1,199.55	1,199.56	0.35
SSLN H2	8.8	18	0.013	0.049	6.94	8.25	1,195.76	1,195.33	1,196.78	1,196.05	0.56
SSLN H1	23.6	18	0.013	0.05	11.22	10.89	1,195.26	1,194.08	1,196.54	1,194.93	0.73

25-YEAR SUMP CURB INLET CALCULATIONS

Drainage Area	Q_{25} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	Maximum Depth of flow, y_0 (ft)	W (ft)	Actual Inlet Length, L_a (ft)	Q_{cap} (cfs)	Q_{int} (cfs)	Qpass	
D2	3.03	0.46	3.50	0.50	1.50	10	10.33	3.50	0.00	
D1	2.77	0.00	2.77	0.50	1.50	10	10.33	2.77	0.00	
B	1.56	0.00	1.56	0.50	1.50	10	10.33	1.56	0.00	
B4	3.56	0.00	3.56	0.50	1.50	10	10.33	3.56	0.00	
B9	1.15	0.00	1.15	0.50	1.50	10	10.33	1.15	0.00	
B8	2.38	0.00	2.38	0.50	1.50	10	10.33	2.38	0.00	
I1	10.77	0.52	11.29	0.50	1.50	20	18.46	11.29	0.00	
G5	1.73	0.00	1.73	0.50	1.50	10	10.33	1.73	0.00	
G4	6.07	0.00	6.07	0.50	1.50	10	10.33	6.07	0.00	
G3	3.77	0.00	3.77	0.50	1.50	10	10.33	3.77	0.00	
H	12.51	0.00	12.51	0.50	1.50	20	18.46	12.51	0.00	
H1	10.16	0.37	10.53	0.50	1.50	20	18.46	10.53	0.00	
H2	6.86	0.00	6.86	0.50	1.50	10	10.33	6.86	0.00	
E3	6.09	0.00	6.09	0.50	1.50	10	10.33	6.09	0.00	
E4	1.91	0.07	1.97	0.50	1.50	10	10.33	1.97	0.00	
E5	9.64	0.00	9.64	0.50	1.50	15	14.39	9.64	0.00	
E6	2.15	0.23	2.38	0.50	1.50	10	10.33	2.38	0.00	
E9	1.33	0.00	1.33	0.50	1.50	10	10.33	1.33	0.00	
E10	2.45	0.00	2.45	0.50	1.50	10	10.33	2.45	0.00	
E13	11.48	0.00	11.48	0.50	1.50	20	18.46	11.48	0.00	
E16	4.95	0.18	5.14	0.50	1.50	10	10.33	5.14	0.00	
C1	5.43	0.00	5.43	0.50	1.50	10	10.33	5.43	0.00	
C2	11.71	0.06	11.78	0.50	1.50	20	18.46	11.78	0.00	
A	6.11	0.00	6.11	0.50	1.50	20	18.46	6.11	0.00	4 SIDED

Required Inlet Length from TxDoT Hydraulic Manual Equation 10-15 $L = \frac{Q}{C_w y^{1.5}} - 1.8W$

Qcap is equation 4-1 from Austin DCM

25-YEAR SUMP GRATE INLET CALCULATIONS

Drainage Area	Q_{25} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	RF %	Depth (ft)	Open Area (square ft)	Q_{cap}(Orifice) (cfs)	Q_{cap} (cfs)	Q_{int} (cfs)	Q_{pass}
C6B	11.02	0.00	11.02	65%	0.33	6.78	20.93	13.60	11.02	0.00

25-YEAR ON GRADE CURB INLET CALCULATIONS

Drainage Area	Q_{25} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	n	S_L (ft/ft)	Gutter Depression, a (in)	S_x (ft/ft)	Depth of flow, y_0 (ft)	Spread, T (ft)	W/T	Ratio of Frontal Flow to Total Gutter Flow, E_0	S_w (ft/ft)	S_e (ft/ft)	Required Inlet Length, L (ft)	Actual Inlet Length, L_a (ft)	Efficiency, E	Q_{int} (cfs)	Q_{pass} (cfs)	Bypass Inlet
D18	0.99	0.00	0.99	0.016	2.11%	5.00	2.00%	0.12	6.22	0.24	0.70	0.28	0.21	5.65	10	1.00	0.99	0.00	
D4	4.87	0.00	4.87	0.016	1.99%	5.00	2.00%	0.23	11.44	0.13	0.45	0.28	0.15	13.72	10	0.90	4.41	0.46	D2
B10	2.36	0.00	2.36	0.016	1.02%	5.00	2.00%	0.20	9.89	0.15	0.45	0.28	0.15	8.28	10	1.00	2.36	0.00	
B7	2.80	0.00	2.80	0.016	0.12%	5.00	2.00%	0.31	15.74	0.10	0.25	0.28	0.09	6.26	10	1.00	2.80	0.00	
B5	1.20	0.00	1.20	0.016	1.91%	5.00	2.00%	0.14	6.83	0.22	0.65	0.28	0.20	6.20	10	1.00	1.20	0.00	
B3	1.13	0.00	1.13	0.016	0.88%	5.00	2.00%	0.15	7.72	0.19	0.65	0.28	0.20	4.79	10	1.00	1.13	0.00	
B1	3.14	0.00	3.14	0.016	1.26%	5.00	2.00%	0.21	10.57	0.14	0.60	0.28	0.19	8.55	10	1.00	3.14	0.00	
I2	1.34	0.00	1.34	0.016	4.60%	5.00	2.00%	0.12	6.02	0.25	0.75	0.28	0.23	7.80	10	1.00	1.34	0.00	
I3	9.63	0.00	9.63	0.016	4.60%	5.00	2.00%	0.25	12.63	0.12	0.40	0.28	0.13	24.95	20	0.95	9.11	0.52	I1
I	1.77	0.00	1.77	0.016	3.73%	5.00	2.00%	0.14	6.96	0.22	0.65	0.28	0.20	8.92	10	1.00	1.77	0.00	
H3	2.52	0.00	2.52	0.016	5.87%	5.00	2.00%	0.15	7.29	0.21	0.40	0.28	0.13	15.28	10	0.85	2.15	0.37	H1
H4	5.77	0.00	5.77	0.016	5.08%	5.00	2.00%	0.20	10.23	0.15	0.75	0.28	0.23	14.86	15	1.00	5.77	0.00	
G	1.67	0.00	1.67	0.016	4.13%	5.00	2.00%	0.13	6.69	0.22	0.65	0.28	0.20	8.98	10	1.00	1.67	0.00	
E1	2.14	0.00	2.14	0.016	4.13%	5.00	2.00%	0.15	7.34	0.20	0.65	0.28	0.20	9.96	10	1.00	2.14	0.00	
E2	7.56	0.00	7.56	0.016	3.83%	5.00	2.00%	0.24	11.94	0.13	0.45	0.28	0.15	20.08	20	1.00	7.56	0.00	
E7	6.92	0.00	6.92	0.016	0.61%	5.00	2.00%	0.33	16.29	0.09	0.30	0.28	0.10	13.66	15	1.00	6.92	0.00	
E11	2.92	0.00	2.92	0.016	0.69%	5.00	2.00%	0.23	11.52	0.13	0.45	0.28	0.15	8.05	10	1.00	2.92	0.00	
E14	5.93	0.00	5.93	0.016	0.49%	5.00	2.00%	0.32	16.02	0.09	0.30	0.28	0.10	11.99	10	0.96	5.69	0.23	V.G. TO E6
E18	7.01	0.00	7.01	0.016	1.31%	5.00	2.00%	0.28	14.19	0.11	0.30	0.28	0.10	17.28	15	0.97	6.83	0.18	V.G. TO E15
E19	2.55	0.00	2.55	0.016	3.76%	5.00	2.00%	0.16	7.97	0.19	0.65	0.28	0.20	10.41	15	1.00	2.55	0.00	
C3	3.34	0.30	3.64	0.016	0.75%	5.00	2.00%	0.25	12.33	0.12	0.45	0.28	0.15	9.06	10	1.00	3.64	0.00	
C4	3.67	0.30	3.97	0.016	1.58%	5.00	2.00%	0.22	11.07	0.14	0.50	0.28	0.16	11.12	10	0.98	3.91	0.06	C2
C5	2.85	0.00	2.85	0.016	1.58%	5.00	2.00%	0.20	9.77	0.15	0.45	0.28	0.15	10.22	10	1.00	2.84	0.00	
C8	4.80	0.00	4.80	0.016	1.58%	5.00	2.00%	0.24	11.89	0.13	0.45	0.28	0.15	12.73	10	0.94	4.50	0.30	C4
A1	3.17	0.00	3.17	0.016	2.04%	5.00	2.00%	0.19	9.70	0.15	0.60	0.28	0.19	9.92	15	1.00	3.17	0.00	

:0 from Figure 4-17 in Austin DCM

25 YEAR PIPE CALCULATIONS

Label	Length (ft)	Diameter (in)	Manning's n	Slope (Calculated) (ft/ft)	Flow (cfs)	Velocity (Out) (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (Normal) (ft)
SSLN D	149	S4	0.013	0.00S	1S4.79	11.21	1,203.74	1,203.00	1,207.82	1,206.65	FULL
SSLN D	131	48	0.013	0.026	149.74	12.17	1,207.46	1,204.04	1,211.0S	1,207.83	2.34
SSLN D	30	48	0.013	0.00S	128.67	11.02	1,207.71	1,207.56	1,211.43	1,211.07	FULL
SSLN D	138	48	0.013	0.00S	12S.04	10.44	1,208.S0	1,207.81	1,212.S4	1,211.44	FULL
SSLN D	21	36	0.013	0.021	41.19	S.83	1,209.95	1,209.S0	1,212.S1	1,212.SS	1.36
SSLN D18	23	18	0.013	0.195	0.99	0.65	1,215.93	1,211.45	1,216.30	1,212.67	0.1S
SSLN D	72.1	36	0.013	0.021	40.36	6	1,211.S0	1,209.95	1,213.S7	1,212.67	1.34
SSLN D5	45	42	0.013	0.00S	84.33	8.77	1,209.22	1,209.00	1,212.90	1,212.S8	FULL
SSLN D4	12	18	0.013	0.157	4.93	3.31	1,212.19	1,210.31	1,213.04	1,211.49	0.35
SSLN D3	1S.1	30	0.013	0.014	21.39	4.9	1,209.27	1,209.06	1,211.06	1,211.14	1.16
SSLN D3	61.8	30	0.013	0.014	21.49	5.17	1,210.12	1,209.27	1,211.70	1,211.24	1.17
SSLN D3	63	24	0.013	0.006	3.69	2.14	1,211.01	1,210.62	1,211.68	1,211.70	0.62
SSLN D1	23.6	18	0.013	0.099	2.81	1.68	1,208.88	1,206.S4	1,209.S2	1,207.88	0.3
SSLN D2	1S.9	18	0.013	0.148	3.07	1.8S	1,208.90	1,206.S4	1,209.S7	1,207.87	0.28
SSLN E	52.8	42	0.013	0.028	130.19	16.34	1,191.46	1,190.00	1,194.77	1,192.70	2.32
SSLN E	167.2	42	0.013	0.028	109.SS	11.S9	1,196.23	1,191.S6	1,199.40	1,194.89	2.06
SSLN E1	4S	18	0.013	0.183	9.81	18.96	1,206.96	1,198.73	1,208.17	1,199.23	0.48
SSLN E1	26.9	18	0.013	0.106	2.17	1.52	1,209.90	1,207.06	1,210.46	1,208.19	0.26
SSLN E2	19.7	18	0.013	0.12	7.66	5.36	1,209.42	1,207.06	1,210.49	1,208.19	0.47
SSLN E	96	42	0.013	0.019	101.08	10.8	1,198.09	1,196.23	1,201.17	1,199.51	2.2
SSLN E	80	42	0.013	0.00S	94.32	10.74	1,198.S9	1,198.19	1,202.13	1,201.19	FULL
SSLN E	S0	42	0.013	0.00S	83.81	8.73	1,198.94	1,198.69	1,202.48	1,202.14	FULL
SSLN E	132	42	0.013	0.00S	78.23	8.1S	1,199.70	1,199.04	1,203.27	1,202.49	FULL
SSLN E	19.7	36	0.013	0.00S	69.05	9.77	1,200.30	1,200.20	1,203.49	1,203.28	FULL
SSLN E	132.4	36	0.013	0.034	66.66	9.43	1,204.90	1,200.40	1,207.S1	1,203.S0	1.57
SSLN E	41.8	36	0.013	0.018	S0.04	7.9	1,205.7S	1,205.00	1,208.05	1,207.S2	1.61
SSLN E	96.6	36	0.013	0.00S	44.8	8.03	1,206.3S	1,205.8S	1,208.65	1,208.06	2.3
SSLN E	172	36	0.013	0.00S	39.14	6.16	1,207.24	1,206.3S	1,209.30	1,208.88	2.06
SSLN E	110	30	0.013	0.01	34.64	9.18	1,208.79	1,207.74	1,210.79	1,209.S3	1.79
SSLN E	20.2	24	0.013	0.03S	10.83	4.S9	1,210.09	1,209.39	1,211.27	1,210.80	0.69
SSLN E19	16.S	18	0.013	0.138	2.S8	2.68	1,212.87	1,210.S9	1,213.48	1,211.39	0.26
SSLN E	14.2	24	0.013	0.041	8.26	3.81	1,210.67	1,210.09	1,211.70	1,211.39	0.58
SSLN E17	41.4	30	0.013	0.006	24.3	S.98	1,209.15	1,208.89	1,210.83	1,210.82	1.61
SSLN E17	94.6	30	0.013	0.007	17.57	4.47	1,209.77	1,209.15	1,211.19	1,211.02	1.29
SSLN E21	18.3	24	0.013	0.037	1S.91	9.89	1,211.45	1,210.77	1,212.89	1,211.79	0.84
SSLN E21	S	24	0.013	0.04	1S.91	S.63	1,211.65	1,211.45	1,213.09	1,213.14	0.82
SSLN E17	22.4	18	0.013	0.00S	2.03	3.6S	1,210.89	1,210.77	1,211.43	1,211.30	0.53
SSLN E17	139.2	18	0.013	0.016	2.07	3.06	1,213.12	1,210.89	1,213.66	1,211.S0	0.4
SSLN E18	14.9	18	0.013	0.157	7.13	13.2	1,212.49	1,210.1S	1,213.S2	1,210.67	0.42
SSLN E16	14.1	18	0.013	0.06S	S.01	9.17	1,209.67	1,208.7S	1,210.S3	1,209.27	0.44
SSLN E15	34.S	18	0.013	0.023	6.68	S.18	1,208.65	1,207.8S	1,209.65	1,208.88	0.68
SSLN E14	15.2	18	0.013	0.112	6.03	3.87	1,208.S5	1,206.8S	1,209.S0	1,208.09	0.42
SSLN E12	38.6	24	0.013	0.013	17.77	8.42	1,207.00	1,206.S0	1,208.S2	1,207.78	1.22
SSLN E12	104.1	18	0.013	0.024	6.46	S.01	1,210.02	1,207.S0	1,211.00	1,208.S3	0.66
SSLN E12	14.1	18	0.013	0.024	6.47	4.48	1,210.36	1,210.

TCP GENERAL NOTES

1. THIS IS A SUGGESTED TRAFFIC CONTROL PLAN (TCP). THE CONTRACTOR MAY SUBMIT AN ALTERNATE TRAFFIC CONTROL PLAN, SINGED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN TEXAS, FOR APPROVAL BY THE ENGINEER. WHEN MUTUALLY BENEFICIAL CHANGES ARE PROPOSED TO THE EXISTING TRAFFIC CONTROL PLAN AND ARE AGREED UPON BY THE CONTRACTOR AND THE DEPARTMENT, THE PLAN SHEETS MAY BE DEVELOPED AND SIGNED AND SEALED BY THE ENGINEER
2. REFER TO PROJECT GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING THE TRAFFIC CONTROL PLAN
3. FURNISH AND INSTALL ALL TRAFFIC CONTROL PLANS DEVICES, INCLUDING BUT NOT LIMITED TO BARRICADES, SIGNS, AND WORK ZONE MARKINGS, IN COMPLIANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD), THE STATE STANDARD TRAFFIC CONTROL PLANS (TCP) SHEETS, AND THE BARRICADES AND CONSTRUCTION (BC) SHEETS. REFER TO THE PROJECT GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING THE TRAFFIC CONTROL PLAN.
4. LIMIT THE LENGTH OF LANE CLOSURES TO MAXIMUM OF TWO MILES. REFER TO SEQUENCE OF CONSTRUCTION FOR FURTHER INFORMATION. ALLOW FOR ALL LANES OPEN TO TRAFFIC DURING NON-WORKING HOURS UNLESS OTHERWISE SPECIFIED IN THE SEQUENCE OF CONSTRUCTION. ANY ADDITIONAL OVERNIGHT LANE CLOSURES NOT SPECIFIED IN THE SEQUENCE OF CONSTRUCTION WILL REQUIRE APPROVAL BY THE ENGINEER.
5. VERIFY THE LOCATION AND SPACING OF SIGNS, BARRICADES, AND CHANNELIZING DEVICES PRIOR TO THE THEIR PLACEMENT ALONG VERTICAL CURVES, HORIZONTAL CURVES, AND OTHER GEOMETRIC CONSTRAINTS TO ASSURE VISIBILITY TO ALL MOTORISTS.
6. PLACE THE TRAFFIC CONTROL DEVICES ONLY WHILE WORK IS ACTUALLY IN PROGRESS OR A DEFINITE NEED EXISTS. ALWAYS HAVE ENOUGH BARRICADES, CHANNELIZING DEVICES, AND SIGNS AT ALL TIME TO REPLACE THOSE DAMAGED.
7. COVER ALL EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLAN AND UNCOVER DURING NON-WORKING HOURS OR AS DIRECTED BY THE ENGINEER. PARTIAL COVERAGE OF THE SIGN OR COVERAGE BY MATERIAL THAT WILL NOT COVER THE ENTIRE SIGN ALL THE TIME IS NOT PERMITTED.
8. VARY THE SPACING OF SIGNS TO MEET TRAFFIC CONDITIONS OR AS DIRECTED BY THE ENGINEER AND ASSURE THAT ALL TRAFFIC CONTROL DEVICES AND WORK ZONE PAVEMENT MARKINGS ARE KEPT IN A HIGHLY VISIBLE CONDITION (CLEAN, UPRIGHT AND AT PROPER LOCATION).
9. MAINTAIN THE ROADWAY SURFACE AND WORK ZONE STRIPING WITHIN THE PROJECT WHILE THE TRAFFIC CONTROL PLAN IS IN EFFECT, PLACE AND BE RESPONSIBLE FOR ALL WORK ZONE PAVEMENT MARKINGS IN ACCORDANCE WITH STANDARD SHEETS WZ(STPM)-13, BC (10), BC (11) AND THE TXMUTCD.
10. CONDUCT CONSTRUCTION OPERATIONS SO AS TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC AND TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL ALLOWABLE DIRECTIONS AT ALL TIMES OR AS PERMITTED BY THE SEQUENCE OF CONSTRUCTION. PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ABUTTING PROPERTY, HIGHWAY, PUBLIC ROAD, AND STREET CROSSINGS EXCEPT AS OTHERWISE SHOWN ON THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR WILL MAINTAIN AT ALL TIMES TWO-WAY TRAFFIC OR A MINIMUM OF ONE LANE USING A PILOT VEHICLE AND FLOGGERS.
11. PLACE ALL STOCKPILED MATERIAL, WASTE MATERIAL, SIGNS, BARRICADES, CHANNELIZING DEVICES AND WORK VEHICLES NOT IN USE, AT A MINIMUM OF 30 FEET FROM THE OUTER EDGE OF THE NEAREST TRAVEL LANE.
12. MAINTAIN ALL EXISTING DRAINAGE CONDITIONS DURING ALL CONSTRUCTION PHASES UNTIL THE PERMANENT DRAINAGE FACILITIES ARE CONSTRUCTED AND READY TO USE. HANDLE EXCAVATED AND STOCKPILED MATERIAL IN SUCH A WAY THAT IT WILL NOT BLOCK DRAINAGE.
13. REGULATE ALL CONSTRUCTION TRAFFIC SO AS TO CAUSE A MINIMAL INCONVENIENCE TO THE TRAVELING PUBLIC. AT THE TIMES WHEN IT IS NECESSARY FOR TRUCKS TO STOP, UNLOAD OR CROSS ROADWAYS UNDER TRAFFIC, PROVIDE WARNING SIGNS AND FLAGGERS AS NEEDED TO ADEQUATELY PROTECT THE TRAVELING PUBLIC
14. DURING NON WORKING HOURS ALL DROP-OFFS ARE TO BE FILLED TO A 3:1 MAXIMUM SLOPE EXCEPT AS OTHERWISE NOTED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
15. NOTIFY THE ENGINEER IN WRITING TWO WEEKS PRIOR TO SHIFTING OF TRAFFIC WITHIN EACH PHASE OF THE TRAFFIC CONTROL PLAN.
16. DURING THE HOLIDAY TIME FRAME OF DECEMBER 21ST THROUGH JANUARY 1ST, EVERY EFFORT SHOULD BE TAKEN TO ENSURE THAT ALL TRAVEL LANES REMAIN OPEN WHERE POSSIBLE.
17. REMOVE FROM THE WORK AREA ALL LOOSE MATERIALS AND DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS AT THE END OF EACH WORK DAY.
18. IMPLEMENT ALL REQUIRED EROSION CONTROL MEASURES AS SHOWN IN THE PLANS DURING THE VARIOUS STAGES OF CONSTRUCTION.
19. MOVING AN EXISTING SIGN TO A TEMPORARY LOCATION IS SUBSIDIARY TO THIS ITEM. INSTALLATIONS WITH PERMANENT SUPPORTS AT PERMANENT LOCATIONS WILL BE PAID FOR UNDER THE APPLICABLE BID ITEM(S).
20. PLACE PORTABLE CHANGEABLE MESSAGE BOARDS AT LOCATION REQUIRING LANE CLOSURES FOR 3 WEEKS BEFORE THE CLOSURES OR AS DIRECTED BY THE ENGINEER.
21. ADDITIONAL SIGNS, BARRICADES AND CHANNELIZING DEVICES MAY BE REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION, AS SHOWN ON TCP STANDARDS. ADDITIONAL SIGNS, BARRICADES, ETC. (IF ANY), WILL BE SUBSIDIARY TO ITEMS 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING".
22. IF THE CONTRACTOR CHOOSES TO WORK MULTIPLE LOCATIONS IN URBAN/RURAL AREAS SIMULTANEOUSLY, CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL APPLICABLE TRAFFIC CONTROL DEVICES, INCLUDING PORTABLE CHANGEABLE MESSAGE BOARDS, AT THEIR OWN EXPENSE.
23. USE PLASTIC DRUMS TO CHANNELIZE TRAFFIC WHEN EXISTING PAVEMENT MARKINGS HAVE BEEN OBLITERATED.
24. LIMIT THE LENGTH OF DAILY WORK TO THAT AREA OF OPERATION THAT CAN BE COMPLETED IN ONE WORK DAY IN ORDER TO ALLOW FOR TWO-WAY TRAFFIC AT NIGHT. SUCH AREA MUST NOT EXCEED TWO (2) MILES, UNLESS APPROVED BY THE ENGINEER. WITHIN THE 2 MILE SECTION, ONLY CLOSE OFF THE AREA WHERE ACTUAL WORK IS BEING PERFORMED.

RIGHT OF WAY MANAGEMENT STANDARD NOTES

1. CONTRACTOR SHALL HAVE AN APPROVED RIGHT OF WAY PERMIT ON SITE AT ALL TIMES WHEN WORKING IN THE ROW.
2. CONTRACTOR MUST PROVIDE TRAINING CERTIFICATION OF COMPETENT PERSON THAT WILL BE RESPONSIBLE FOR THE TRAFFIC CONTROL PLACEMENT, TO RIGHT OF WAY INSPECTOR, PRIOR TO START OF WORK.
3. STORAGE OF EQUIPMENT AND/OR MATERIAL WITHIN THE ROW.
   a. STORAGE OF EQUIPMENT IN THE ROW IS PERMISSIBLE ONLY WITHIN THE CURRENT LIMITS OF LONG-TERM OR INTERMEDIATE-TERM CLOSURES AND SHALL BE LIMITED TO THE EQUIPMENT REQUIRED FOR THE CURRENT WORK ACTIVITY. THIS EQUIPMENT SHALL BE PROTECTED BEHIND BARRICADES.
   b. STORAGE OF MATERIAL IN THE ROW IS PERMISSIBLE ONLY WITHIN THE CURRENT LIMITS OF LONG-TERM OR INTERMEDIATE-TERM CLOSURES AND SHALL BE LIMITED TO NO MORE THAN THE MATERIAL REQUIRED FOR THREE DAYS OF PRODUCTION. THIS MATERIAL SHALL BE PROTECTED BEHIND WATER-FILLED BARRIER.
   c. EQUIPMENT OR MATERIAL STORED IN THE ROW SHALL NOT CREATE A VISUAL BARRIER TO TRAFFIC.
9. NO MORE THAN ONE WORK ZONE LOCATION MAY BE SET AT ONE TIME.
10. "ROAD WORK AHEAD" AND "CONSTRUCTION ENTRANCE AHEAD" SIGNS MUST BE PLACED AT ALL APPROACHES TO STABILIZED CONSTRUCTION ENTRANCE.
11. DRIVEWAY'S SHALL NOT BE CLOSED OVERNIGHT OR FOR MORE THAN 3 CONSECUTIVE CALENDAR DAYS
12. ADA COMPLIANCE SHALL BE MAINTAINED THROUGH STABILIZED CONSTRUCTION ENTRANCE.
13. BARRIER SHALL BE PLACED WITHIN GUIDELINES SET FORTH BY THE TMUTCD CRASH TESTING REQUIREMENTS (NCHRP REPORT 350) FOR THAT PARTICULAR BARRIER USED. ANY MODIFICATIONS TO THAT TESTING APPLICATION SHALL BE APPROVED BY THE ENGINEER OF RECORD.
14. FOR OVERNIGHT PROTECTION OF WORK ZONES WITHIN THE ROW, REFER TO TXDOT STANDARD DETAILS.
15. ALL TEMPORARY PAVING SHALL CONFORM TO CITY OF AUSTIN STANDARD DETAIL 11005-4.

GENERAL REQUIREMENTS

1. CONSTRUCTION PHASING WILL CONSIST OF TWO-LANE TWO-WAY TRAFFIC OPERATIONS THROUGHOUT THE PROJECT BY MEANS OF CHANNELIZATION DEVICES PER TXDOT STANDARD TCP (1-3)-18.
2. CONTRACTOR SHALL LIMIT WORK AREAS TO A MAXIMUM OF 1000 FEET UNLESS OTHERWISE APPROVED BY THE ENGINEER. WORKZONE PAVEMENT MARKINGS/MARKERS SHALL BE INSTALLED ON PRIME COAT (FOR ACP PAVEMENT) AND BOND BREAKER (FOR CONCRETE PAVEMENT) SURFACE PRIOR TO COMMENCING CONSTRUCTION ON THE NEXT WORK ZONE.
3. UNEVEN TRANSVERSE JOINTS CREATED DURING TCP PHASING SHALL BE TREATED WITH APPROVED MATERIAL UTILIZING A MINIMUM LONGITUDINAL TAPER RATE OF 50:1 PRIOR TO OPENING TO TRAFFIC.
4. CONSTRUCTION OF SUBGRADE SHALL ADHERE TO ORDINARY COMPACTION REQUIREMENTS SPECIFIED UNDER SPECIFICATION ITEM 132.
5. SUBGRADE WILL NOT BE ALLOWED AS A RIDING SURFACE MATERIAL DURING TCP PHASING. ALLOWABLE RIDING SURFACE MATERIALS INCLUDE, FLEX BASE, OCST, ASPHALT PAVEMENT, CRCP, OR AS APPROVED BY THE ENGINEER.

TCP NARRATIVE

PHASE 1 (CONSTRUCTION FROM STA 1+70 TO STA 16+00 ON FOUNDERS PARK ROAD)

1. PLACE WORK ZONE ADVANCE WARNING SIGNS PER SIGN LAYOUT IN PHASE 1
2. INSTALL CONSTRUCTION ZONE ENTRANCES AND EXITS
3. INSTALL SW3P DEVICES AS SHOWN IN PLANS
4. PREPARE RIGHT OF WAY (R.O.W.)
5. RELOCATE ALL UTILITIES THAT ARE TO BE ADJUSTED, WITHIN THE PROPOSED R.O.W.
6. DEMOLISH EXISTING PER OFFSITE PLANS.
7. COMPLETE ALL CONSTRUCTION WITHIN THE DEFINED PHASE 1 LIMITS
8. PERFORM FINAL PAVING OPERATIONS
9. PLACE FINAL SIGNING AND PAVEMENT MARKINGS AS SHOWN ON THE PLANS
10. REMOVE EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED

PHASE 2 (CONSTRUCTION FROM STA 16+00 TO STA 24+69 ON FOUNDERS PARK ROAD)

1. PLACE WORK ZONE ADVANCE WARNING SIGNS PER SIGN LAYOUT IN PHASE 2
2. INSTALL CONSTRUCTION ZONE ENTRANCES AND EXITS
3. INSTALL SW3P DEVICES AS SHOWN IN PLANS
4. PREPARE RIGHT OF WAY (R.O.W.)
5. RELOCATE ALL UTILITIES THAT ARE TO BE ADJUSTED, WITHIN THE PROPOSED R.O.W.
6. COMPLETE TEMPORARY PAVING AND SWALE SECTION OF ROAD
7. COMPLETE ALL CONSTRUCTION WITHIN THE DEFINED PHASE 2 LIMITS FOR THE NEW ALIGNMENT
8. PERFORM FINAL PAVING OPERATIONS
9. PLACE FINAL SIGNING AND PAVEMENT MARKINGS AS SHOWN ON THE PLANS
10. REMOVE EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED

PHASE 3A (CONSTRUCTION FROM STA 383+35 TO STA 391+29 ON RANCH ROAD 12)

1. PLACE WORK ZONE ADVANCE WARNING SIGNS PER SIGN LAYOUT IN PHASE 3A
2. INSTALL CONSTRUCTION ZONE ENTRANCES AND EXITS
3. INSTALL SW3P DEVICES AS SHOWN IN PLANS
4. PREPARE RIGHT OF WAY (R.O.W.)
5. RELOCATE ALL UTILITIES THAT ARE TO BE ADJUSTED, WITHIN THE PROPOSED R.O.W.
6. REMOVE EXISTING STRIPING AND MARKINGS AND INSTALL TRAFFIC CONTROL SIGNS AND CHANNELIZATION DEVICES PER PHASE 3A PLAN
7. COMPLETE ALL CONSTRUCTION WITHIN THE DEFINED PHASE 3A LIMITS
8. UTILIZE MOBILE OPERATION, FLAGGERS, OR SHIFT TRAFFIC AS NECESSARY TO PERFORM FINAL PAVING OPERATIONS
9. PLACE FINAL SIGNING AND PAVEMENT MARKINGS AS SHOWN ON THE PLANS
10. REMOVE EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED

PHASE 3B (CONSTRUCTION FROM STA 383+35 TO STA 391+29 ON RANCH ROAD 12)

1. PLACE WORK ZONE ADVANCE WARNING SIGNS PER SIGN LAYOUT IN PHASE 3B
2. INSTALL CONSTRUCTION ZONE ENTRANCES AND EXITS
3. INSTALL SW3P DEVICES AS SHOWN IN PLANS
4. PREPARE RIGHT OF WAY (R.O.W.)
5. RELOCATE ALL UTILITIES THAT ARE TO BE ADJUSTED, WITHIN THE PROPOSED R.O.W.
6. REMOVE EXISTING STRIPING AND MARKINGS AND INSTALL TRAFFIC CONTROL SIGNS AND CHANNELIZATION DEVICES PER PHASE 3B PLAN
7. COMPLETE ALL CONSTRUCTION WITHIN THE DEFINED PHASE 3B LIMITS
8. UTILIZE MOBILE OPERATION, FLAGGERS, OR SHIFT TRAFFIC AS NECESSARY TO PERFORM FINAL PAVING OPERATIONS
9. PLACE FINAL SIGNING AND PAVEMENT MARKINGS AS SHOWN ON THE PLANS
10. REMOVE EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED

STREETS

STREET	CLASSIFICATION	PROTECTION	STREET FROM	STREET TO	PLANNED IMPROVEMENTS	TRAFFIC CONTROL PLAN SHEET/ DETAIL	ALLOWED BARRICADING HOURS	DURATION	COMMENTS
US HWY 290	HIGHWAY	DETOUR PLAN	ROB SHELTON BLVD.	RANCH ROAD 12	NO IMPROVEMENTS ON THIS ROAD	SHEETS 15, 16, AND 17	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	
RANCH ROAD 12	MAJOR COLLECTOR	TCP (1-3)-18	US HWY 290	GRAND PRAIRIE ROAD	TURNING LANE AT FOUNDERS PARK ROAD	SHEETS 15, 16, 17, AND 18	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	
FOUNDERS PARK ROAD	COLLECTOR	COA 8045-1	RANCH ROAD 12	FOUNDERS PARK PARKING LOT	PROPOSED ROADWAY CONSTRUCTION	SHEETS 15, 16, AND 17	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	
ROB SHELTON BLVD	COLLECTOR	ROAD CLOSURE	DIAMOND POINT DRIVE	FOUNDERS PARK ROAD	PROPOSED ROADWAY CONSTRUCTION	SHEET 15, 16, AND 17	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	

INTERSECTIONS

STREET INTERSECTION	PLANNED IMPROVEMENTS	TRAFFIC CONTROL PLAN SHEET/ DETAIL	ALLOWED BARRICADING HOURS	DURATION	COMMENTS
FOUNDERS PARK ROAD AT RANCH ROAD 12	TURNING LANE ON RANCH ROAD 12	SHEET 15 AND 17	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	
ROB SHELTON BLVD AT FOUNDERS PARK ROAD	PROPOSED ROADWAY AND INTERSECTION	SHEET 15 AND 16	PERMANENT THROUGHOUT THE DURATION OF CONSTRUCTION	3 MONTHS	

FOR REFERENCE ONLY. REFER TO TRAFFIC CONTROL PLAN IN FOUNDERS PARK OFFSITE IMPROVEMENTS PLANS.

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TRAFFIC CONTROL NOTES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED PROFESSIONAL ENGINEER
7 May 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

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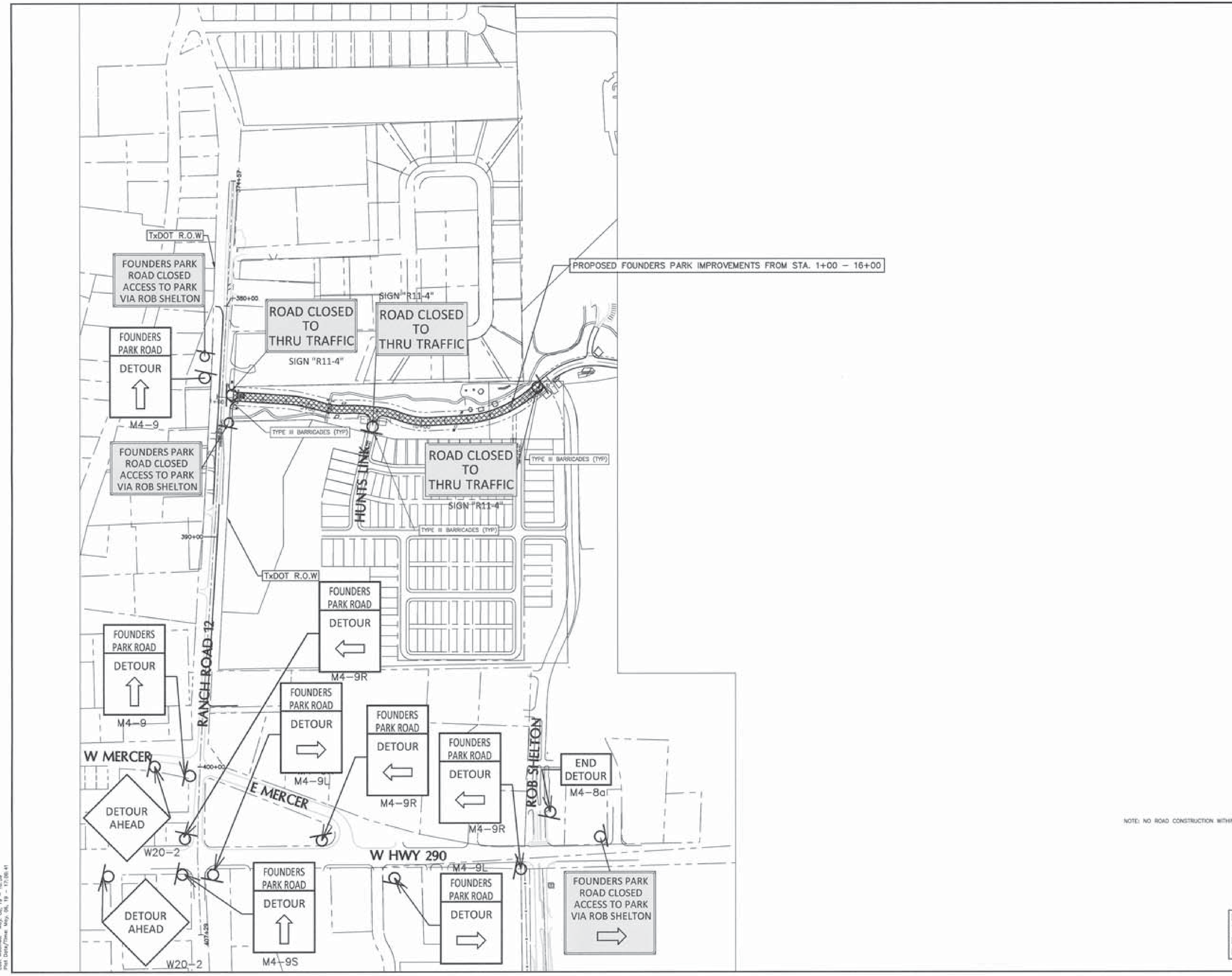

LEGEND

- IRON ROD FOUND (SIZE NOTED)
- IRON PIPE FOUND (SIZE NOTED)
- BENCHMARK FOUND
- CALCULATED POINT
- COTTON SPINDLE FOUND
- NAIL FOUND
- FENCE POST OCCUPIES PROPERTY CORNER
- MONUMENT FOUND
- CONCRETE MARKER FOUND
- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- ELECTRIC PULL BOX
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC MANHOLE
- FIRE HYDRANT
- GAS METER
- GATE VALVE
- HANDICAP PARKING
- LIGHT POLE
- MAILBOX
- TELEPHONE MANHOLE
- TELEPHONE SERVICE BOX
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT

LEGEND

- DETOUR SIGNAGE
- STREET END BARRIER
- CHANNELIZATION DEVICE
- WATER FILLED BARRICADE
- HEAVY WORK VEHICLE

NOTE: NO ROAD CONSTRUCTION WITHIN TXDOT ROW ALONG RR12

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TRAFFIC CONTROL PLAN - PHASE 1

BIG SKY RANCH PHASE ONE PLAN

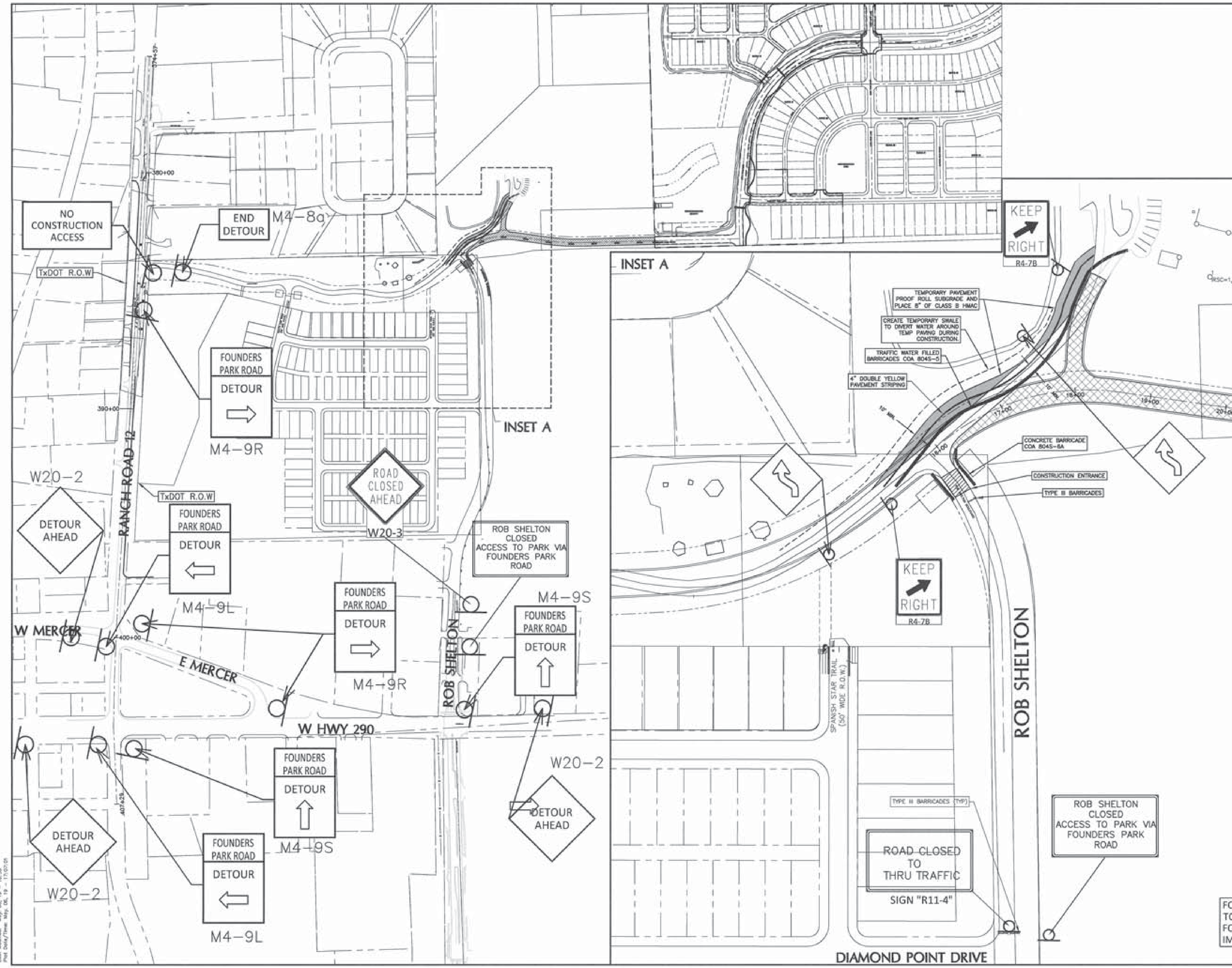
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
7 MAY 2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 20 OF 175

Project No: 1691-002



FOR REFERENCE ONLY. REFER TO TRAFFIC CONTROL PLAN IN FOUNDERS PARK OFFSITE IMPROVEMENTS PLANS.

LEGEND

- IRON ROD FOUND (SIZE NOTED)
- IRON PIPE FOUND (SIZE NOTED)
- BENCHMARK FOUND
- CALCULATED POINT
- COTTON SPINDLE FOUND
- NAIL FOUND
- FENCE POST OCCUPIES PROPERTY CORNER
- MONUMENT FOUND
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- SIGN (AS NOTED)
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- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT

LEGEND

- DETOUR SIGNAGE
- STREET END BARRIER
- CHANNELIZATION DEVICE
- WATER FILLED BARRICADE
- HEAVY WORK VEHICLE

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TRAFFIC CONTROL PLAN - PHASE 2

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
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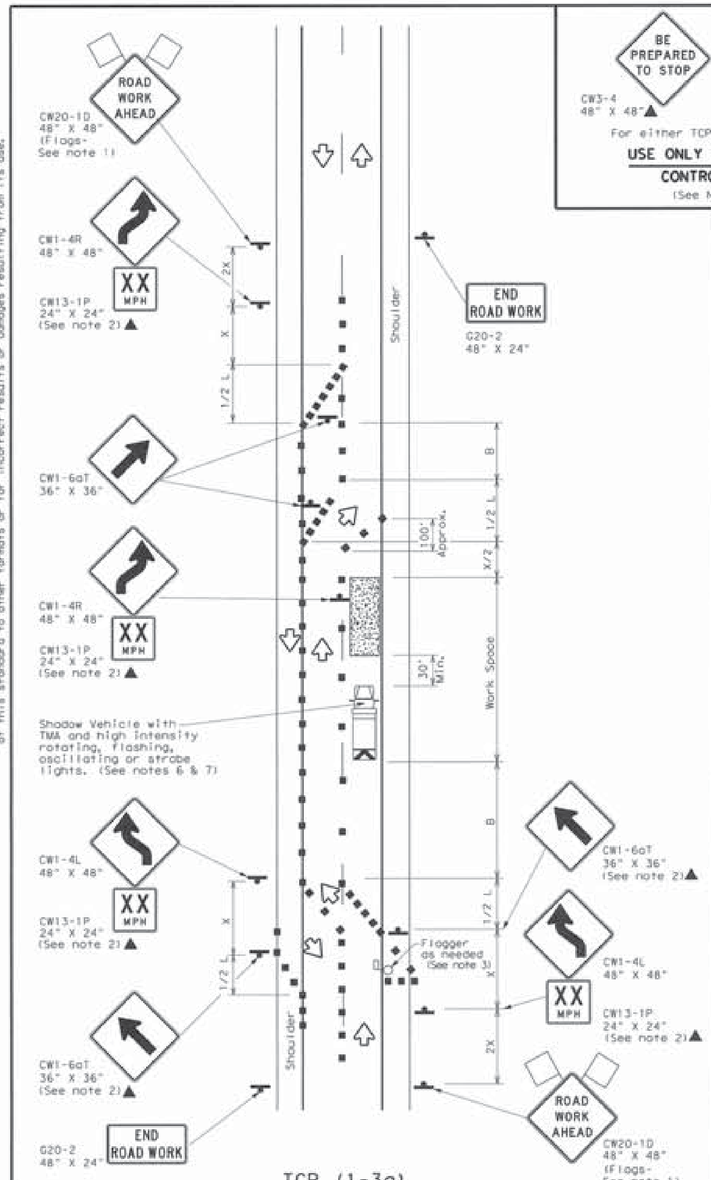
7 May 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 21 OF 175

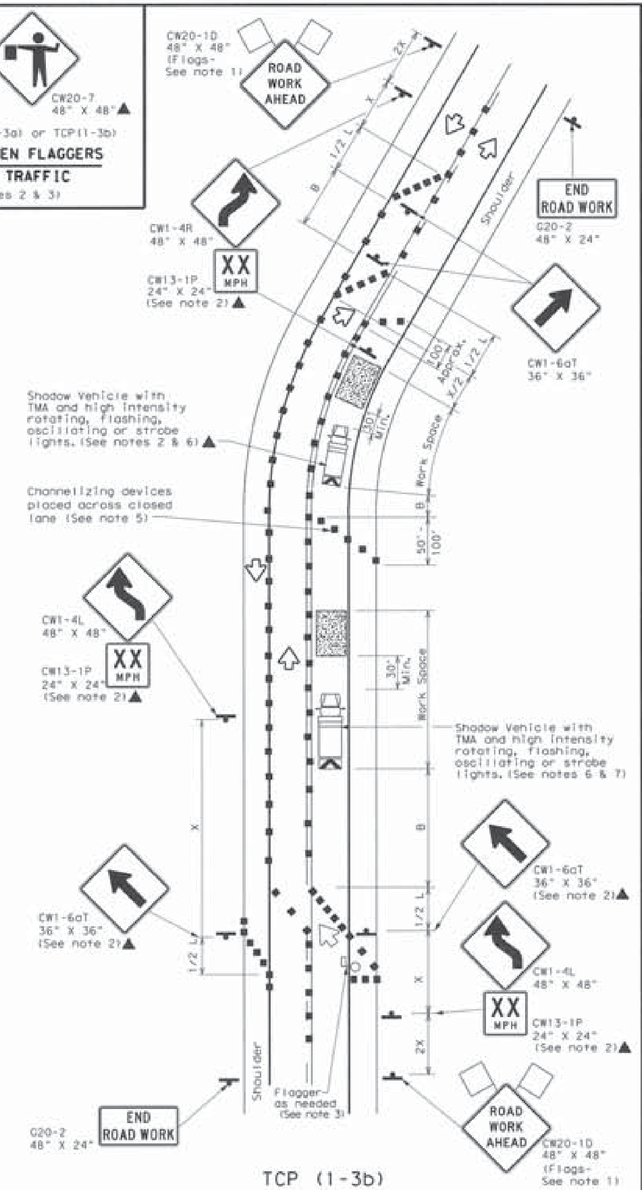
Project No: 1691-002



TCP (1-3a)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
ADEQUATE FIELD OF VIEW

BE PREPARED TO STOP
CW3-4 48" X 48"
CW20-7 48" X 48"
For either TCP(1-3a) or TCP(1-3b)
USE ONLY WHEN FLAGGERS CONTROL TRAFFIC
(See Notes 2 & 3)



TCP (1-3b)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
4. DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
5. When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
8. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/25 where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON
TWO LANE ROADS

TCP(1-3)-18

FILE: tcp1-3-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST		COUNTY	SHEET NO.

153

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FOR REFERENCE ONLY. REFER TO TRAFFIC CONTROL PLAN IN FOUNDERS PARK OFFSITE IMPROVEMENTS PLANS.

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TRAFFIC CONTROL DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
1 May 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019
SHEET 22 OF 175
Project No: 1691-002

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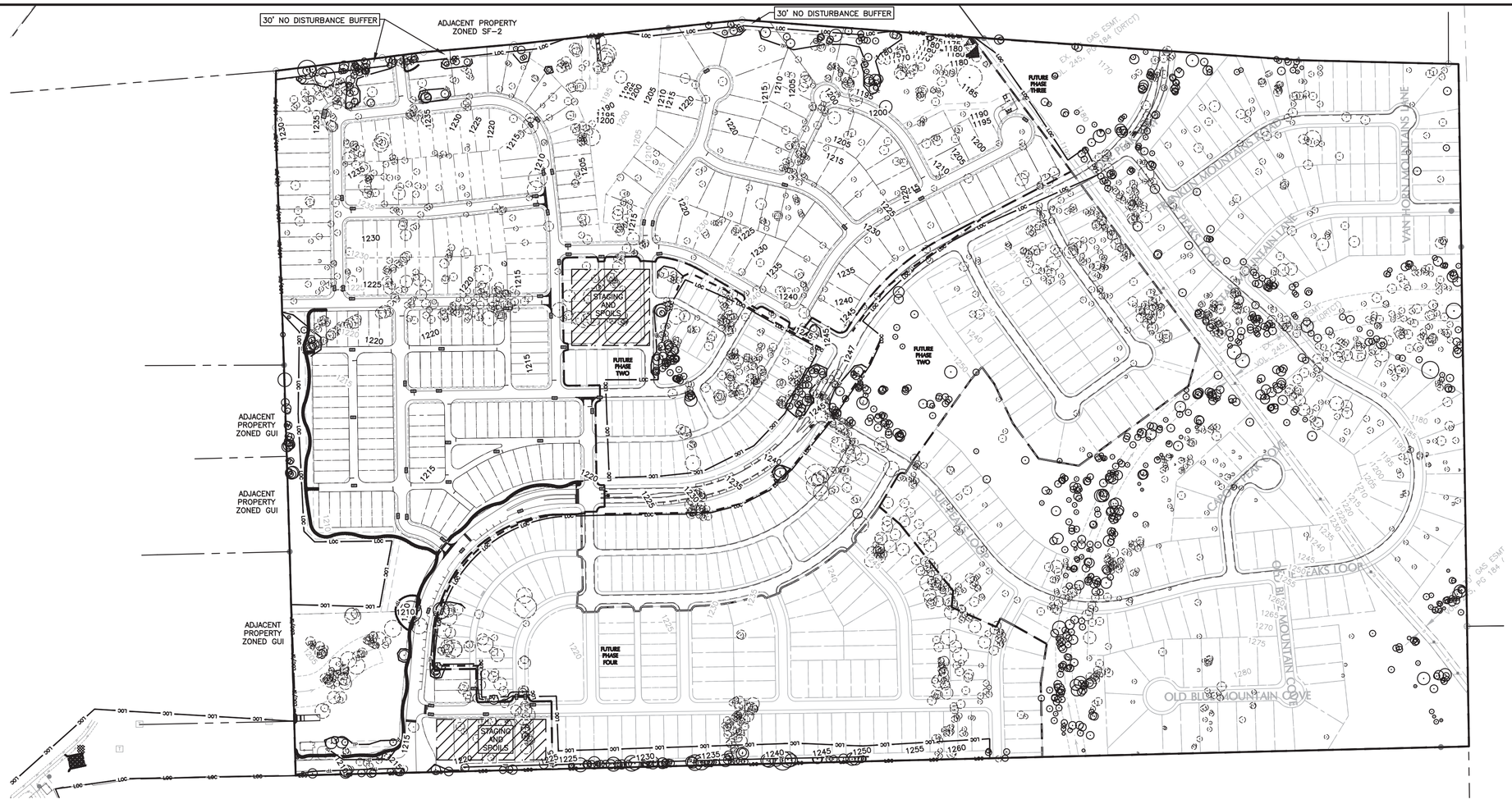

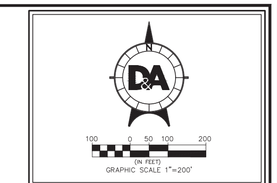

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED/RELOCATED
- PHASE LINES
- TREE PROTECTION

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

OVERALL TREE PROTECTION PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 23 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-TRP.dwg
User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
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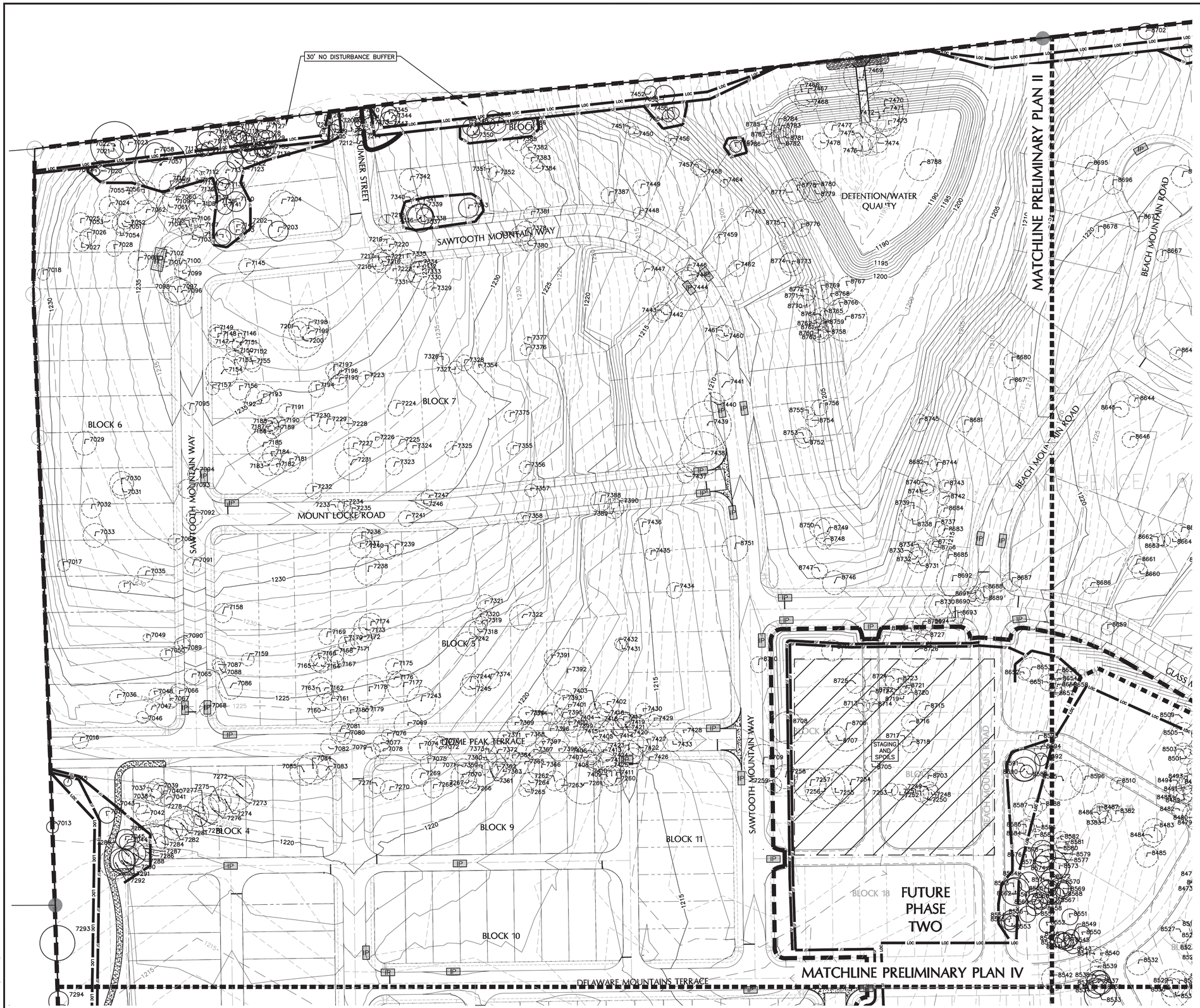
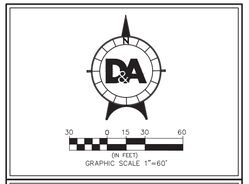
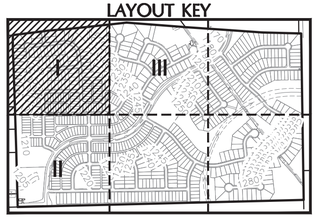




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED/RELOCATED
- PHASE LINES
- TREE PROTECTION

LAYOUT KEY



NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

TREE PROTECTION PLAN I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

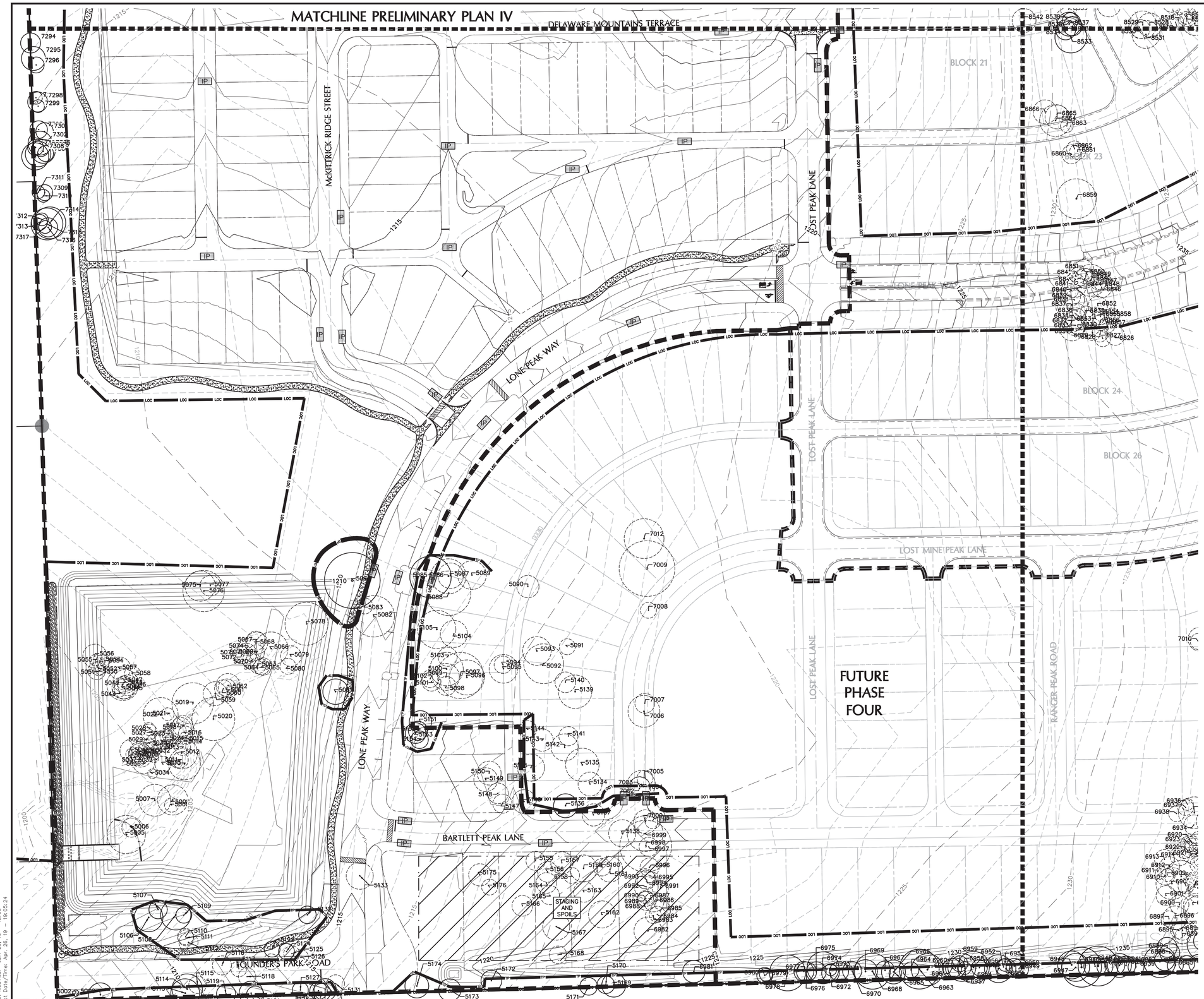
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

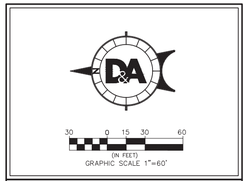
Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 24 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-TRP.dwg
User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:05:05

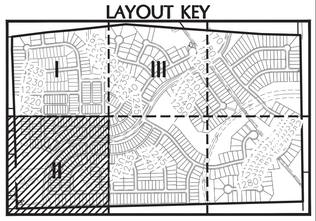




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED/RELOCATED
- PHASE LINES
- TREE PROTECTION

LAYOUT KEY



NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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www.doucetengineers.com
Firm Registration Number: 3937

TREE PROTECTION PLAN II

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

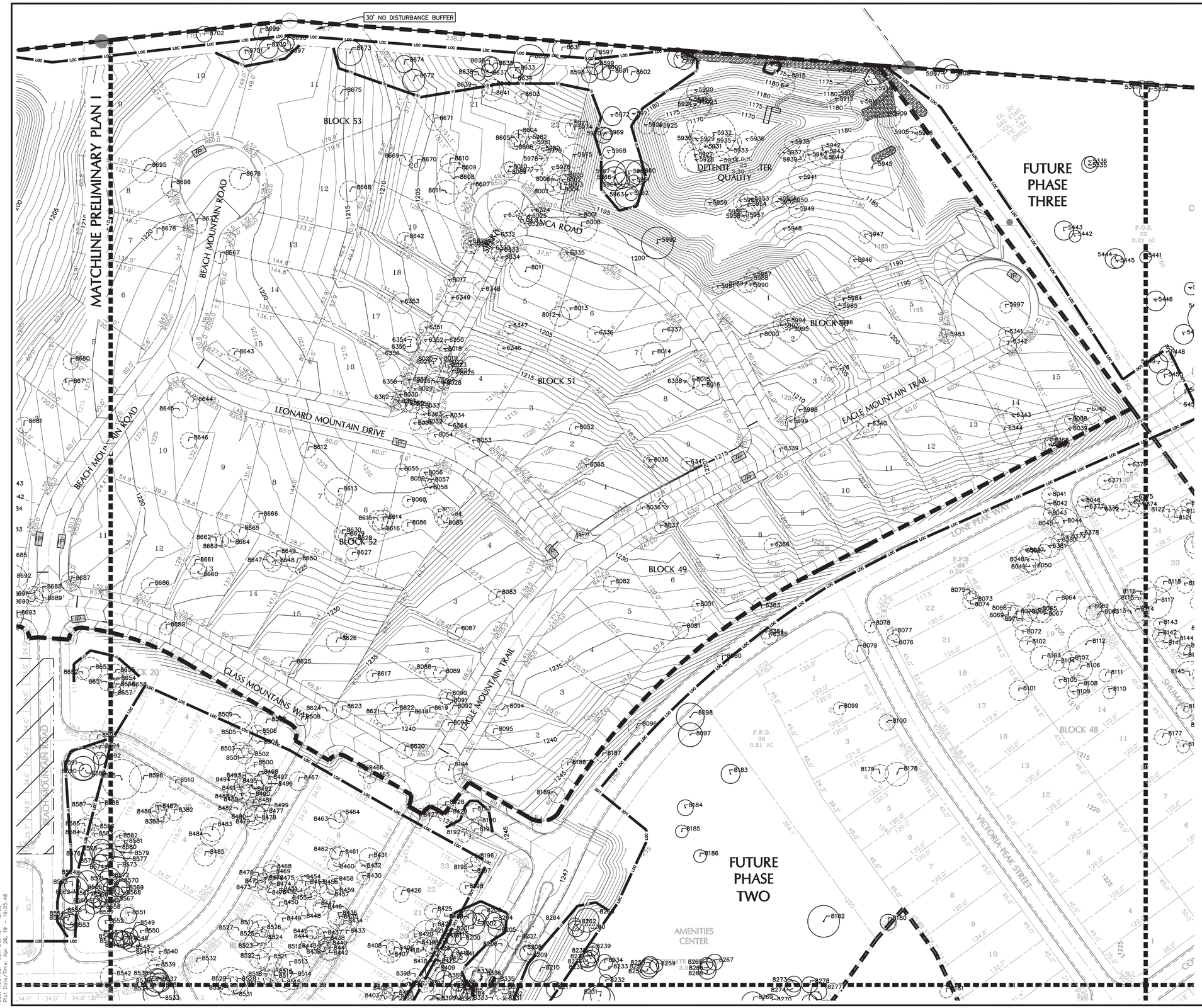
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

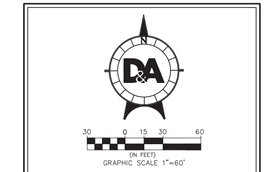
Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 25 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-TRP.dwg
User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:05:24

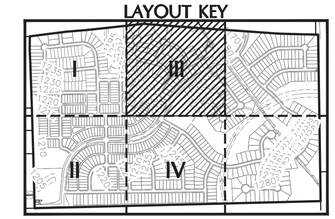




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED/RELOCATED
- PHASE LINES
- TREE PROTECTION

LAYOUT KEY



NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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www.doucetengineers.com
Firm Registration Number: 3937

TREE PROTECTION PLAN III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

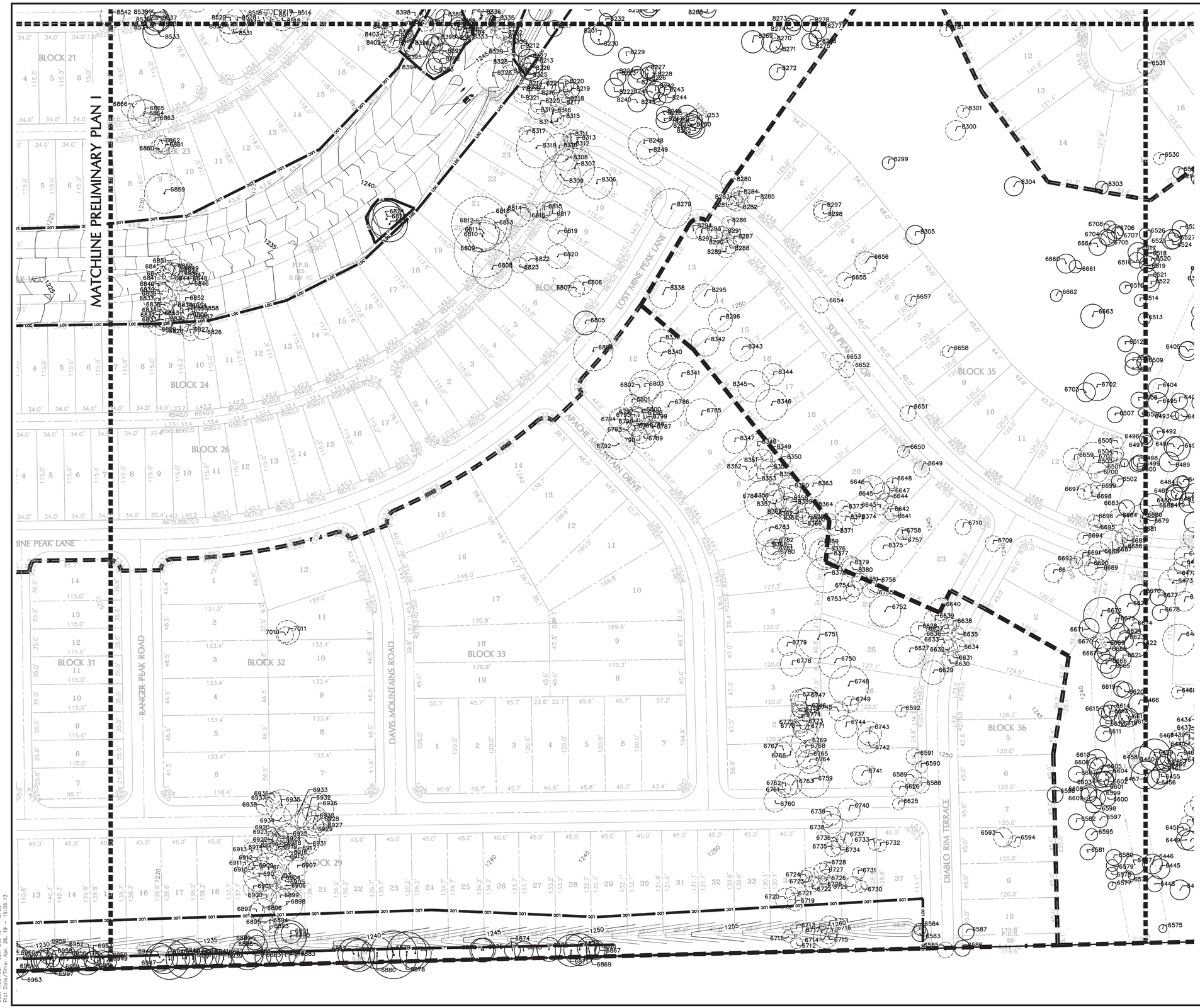
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

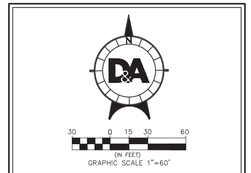
Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 26 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-TRP.dwg
User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:05:48

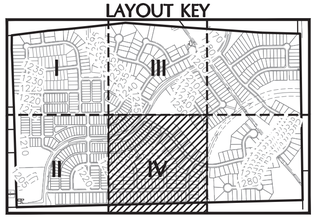




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED/RELOCATED
- PHASE LINES
- TREE PROTECTION

LAYOUT KEY



NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

TREE PROTECTION PLAN IV

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/29/20

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 27 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-TRP.dwg
User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:06:13

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diameters						Total Size
x		5000	OAK	15							15
x		5002	OAK	4							4
x		5003	OAK	4							4
?	?	5004	HCK	19							19
	x	5005	OAK	24	14	17					24
	x	5006	OAK	12							12
	x	5007	CDE	20	11	10	8				20
	x	5008	CDE	19							19
	x	5009	CDE	9							9
	x	5010	OAK	20							20
	x	5011	OAK	10							10
	x	5012	OAK	20							20
	x	5013	OAK	10	8	5					10
	x	5014	OAK	6							6
	x	5015	OAK	8							8
	x	5016	OAK	9	7	5					9
	x	5017	OAK	13	10	7					13
	x	5018	OAK	13	9	9					13
	x	5019	OAK	26							26
	x	5020	CDE	27							27
	x	5021	OAK	8							8
	x	5022	OAK	22							22
	x	5023	OAK	7							7
	x	5024	OAK	8							8
	x	5025	OAK	12	10	5					12
	x	5026	OAK	13	9	8					13
	x	5027	OAK	10	8	4					10
	x	5028	OAK	8							8
	x	5029	OAK	20	12	9	6				20
	x	5030	OAK	7							7
	x	5031	OAK	10							10
	x	5032	OAK	10							10
	x	5033	OAK	6							6
	x	5034	OAK	8							8
	x	5035	OAK	10							10
	x	5036	OAK	14	11	6					14
	x	5037	OAK	10							10
	x	5038	OAK	15	10	9					15
	x	5039	OAK	13	10	6					13
	x	5040	OAK	8							8
	x	5041	OAK	6							6
	x	5042	OAK	15	11	8					15
	x	5043	OAK	8							8
	x	5044	OAK	14	10	8					14
	x	5045	OAK	13	10	6					13
	x	5046	OAK	13							13
	x	5047	OAK	15							15
	x	5048	OAK	9							9
	x	5049	OAK	20							20
	x	5050	OAK	6							6
	x	5051	OAK	11							11
	x	5052	OAK	9							9
	x	5053	OAK	9							9
	x	5054	OAK	6							6
	x	5055	OAK	7							7
	x	5056	OAK	15							15
	x	5057	OAK	14							14
	x	5058	OAK	10							10
	x	5059	CDE	15							15
	x	5060	CDE	11							11
	x	5061	CDE	11							11
	x	5062	CDE	15							15
	x	5063	OAK	10							10
	x	5064	OAK	10							10
	x	5065	OAK	11							11
	x	5066	OAK	21	12	10	6				21
	x	5067	OAK	12							12
	x	5068	OAK	14							14
	x	5069	OAK	10							10
	x	5070	OAK	11							11
	x	5071	OAK	13							13
	x	5072	OAK	11							11
	x	5073	OAK	11							11
	x	5074	OAK	11							11
	x	5075	OAK	19	18	10					19
	x	5076	OAK	26	20	13					26
	x	5077	OAK	13							13
	x	5078	CDE	27	21	13					27
	x	5079	OAK	13	10	6					13
	x	5080	OAK	10							10
x		5081	CDE	16							16
	x	5082	CDE	26							26
	x	5083	CDE	10							10
x		5084	OAK	35	27	16					35
x		5106	OAK	18	13	11					18
x		5107	OAK	13							13
x		5108	OAK	19	18	10					19
x		5109	OAK	10							10
x		5110	OAK	10							10
x		5111	OAK	10							10
x		5112	OAK	12							12
x		5113	CDE	18							18
x		5114	OAK	19							19
	x	5115	OAK	11							11
	x	5116	OAK	12							12
	x	5117	OAK	10							10
	x	5118	OAK	11							11
x		5119	OAK	12							12
x		5120	OAK	15							15
x		5121	OAK	11							11
x		5122	OAK	10							10
	x	5123	OAK	10							10
x		5124	OAK	10							10
	x	5125	OAK	10							10
	x	5126	OAK	10							10
x		5127	OAK	10							10
x		5128	OAK	11							11
x		5129	OAK	11							11
x		5130	OAK	14							14
	x	5131	OAK	11							11
x		5132	OAK	11							11
	x	5133	CDE	17	12	10					17
	x	5134	OAK	15							15
	x	5135	CDE	21							21
x		5136	CDE	15							15
	x	5137	OAK	14	10	9					14
	x	5138	CDE	17							17
	x	5147	OAK	12	10	4					12
	x	5148	CDE	13							13
	x	5149	OAK	15							15
	x	5150	OAK	15							15
x		5151	OAK	14	10	8					14
x		5152	OAK	12							12
x		5153	OAK	13	11	4					13
x		5154	OAK	11							11
	x	5155	CDE	12							12
	x	5156	CDE	13							13
	x	5157	CDE	14							14
	x	5158	CDE	10							10
	x	5159	CDE	17	14	6					17
	x	5160	CDE	11							11
	x	5161	CDE	16							16
	x	5162	CDE	17	12	5					17
	x	5163	CDE	13							13
	x	5164	CDE	13							13

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diameters						Total Size
	x	5165	CDE	12							12
	x	5166	CDE	13	10	7					13
	x	5167	CDE	17							17
	x	5168	CDE	11							11
x		5169	CDE	15	10	10					15
x		5170	OAK	11							11
x		5171	CDE	11							11
x		5172	CDE	13							13
x		5173	CDE	14							14
x		5174	CDE	15							15
	x	5175	CDE	14							14
	x	5176	CDE	10							10
x		5905	OAK	9							9
x		5906	OAK	10							10
x		5909	OAK	14							14
	x	5910	OAK	14							14
	x	5911	OAK	16	13	6					16
	x	5912	OAK	14							14
	x	5913	OAK	9							9
	x	5914	OAK	15	12	7					15
	x	5915	OAK	8							8
	x	5916	OAK	10							10
x		5917	OAK	11	8	6					11
x		5918	OAK	16							16
x		5919	OAK	16							16
	x	5920	OAK	13	9	9					13
	x	5921	OAK	9							9
	x	5922	OAK	9							9
	x	5923	OAK	14							14
	x	5924	OAK	16	12	8					16
	x	5925	OAK	10							10
	x	5926	OAK	10							10
	x	5927	OAK	23	12	10	9	5			23
	x	5928	OAK	14	11	7					14
	x	5929	OAK	13							13
	x	5930	OAK	9							9
	x	5931	OAK	8							8
	x	5932	OAK	26	14	12	12				26
	x	5933	OAK	15	9	8	6				15
	x	5934	OAK	12	8	8					12
	x	5935	OAK	11							11
	x	5936	OAK	14	10	8					14
	x	5937	OAK	9							9
	x	5938	OAK	11							11
x		5939	OAK	9							9
x		5940	OAK	8							8
x		5941	OAK	14							14
x		5942	OAK	17							17
x		5943	OAK	8							8
x		5944	OAK	8							8
x		5945	OAK	43							43
	x	5946	OAK	8							8
	x	5947	OAK	8							8
	x	5948	OAK	18	12	12					18
x		5949	OAK	10							10
x		5950	OAK	8							8
x		5951	OAK	10							10
x		5952	OAK	8							8
x		5953	OAK	13							13
	x	5954	OAK	14							14
x		5955	OAK	11							11
	x	5956	OAK	10							10
	x	5957	OAK	16							16
	x	5958	OAK	9							9
x		5959	OAK	9							9
x		5960	OAK	15							15
x		5961	OAK	9							9
x		5962	OAK	9							9
x		5963	OAK	13							13
x		5964	OAK	10							10
x		5965	OAK	18	14	9					18
x		5966	OAK	13							13
x		5967	OAK	13							13
x		5968	OAK	9							9
x		5969	OAK	9							9
x		5970	OAK	10	8	4					10
x		5971	OAK	9							9
x		5972	OAK	12							12
	x	5973	OAK	13							13
	x	5974	OAK	12	9	6					12
	x	5975	OAK	15							15
	x	5976	OAK	16							16
	x	5977	OAK	8							8
	x	5978	OAK	9							9
	x	5979	OAK	8							8
	x	5980	OAK	8							8
	x	5981	OAK	8							8
	x	5982	OAK	12							12
	x	5983	OAK	8							8
	x	5984	OAK	12	8	8					12
	x	5985	OAK	9							9
	x	5986	OAK	18	10	9	8				18
	x	5987	OAK	10							10
	x	5988	OAK	9							9
	x	5989	OAK	10	8	4					10
	x	5990	OAK	9							9
	x	5991	OAK	9							9
x		5992	OAK	20	18	5					20
	x	5993	OAK	10							10
	x	5994	OAK	10							10
	x	5995	OAK	15							15
	x	5996	OAK	10							10
	x	5997	OAK	9							9
	x	5998	OAK	8							8
	x	5999	OAK	9							9
x		6324	OAK	10							10
	x	6325	OAK	9							9
	x	6326	OAK	8							8
	x	6327	OAK	23	17	15					23
	x	6328	OAK	12							12
	x	6329	OAK	10							10
	x	6330	OAK	12							12
	x	6331	OAK	10							10
	x	6332	OAK	8							8
	x	6333	OAK	13	9	8					13
	x	6334	OAK	12	9	5					12
	x	6335	OAK	9							9
	x	6336	OAK	10							10
	x	6337	OAK	13							13
	x	6338	OAK	13	9	8					13
	x	6339	OAK	9							9
	x	6340	OAK	15	10	10					15
	x	6341	OAK	9							9
	x	6342	OAK	12	9	5					12
	x	6343	OAK	14	10	8					14
	x	6344	OAK	23	18	10					23
	x	6345	OAK	8							8
	x	6346	OAK	9							9
	x	6347	OAK	8							8
	x	6348	OAK	12							12
	x	6349	OAK	10							10
	x	6350	OAK	12							12
	x	6351	OAK	9							9
	x	6352	OAK	12							12
	x	6353	OAK	13							13

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diameters						Total Size
	x	6354	OAK	13							13
	x	6355	OAK	11							11
	x	6356	OAK	9							9
	x	6357	OAK	9							9
	x	6358	OAK	10							10
	x	6359	OAK	9							9
	x	6360	OAK	8							8
	x	6361	OAK	8							8
	x	6362	OAK	9							9
	x	6363	OAK	10							10
	x	6364	OAK	11							11
	x	6365	OAK	10							10
	x	6366	OAK	11							11
	x	6367	OAK	10							10
	x	6368	OAK	9							9
	x	6369	OAK	10							10
x		6821	OAK	24							24
	x	6822	ASH	11							11
	x	6823	ASH	10							10
x		6824	OAK	18							18
x		6825	OAK	24							24
	x	6826	OAK	17							12
	x	6827	OAK	11							11
	x	6828	OAK	9							9
	x	6829	OAK	9							9
x		6830	OAK	11							11
x		6831	OAK	16	13	7					16
x		6832	OAK	13	9	9					13
x		6833	OAK	13							13
x		6834	OAK	13							13
x		6835	OAK	8							8
x		6836	OAK	9							9
x		6837	OAK	20	15	10					20
x		6838	OAK	14	11	7					14
x		6839	OAK	12							12
	x	6840	OAK	8							8
	x	6841	OAK	15							15
	x	6842	OAK	10							10
	x	6843	OAK	11							11
	x	6844	OAK	11	9	5					11
	x	6845	OAK	22	11	9	8	6			22
x		6846	OAK	14	11	6					14
	x	6847	OAK	9							9
	x	6848	OAK	9							9
	x	6849	OAK	8							8
	x	6850	OAK	8							8
	x	6851	OAK	13							13
x		6980	OAK	10							10
x		6981	OAK	14	11	7					14
	x	6982	OAK	19							19
	x	6983	CDE	13	10	7					13
	x	6984	CDE	11							11
	x	6985	OAK	13							13
	x	6986	OAK	13							13
	x	6987	OAK	9							9
	x	6988	OAK	12							12
	x	6989	OAK	11							11
	x	6990	OAK	9							9
	x	6991	OAK	11							11
	x	6992	OAK	16	11	11					16
	x	6993	OAK	13							13
	x	6994	OAK	12							12
	x	6995	OAK	8							8
	x	6996	OAK	12							12
	x	6997	OAK	12							12
	x	6998	OAK	42	24	19	19				42
	x	6999	OAK	27							27
	x	7000	OAK	15							15
	x	7001	OAK	10							10
x		7013	OAK	10							10
x		7014	OAK	10							10
x		7015	OAK	8							8
x		7016	OAK	18	13	10					18
	x	7017	OAK	11	8	6					11
	x	7018	OAK	8							8
x		7019	OAK	22							22
	x	7020	OAK	25	14	12	10				25
x		7021	OAK	14							14
x		7022	OAK	26	14	13	10				26
x		7023	OAK	9							9
x		7024	OAK	14	9	9					14
	x	7025	OAK	10							10
	x	7026	OAK	11							11
	x	7027	OAK	8							8
	x	7028	OAK	9							9
	x	7029	OAK	14							14
	x	7030	OAK	12							12
	x	7031	OAK	18							18
	x	7032	OAK	12							12
	x	7033	OAK	15							15
	x	7034	OAK	9							9
	x	7035	OAK	10							10
	x	7036	OAK	15	9	6	5				15
	x	7037	OAK	13							13
	x	7038	OAK	9							9
	x	7039	OAK	10							10
	x	7040	OAK	11							11
	x	7041	OAK	9							9
	x	7042	OAK	11							11
	x	7043	OAK	11							11
x		7044	OAK	14	11	6					14
x		7045	OAK	11							11
	x	7046	OAK	12	9	5					12
	x	7047	OAK	8							8
	x	7048	OAK	8							8
	x	7049	OAK	8							8
	x	7050	OAK	10							10
	x	7051	OAK	11							11
	x	7052	OAK	8							8
	x	7053	OAK	9							9
	x	7054	OAK	8							8
	x	7055	OAK	13	9	8					13
	x	7056	OAK	16	13	6					16
x		7057	OAK	33	15	15	11	7			33
x		7058	OAK	17							17
	x	7059	OAK	13							13
	x	7060	OAK	11							11
	x	7061	OAK	8							8
	x	7062	OAK	9							9
	x	7063	OAK	8							8
	x	7064	OAK	9							9
	x	7065	OAK	9							9
	x	7066	OAK	12							12
	x	7067	OAK	9							9
	x	7068	OAK	8							8
	x	7069	CDE	24	12	12	12				24
	x	7070	OAK	14							14
	x	7071	OAK	8							8
	x	7072	OAK	12							12
	x	7073	CDE	10							10
	x	7074	OAK	12							12
	x	7075	CDE	13							13
	x	7076	CDE	9							9
	x	7077	CDE	11							11
	x	7078	OAK	8							8

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diameters						Total Size
	x	7079	OAK	12							12
	x	7080	CDE	11							11
	x	7081	OAK	12							12
	x	7082	CDE	12							12
	x	7083	OAK	14							14
	x	7084	OAK	15							15
	x	7085	OAK	15							15
	x	7086	OAK	16							16
	x	7087	OAK	8							8
	x	7088	OAK	8							8
	x	7089	OAK	9							9
	x	7090	OAK	8							8
	x	7091	OAK	11	8	6					11
	x	7092	OAK	9							9
	x	7093	OAK	12	9	6					12
	x	7094	OAK	8							8
	x	7095	OAK	8							8
	x	7096	OAK	18	13	10					18
	x	7097	OAK	17	12	10					17
	x	7098	OAK	16	12	9					16
	x	7099	OAK	9							9
	x	7100	OAK	8							8
	x	7101	OAK	9							9
	x	7102	OAK	12	9	6					12
	x	7103	OAK	14							14
	x	7104	OAK	9							9
	x	7105	OAK	10							10
	x	7106	OAK	9							9
	x	7107	OAK	12							12
	x	7108	OAK	10							10
	x	7109	OAK	12							12
	x	7110	OAK	15							15
	x	7111	OAK	9							9
	x	7112	OAK	10							10
x		7113	OAK	8							8
x		7114	OAK	8							8
x		7115	OAK	15							15
x		7116	OAK	15							15
x		7117	OAK	8							8
x		7118	OAK	10							10
x		7119	OAK	8							8
x		7120	OAK	12							12
x		7121	OAK	9							9
x		7122	OAK	10							10
x		7123	OAK	10							10
x		7124	OAK	10							10
x		7125	OAK	9							9
x		7126	OAK	11							11
x		7127	OAK	12							12
x		7128	OAK	9							9
x		7129	OAK	12							12
	x	7130	OAK	11							11
	x	7131	OAK	8							8
	x	7132	OAK	11							11
	x	7133	OAK	8							8
x		7134	OAK	8							8
x		7135	OAK	11							11
	x	7136	OAK	9							9
x		7137	OAK	14	11	6					14
	x	7138	OAK	10							10
	x	7139	OAK	10							10
	x	7140	OAK	13	9	8					13
x		7141	OAK	9							9
x		7142	OAK	11	8	7					11
x		7143	OAK	13	9	8					13
x		7144	OAK	9							9
	x	7145	OAK	11	9	4					11
	x	7146	OAK	8							8
	x	7147	OAK	12							12
	x	7148	OAK	12	9	6					12
	x	7149	OAK	8							8
	x	7150	OAK	10							10
	x	7151	OAK	10							10
	x	7152	OAK	18							18
	x	7153	OAK	15	11	9					15
	x	7154	OAK	21	10	9	8	6			21
	x	7155	OAK	9							9
	x	7156	OAK	13							13
	x	7157	OAK	8							8
	x	7158	OAK	12	9	6					12
	x	7159	OAK	8							8
	x	7160	OAK	19	14	11					19
	x	7161	OAK	12							12
	x	7162	OAK	9							9
	x	7163	OAK	17	12	11					17
	x	7164	OAK	11							11
	x	7165	OAK	10							10
	x	7166	OAK	9							9
	x	7167	OAK	8							8
	x	7168	OAK	9							9
	x	7169	OAK	11							11
	x	7170	OAK	9							9
	x	7171	OAK	9							9
	x	7172	OAK	14							14
	x	7173	OAK	15							15
	x	7174	OAK	15	11	9					15
	x	7175	CDE	11							11
	x	7176	CDE	9							9
	x	7177	OAK	20							20
	x	7178	CDE	20	14	13					20
	x	7179	CDE	9							9
	x	7180	CDE	9							9
	x	7181	OAK	13	9	8					13
	x	7182	OAK	10							10
	x	7183	OAK	14	10	8					14
	x	7184	OAK	12	8	8					12
	x	7185	OAK	20	10	8	7	6			20
	x	7186	OAK	10							10
	x	7187	OAK	11							11
	x	7188	OAK	8							8
	x	7189	OAK	8							8
	x	7190	OAK	8							8
	x	7191	OAK	10							10
	x	7192	OAK	24	10	10	10	9			24
	x	7193	OAK	8							8
	x	7194	OAK	10							10
	x	7195	OAK	9							9
	x	7196	OAK	12							12
	x	7197	OAK	9							9
	x	7198	OAK	28	24	8					28
	x	7199	OAK	10							10
	x	7200	OAK	27	10	9	9	9			27
	x	7201	OAK	10							10
	x	7202	OAK	17	12	10					17
x		7203	OAK	13	10	6					13
	x	7204	OAK	18	11

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diamenters				Total Size
	x	8016	OAK	12					12
	x	8017	OAK	9					9
	x	8018	OAK	9					9
	x	8019	OAK	13					13
	x	8020	OAK	9					9
	x	8021	OAK	10					10
	x	8022	OAK	8					8
	x	8023	OAK	8					8
	x	8024	OAK	9					9
	x	8025	OAK	9					9
	x	8026	OAK	12					12
	x	8027	OAK	8					8
	x	8028	OAK	9					9
	x	8029	OAK	8					8
	x	8030	OAK	9					9
	x	8031	OAK	9					9
	x	8032	OAK	9					9
	x	8033	OAK	8					8
	x	8034	OAK	9					9
	x	8035	OAK	8					8
	x	8036	OAK	8					8
	x	8037	OAK	8					8
	x	8038	OAK	9					9
	x	8039	OAK	16	10	7	6		16
	x	8040	OAK	14	8	6	6		14
	x	8051	OAK	9					9
	x	8052	OAK	8					8
	x	8053	OAK	9					9
	x	8054	OAK	11					11
	x	8055	OAK	8					8
	x	8056	OAK	8					8
	x	8057	OAK	8					8
	x	8058	OAK	9					9
	x	8059	OAK	8					8
	x	8060	OAK	9					9
	x	8061	OAK	9					9
	x	8051	OAK	9					9
	x	8052	OAK	8					8
	x	8053	OAK	9					9
	x	8054	OAK	11					11
	x	8055	OAK	8					8
	x	8056	OAK	8					8
	x	8057	OAK	8					8
	x	8058	OAK	9					9
	x	8059	OAK	8					8
	x	8060	OAK	9					9
	x	8061	OAK	9					9
	x	8188	OAK	8					8
	x	8189	OAK	9					9
	x	8194	OAK	19	14	11			19
x		8200	OAK	8					8
x		8201	OAK	14					14
x		8202	OAK	8					8
x		8203	OAK	10					10
x		8204	OAK	9					9
x		8205	OAK	9					9
	x	8206	OAK	8					8
	x	8207	OAK	12					12
	x	8208	OAK	13					13
x		8209	OAK	9					9
x		8210	OAK	14					14
x		8211	OAK	11					14
x		8212	OAK	11					14
x		8213	OAK	12					14
x		8260	OAK	11				0	11
x		8261	OAK	9				0	9
x		8262	OAK	8				0	8
x		8263	OAK	15	10	9		10	25
	x	8264	OAK	15	10	9		10	25
x		8265	OAK	8				0	8
	x	8320	OAK	13					13
	x	8321	OAK	10					10
	x	8322	OAK	8					8
	x	8323	OAK	19					19
	x	8324	OAK	10					10
	x	8325	OAK	9					9
	x	8328	OAK	11					11
	x	8329	OAK	8					8
	x	8330	OAK	13	9				13
	x	8331	OAK	11					11
	x	8332	OAK	10					10
	x	8333	OAK	14					14
	x	8334	OAK	12					12
	x	8335	OAK	12					12
	x	8336	OAK	12					12
	x	8384	OAK	8					8
	x	8385	OAK	9					9
	x	8386	OAK	10					10
x		8387	OAK	13	9	8			13
x		8388	OAK	8					8
x		8389	OAK	10					10
x		8390	OAK	8					8
x		8391	OAK	11					11
x		8392	OAK	14					14
x		8393	OAK	10					10
x		8394	OAK	9					9
x		8395	OAK	9					9
x		8396	OAK	10					10
x		8397	OAK	9					9
	x	8398	OAK	9					9
	x	8399	OAK	8					8
	x	8400	OAK	12					12
	x	8401	OAK	11					11
	x	8402	OAK	9					9
	x	8403	OAK	9					9
	x	8404	OAK	16	11	10			16
	x	8405	OAK	10					10
	x	8406	OAK	10					10
	x	8407	OAK	15	11	9			15
	x	8408	OAK	10					10
x		8409	OAK	12	8	8			12
	x	8410	OAK	8					8
	x	8411	OAK	8					8
x		8412	OAK	10					10
x		8413	OAK	10					10
x		8414	OAK	10					10
x	x	8428	OAK	9					9
x	x	8465	OAK	8					8
x	x	8466	OAK	8					8
	x	8508	OAK	8					8
		8597	OAK	9					9
		8598	OAK	9					9
		8599	OAK	10					10
x		8600	OAK	10					10
x		8601	OAK	10					10
x		8602	OAK	10					10
x	x	8603	OAK	8					8
x	x	8604	OAK	10					10
x	x	8605	OAK	10					10
	x	8606	OAK	8					8
	x	8607	OAK	8					8
	x	8608	OAK	22	12	10	10		22
	x	8609	OAK	11					11
	x	8610	OAK	12					12
	x	8611	OAK	15					15

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diamenters				Total Size
	x	8612	OAK	10	8	5			10
	x	8613	OAK	17	13	9			17
	x	8614	OAK	13	9	5	4		13
	x	8615	OAK	13	9	9			13
	x	8616	OAK	12	9	6			12
	x	8617	OAK	8					8
	x	8618	OAK	12					12
	x	8619	OAK	8					8
	x	8620	OAK	9					9
	x	8621	OAK	14	10	9			14
	x	8622	OAK	9					9
	x	8623	OAK	11	8	7			11
	x	8624	OAK	12					12
	x	8625	OAK	10	8	4			10
	x	8626	OAK	12	9	7			12
	x	8627	OAK	8					8
	x	8628	OAK	9					9
	x	8629	OAK	8					8
	x	8630	OAK	10					10
		8631	OAK	11	9	4			11
		8632	OAK	19	15	8			19
		8633	OAK	9					9
x		8634	OAK	9					9
x		8635	OAK	9					9
x		8636	OAK	9					9
x		8637	OAK	8					8
x		8638	OAK	8					8
x	x	8639	OAK	15					15
x	x	8640	OAK	10					10
x	x	8641	OAK	14					14
	x	8642	OAK	10					10
	x	8643	OAK	8					8
	x	8644	OAK	8					8
	x	8645	OAK	10					10
	x	8646	OAK	9					9
	x	8647	OAK	8					8
	x	8648	OAK	12	8	8			12
	x	8649	OAK	12	8	8			12
	x	8650	OAK	13	9	9			13
	x	8659	OAK	8					8
	x	8660	OAK	9					9
	x	8661	OAK	11					11
	x	8662	OAK	8					8
	x	8663	OAK	8					8
	x	8664	OAK	9					9
	x	8665	OAK	10					10
	x	8666	OAK	8					8
	x	8667	OAK	8					8
	x	8668	OAK	13					13
	x	8669	OAK	8					8
	x	8670	OAK	9					9
	x	8671	OAK	9					9
		8672	OAK	14					14
		8673	OAK	16	11	10			16
		8674	OAK	11	8	7			11
x	x	8675	OAK	10					10
x	x	8676	OAK	14	8	7	7		14
x	x	8677	OAK	13	10	6			13
	x	8678	OAK	8					8
	x	8679	OAK	8					8
	x	8680	OAK	9					9
	x	8681	OAK	9					9
	x	8682	OAK	12					12
	x	8683	OAK	8					8
	x	8684	OAK	8					8
	x	8685	OAK	9					9
	x	8686	OAK	10	8	4			10
	x	8687	OAK	12	9	7			12
	x	8688	OAK	11					11
	x	8689	OAK	9					9
	x	8690	OAK	10					10
	x	8691	OAK	8					8
	x	8692	OAK	19	13	6	6		19
	x	8693	OAK	8					8
	x	8694	OAK	9					9
	x	8695	OAK	17	9	8	5		17
	x	8696	OAK	12	9	6			12
		8697	OAK	8					8
		8698	OAK	8					8
		8699	OAK	10					10
x		8700	OAK	12	8	7			12
x		8701	OAK	8					8
x		8702	OAK	10	8	5			10
x	x	8709	OAK	24					24
x	x	8710	OAK	9					9
x	x	8729	OAK	13					13
	x	8730	OAK	14					14
	x	8731	OAK	14					14
	x	8732	OAK	11					11
	x	8733	OAK	14					14
	x	8734	OAK	11					11
	x	8735	OAK	8					8
	x	8736	OAK	8					8
	x	8737	OAK	13					13
	x	8738	OAK	17					17
	x	8739	OAK	16					16
	x	8740	OAK	10					10
	x	8741	OAK	8					8
	x	8742	OAK	8					8
	x	8743	OAK	8					8
	x	8744	OAK	8					8
	x	8745	OAK	11					11
	x	8746	OAK	15					15
	x	8747	OAK	10					10
	x	8748	OAK	9					9
	x	8749	OAK	17					17
	x	8750	OAK	13					13
	x	8751	CDE	16					16
	x	8752	OAK	12	8	8			12
	x	8753	OAK	10					10
	x	8754	OAK	8					8
	x	8755	OAK	8					8
	x	8756	OAK	9					9
		8757	CDE	28					28
	x	8758	OAK	9					9
	x	8759	OAK	8					8
x	x	8760	OAK	13	9	5			13
	x	8761	OAK	8					8
	x	8762	OAK	9					9
	x	8763	OAK	9					9
	x	8764	OAK	9					9
	x	8765	OAK	8					8
		8766	OAK	9					9
		8767	CDE	11					11
		8768	CDE	11					11
x	x	8769	OAK	12					12
x	x	8770	OAK	12					12
x	x	8771	OAK	14					14
	x	8772	OAK	9					9
	x	8773	OAK	15					15
	x	8774	OAK	12					12
	x	8775	OAK	12					12
	x	8776	OAK	11					11
	x	8777	OAK	15					15
	x	8778	OAK	15					15

Big Sky Ranch Tree List (Residential)

Saved	Remove	Tree #	Tree Type	Calc'd Tree	Multi-trunk Diamenters				Total Size
	x	8779	OAK	13					13
	x	8780	OAK	20	14	13			20
	x	8781	OAK	11					11
	x	8782	OAK	12					12
	x	8783	OAK	8					8
	x	8784	OAK	16					16
	x	8785	OAK	11					11
	x	8786	OAK	15					15
	x	8787	OAK	10					10
	x	8788	OAK	19					19

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User: JBANISTER
Last Modified: Jan. 26, 19 - 12:03
Plot Date/Time: Apr. 26, 19 - 19:06:23

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Firm Registration Number: 3937

TREE LIST II

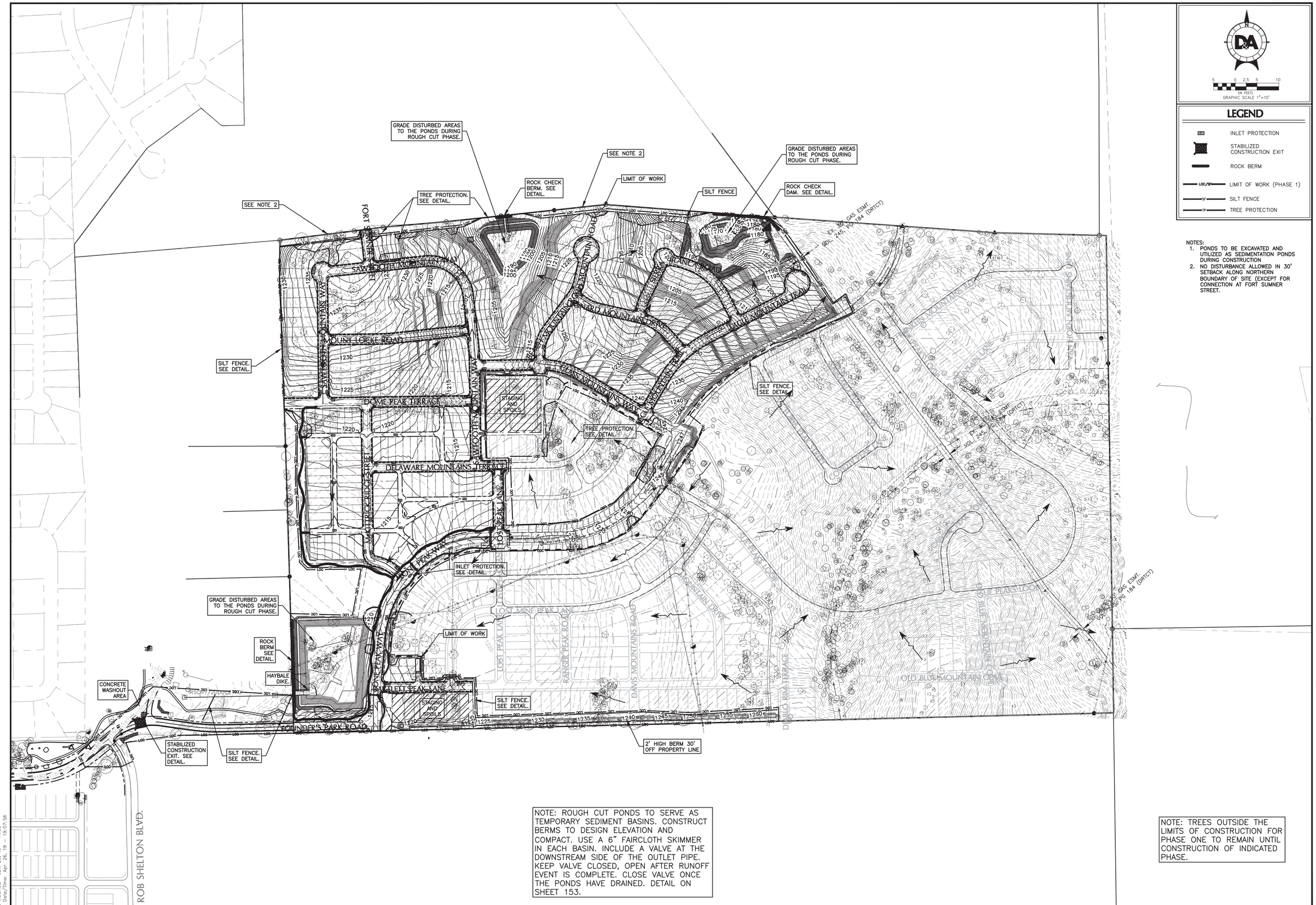
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
29
OF 175

Project No.:
1691-002



LEGEND

- INLET PROTECTION
- STABILIZED CONSTRUCTION EXIT
- ROCK BERM
- LOC/SF — LIMIT OF WORK (PHASE 1)
- SF — SILT FENCE
- TP — TREE PROTECTION

NOTES:
1. PONDS TO BE EXCAVATED AND UTILIZED AS SEDIMENTATION PONDS DURING CONSTRUCTION
2. NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET.

NOTE: ROUGH CUT PONDS TO SERVE AS TEMPORARY SEDIMENT BASINS. CONSTRUCT BERMS TO DESIGN ELEVATION AND COMPACT. USE A 6" FAIRCLOTH SKIMMER IN EACH BASIN. INCLUDE A VALVE AT THE DOWNSTREAM SIDE OF THE OUTLET PIPE. KEEP VALVE CLOSED, OPEN AFTER RUNOFF EVENT IS COMPLETE. CLOSE VALVE ONCE THE PONDS HAVE DRAINED. DETAIL ON SHEET 153.

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Firm Registration Number: 3937

OVERALL EROSION & SEDIMENTATION CONTROL PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 30 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_ES.dwg
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Last Modified: Jan. 26, 19 - 11:36
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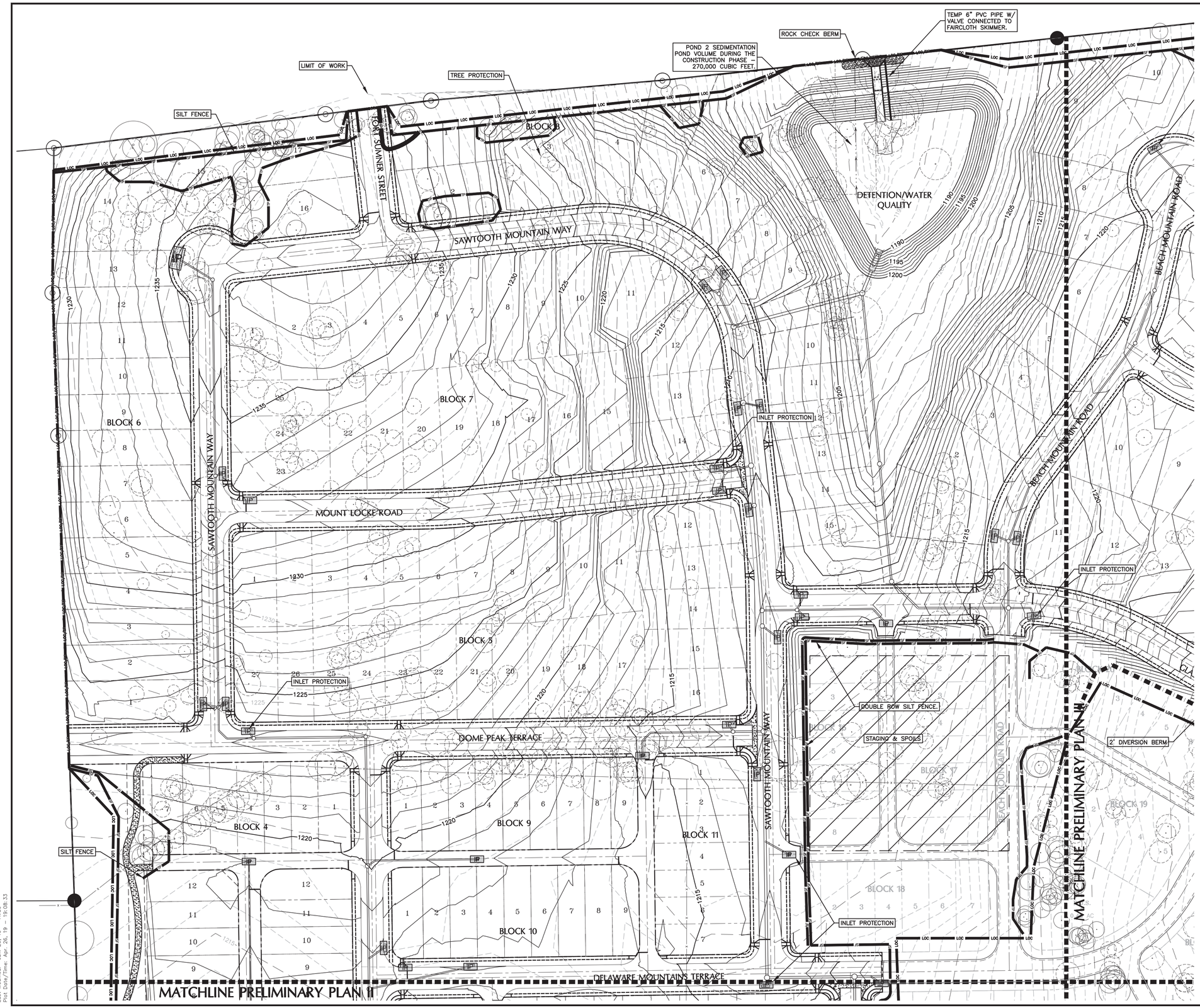
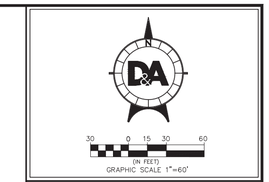
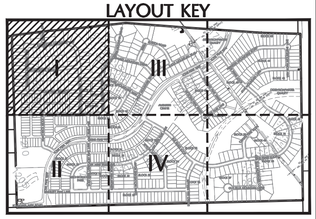




LEGEND

- IP — INLET PROTECTION
- STABILIZED CONSTRUCTION EXIT
- ROCK BERM
- HAY BALE DIKE
- LOC/SP — LIMIT OF WORK (PHASE 1)
- SF — SILT FENCE
- TP — TREE PROTECTION

LAYOUT KEY



NOTES:

1. PONDS TO BE EXCAVATED AND UTILIZED AS SEDIMENTATION PONDS DURING CONSTRUCTION. POND 2 SEDIMENTATION POND VOLUME DURING THE CONSTRUCTION PHASE – 270,000 CUBIC FEET.
2. NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET.

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Firm Registration Number: 3937

EROSION & SEDIMENTATION CONTROL PLAN I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 31 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_ES.dwg
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Last Modified: Jan. 26, 19 – 11:36
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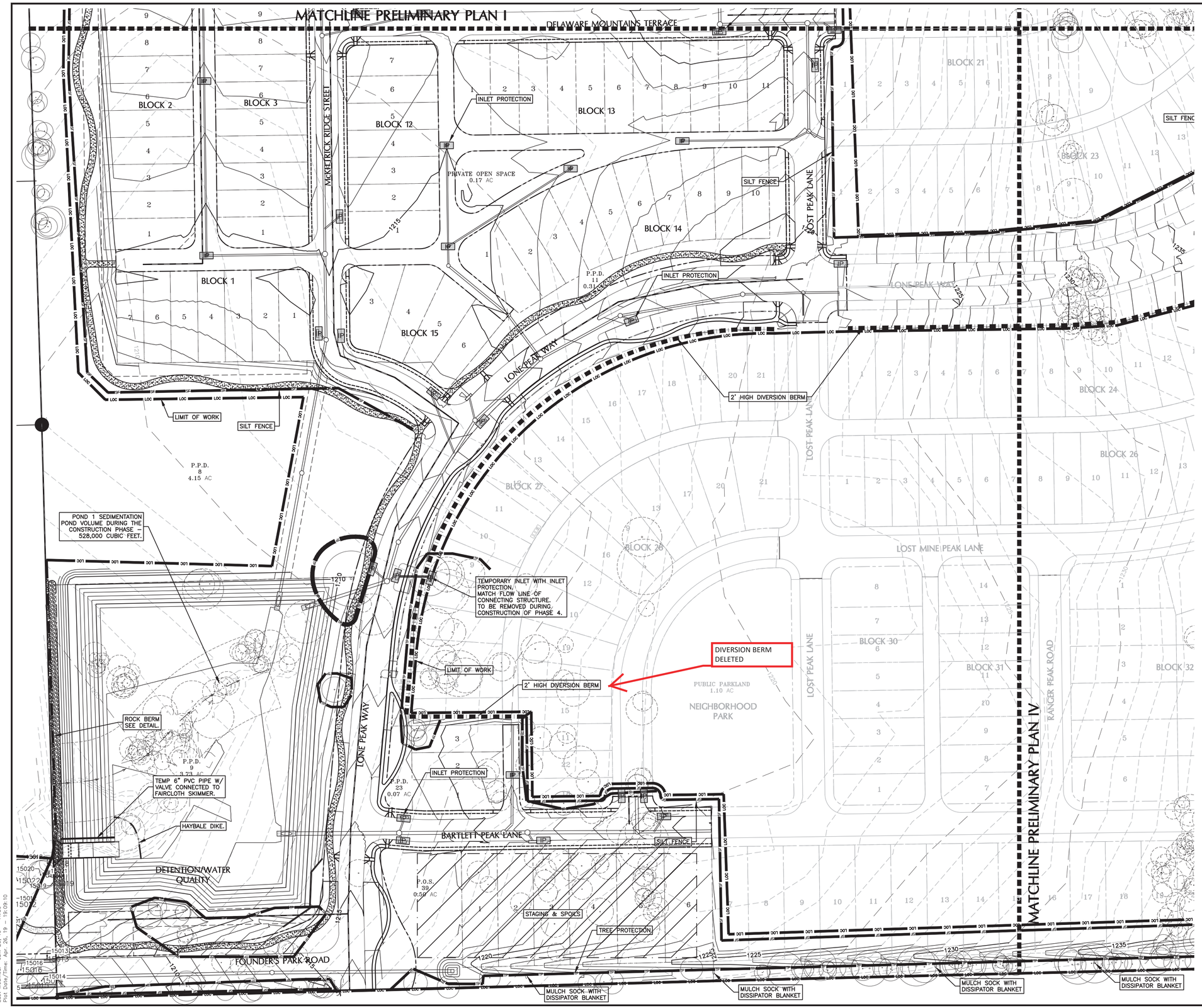
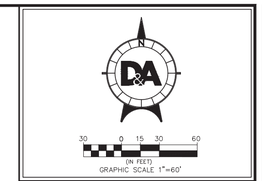
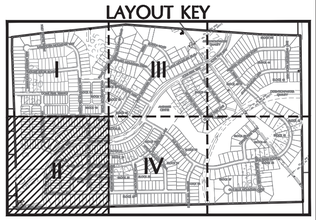




LEGEND

- IP — INLET PROTECTION
- STABILIZED CONSTRUCTION EXIT
- ROCK BERM
- HAY BALE DIKE
- LOC/SF — LIMIT OF WORK (PHASE 1)
- SF — SILT FENCE
- TP — TREE PROTECTION

LAYOUT KEY



NOTES:

1. PONDS TO BE EXCAVATED AND UTILIZED AS SEDIMENTATION PONDS DURING CONSTRUCTION. POND 1 SEDIMENTATION POND VOLUME DURING THE CONSTRUCTION PHASE – 528,000 CUBIC FEET.
2. NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET.

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Firm Registration Number: 3937

EROSION & SEDIMENTATION CONTROL PLAN II

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 32 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_ES.dwg
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Last Modified: Jan. 26, 19 – 11:36
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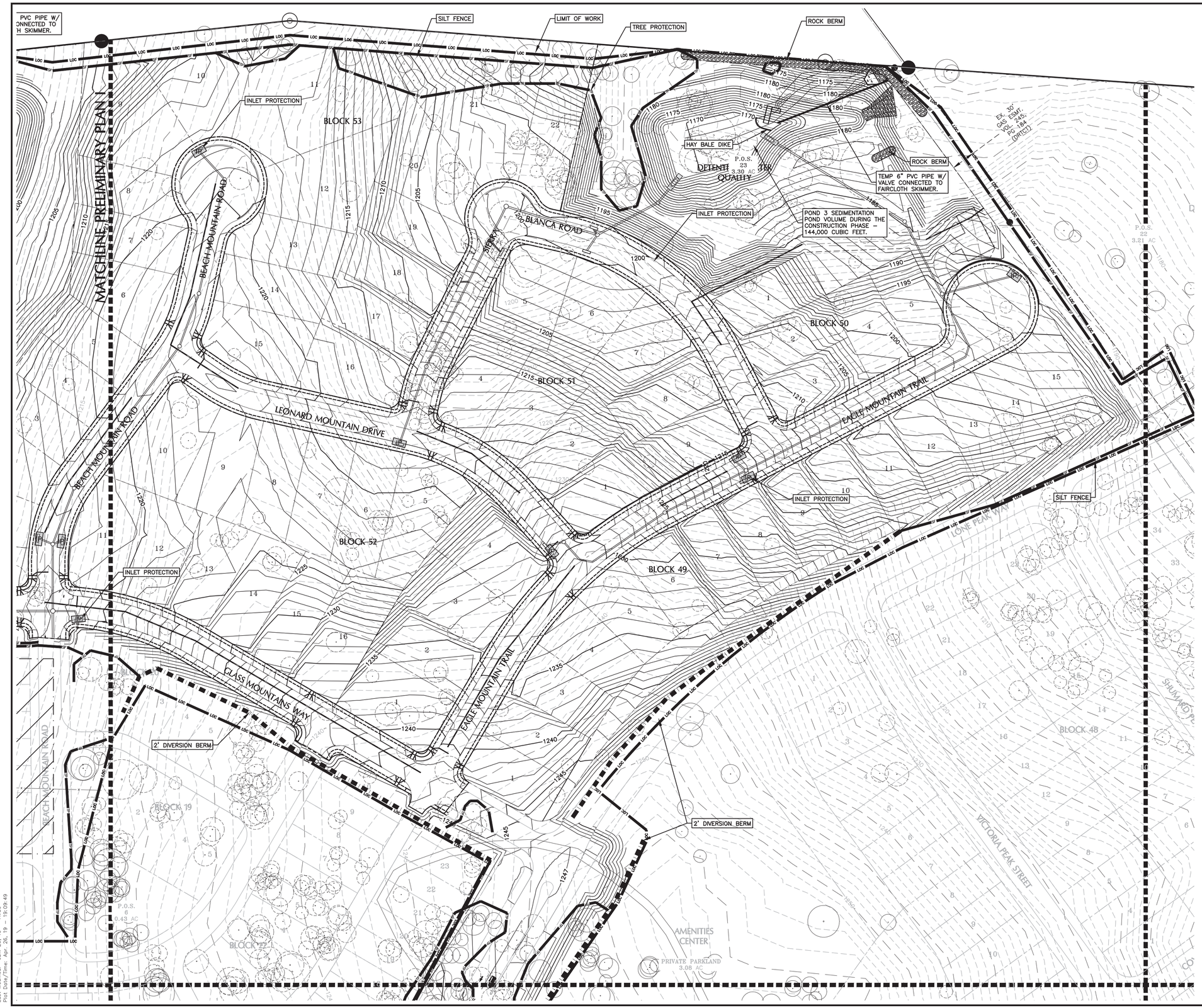
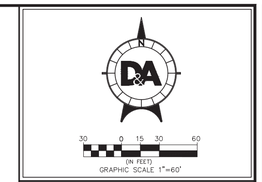
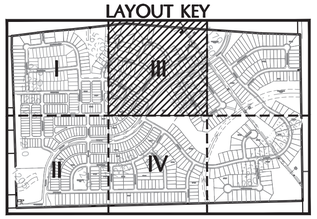




LEGEND

- IP — INLET PROTECTION
- STABILIZED CONSTRUCTION EXIT
- ROCK BERM
- HAY BALE DIKE
- LOC/SF — LIMIT OF WORK (PHASE 1)
- SF — SILT FENCE
- TP — TREE PROTECTION

LAYOUT KEY



NOTES:

1. PONDS TO BE EXCAVATED AND UTILIZED AS SEDIMENTATION PONDS DURING CONSTRUCTION. POND 3 SEDIMENTATION POND VOLUME DURING THE CONSTRUCTION PHASE – 144,000 CUBIC FEET.
2. NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET.

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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EROSION & SEDIMENTATION CONTROL PLAN III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
7/25/19

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 33 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_ES.dwg
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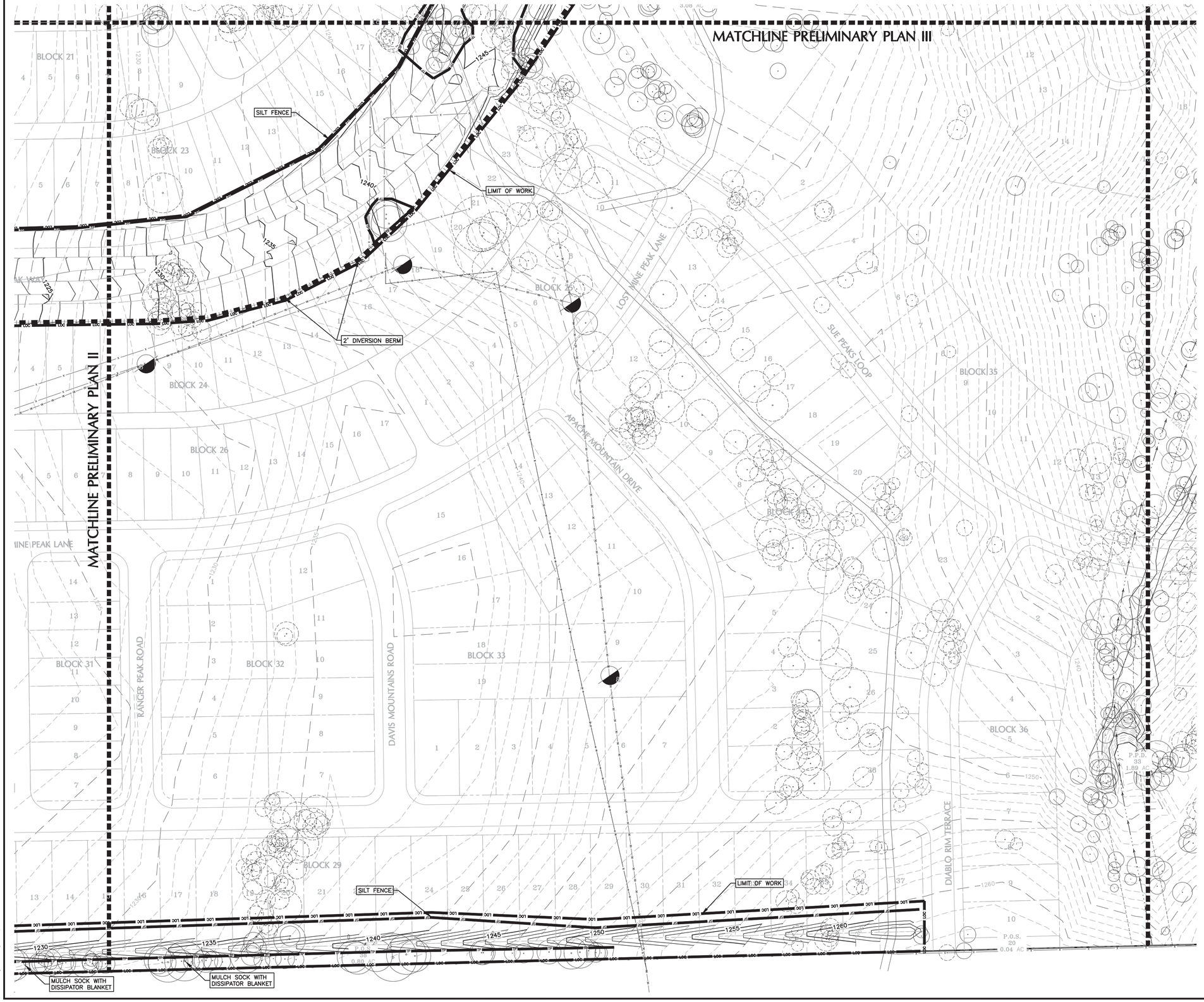
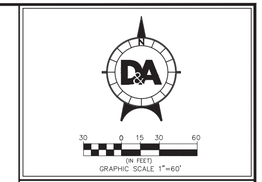
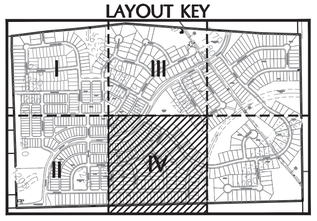




LEGEND

- IP — INLET PROTECTION
- STABILIZED CONSTRUCTION EXIT
- ROCK BERM
- HAY BALE DIKE
- LOC/SF — LIMIT OF WORK (PHASE 1)
- SF — SILT FENCE
- TP — TREE PROTECTION

LAYOUT KEY



NOTES:
1. PONDS TO BE EXCAVATED AND UTILIZED AS SEDIMENTATION PONDS DURING CONSTRUCTION. POND 3 SEDIMENTATION POND VOLUME DURING THE CONSTRUCTION PHASE – 144,000 CUBIC FEET.
2. NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET.

NOTE: TREES OUTSIDE THE LIMITS OF CONSTRUCTION FOR PHASE ONE TO REMAIN UNTIL CONSTRUCTION OF INDICATED PHASE.

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Firm Registration Number: 3937

EROSION & SEDIMENTATION CONTROL PLAN IV

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 34 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\eng\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_ES.dwg
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Last Modified: Jan. 26, 19 – 11:36
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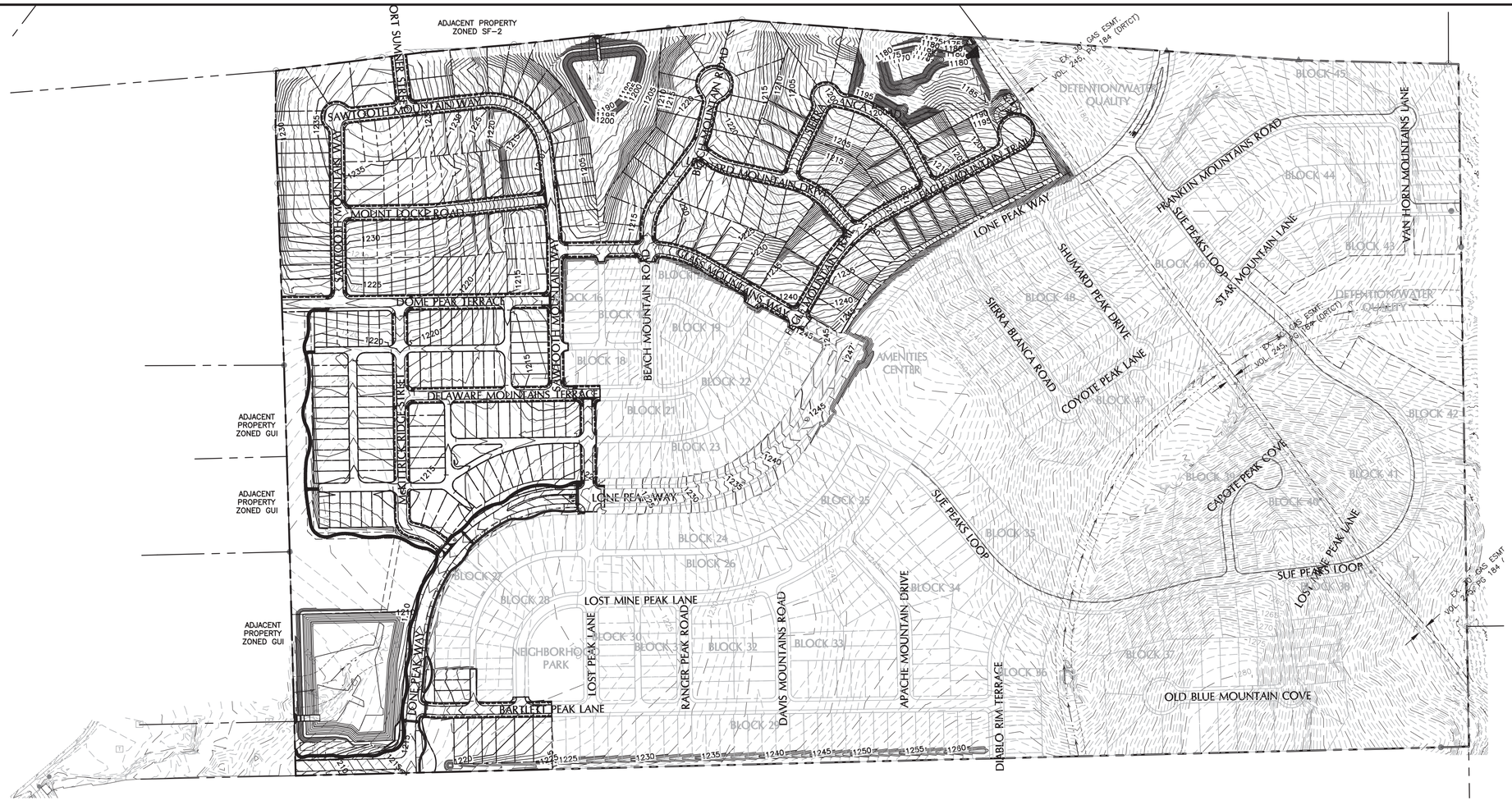

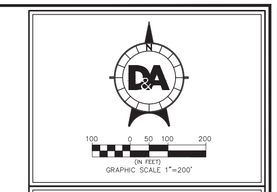

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

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www.doucetengineers.com
Firm Registration Number: 3937

OVERALL GRADING PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 35 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-GR.dwg
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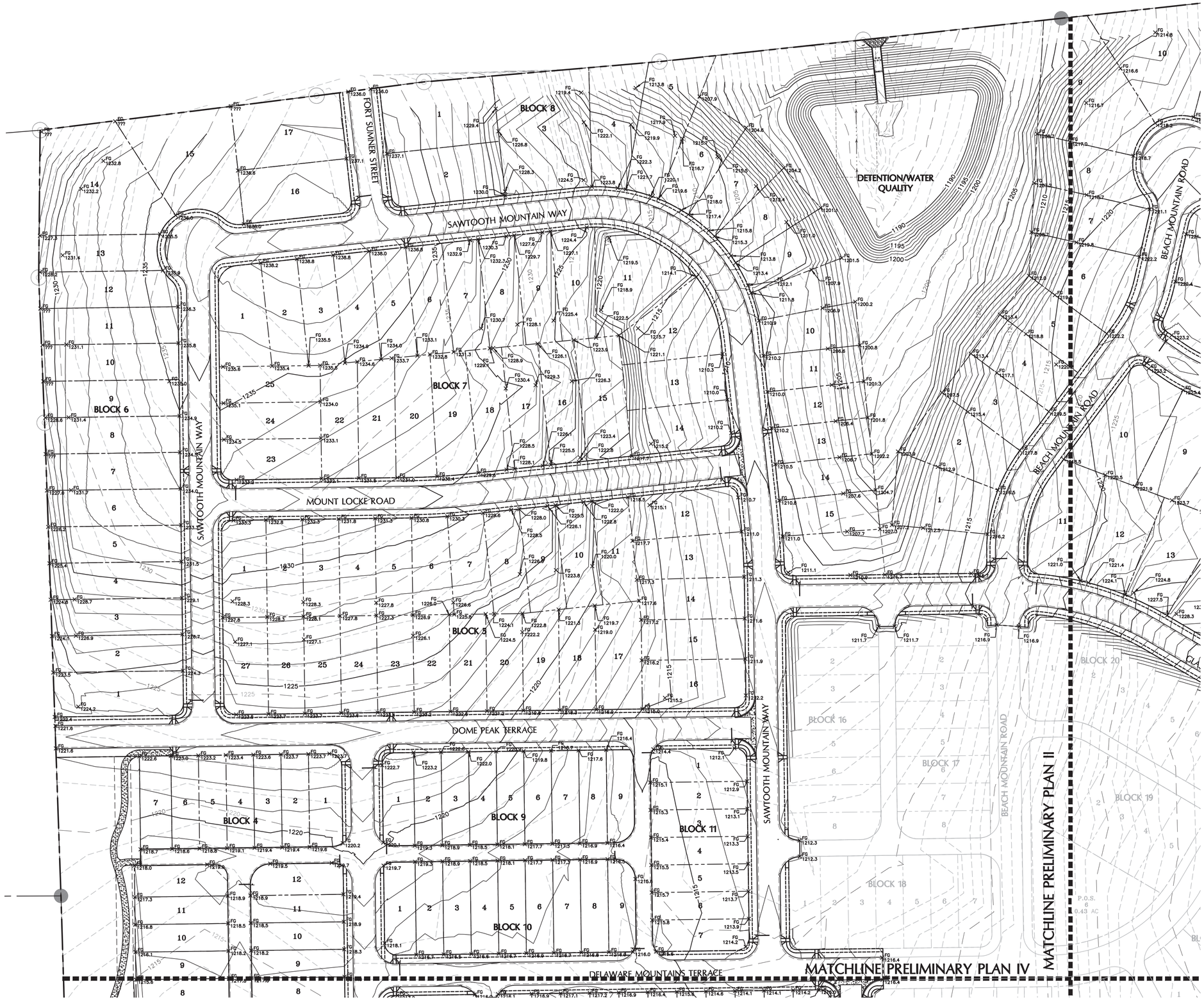
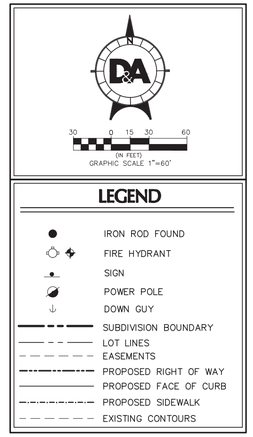
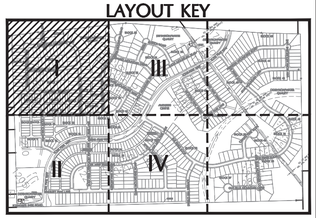




ABBREVIATIONS:
P.O.S. = PRIVATE OPEN SPACE
P.P.D. = PUBLIC PARKLAND DEDICATION

LAYOUT KEY



NOTE: SIDEWALK RAMP INSTALLATIONS SHALL NOT EXCEED 2% CROSS SLOPE. INCLUDING SECTION OF STREET @ CROSSING. RAMP RUN SLOPE SHALL NOT EXCEED 1:12 OR 8.33%. AND A MAXIMUM RISE OF 6".

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www.doucetengineers.com
Firm Registration Number: 3937

GRADING PLAN I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 36 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-GR.dwg
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Last Modified: Mar. 15, 19 - 11:52
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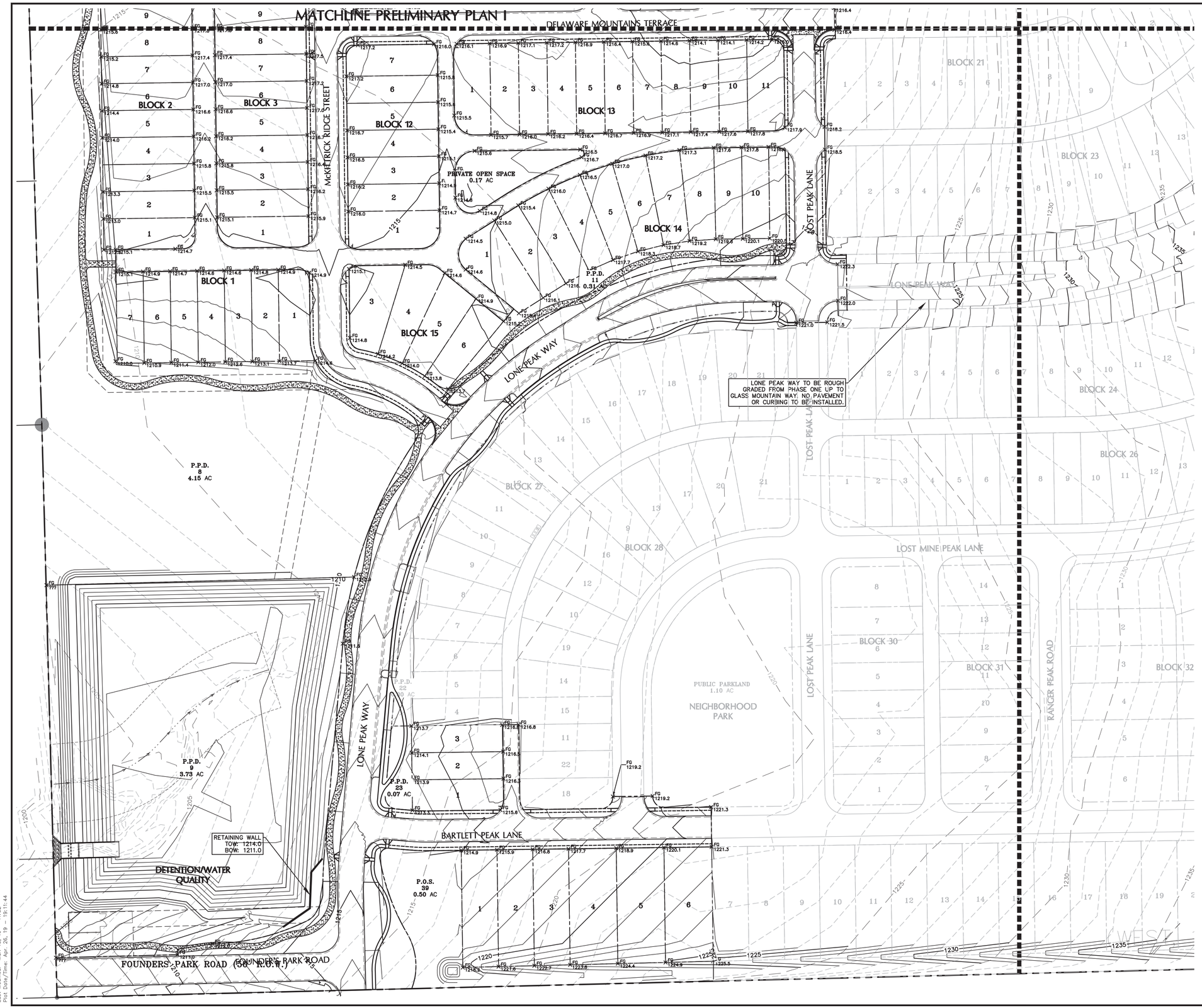
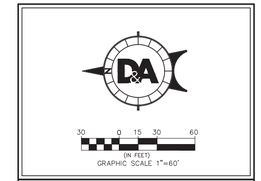


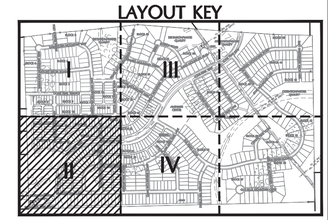


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

ABBREVIATIONS:
P.O.S. = PRIVATE OPEN SPACE
P.P.D. = PUBLIC PARKLAND DEDICATION

LAYOUT KEY



NOTE: SIDEWALK RAMP INSTALLATIONS SHALL NOT EXCEED 2% CROSS SLOPE. INCLUDING SECTION OF STREET @ CROSSING. RAMP RUN SLOPE SHALL NOT EXCEED 1:12 OR 8.33%. AND A MAXIMUM RISE OF 6".

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www.doucetengineers.com
Firm Registration Number: 3937

GRADING PLAN II

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

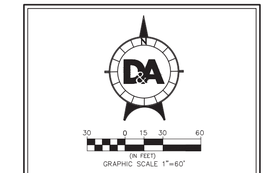
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 37 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-GR.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 11:52
Plot Date/Time: Apr. 26, 19 - 19:11:44

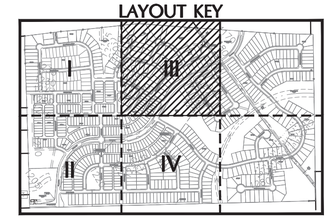


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

ABBREVIATIONS:
P.O.S. = PRIVATE OPEN SPACE
P.P.D. = PUBLIC PARKLAND DEDICATION

LAYOUT KEY



NOTE: SIDEWALK RAMP INSTALLATIONS SHALL NOT EXCEED 2% CROSS SLOPE. INCLUDING SECTION OF STREET @ CROSSING. RAMP RUN SLOPE SHALL NOT EXCEED 1:12 OR 8.33%. AND A MAXIMUM RISE OF 6".

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Firm Registration Number: 3937

GRADING PLAN III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
7/29/19

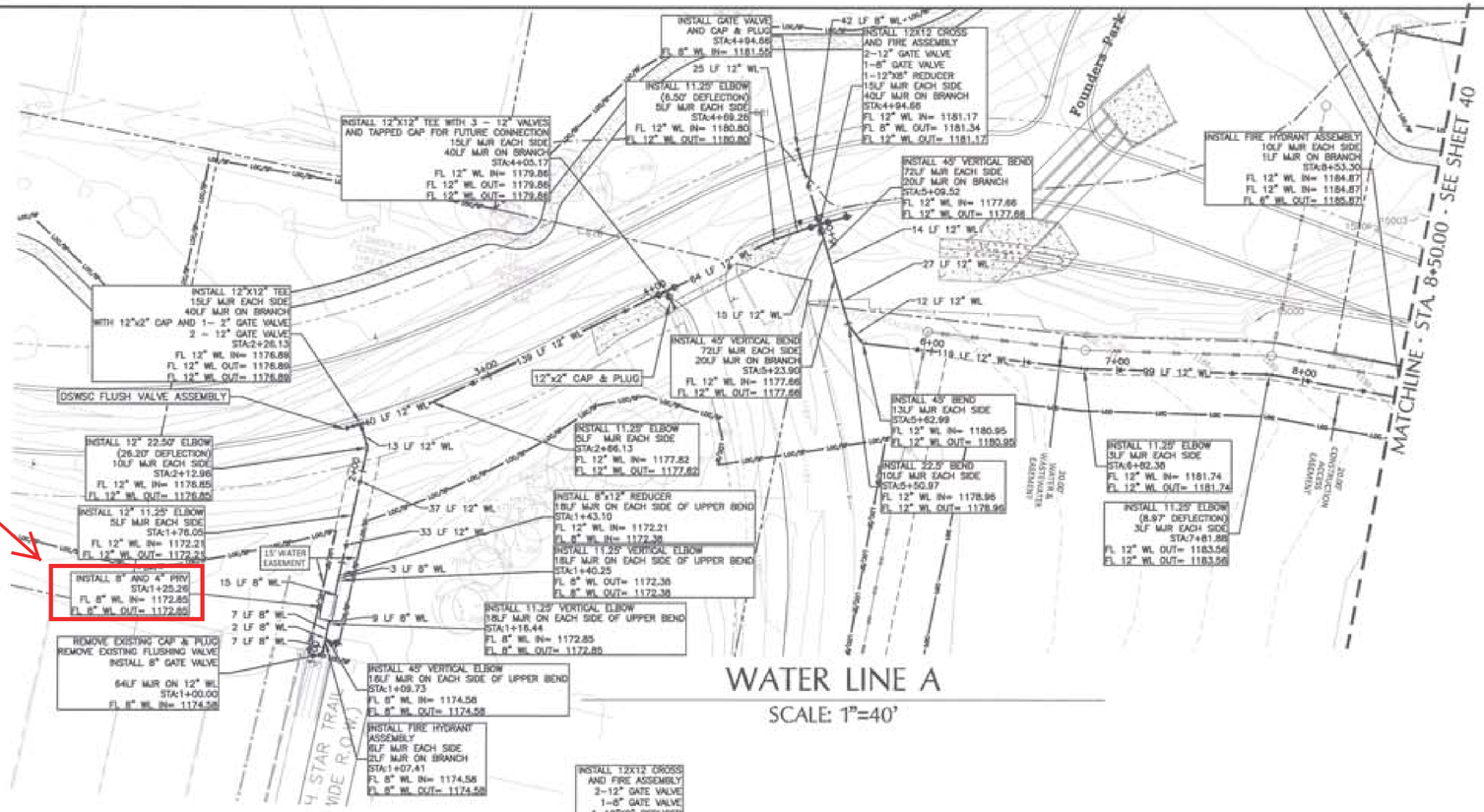
Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

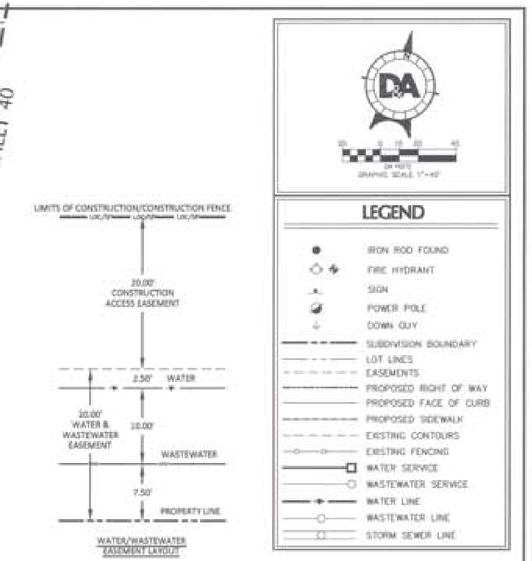
SHEET 38 OF 175

Project No.: 1691-002

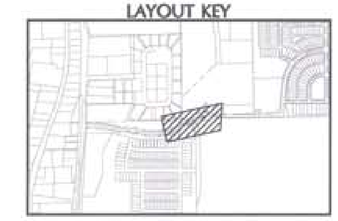
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-GR.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 11:52
Plot Date/Time: Apr. 26, 19 - 19:12:04

MOVED PRV TO THIS LOCATION _ DELETED PRV @FORT SUMNER

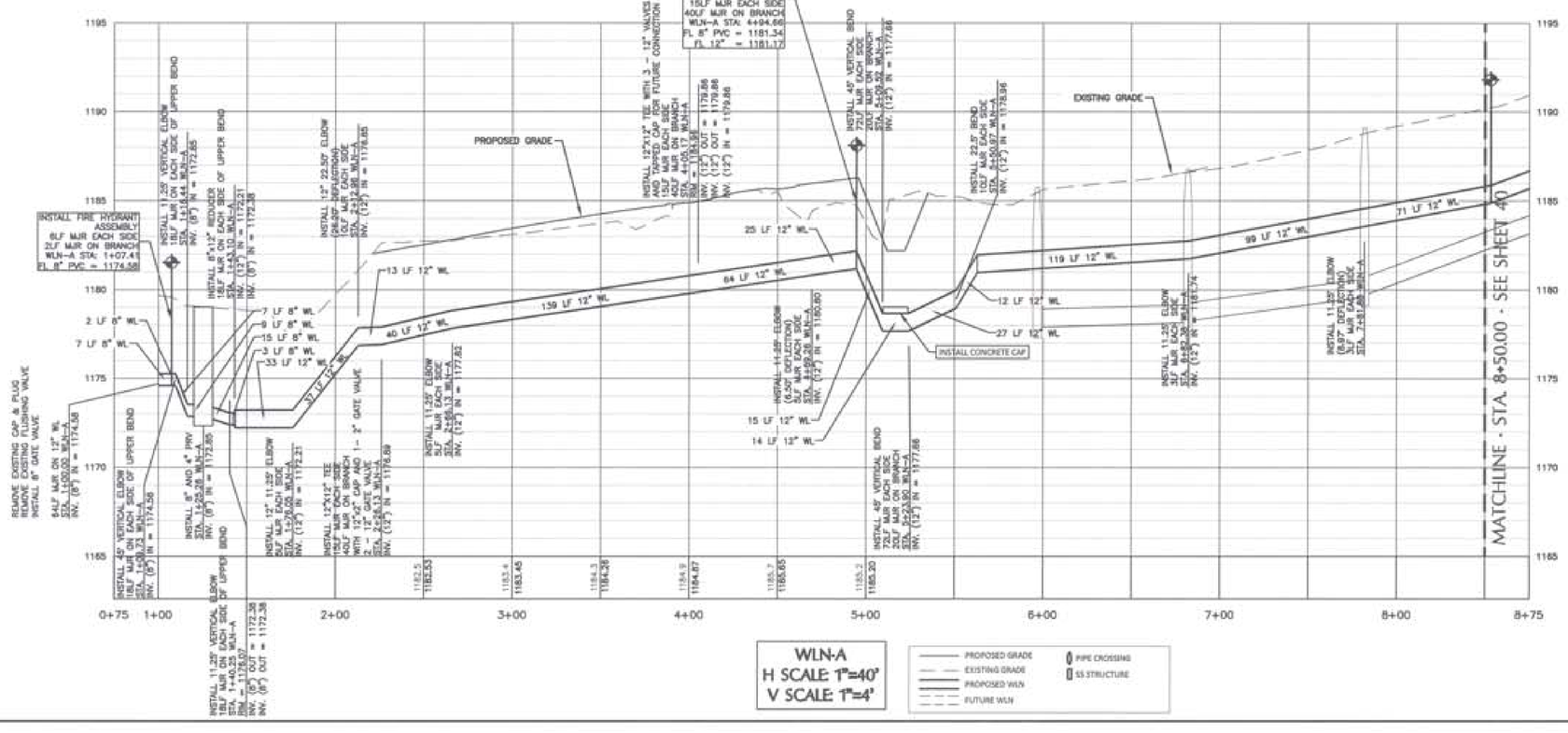


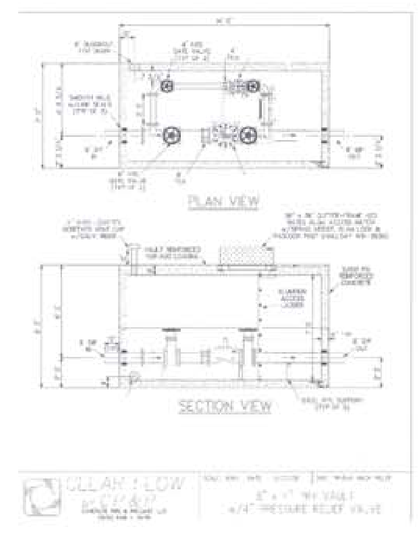


LAYOUT KEY



NOTES:
1. ALL TREES SHOWN ARE TO BE SAVED. SEE THE EROSION CONTROL PLANS, SHEET 13 & 14, FOR TREE PROTECTION.
2. CONTRACTOR TO MAINTAIN EXISTING FENCE ALONG CANNON PROPERTY.





NOT IN APPROVED PLANS. THIS IS FOR USE TO INSTALL PRV ONLY & TO BE INCORPORATED INTO AS-BUILT PLANS.

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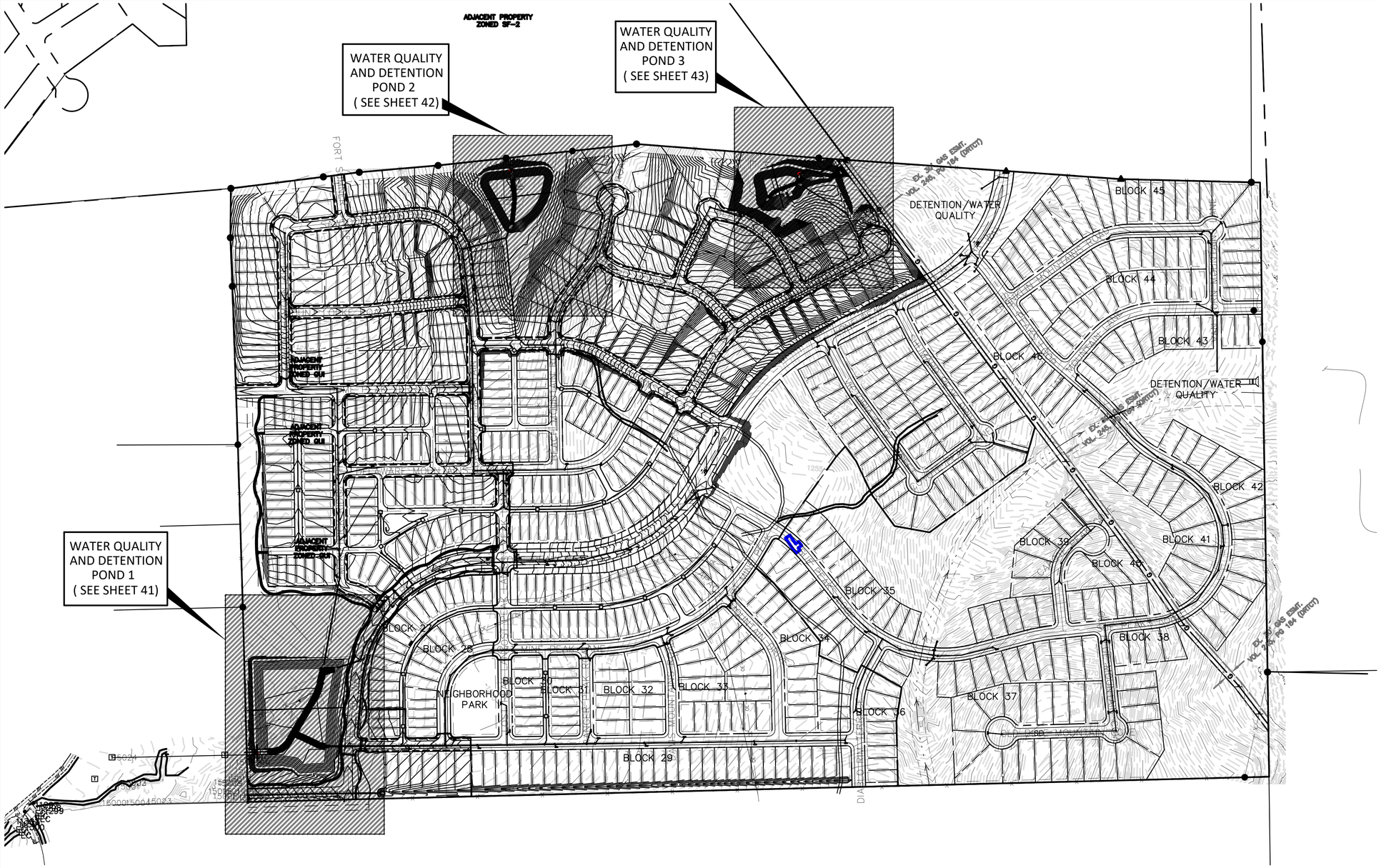
Firm Registration Number: 3937

WATER LINE PLAN & PROFILE (STA. 1+00 to 8+50)

BIG SKY RANCH FOUNDERS PARK ROAD DRIPPINGS SPRINGS, TX

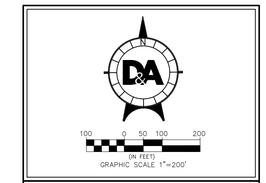
Designed: JJP
Drawn: JBB
Reviewed: JJP
Date: 11/29/2018

Project No: 1691-002



OVERALL DETENTION AND WATER QUALITY POND PLAN

SCALE: 1" = 200'



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS

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Firm Registration Number: 3937

OVERALL POND PLAN

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

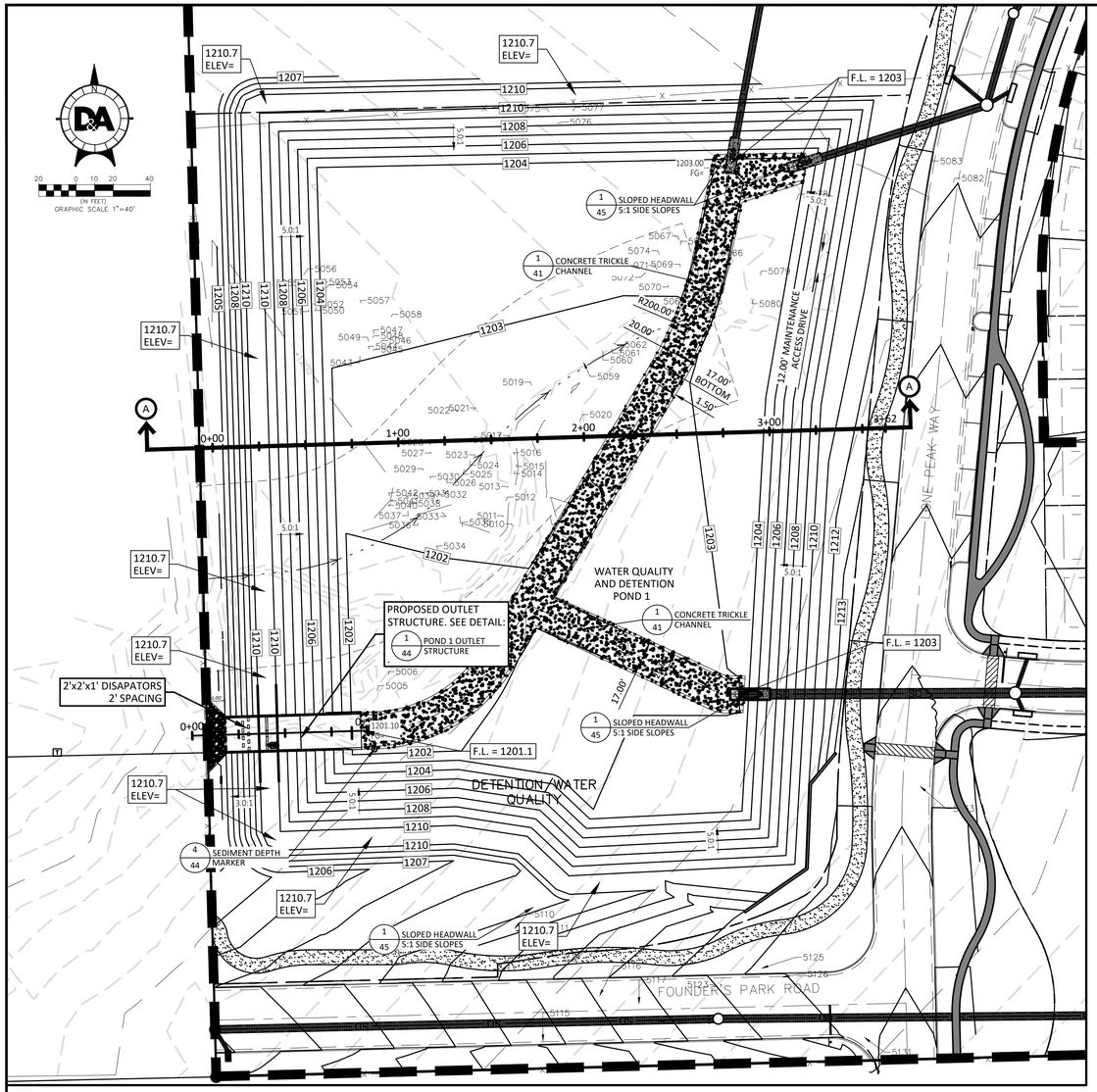
JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET
40
OF 175

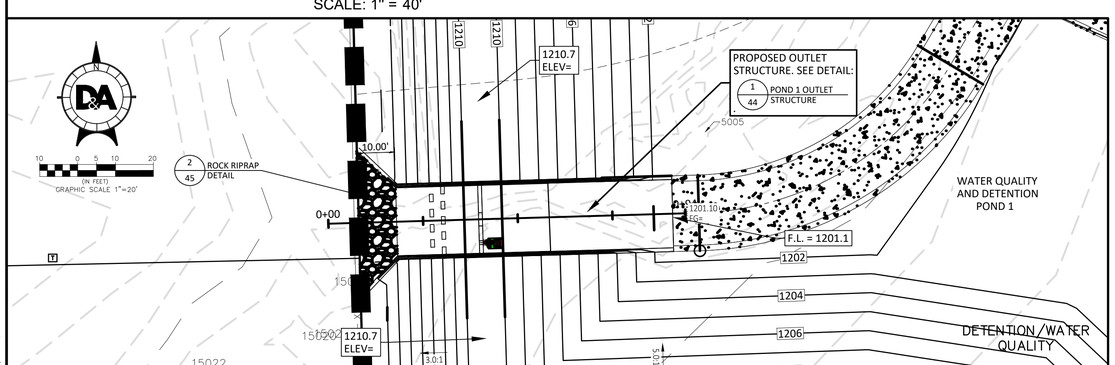
Project No.: 1691-002

Drawing: G:\pwworking\austin-dms\739A\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:00:40



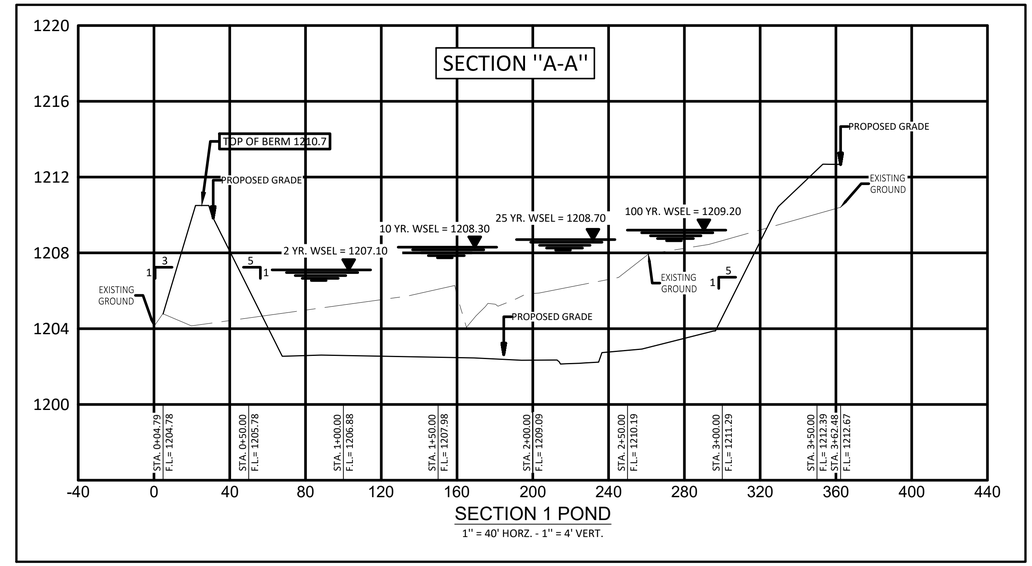
WATER QUALITY AND DETENTION POND 1

SCALE: 1" = 40'



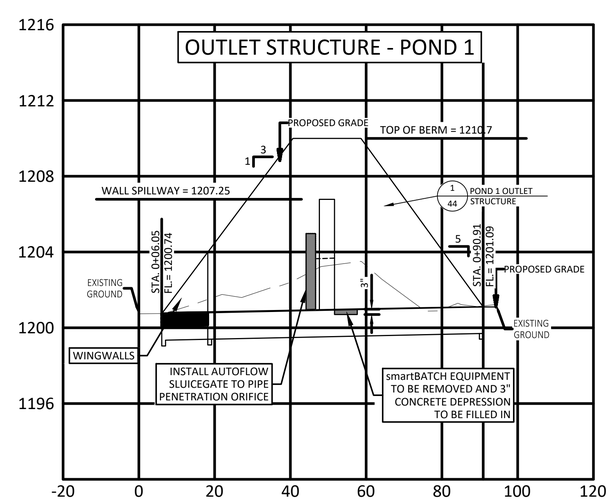
POND 1 OUTLET STRUCTURE PLAN

SCALE: 1" = 20'



SECTION 1 POND

1" = 40' HORZ. - 1" = 4' VERT.



SECTION 1 STRUCTURE

1" = 20' HORZ. - 1" = 4' VERT.

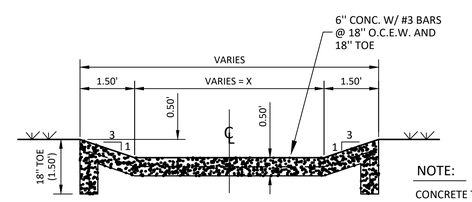
GRADING LEGEND

- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- DETAIL NUMBER / SHEET NUMBER — DETAIL NAME — DETAIL CALLOUT REFERENCE
- 1200 EX. CONTOURS — 1200 PROP. CONTOURS
- SD EX. STORM DRAIN — SD PROP. STORM DRAIN
- PROPOSED ROCK RIPRAP
- 5:1 / 5 / 1 PROPOSED SLOPE (SLOPE DOWN)
- 1000 ELEV= PROPOSED OVERFILL ELEVATION ON BERM. CONTRACTOR TO FILL AT CENTER OF BERM TO THIS SPOT ELEVATION.

NOTE: FINISHED GRADING ELEVATION CALLOUTS INDICATE THE ELEVATION OF FINAL GRADING INCLUDING THE INSTALLATION OF GRASS AND/OR REVEGETATION. IF THE CONTRACTOR INSTALLS GRASS SOD AND / OR TOP SOIL, THE THICKNESS OF THE MATERIAL SHOULD BE SUBTRACTED FROM THE FINISHED GROUND ELEVATIONS CALLOUTS.

NOTE: ALL EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY. ALL SLOPES AND DISTURBED AREAS MUST BE REVEGETATED TO ACHIEVE STABILIZATION.

DETENTION POND EMBANKMENTS SHALL BE CONSTRUCTED USING CH OR CL CLAY SOIL WITH A PI GREATER THAN 25 AND NO ROCKS OR CLODS GREATER THAN 4" IN DIAMETER. SOILS SHALL BE COMPACTED IN LIFTS TO 100% OF ASTM D 698 AT A MOISTURE CONTENT OF OPTIMUM TO PLUS 4%. FOLLOW COA SPECIFICATION 132S.



1 / 41 CONCRETE TRICKLE CHANNEL

SCALE: NONE

NOTE:

CONCRETE TRICKLE CHANNEL TO BE GRADED AT 0.5% SLOPE.

POND	X (FT)
1	17.0'
2	9.0'
3	7.0'

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Firm Registration Number: 3937

POND 1 PLAN VIEW AND SECTIONS

BIG SKY RANCH PHASE ONE PLAN DRIPPINGS SPRINGS, TX

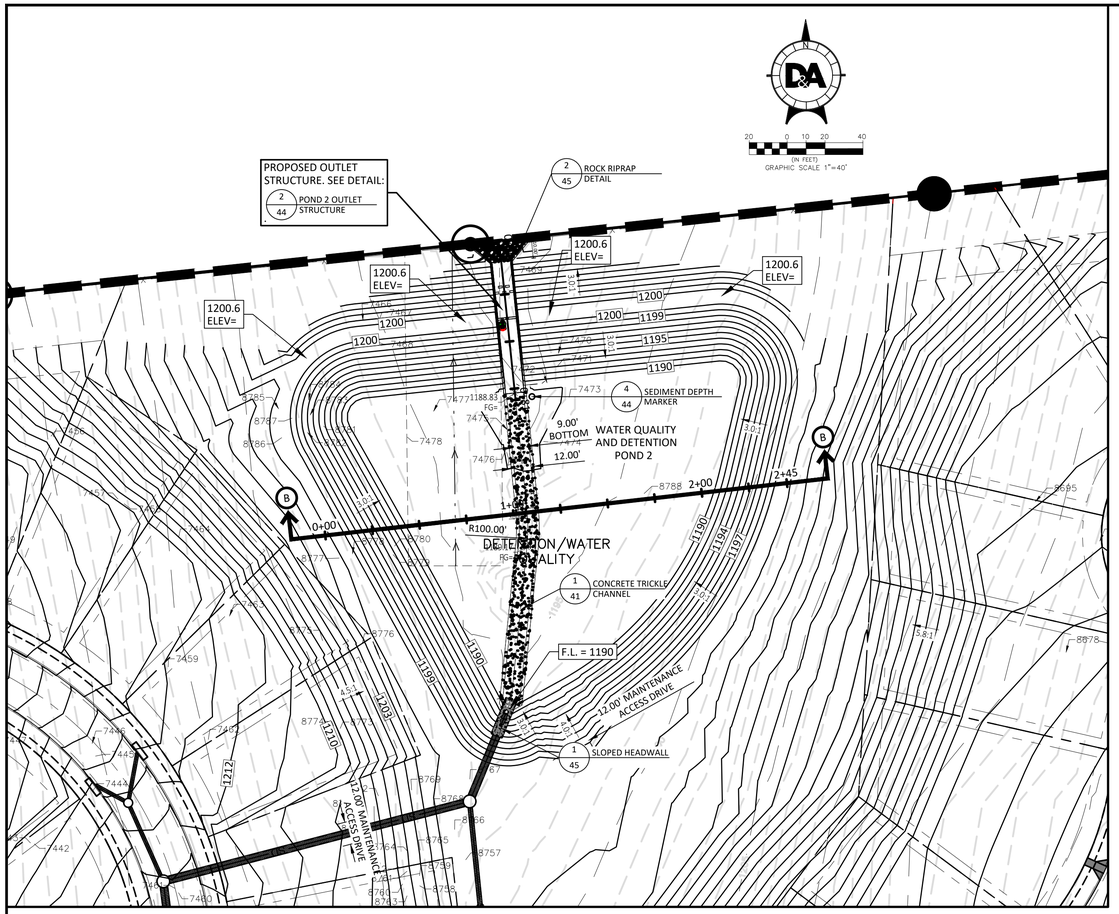
JACOB S. HARRIS 144473 LICENSED PROFESSIONAL ENGINEER 4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET 41 OF 175

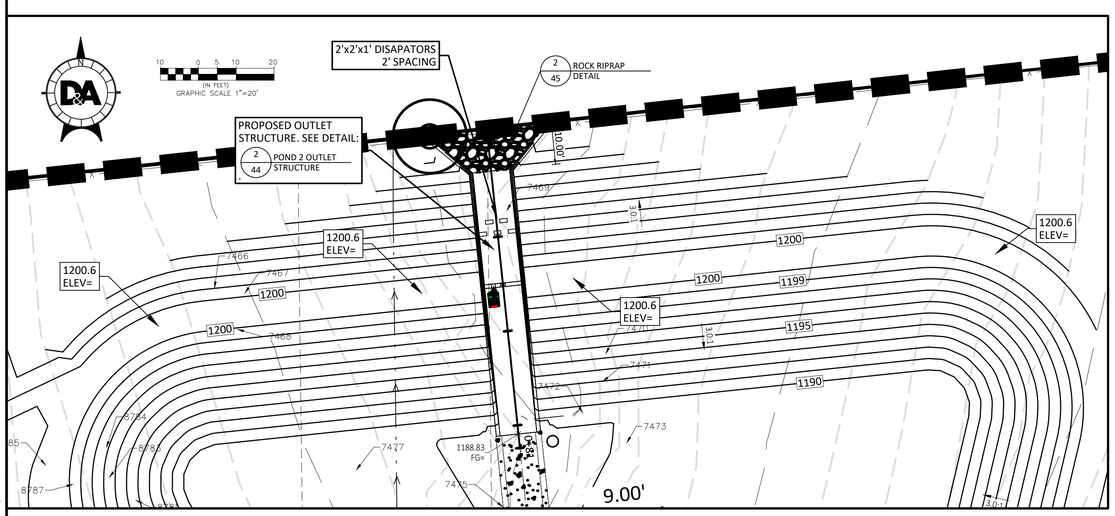
Project No.: 1691-002

Drawing: C:\pwworking\wf-dct-proa\matthew.white\dms17394\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:01:19



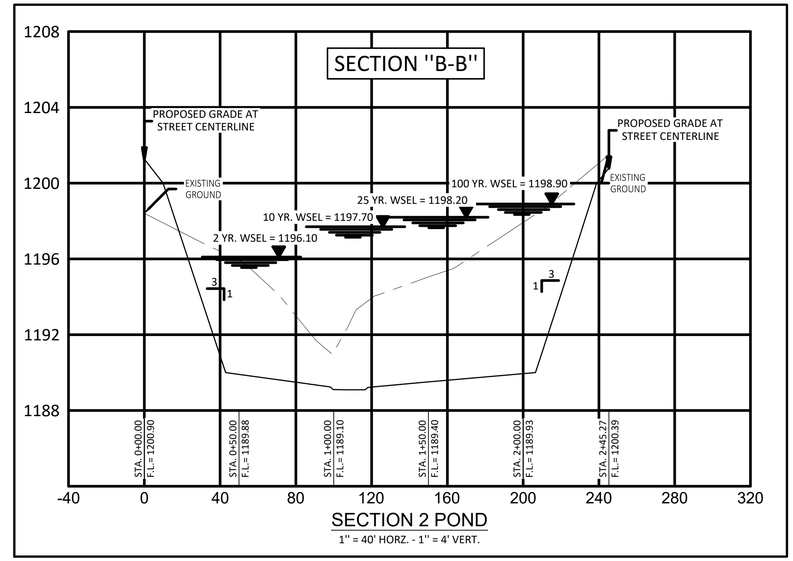
WATER QUALITY AND DETENTION POND 2

SCALE: 1" = 40'



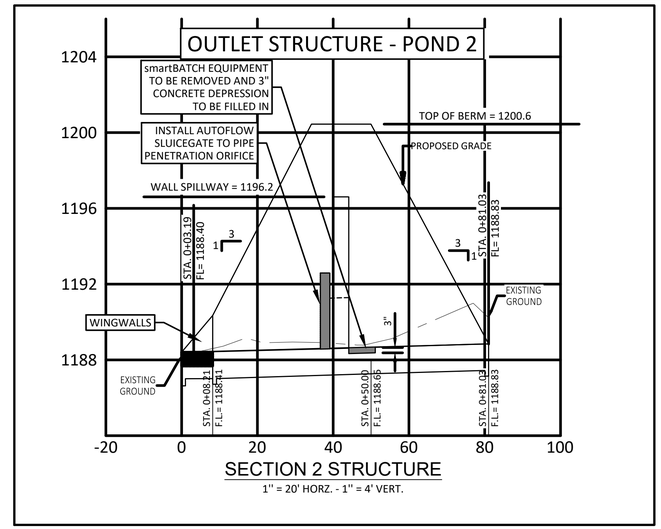
POND 2 OUTLET STRUCTURE PLAN

SCALE: 1" = 20'



SECTION 2 POND

1" = 40' HORZ. - 1" = 4' VERT.



SECTION 2 STRUCTURE

1" = 20' HORZ. - 1" = 4' VERT.

GRADING LEGEND

- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- DETAIL NUMBER / SHEET NUMBER — DETAIL NAME — DETAIL CALLOUT REFERENCE
- 1200 EX. CONTOURS — 1200 PROP. CONTOURS
- SD EX. STORM DRAIN — SD PROP. STORM DRAIN
- PROPOSED ROCK RIPRAP
- 5:1 — PROPOSED SLOPE (SLOPE DOWN)
- 1000 ELEV= — PROPOSED OVERFILL ELEVATION ON BERM. CONTRACTOR TO FILL AT CENTER OF BERM TO THIS SPOT ELEVATION.

NOTE: FINISHED GRADING ELEVATION CALLOUTS INDICATE THE ELEVATION OF FINAL GRADING INCLUDING THE INSTALLATION OF GRASS AND/OR REVEGETATION. IF THE CONTRACTOR INSTALLS GRASS SOD AND / OR TOP SOIL, THE THICKNESS OF THE MATERIAL SHOULD BE SUBTRACTED FROM THE FINISHED GROUND ELEVATIONS CALLOUTS.

NOTE: ALL EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY. ALL SLOPES AND DISTURBED AREAS MUST BE REVEGETATED TO ACHIEVE STABILIZATION.

DETENTION POND EMBANKMENTS SHALL BE CONSTRUCTED USING CH OR CL CLAY SOIL WITH A PI GREATER THAN 25 AND NO ROCKS OR CLODS GREATER THAN 4" IN DIAMETER. SOILS SHALL BE COMPACTED IN LIFTS TO 100% OF ASTM D 698 AT A MOISTURE CONTENT OF OPTIMUM TO PLUS 4%. FOLLOW COA SPECIFICATION 132S.

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Firm Registration Number: 3937

POND 2 PLAN VIEW AND SECTIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

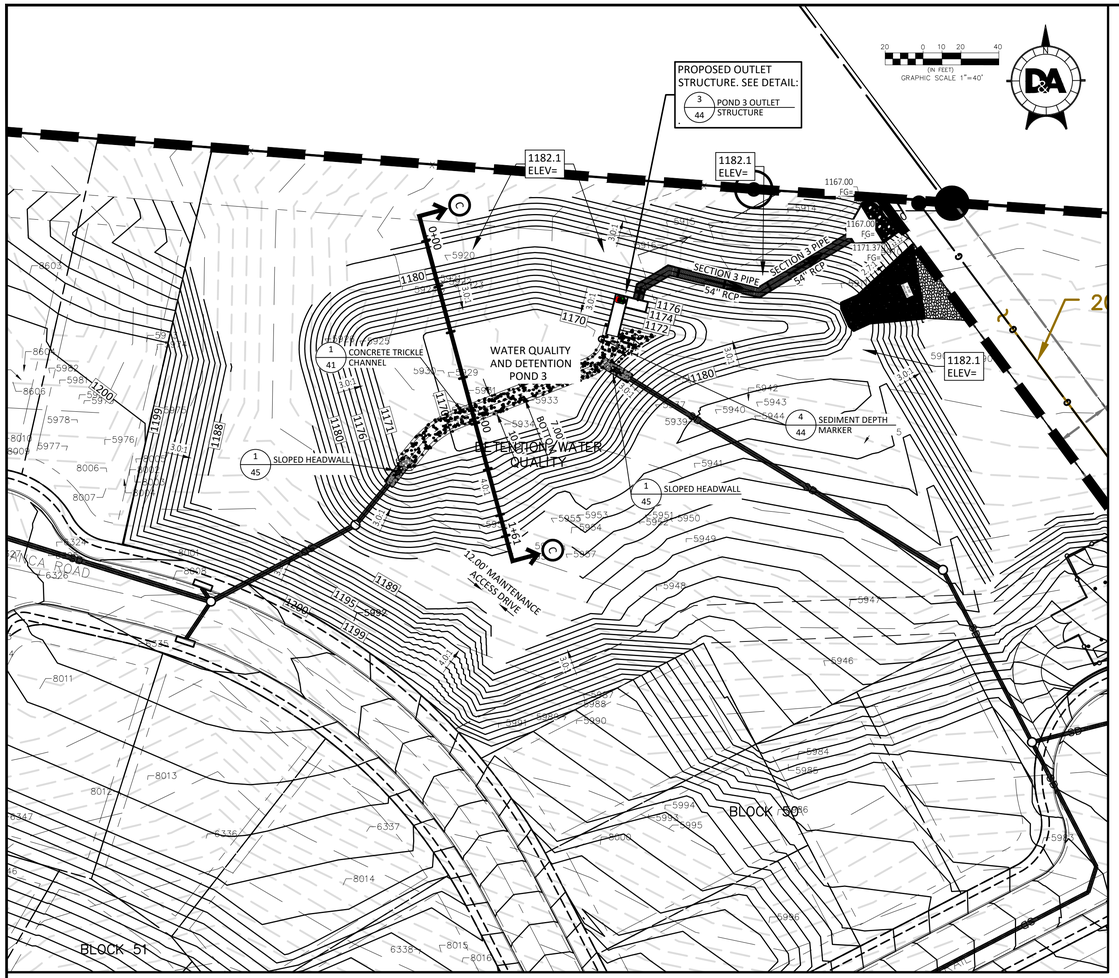
JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET 42 OF 175

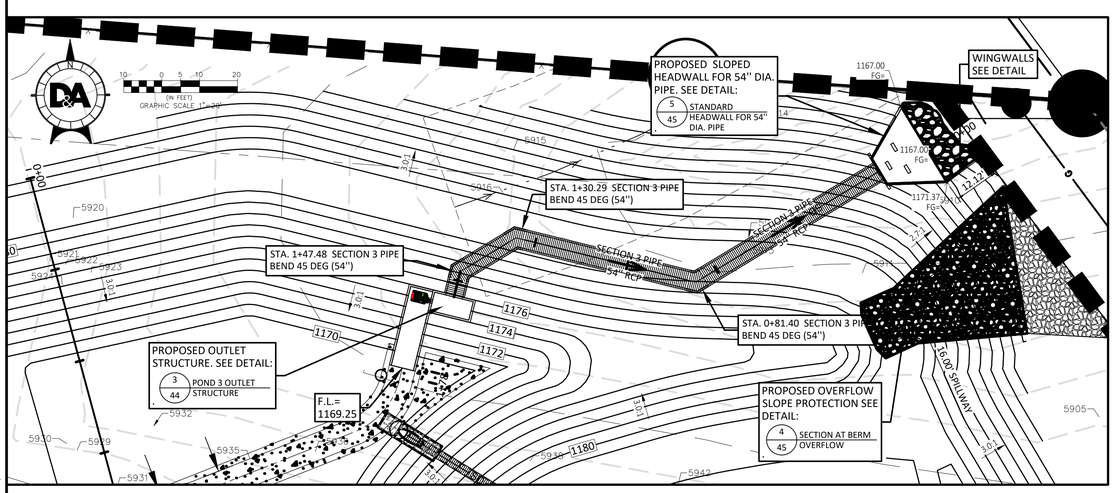
Project No.: 1691-002

Drawing: G:\pwworking\wlf-dct-prod\matthew.white\dms17394\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:01:50



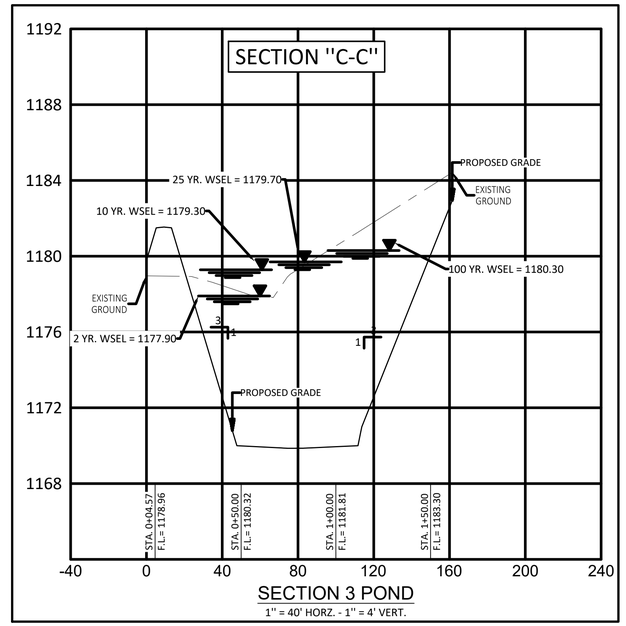
WATER QUALITY AND DETENTION POND 3

SCALE: 1" = 40'



POND 3 OUTLET STRUCTURE PLAN

SCALE: 1" = 20'



SECTION 3 POND

1" = 40' HORZ. - 1" = 4' VERT.

GRADING LEGEND

- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- DETAIL NUMBER / SHEET NUMBER — DETAIL NAME — DETAIL CALLOUT REFERENCE
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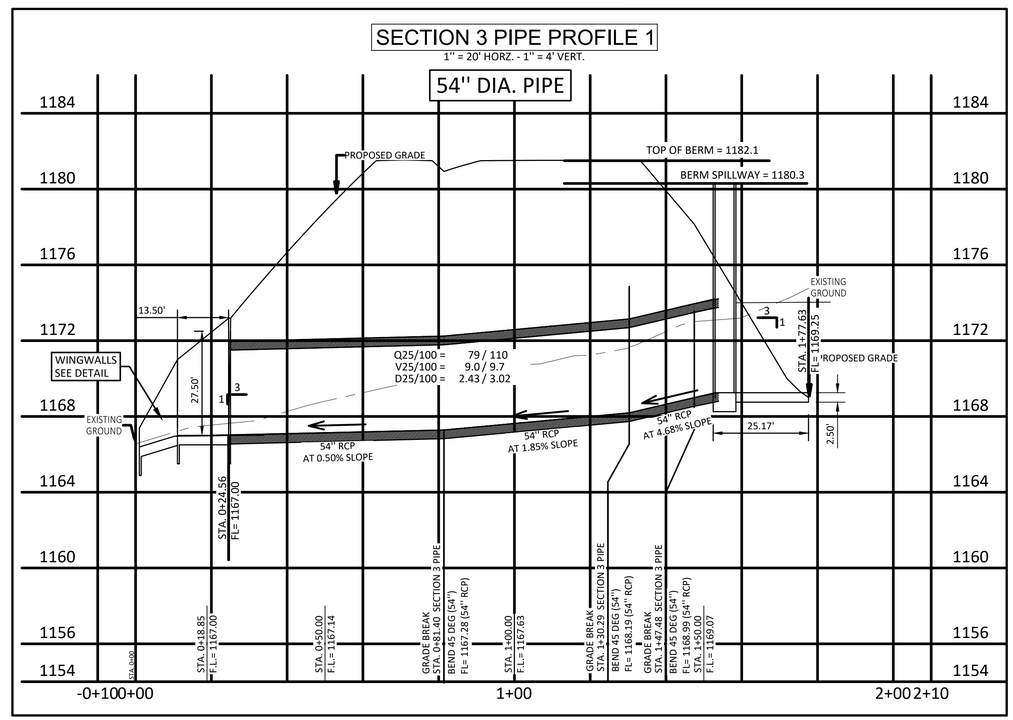

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Austin, Texas 78735, Phone: (512)-583-2600
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Firm Registration Number: 3937

POND 3 PLAN VIEW AND SECTIONS

BIG SKY RANCH PHASE ONE PLAN DRIPPINGS SPRINGS, TX

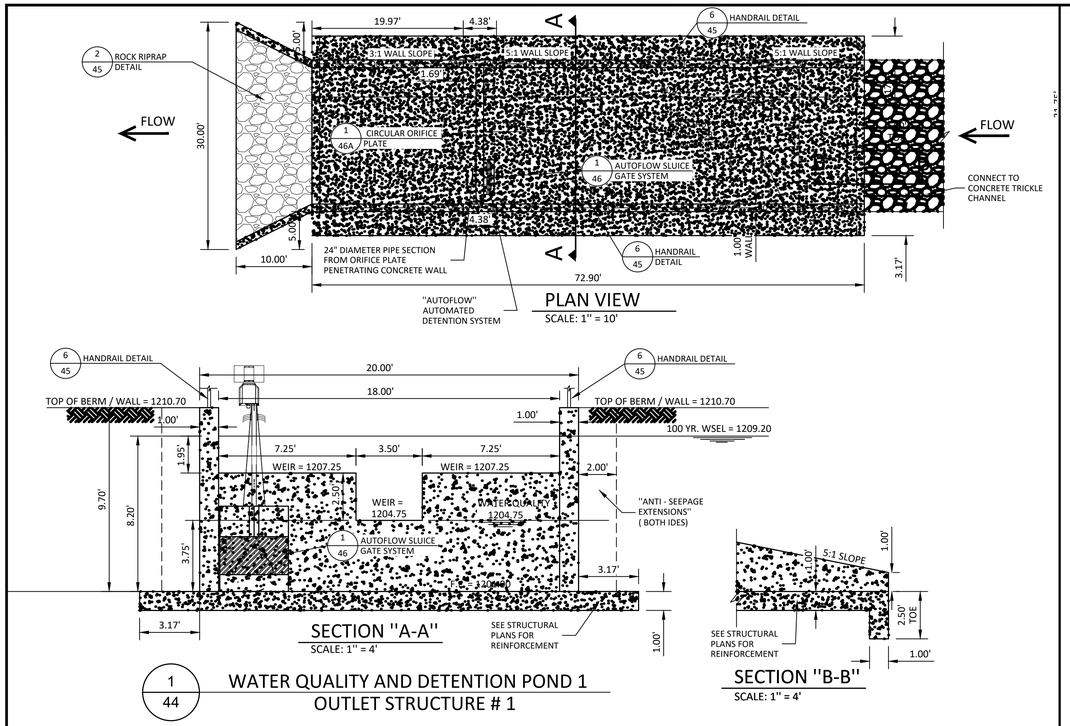
JACOB S. HARRIS 144473 LICENSED PROFESSIONAL ENGINEER 4/24/2025

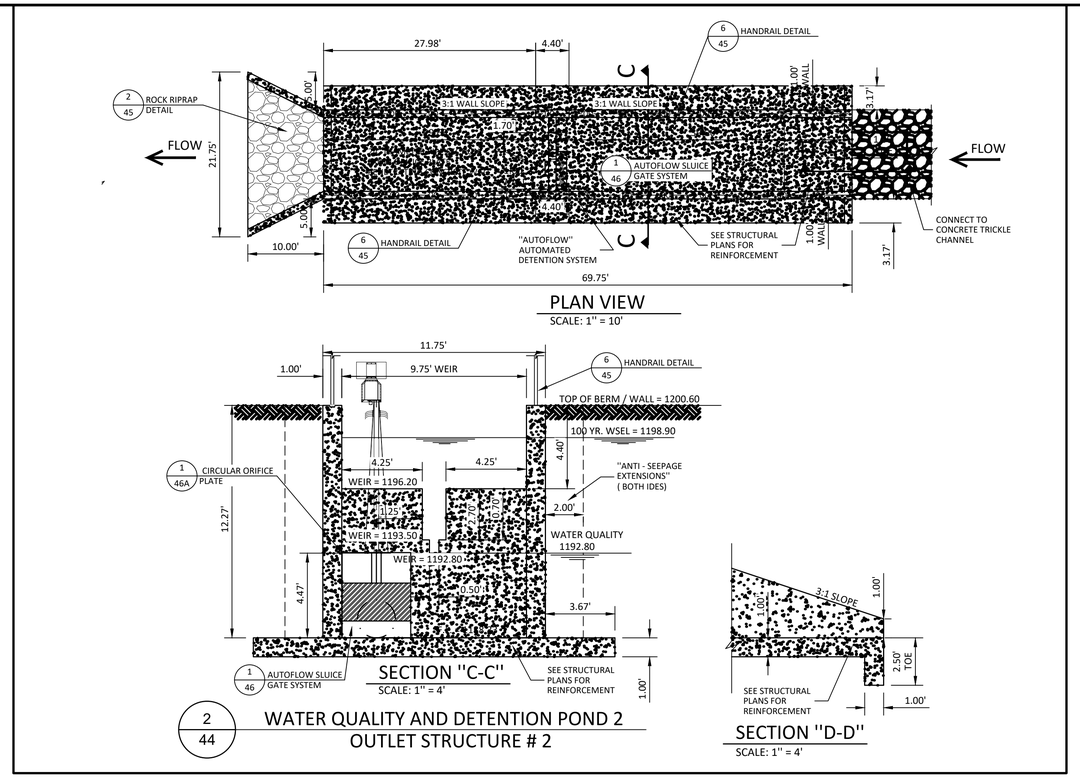
Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

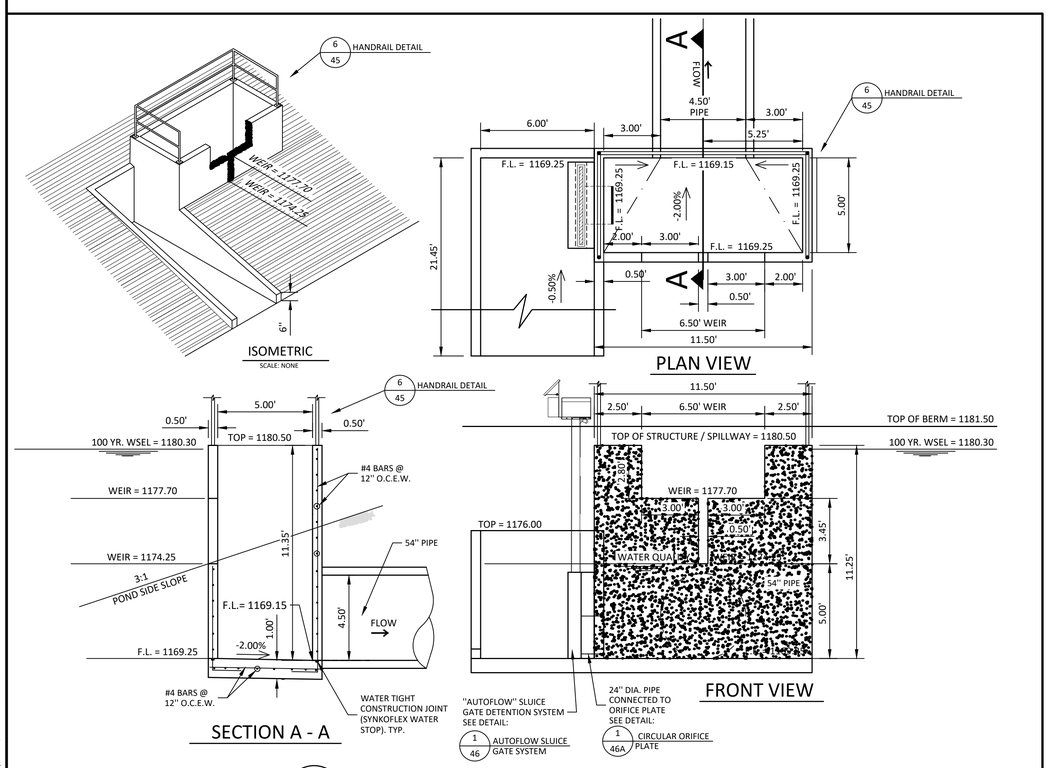
SHEET 43 OF 175

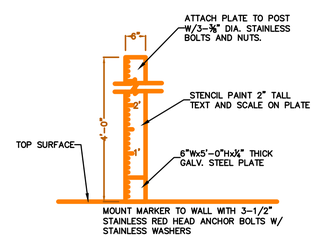
Project No.: 1691-002

Drawing: C:\pwworking\dfl-dc1-prod\mattthew.white\dms17394\691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 08:59
Plot Date/Time: Apr. 24, 25 - 10:02:15









WINGWALL DIMENSIONS		
	Hw	Lw
Pond 1	5	14
Pond 2	3.5	15
Pond 3	8	15

Elevation	54" RCP Area (sq ft)	Head (ft)	Discharge (cfs)	Weir 1 Length (ft)	Head (ft)	Weir 2 Length (ft)	Head (ft)	Weir 3 Length (ft)	Head (ft)	Weir 1 Overflow (cfs)	Weir 2 Overflow (cfs)	Weir 3 Overflow (cfs)	Total Weir Overflow (cfs)	Culvert Capacity > Weir Overflow?
1169.25	15.9	0.00	0.0	0	0	0	0	0	0	0	0	0	0	Yes
1170	15.9	0.75	66.3	0	0	0	0	0	0	0	0	0	0	Yes
1171	15.9	1.75	101.3	0	0	0	0	0	0	0	0	0	0	Yes
1172	15.9	2.75	127.0	0	0	0	0	0	0	0	0	0	0	Yes
1173	15.9	3.75	148.3	0	0	0	0	0	0	0	0	0	0	Yes
1174	15.9	4.75	166.9	0.5	0.00	0	0	0	0.00	0.00	0	0	0	Yes
1174.25	15.9	5.00	171.2	0.5	0.25	0	0	0	0.00	0.21	0	0	0.21	Yes
1175	15.9	5.75	183.6	0.5	1.00	0.75	0	0	0.00	1.67	0	0	1.67	Yes
1176	15.9	6.75	198.9	0.5	2.00	0.75	1	0	0.00	4.71	2	0	7.21	Yes
1177	15.9	7.75	213.1	0.5	3.00	0.75	2	0	0.00	8.65	7.06	0.00	15.72	Yes
1177.7	15.9	8.45	222.5	0.5	3.70	0.75	3	0	0.00	11.85	11.08	0.00	22.93	Yes
1178	15.9	8.75	226.5	0.5	4.00	0.75	3	8.5	0.00	13.32	12.98	0.00	26.30	Yes
1179	15.9	9.75	239.1	0.5	5.00	0.75	4	8.5	1.00	18.62	19.98	28.31	66.90	Yes
1180	15.9	10.75	251.0	0.5	6.00	0.75	5	8.5	2.00	24.47	27.92	80.06	132.45	Yes
1180.5	15.9	11.25	256.8	0.5	6.50	0.75	6	8.5	2.50	27.59	32.21	111.89	171.69	Yes

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Firm Registration Number: 3937

POND DETAILS
OUTLET
STRUCTURES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

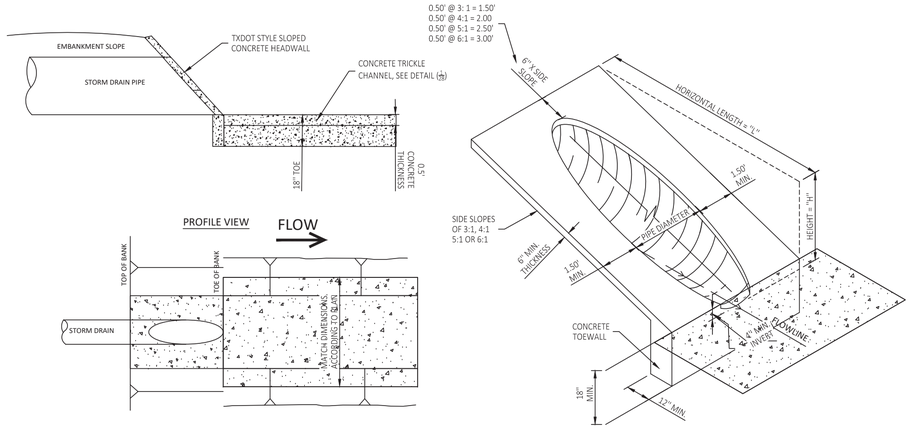
JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET
44
OF 175

Project No.: 1691-002

Drawing: G:\pwworking\att-dc1-prod\matthew.white\dms17394\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:03:56



ISOMETRIC VIEW OF SLOPED HEADWALL

HEADWALL TABLE

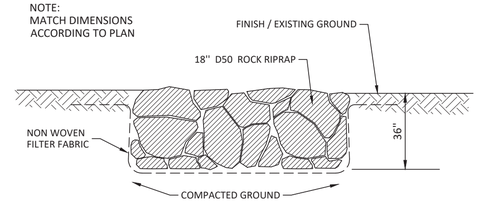
CULVERT PIPE I.D.	MULTI-PIPE SPACING	3:1 SIDE SLOPE H (FT.)	3:1 SIDE SLOPE L (FT.)	4:1 SIDE SLOPE H (FT.)	4:1 SIDE SLOPE L (FT.)	5:1 SIDE SLOPE H (FT.)	5:1 SIDE SLOPE L (FT.)	6:1 SIDE SLOPE H (FT.)	6:1 SIDE SLOPE L (FT.)
18"	1'- 2"	2.33'	6.00'	2.33'	8.00'	2.33'	10.00'	2.33'	12.00'
24"	1'- 7"	2.83'	7.50'	2.83'	10.00'	2.83'	12.50'	2.83'	15.00'
30"	1'-10"	3.33'	9.00'	3.33'	12.00'	3.33'	15.00'	3.33'	18.00'
36"	2'- 1"	3.83'	10.50'	3.83'	14.00'	3.83'	17.50'	3.83'	21.00'
42"	2'- 4"	4.33'	12.00'	4.33'	16.00'	4.33'	20.00'	4.33'	24.00'
48"	2'- 7"	4.83'	13.50'	4.83'	18.00'	4.83'	22.50'	4.83'	27.00'
54"	3'- 0"	5.33'	15.00'	5.33'	20.00'	5.33'	25.00'	5.33'	30.00'
60"	3'- 3"	5.83'	16.50'	5.83'	22.00'	5.83'	27.50'	5.83'	33.00'

NOTES:
1. ALL REINFORCEMENT SHALL BE GRADE 60 STEEL #3 BAR @ 12" O.C. BOTH WAYS.
2. CONCRETE SHALL BE 3000 PSI STRENGTH @ 28 DAYS.
3. DIMENSIONS SHOWN ARE BASED ON TXDOT DETAILS

TXDOT STYLE SLOPED CONCRETE HEADWALL WITH ROCK RIPRAP PROTECTION

1/45 SCALE: NONE CUST-480

NOTE:
MATCH DIMENSIONS ACCORDING TO PLAN



ROCK RIPRAP WITH FILTER FABRIC

ROCK RIPRAP DETAIL

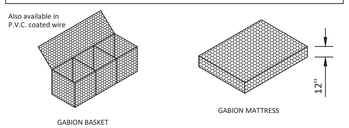
2/45 SCALE: NONE CUST-001

Letter Code	Length	Width	Height	Number of Diaphragms	Capacity Cubic Yards	Color Code
A	6'	3'	3'	1	2.0	BLUE
B	9'	3'	3'	2	3.0	WHITE
C	12'	3'	3'	3	4.0	BLACK
D	6'	3'	1'6'	1	1.0	RED
E	9'	3'	1'6"	2	1.5	GREEN
F	12'	3'	1'6"	3	2.0	YELLOW
G	6'	3'	1'	1	0.66	BLUE-RED
H	9'	3'	1'	2	1.0	BLUE-YELLOW
I	12'	3'	1'	3	1.33	BLUE-GREEN

SPECIFICATIONS

	ZINC COATED	PVC COATED
Mesh opening	Hex. nom. 3 " x 2.3 "	Hex. nom. 3 " x 2.3 "
Wire for netting	0.1181" nom. dia.	0.1062" nom. dia. plus nom. 0.02165" PVC
Wire for selvedges	0.1535" nom. dia.	0.1338" nom. dia. plus nom. 0.02165" PVC
Wire for lacing	0.0866" nom. dia	0.0866" nom. dia. plus nom. 0.02165" PVC
Zinc coating	0.80 ozs. per sq. ft.	0.80 ozs. per sq. ft. plus nom. 0.02165" PVC
		Minimum thickness of PVC coating shall be not less than 0.015".

Also available in P.V.C. coated wire



Installation

1) Level the base where the gabions will be placed to a smooth finish and the right elevation.

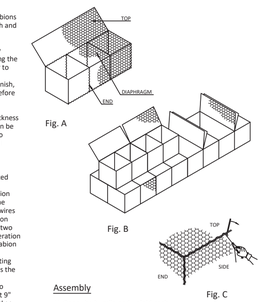
2) Each unit should be securely wired to the adjacent units along the top and the vertical edges prior to placing the 4" to 8" stone. To achieve better alignment and finish, the gabions can be stretched before filling.

3) Where permitted by the thickness of the structure, the gabions can be placed back to back and front to front to facilitate the filling and closing of the lids. Fig. B.

4) During the filling operation connecting wires shall be inserted in the following manner:
a) Each cell of the 36" high gabion shall be filled to a depth of one third after which connecting wires are placed one in each direction with the ends looped around two meshes at each end. This operation shall be repeated when the gabion is two thirds full.
b) For thinner gabions, connecting wires are not necessary unless the 18" are used to build vertical structures and in this case two wires, one in each direction at 9" from the base, must be placed as above.

5) After filling has been completed, the top is folded shut and wired to the ends, sides and diaphragms. (Fig. C)

6) Empty gabions placed on top of a completed row must be wired to the filled gabions at front and back.



Assembly

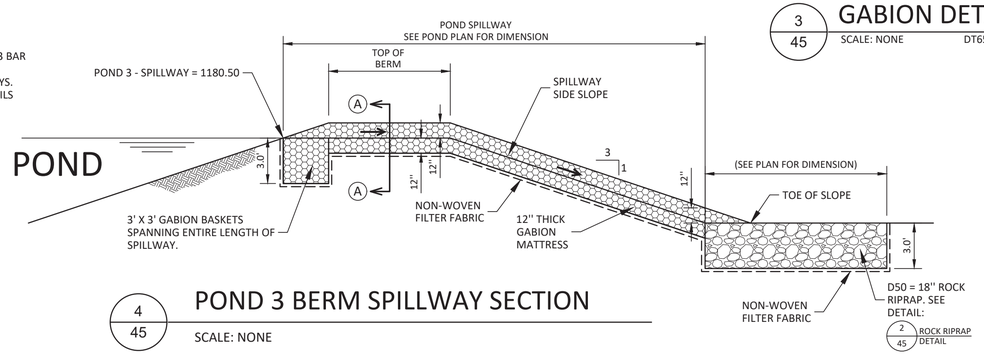
1) Open the bundle and unfold each unit.

2) Lift the sides, the ends and diaphragms into vertical position, Fig. A.

3) Wire the four corners together and the edges of the diaphragms to the gabion sides, Fig. A.

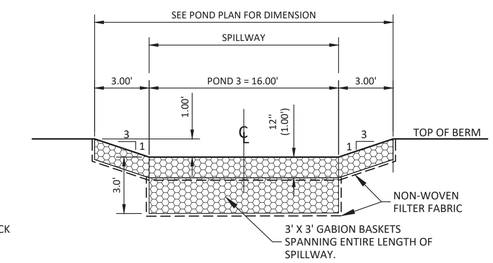
GABION DETAIL

3/45 SCALE: NONE DT652-RC



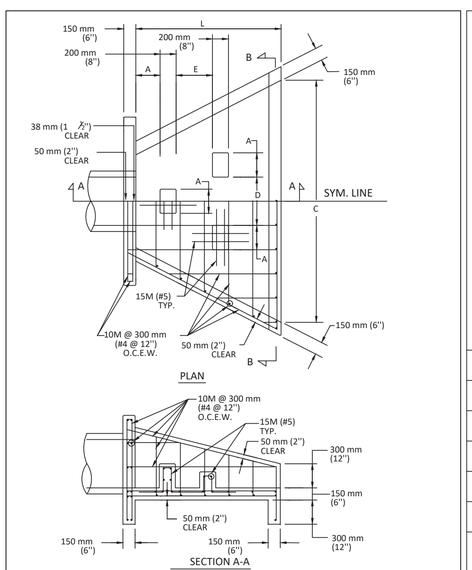
POND 3 BERM SPILLWAY SECTION

4/45 SCALE: NONE

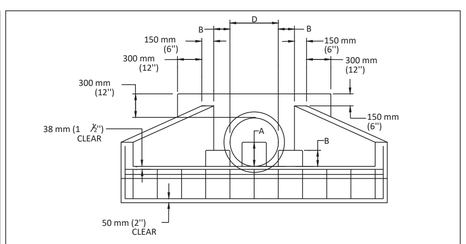


SECTION "A-A" SPILLWAY CROSS-SECTION

SCALE: NONE



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD HEADWALL AND ENERGY DISSIPATORS	STANDARD NO.
RECORD COPY SIGNED BY BILL GARDNER	08/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	508S-13 1 OF 2



NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S, CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	343 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")

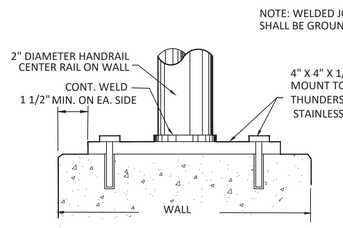
DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).

DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD HEADWALL AND ENERGY DISSIPATORS	STANDARD NO.
RECORD COPY SIGNED BY BILL GARDNER	08/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	508S-13 2 OF 2

STANDARD HEADWALL FOR 54" DIA. PIPE

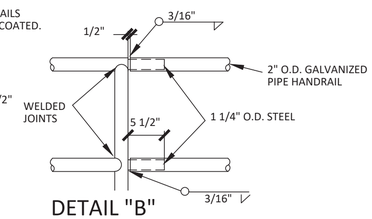
5/45 SCALE: NONE



HANDRAIL POST ELEVATION ON WALL

NOT TO SCALE

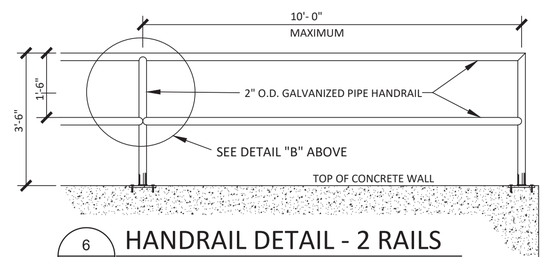
NOTE: WELDED JOINTS ON HANDRAILS SHALL BE GROUND SMOOTH AND COATED.



DETAIL "B"

PIPE SLEEVE EXPANSION JOINT

NOT TO SCALE



HANDRAIL DETAIL - 2 RAILS

6/45 SCALE: NONE CUST-155

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

POND DETAILS
HEADWALL DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
THOMAS EDWARD HEGEMIER
62216
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: TH
Drawn: RT & JBB
Reviewed: TH
Date: 11/29/2018

SHEET 45 OF 184

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-WQ - 1.dwg
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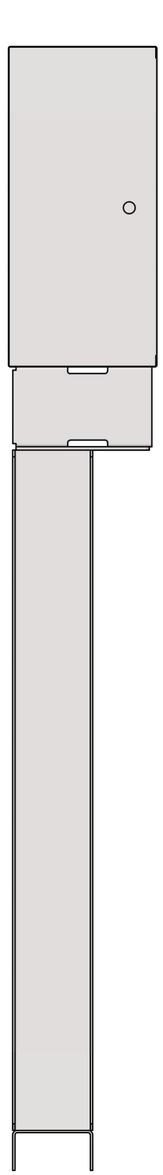

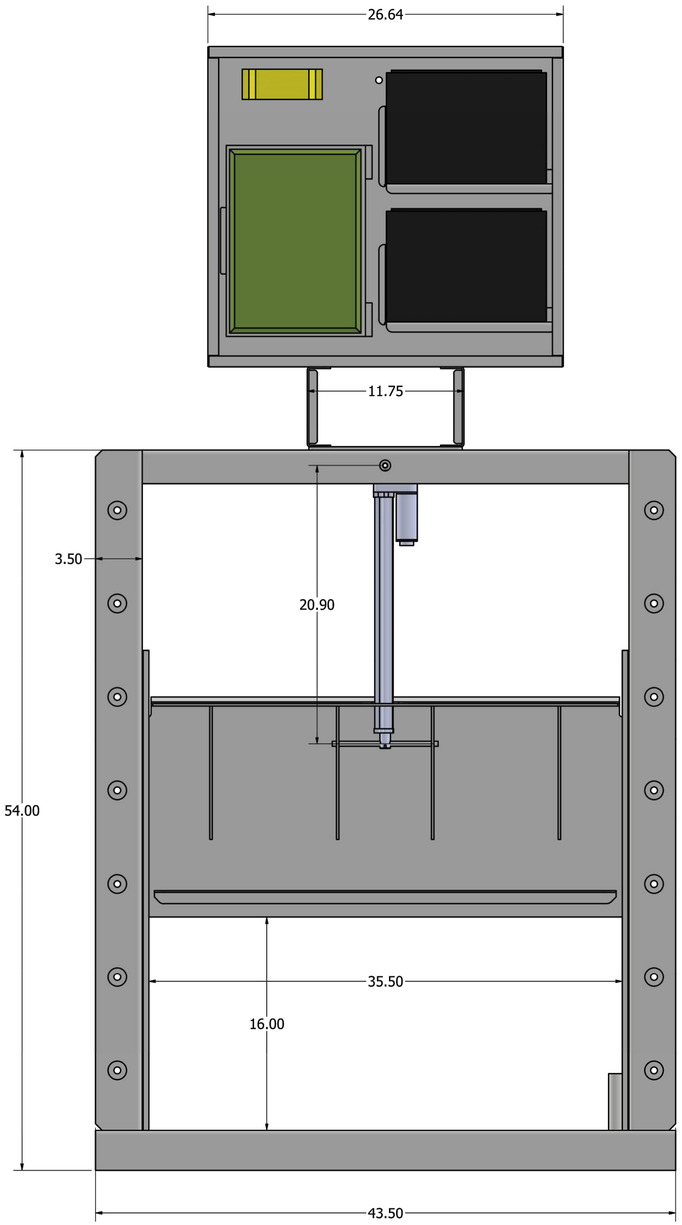

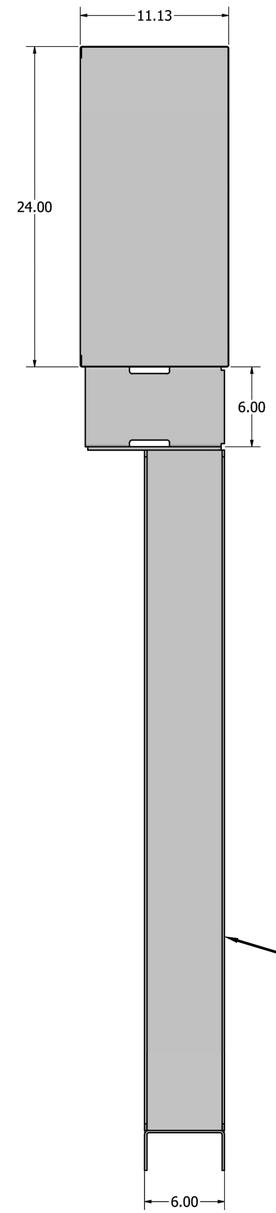

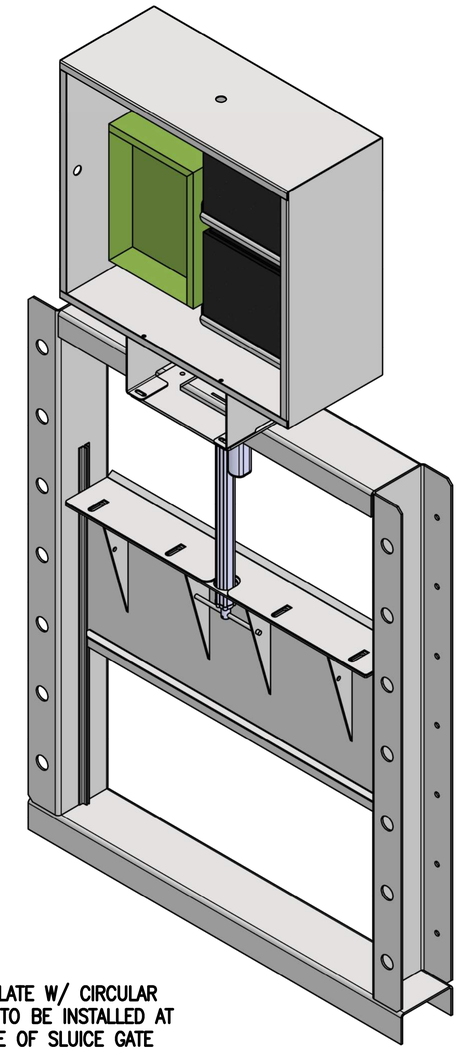

STEEL PLATE W/ CIRCULAR ORIFICE TO BE INSTALLED AT BACKSIDE OF SLUICE GATE (REFER TO NEXT SHEET)

DRAWN kolton.shaw	5/17/2023	
CHECKED		TITLE
QA		
MFG		
APPROVED		SIZE D / DWG NO Slide Gate_ Full Assembly / REV
		SCALE 1 / 5 / SHEET 1 OF 1

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

POND DETAILS
AUTOFLOW

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed: JJP
Drawn: AD & JBB
Reviewed: JH
Date: 4/24/2025

SHEET 46 OF 175

Project No.: 1691-002

Drawing: G:\pwworking\wf-dc1-proj\matthew.white\dms17394\1691002-CD-PH1-WQ - 1.dwg
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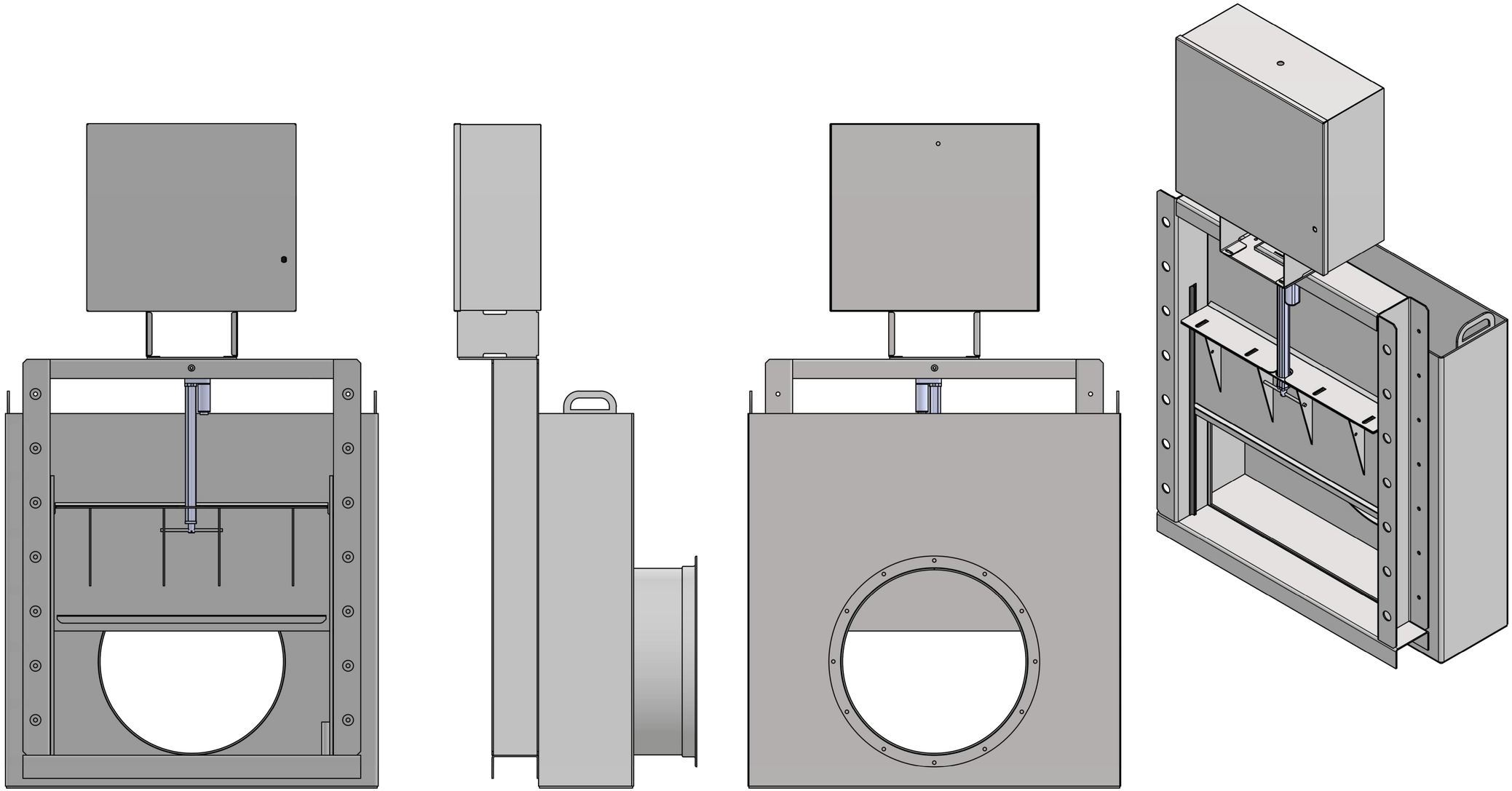

	6/6/2023	
CHECKED		TITLE Sluice Gate Pipe Adapter
QA		
MFG		
APPROVED		SIZE D / DWG NO / REV
		SCALE 0.16 / SHEET 1 OF 1

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Austin, Texas 78735, Phone: (512)-583-2600
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Firm Registration Number: 3937

POND DETAILS
AUTOFLOW CONT.

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JACOB S. HARRIS
144473
LICENSED PROFESSIONAL ENGINEER
4/24/2025

Designed:JJP
Drawn: AD & JBB
Reviewed:JH
Date: 4/24/2025

SHEET
46A
OF 175

Project No.:
1691-002

Drawing: C:\pwworking\kfl-dc1-prod\matthew.white\dms17394\1691002-CD-PH1-WQ - 1.dwg
User: MJWHITE
Last Modified: Apr. 24, 25 - 09:59
Plot Date/Time: Apr. 24, 25 - 10:04:01

WATER QUALITY AND DETENTION POND 1 CALCULATIONS

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =		66.22 acres
Pre-development impervious area within the limits of the plan =		0 acres
Total post-development area within the limits of theplan =		25.600 acres
Total post-development impervious cover fraction =		0.39
P =		33 inches
Lm total project (TCEQ Required 80%)=		23400.96 lbs.

2. Drainage Basin Parameters:

Total drainage basin =	66.22 acres
Predevelopment impervious area within drainage basin =	0 acres
Post-development impervious area within drainage basin =	25.60 acres
Post-development impervious fraction within drainage basin =	0.39
Lm (TCEQ Required 80%)=	23400.96 lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =		91 percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	66.22 acres
Al =	25.60 acres
Ap =	40.62 acres
Lr =	27258.07 lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	23400.960 lbs.
F =	0.86

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.46 inches
Post Development Runoff Coefficient =	0.38
On-site Water Quality Volume =	132,871 cubic feet
Off-site area draining to BMP =	0 acres
Off-Site Impervious cover draining to BMP =	0 acres
Impervious fraction of off-site area =	0
Off-site Runoff Coefficient =	0
Off-site Water Quality Volume =	0 cubic feet
Storage for sediment =	
Total Capture Volume (required water quality volume x 1.2) =	159,446 cubic feet 3.660 acre-ft
Volume provided =	161,742 cubic feet 3.713 acre-ft

BIG SKY RANCH PHASE ONE - POND 1

Stage (ft msl)	Area (sf)	Storage Incremental (cf)	Storage Cummulative(cf)	Storage Cummulative(ac-ft)	Discharge (cfs)
1201	0	0	0	0.000	0.00
1202	11,329	5,665	5,665	0.130	5664.63
1203	48,239	29,784	35,449	0.814	35449.31
1204	80,396	64,318	99,766	2.290	99768.29
1204.75	84,872	61,976	161,742	3.713 (WQ)	161741.50
1205	86,364	21,405	183,146	4.204	183150.20
1206	91,931	89,148	272,294	6.251	272299.85
1207	99,498	95,715	368,008	8.448	368016.85
1207.25	101,140	25,080	393,088	9.024	393097.25
1208	106,066	77,702	470,790	10.808	470801.21
1209	112,633	109,349	580,140	13.318	580152.92
1209.2	113,946	22,658	602,798	13.838	602811.34
1210	119,200	93,258	696,056	15.979	696071.98

	Existing Flows	Pond 1 Flows			
	Q (cfs)	Q_{in} (cfs)	Q_{out} (cfs)	Peak WSEL (ft)	Freeboard (ft)
2-Year	93.8	140.1	42.9	1207.1	3.1
10-Year	191.5	251.3	165.4	1208.3	1.9
25-Year	237.5	303.0	219.1	1208.7	1.5
100-Year	321.6	397.6	311.5	1209.2	1.0

WATER QUALITY AND DETENTION POND 2 CALCULATIONS

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =		34.45 acres
Pre-development impervious area within the limits of the plan =		0 acres
Total post-development area within the limits of theplan =		14.700 acres
Total post-development impervious cover fraction =		0.43
P =		33 inches
Lm total project (TCEQ Required 80%)=		13437.27 lbs.

2. Drainage Basin Parameters:

Total drainage basin =	34.45 acres
Predevelopment impervious area within drainage basin =	0 acres
Post-development impervious area within drainage basin =	14.70 acres
Post-development impervious fraction within drainage basin =	0.43
Lm (TCEQ Required 80%)=	13437.27 lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =		91 percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	34.45 acres
Al =	14.90 acres
Ap =	19.55 acres
Lr =	15798.69 lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	13437.270 lbs.
F =	0.85

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.37 inches
Post Development Runoff Coefficient =	0.41
On-site Water Quality Volume =	70,705 cubic feet
Off-site area draining to BMP =	0 acres
Off-Site Impervious cover draining to BMP =	0 acres
Impervious fraction of off-site area =	0
Off-site Runoff Coefficient =	0
Off-site Water Quality Volume =	0 cubic feet
Storage for sediment =	
Total Capture Volume (required water quality volume x 1.2) =	84,846 cubic feet 1.948 acre-ft
Volume Provided =	85,642 cubic feet 1.966 acre-ft

BIG SKY RANCH PHASE ONE - POND 2

Stage (ft msl)	Area (sf)	Storage Incremental (cf)	Storage Cummulative(cf)	Storage Cummulative(ac-ft)	Discharge (cfs)
1188.5	0	0	0	0.000	0.00
1189	2,551	638	638	0.015	3826.51
1190	22,829	12,690	13,328	0.306	48847.06
1191	24,970	23,900	37,227	0.855	86097.60
1192	27,111	26,041	63,268	1.452	116420.70
1192.8	28,824	22,374	85,642	1.966 (WQ)	136839.39
1193	29,252	5,808	91,449	2.099	126510.93
1193.5	30,323	14,894	106,343	2.441	151561.44
1194	31,393	15,429	121,772	2.795	168596.41
1195	33,534	32,463	154,235	3.541	220236.22
1196	35,675	34,604	188,840	4.335	259123.43
1196.2	36,103	7,178	196,017	4.500	239302.96
1197	37,816	29,568	225,585	5.179	292973.89
1198	39,957	38,886	264,472	6.071	343320.98
1199	42,098	41,027	305,499	7.013	388631.32
1200	44,239	43,168	348,667	8.004	436082.67

	Existing Flows	Pond 2 Flows			
	Q (cfs)	Q_{in} (cfs)	Q_{out} (cfs)	Peak WSEL (ft)	Freeboard (ft)
2-Year	45.3	75.0	21.0	1196.1	3.9
10-Year	103.2	139.1	96.1	1197.7	2.3
25-Year	131.3	169.4	128.6	1198.2	1.8
100-Year	183.4	225.1	182.5	1198.9	1.1

WATER QUALITY AND DETENTION POND 3 CALCULATIONS

1. Required Load Reduction for the total project:

Lm = 27.7(An x P)

Lm = Required TSS removal resulting from proposed development = 80% of increased load
An = Anet increase in impervious area for the project
P = Average annual precipitation

County =	Hays	
Total Project area =		18.4 acres
Pre-development impervious area within the limits of the plan =		0 acres
Total post-development area within the limits of theplan =		6.000 acres
Total post-development impervious cover fraction =		0.33
P =		33 inches
Lm total project (TCEQ Required 80%)=		5484.60 lbs.

2. Drainage Basin Parameters:

Total drainage basin =	18.4 acres
Predevelopment impervious area within drainage basin =	0 acres
Post-development impervious area within drainage basin =	6.00 acres
Post-development impervious fraction within drainage basin =	0.33
Lm (TCEQ Required 80%)=	5484.6 lbs.

3. Indicate the proposed BMP Code for this basin:

Proposed BMP =	Batch Detention	
Removal efficiency =		91 percent

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

Lr = (BMP efficiency) x P x (Al x 34.6 + Ap x 0.54)

Ac = Total On-site drainage area in the BMP catchment area
Al = Impervious area proposed in the BMP catchment area
Ap = Pervious area remaining in the BMP catchment area
Lr = TSS Load removed from this catchment area by the proposed BMP

Ac =	18.4 acres
Al =	6.00 acres
Ap =	12.40 acres
Lr =	6435.31 lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin:

Desired Lm this basin =	5484.600 lbs.
F =	0.85

6. Calculate Capture Volume required by the BMP Type for this drainage basin:

Rainfall Depth =	1.37 inches
Post Development Runoff Coefficient =	0.33
On-site Water Quality Volume =	29,938 cubic feet
Off-site area draining to BMP =	0 acres
Off-Site Impervious cover draining to BMP =	0 acres
Impervious fraction of off-site area =	0
Off-site Runoff Coefficient =	0
Off-site Water Quality Volume =	0 cubic feet
Storage for sediment =	
Total Capture Volume (required water quality volume x 1.2) =	35,926 cubic feet 0.825 acre-ft
Volume Provided =	41,875 cubic feet 0.961 acre-ft

BIG SKY RANCH PHASE ONE - POND 3

Stage (ft msl)	Area (sf)	Storage Incremental (cf)	Storage Cummulative(cf)	Storage Cummulative(ac-ft)	Discharge (cfs)
1169.25	0	0	0	0.000	0.00
1170	5,360	2,010	2,010	0.046	9380.05
1171	8,198	6,779	8,789	0.202	23766.20
1172	9,417	8,808	17,597	0.404	35821.40
1173	10,769	10,093	27,690	0.636	48552.14
1174	12,143	11,456	39,145	0.899	62744.40
1174.25	12,470	3,077	42,222	0.969 (WQ)	57768.06
1175	13,516	9,745	51,966	1.193	75228.29
1176	15,438	14,477	66,443	1.525	96359.96
1177	17,356	16,397	82,840	1.902	116595.34
1177.7	18,756	12,639	95,480	2.192	126877.03
1178	19,356	5,717	101,196	2.323	126271.56
1179	21,356	20,356	121,552	2.790	163267.23
1180	23,355	22,356	143,908	3.304	189621.74
1180.5	24,355	11,928	155,835	3.577	192121.51
1181	25,355	12,428	168,263	3.863	206049.30

	Existing Flows	Pond 3 Flows			
	Q (cfs)	Q_{in} (cfs)	Q_{out} (cfs)	Peak WSEL (ft)	Freeboard (ft)
2-Year	31.3	45.5	14.1	1177.9	3.6
10-Year	66.2	84.1	60.0	1179.3	2.2
25-Year	82.7	102.1	78.6	1179.7	1.8
100-Year	113	135.1	109.8	1180.3	1.2

NOTE: WATER QUALITY VOLUME DETERMINED BY THE TCEQ OPTIONAL ENHANCED MEASURES CRITERIA

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POND CALCULATION SHEET

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
THOMAS EDWARD HEGEMIER
62216
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: TH
Drawn: RT & JBB
Reviewed: TH
Date: 11/29/2018

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\169102-CD-PH1-WQ - 1.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 15:30
Plot Date/Time: Apr. 26, 19 - 19:17:14

GENERAL NOTES

GENERAL

THESE GENERAL NOTES SHALL APPLY UNLESS SPECIFICALLY NOTED ON THE PLANS AND DETAILS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL COORDINATE ALL STRUCTURAL PLANS AND DETAILS WITH THE ARCHITECTURAL DRAWINGS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. DESIGN, CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE 2015 INTERNATIONAL BUILDING CODE.

FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION AND REPORT #17101175.001 PREPARED BY MLA LABS, INC. DATED JULY 27, 2017.

FOUNDATION NOTES

1. FOR A DISTANCE OF 2'-0" OUTSIDE THE FOUNDATION LINE, REMOVE AT LEAST 6" OF TOP SOIL, VEGETATION (TREE STUMPS AND MAJOR ROOT SYSTEMS SHOULD BE COMPLETELY REMOVED), DEBRIS, ETC., AND ANY ADDITIONAL AMOUNT REQUIRED TO ENSURE THAT THE FINAL GRADING WILL PROVIDE A MINIMUM OF 6" OF SELECT FILL BELOW THE BOTTOM OF THE SLAB. REMOVAL OF SURFICIAL SOIL CAN BE STOPPED IF LIMESTONE IS ENCOUNTERED.

2. REWORK AND COMPACT THE TOP 6" OF THE EXPOSED SUBGRADE TO 95% OF THE MAXIMUM DENSITY AT 2% TO 3% ABOVE OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH ASTM METHOD D 698 USING A COMPACTIVE EFFORT OF 7.16 FT-LB./CU.IN.. DO NOT ALLOW THE EXPOSED SUBGRADE TO DRY OUT PRIOR TO PLACING THE STRUCTURAL FILL.

3. FILL BACK TO REQUIRED GRADE WITH MATERIAL SELECTED AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS BELOW. FILL SHOULD EXTEND AT LEAST 3'-0" BEYOND THE FOUNDATION PERIMETER AND SLOPE DOWN AT NOT MORE THAN ONE TO TWO SLOPE TO NATURAL SOIL EXCEPT AT DEEP BEAM CONDITIONS.

4. SELECT FILL, WHEN PROPERLY SLAKED AND TESTED BY STANDARD LABORATORY METHODS, SHALL MEET THE FOLLOWING REQUIREMENTS:

RETAINED ON 1-3/4" SCREEN	0%
RETAINED ON 1-1/2" SCREEN	0% - 15%
RETAINED ON 3/4" SCREEN	25% - 55%
RETAINED ON NO. 4 MESH SIEVE	30% - 75%
RETAINED ON NO. 40 MESH SIEVE	60% - 90%

MATERIAL PASSING THE NO. 40 SIEVE SHALL HAVE A MINIMUM PLASTICITY INDEX OF 3 AND SHALL NOT HAVE A PLASTICITY INDEX OF GREATER THAN 18.

MAXIMUM LIQUID LIMIT.....35%

NOTE: SANDY LOAM OR ANY MATERIAL CONTAINING ANY ORGANIC MATTER IS NOT ACCEPTABLE SELECT FILL MATERIAL.

5. SAMPLES OF PROPOSED SELECT FILL SHALL BE FURNISHED TO THE TESTING LABORATORY 7 DAYS PRIOR TO INSTALLATION TO PERMIT TIME FOR SPECIFICATION COMPLIANCE INSPECTION AND APPROVAL.

6. SELECT FILL SHALL BE COMPACTED IN THE FIELD IN LOOSE LIFTS NOT TO EXCEED 8" TO A MINIMUM OF 95% OF MAXIMUM LABORATORY DENSITY (FILL SHALL BE WITHIN 2% OF OPTIMUM MOISTURE CONTENT DURING COMPACTION) AS DETERMINED BY ASTM METHOD D 698 USING A COMPACTIVE EFFORT OF 7.16 FT.-LB./CU.IN.. FIELD DENSITIES SHALL BE CHECKED IN ACCORDANCE WITH ASTM D-2922.

7. LABORATORY MOISTURE-DENSITY CURVE OR CURVES AS REQUIRED AND RESULTS OF AT LEAST 2 FIELD DENSITY CHECKS PER LIFT ARE TO BE SUBMITTED TO THE ARCHITECT OR ENGINEER.

8. BEAM TRENCHES SHALL BE CUT DIRECTLY INTO COMPACTED FILL TO PLAN DIMENSIONS AND SACKING OF TRENCHES WILL BE PERMITTED FOR INSIDE OF PERIMETER BEAMS. IN CASE SACKING IS USED, DENSITY TESTING WILL NOT BE PERFORMED CLOSER THAN 4'-0" FROM THE INSIDE OF THE PERIMETER BEAM FACE.

9. ALL FOUNDATION EXCAVATIONS SHALL BE EXTENDED TO FINAL GRADE AND THE FOOTINGS CONSTRUCTED AND POURED AS SOON AS POSSIBLE TO MINIMIZE POTENTIAL DAMAGE (DUE TO WETTING AND/OR DRYING) TO BEARING SOILS. FOUNDATION CONCRETE SHOULD NOT BE PLACED ON SOILS THAT HAVE BEEN DISTURBED BY RAINFALL OR SEEPAGE.

CONCRETE NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) SPECIFICATION, ACI 301 AND THE BUILDING CODE REQUIREMENTS, ACI 318.

2. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE "ACI DETAILING MANUAL", PUBLICATION SP-66, LATEST EDITION, ACI 315, LATEST EDITION, AND ACI 315R, LATEST EDITION.

3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:

ALL CONCRETE	4,000 PSI
MINIMUM CEMENT CONTENT	5.0 SACKS/CY
MAXIMUM WATER/CEMENT RATIO	0.50
SLUMP RANGE	2" MIN. - 5" MAX.

TYPE C OR F FLY ASH CAN BE SUBSTITUTED FOR CEMENT 20% TO 25% BY WEIGHT. CALCIUM CHLORIDE IS NOT ACCEPTABLE FOR USE IN MIX. FURNISH MIX DESIGNS FOR ALL CLASSES OF CONCRETE. RETAIN A QUALIFIED TESTING LABORATORY TO MAKE CONCRETE CYLINDERS AND PERFORM COMPRESSIVE TESTS. A MINIMUM OF THREE CYLINDERS SHALL BE TAKEN PER 50 CUBIC YARDS OF CONCRETE, WITH ONE TEST AT 7 DAYS AND TWO AT 28 DAYS. COARSE AND FINE AGGREGATES SHALL COME FROM SOURCES LISTED ON THE "CONCRETE RATED SOURCE QUALITY CATALOG" BY THE TEXAS DEPARTMENT OF TRANSPORTATION AS NON REACTIVE SOURCES PUBLISHED LATEST EDITION. SOURCES OF RIVER GRAVEL AND SAND SHALL HAVE NO MARCASITE OR IRON PYRITE PRESENT AT THE PRODUCTION FACILITY.

4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.

5. STANDARD PROTECTIVE COVER OF REINFORCING BARS UNLESS OTHERWISE NOTED SHALL BE:

SLABS ON GRADE (TOP)	2 IN.
GRADE BEAMS AND PIERS	
TOPS	1 1/2 IN.
SIDES	3 IN.
BOTTOMS	3 IN.
OTHER	1 1/2 IN.

6. ALL ACCESSORIES SHALL BE IN ACCORDANCE WITH THE "ACI DETAILING MANUAL", PUBLICATION SP-66, LATEST EDITION, ACI 315, LATEST EDITION, AND ACI 315R, LATEST EDITION. PROVIDE CONCRETE BRICK CHAIRS AT ALL BEAMS AND SLABS TO SUPPORT REINFORCING STEEL AT A SPACING NOT TO EXCEED 4'-0" O.C. IN ANY DIRECTION.

7. VERTICAL JOINTS IN FLOOR SLABS ARE TO BE SHOWN ON PLANS. NO HORIZONTAL JOINTS WILL BE PERMITTED IN SLABS OR BEAMS UNLESS NOTED OTHERWISE.

8. INCLUDE AN ALLOWANCE FOR .5 TONS OF REINFORCING STEEL (ANY SIZE) TO BE USED AS DIRECTED IN THE FIELD FOR SPECIAL CONDITIONS (LABOR PLACING THE SAME TO BE INCLUDED). UPON COMPLETION OF THE PROJECT REBATE ANY AMOUNT REMAINING TO THE OWNER.

9. LAP LENGTHS FOR BARS SCHEDULED AND DETAILED "CONT." SHALL BE:

FOR 3000 PSI CONCRETE

#3 BARS - 22 INCHES	#7 BARS - 63 INCHES
#4 BARS - 29 INCHES	
#5 BARS - 36 INCHES	
#6 BARS - 43 INCHES	

LAP LENGTH FOR WELDED WIRE REINFORCEMENT SHALL BE EQUAL TO A DISTANCE OF TWO TIMES THE MESH SIZE OPENING.

10. CONCRETE PLACED BY PUMPING SHALL MEET THE FOLLOWING REQUIREMENTS:

A) COARSE AGGREGATE SHALL BE GRADED FROM A MAXIMUM OF 1" DOWN.

B) MAXIMUM ALLOWABLE INCREASE IN CEMENT FACTOR SHALL BE 1/2 SACK PER CUBIC YARD OVER NORMAL MIX DESIGN.

C) MAXIMUM WATER CEMENT RATIO SHALL CONFORM TO NOTE 3 OF THIS SECTION. IF MORE WORKABILITY IS REQUIRED, AN ADMIXTURE MAY BE USED.

D) MAXIMUM WEIGHT RATIO OF FINE AGGREGATES TO COARSE AGGREGATES SHALL NOT EXCEED 2/3.

E) REFER TO ACI 301-05, SECTION 800, FOR OTHER PUMPING REQUIREMENTS.

11. WELDING OR HEAT BENDING OF REINFORCING BARS SHALL NOT BE PERMITTED, UNLESS APPROVED BY THE ENGINEER.

12. DURING PLACEMENT OF CONCRETE, USE A TREMIE OR OTHER MEANS TO LIMIT FREE FALL OF CONCRETE TO 5'-0"..

13. CONCRETE SHALL BE CONTINUOUSLY CURED FOR A PERIOD OF 7 DAYS FOLLOWING PLACEMENT BY ANY OF THE FOLLOWING METHODS:
A) FOGGING WITH WATER
B) APPLYING AN APPROVED SPRAY ON CONCRETE CURING COMPOUND
C) COVERING WITH A POLY MEMBRANE

14. SHOP DRAWINGS SHALL BE PREPARED FOR ALL REINFORCING STEEL AND SUBMITTED FOR REVIEW BY THE ENGINEER. ENGINEER'S REVIEW WILL COVER BAR SIZES, AND GENERAL AGREEMENTS BUT NOT DIMENSIONS OR QUANTITIES. ENGINEERING DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ANY REPRODUCED DRAWINGS WILL BE REJECTED AND RESUBMITTAL WILL BE REQUIRED.

15. HOT WEATHER CONCRETE:

THE TEMPERATURE OF CONCRETE AS PLACED SHALL NOT EXCEED 90°F UNLESS OTHERWISE SPECIFIED OR PERMITTED. LOSS OF SLUMP, FLASH SET, OR COLD JOINTS DUE TO TEMPERATURE OF CONCRETE AS PLACED WILL NOT BE ACCEPTABLE. WHEN TEMPERATURE OF CONCRETE EXCEEDS 90°F, OBTAIN ACCEPTANCE, WHEN REQUIRED, OF PROPOSED PRECAUTIONARY MEASURES. WHEN TEMPERATURE OF STEEL REINFORCEMENT IS GREATER THAN 120°F, FOG STEEL REINFORCEMENT, EMBEDMENTS, SUBGRADE AND FORMS WITH WATER IMMEDIATELY BEFORE PLACING CONCRETE. REMOVE STANDING WATER BEFORE PLACING CONCRETE. REDUCE TIME BETWEEN PLACING AND START OF CURING BY AVOIDING DELAYS DURING CONSTRUCTION. IN THE EVENT OF ANY DELAY DURING CONSTRUCTION PROTECT CONCRETE WITH TEMPORARY COVERINGS, SUCH AS POLYETHYLENE SHEETING OR SPRAY APPLY AN EVAPORATION RETARDER IMMEDIATELY AFTER FINISHING TO MINIMIZE EVAPORATION. APPLY A SUITABLE CURING MATERIAL SUCH AS A CURING COMPOUND, WET BURLAP, OR CURING PAPER.

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Firm Registration Number: 3937

POND DETAILS
OUTLET STRUCTURES

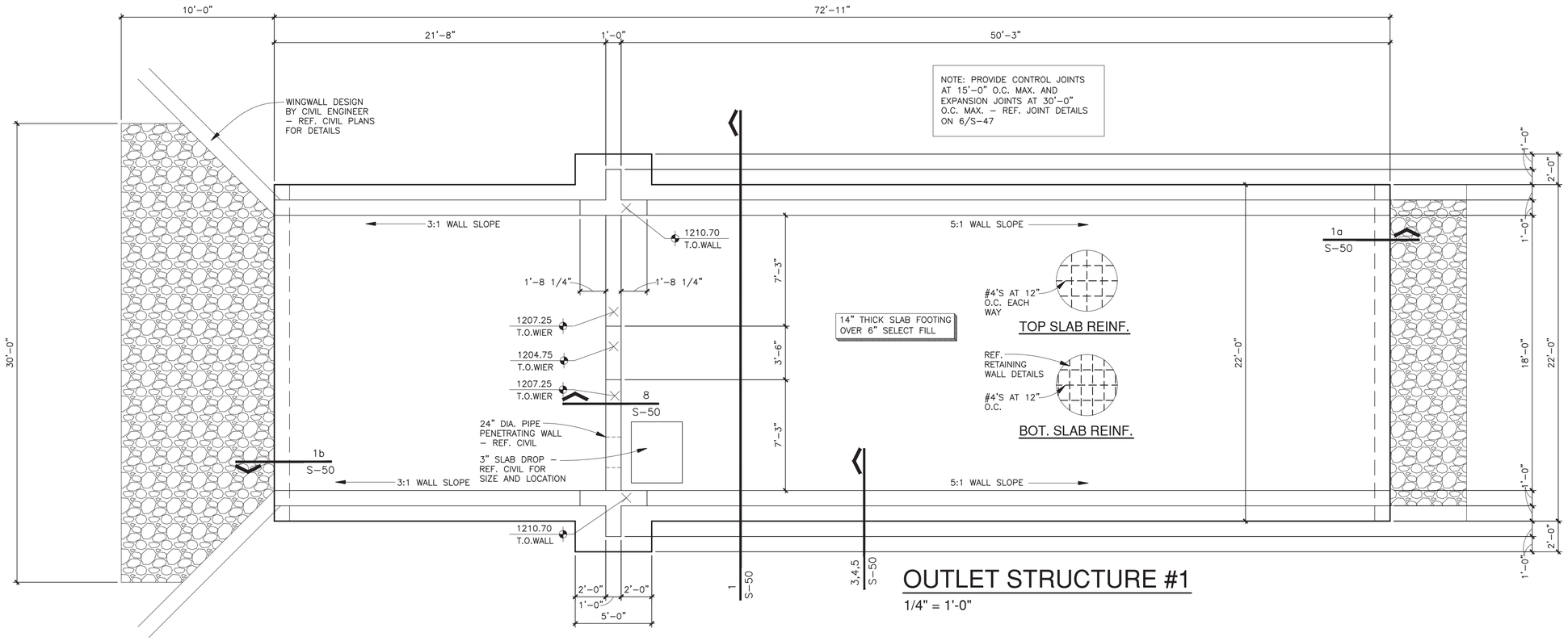
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
WILLIAM W. SMITH
104797
PROFESSIONAL ENGINEER
03/22/2019

Designed: CES
Drawn: CES
Reviewed: WWS
Date: 03/22/2019

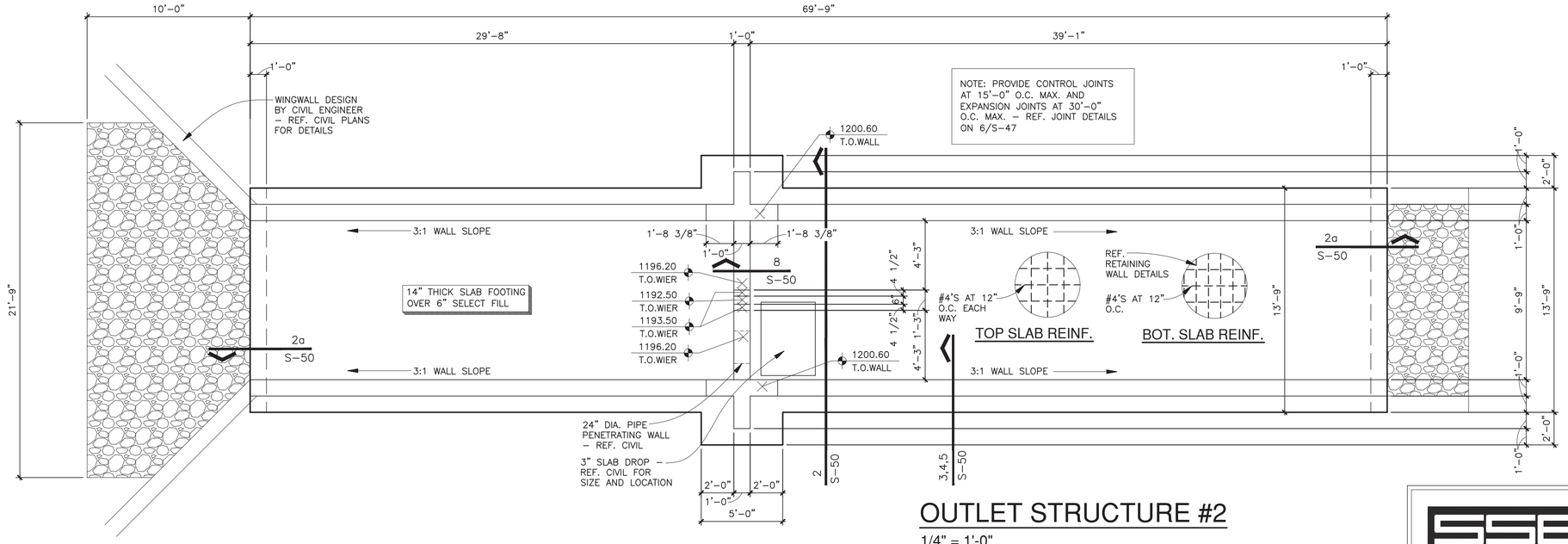
SHEET
48
OF

Project No.: 18163



OUTLET STRUCTURE #1

1/4" = 1'-0"



OUTLET STRUCTURE #2

1/4" = 1'-0"

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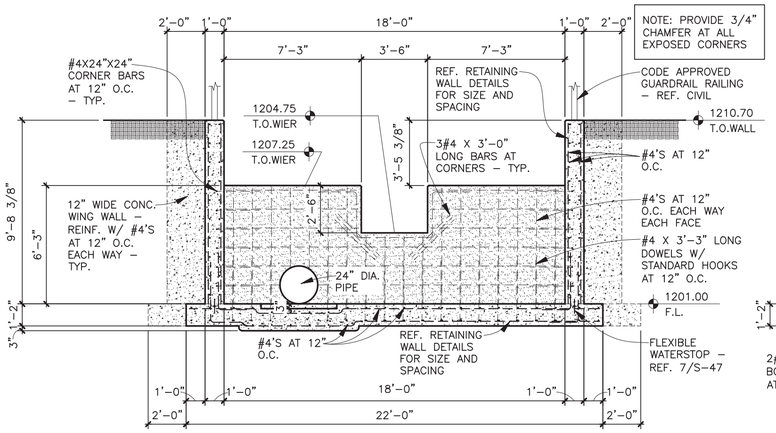
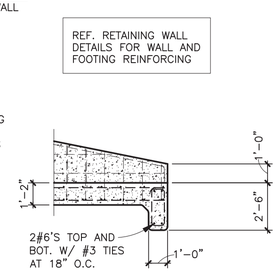


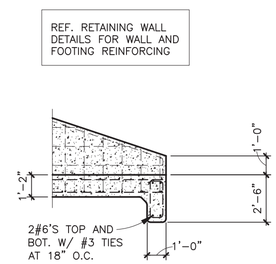
1. OUTLET STRUCTURE #1 SECTION

1/4" = 1'-0"



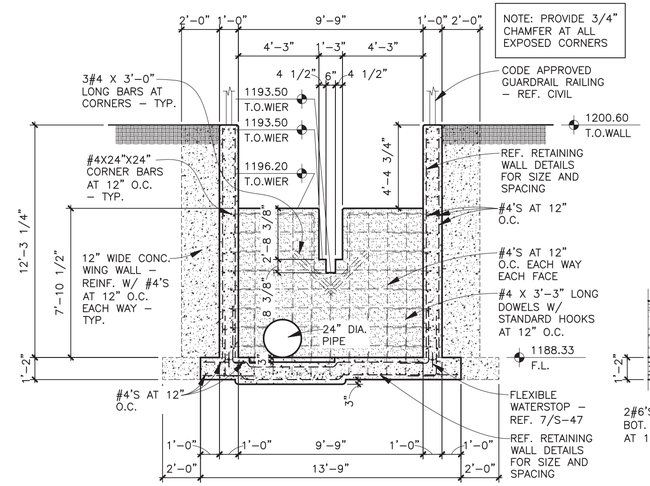
1a. 5:1 SLOPED WALL

1/4" = 1'-0"



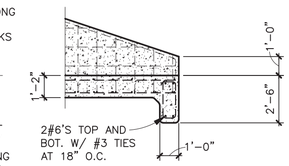
1b. 3:1 SLOPED WALL

1/4" = 1'-0"



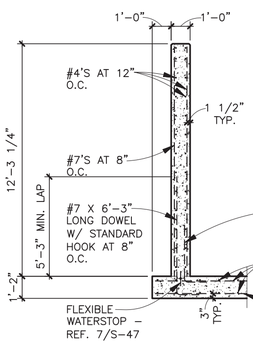
2. OUTLET STRUCTURE #2 SECTION

1/4" = 1'-0"



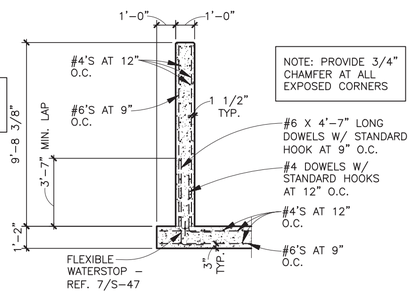
2a. 3:1 SLOPED WALL

1/4" = 1'-0"



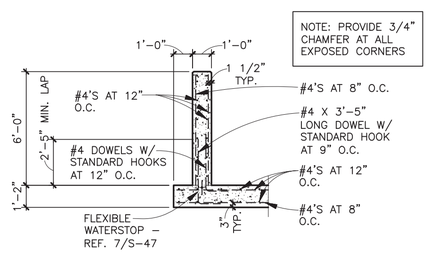
3. 12'-4" MAX. WALL

1/4" = 1'-0"



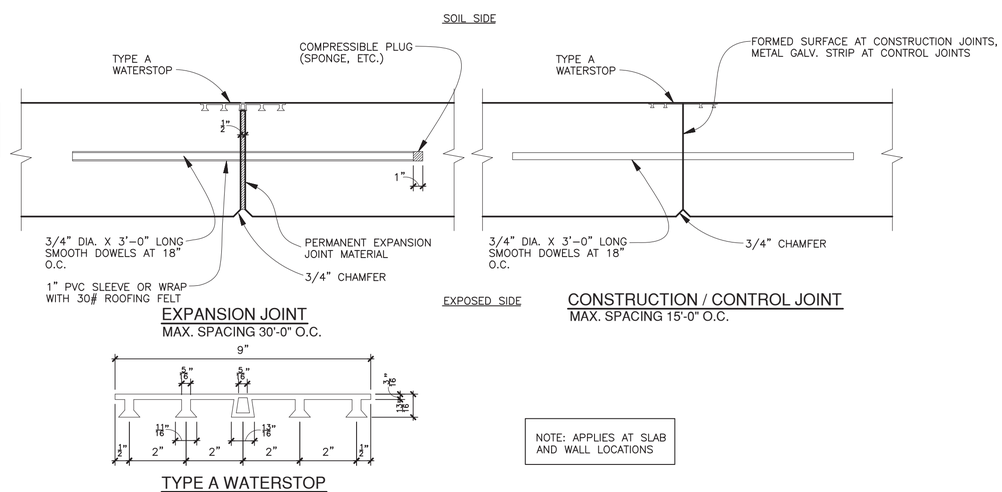
4. 9'-9" MAX. WALL

1/4" = 1'-0"



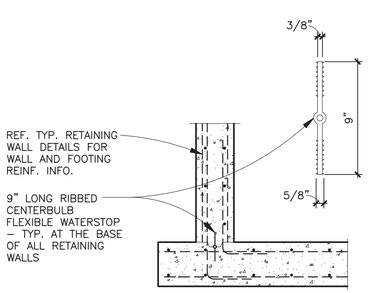
5. 6'-0" MAX. WALL

1/4" = 1'-0"



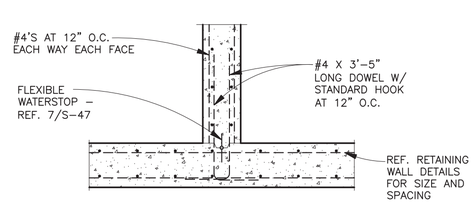
6. TYP. JOINT DETAILS

N.T.S.



7. TYP. FLEXIBLE WATERSTOP

N.T.S.



8. WALL SECTION AT WIER

N.T.S.

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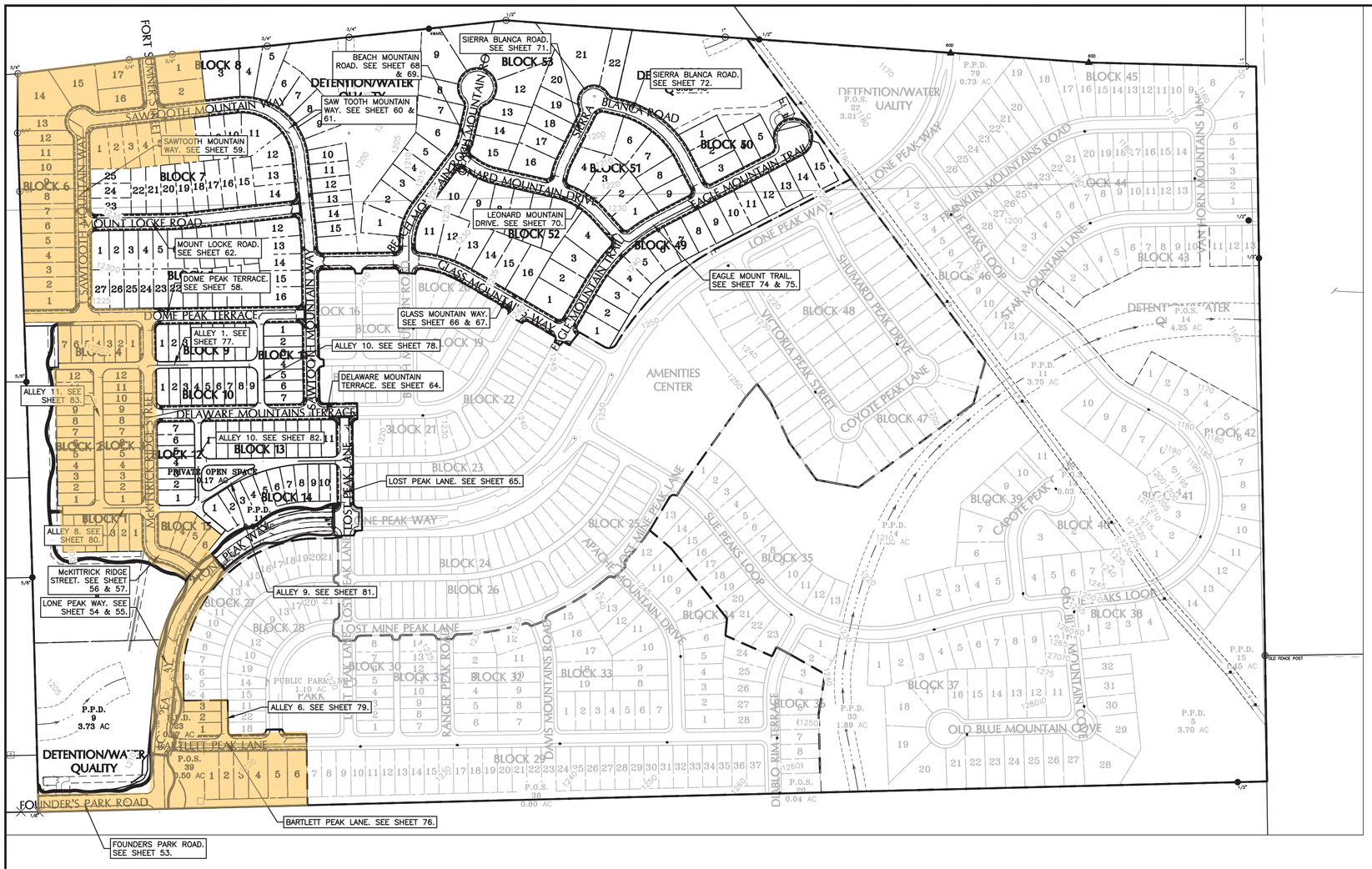
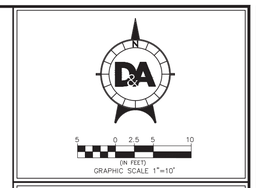
OF

Project No.: 18163





LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

PUBLIC ROADWAY TABLE

STREET NAME	R.O.W.	PAVEMENT	C&G	CL LENGTH	SIDEWALK
BARLETT PEAK LANE	50'	28'	Y	550.00 LF	BOTH SIDES 4' WIDE
BEACH MOUNTAIN ROAD	50'	28'	Y	628.42 LF	BOTH SIDES 4' WIDE
DELAWARE MOUNTAIN TERRACE	50'	28'	Y	640.15 LF	BOTH SIDES 4' WIDE
DOME PEAK TERRACE	50'	28'	Y	878.69 LF	BOTH SIDES 4' WIDE
EAGLE MOUNTAIN TRAIL	50'	28'	Y	977.06 LF	BOTH SIDES 4' WIDE
FOUNDER'S PARK ROAD	70'	28'	Y	372.33 LF	BOTH SIDES 4' WIDE
GLASS MOUNTAINS WAY	50'	28'	Y	874.03 LF	BOTH SIDES 4' WIDE
LONE PEAK WAY	70'	32'	Y	1,375.00 LF	4' WIDE SIDEWALK RIGHT & 8' TRAIL LEFT
LEONARD MOUNTAIN DRIVE	50'	28'	Y	548.72 LF	BOTH SIDES 4' WIDE
LOST PEAK LANE	50'	28'	Y	1,014.14 LF	BOTH SIDES 4' WIDE
MCKITTRICK RIDGE STREET	50'	28'	Y	900.28 LF	BOTH SIDES 4' WIDE
MOUNT LOCKE ROAD	50'	28'	Y	686.79 LF	BOTH SIDES 4' WIDE
SAWTOOTH MOUNTAIN WAY	50'	28'	Y	2,143.70 LF	BOTH SIDES 4' WIDE
SIERRA BLANCA ROAD	50'	28'	Y	824.65 LF	BOTH SIDES 4' WIDE
ALLEY 1	20'	20'	N	621.00 LF	N/A
ALLEY 2	20'	20'	N	300.00 LF	N/A
ALLEY 6	20'	20'	N	132.00 LF	N/A
ALLEY 8	28'	28'	N	268.00 LF	N/A
ALLEY 9	20'	20'	N	527.93 LF	N/A
ALLEY 10	20'	20'	N	400.00 LF	N/A
ALLEY 11	28'	28'	N	442.00 LF	N/A

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

OVERALL ROAD LAYOUT

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 51 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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Last Modified: Mar. 15, 19 – 13:28
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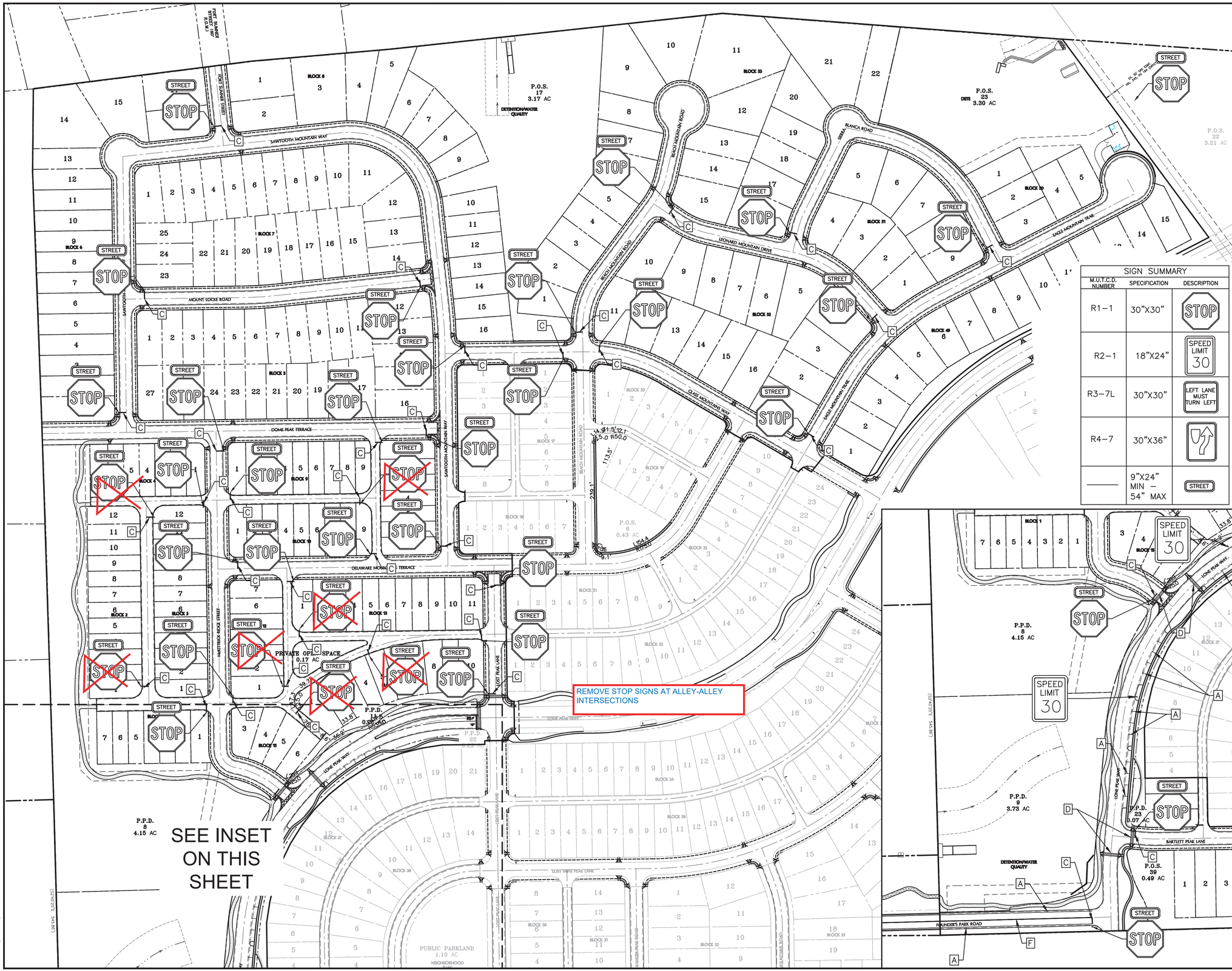

SIGN SUMMARY

M.U.T.C.D. NUMBER	SPECIFICATION	DESCRIPTION
R1-1	30"X30"	STOP
R2-1	18"X24"	SPEED LIMIT 30
R3-7L	30"X30"	LEFT LANE MUST TURN LEFT
R4-7	30"X36"	
	9"X24" MIN – 54" MAX	STREET

LEGEND

- A — SINGLE WHITE SOLID LINE 6"
- B — SINGLE WHITE DASHED LINE 6"
- C — SINGLE WHITE SOLID LINE 24" (STOPBAR)
- D — SINGLE WHITE SOLID LINE 6" 45° @ 3' C-C
- E — SINGLE YELLOW SOLID LINE 6"
- F — DOUBLE YELLOW SOLID LINE 6"
- G — REFL PAV MRK TY I (W) (ARROW)
- H — REFL PAV MRK TY I (W) (WORD)
- S — STORM SEWER MANHOLE
- WW — WASTEWATER MANHOLE
- W — WATER MANHOLE
- SIGN (AS NOTED)
- CONCRETE
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OE — OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED BY HOME BUILDER
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

50 0 25 50 100
(IN FEET)
GRAPHIC SCALE 1"=100'

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OVERALL STRIPING & SIGNAGE PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 52 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_STRIPE.dwg
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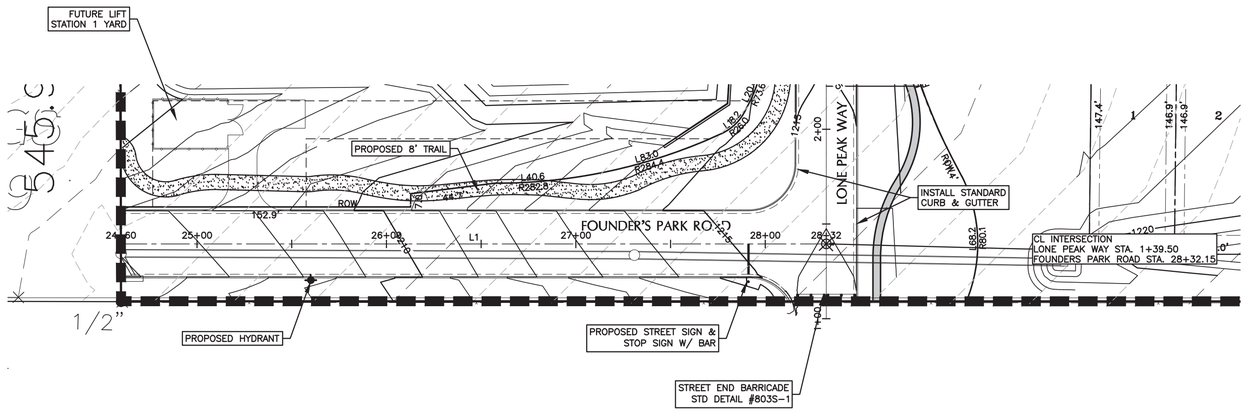
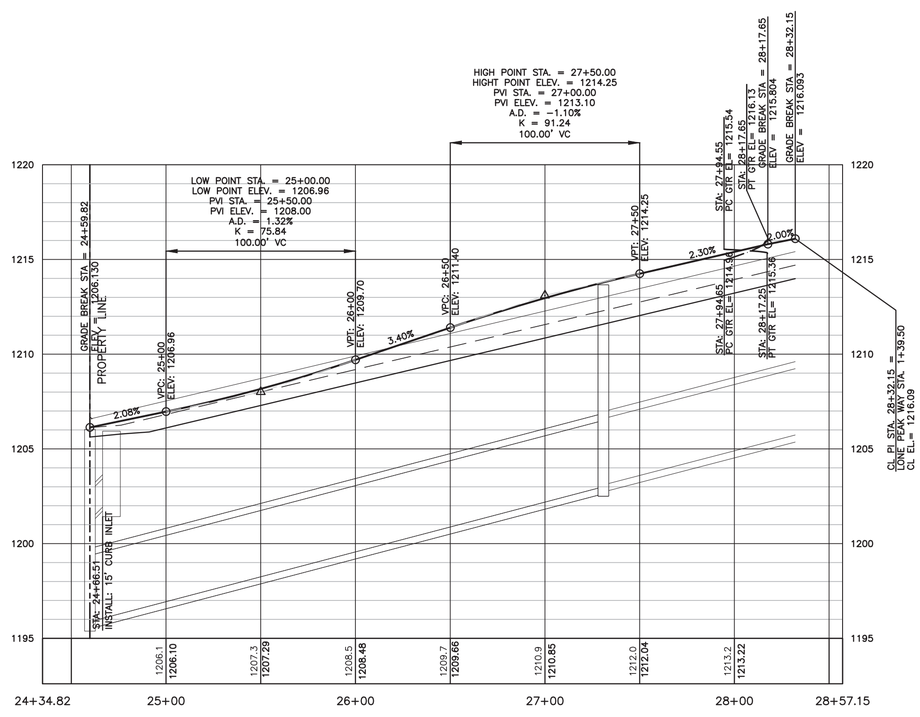


Founders Park Road Line Table				
Line #	Length	Direction	Start Point	End Point
L1	372.32	N88° 34' 29.53"E	(2259325.51,13985158.80)	(2259697.72,13985168.06)



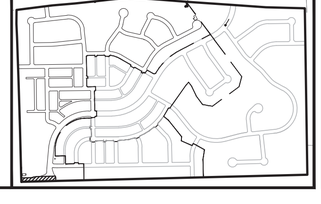
FOUNDERS PARK ROAD
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

NOTE:
1. CONSTRUCTION PLANS FOR EXTENSION OF FOUNDER'S PARK ROAD UNDER SEPARATE DOCUMENTS ENTITLED "FOUNDER'S PARK ROAD ROADWAY IMPROVEMENTS".
2. PAVEMENT IS -2% LEFT TO RIGHT. SEE CROSS-SECTION FOR FOUNDERS PARK ROAD. LEFT CURB IS SPILL CURB, RIGHT CURB IS CATCH CURB. BOTH CURBS WILL TRANSITION TO 24" LAY-DOWN CURB OFFSITE (SEE FOUNDERS PARK ROAD IMPROVEMENTS PLAN).

LAYOUT KEY



N

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OE — OE — OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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www.doucetengineers.com
Firm Registration Number: 3937

FOUNDERS PARK ROAD PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

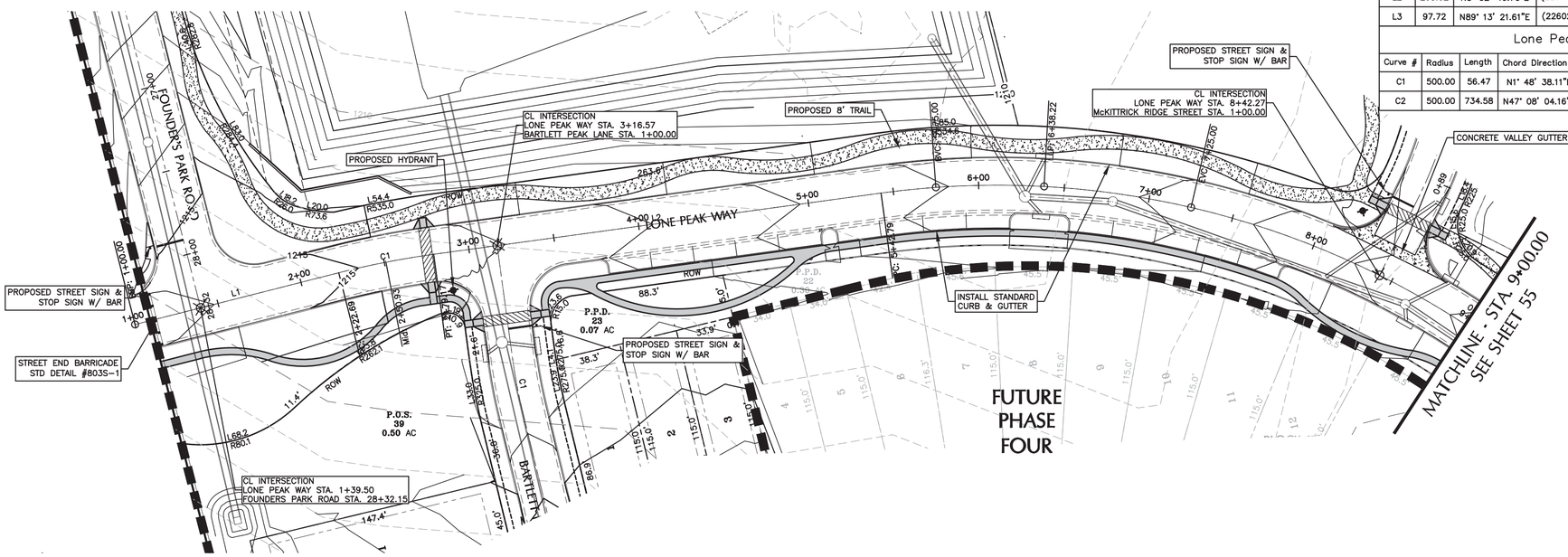
SHEET
53
OF 175

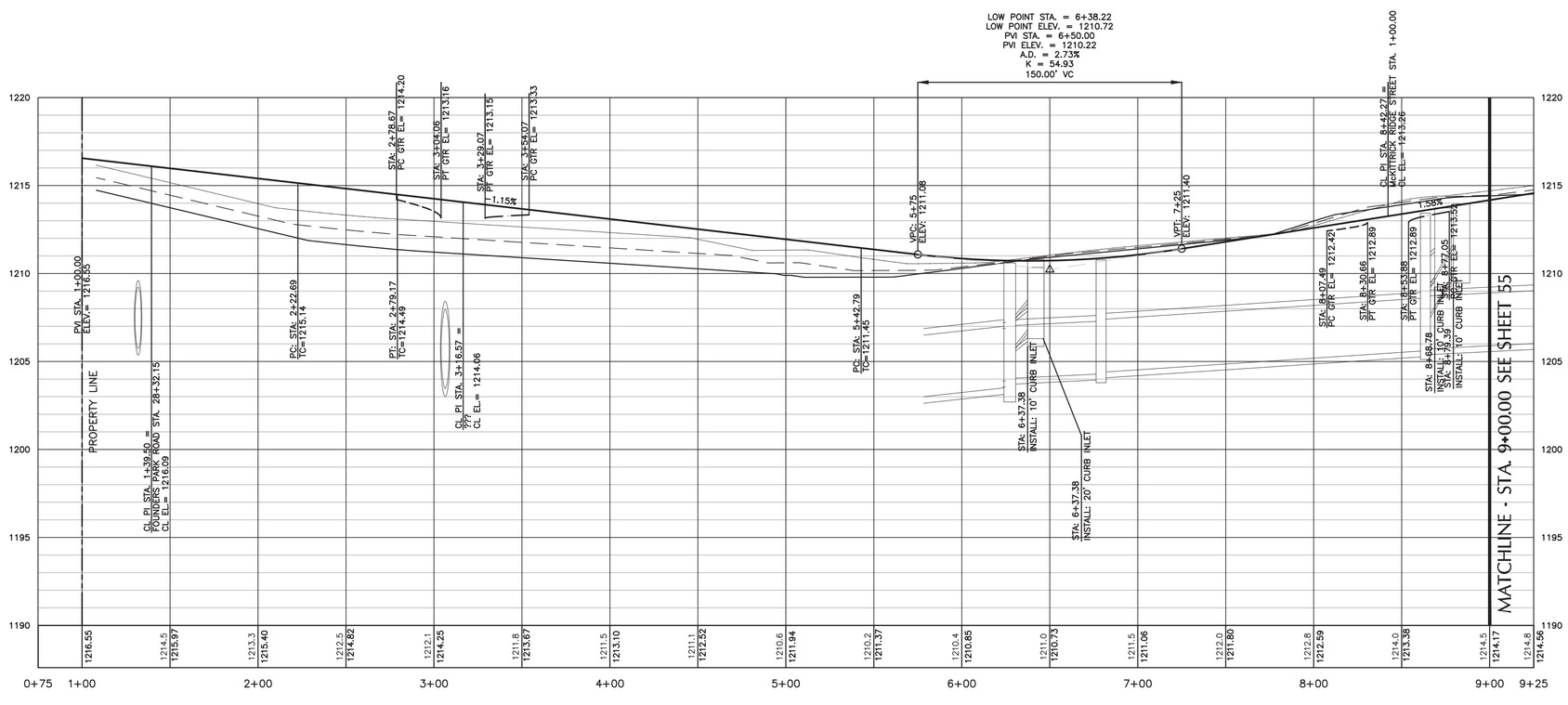
Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 19:27:30

Lone Peak Way Line Table				
Line #	Length	Direction	Start Point	End Point
L1	122.69	N1° 25' 30.47"W	(2259698.70,13985128.57)	(2259695.65,13985251.23)
L2	263.62	N5° 02' 46.70"E	(2259697.43,13985307.65)	(2259720.62,13985570.25)
L3	97.72	N89° 13' 21.61"E	(2260211.90,13986026.22)	(2260308.38,13986027.53)

Lone Peak Way Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	500.00	56.47	N1° 48' 38.11"E	(2259695.65,13985251.23)	(2259697.43,13985307.65)
C2	500.00	734.58	N47° 08' 04.16"E	(2259720.62,13985570.25)	(2260211.90,13986026.22)





LONE PEAK WAY
H SCALE: 1"=40'
V SCALE: 1"=4'

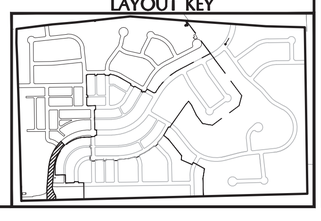
PROFILE LEGEND
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

LONE PEAK WAY PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 54 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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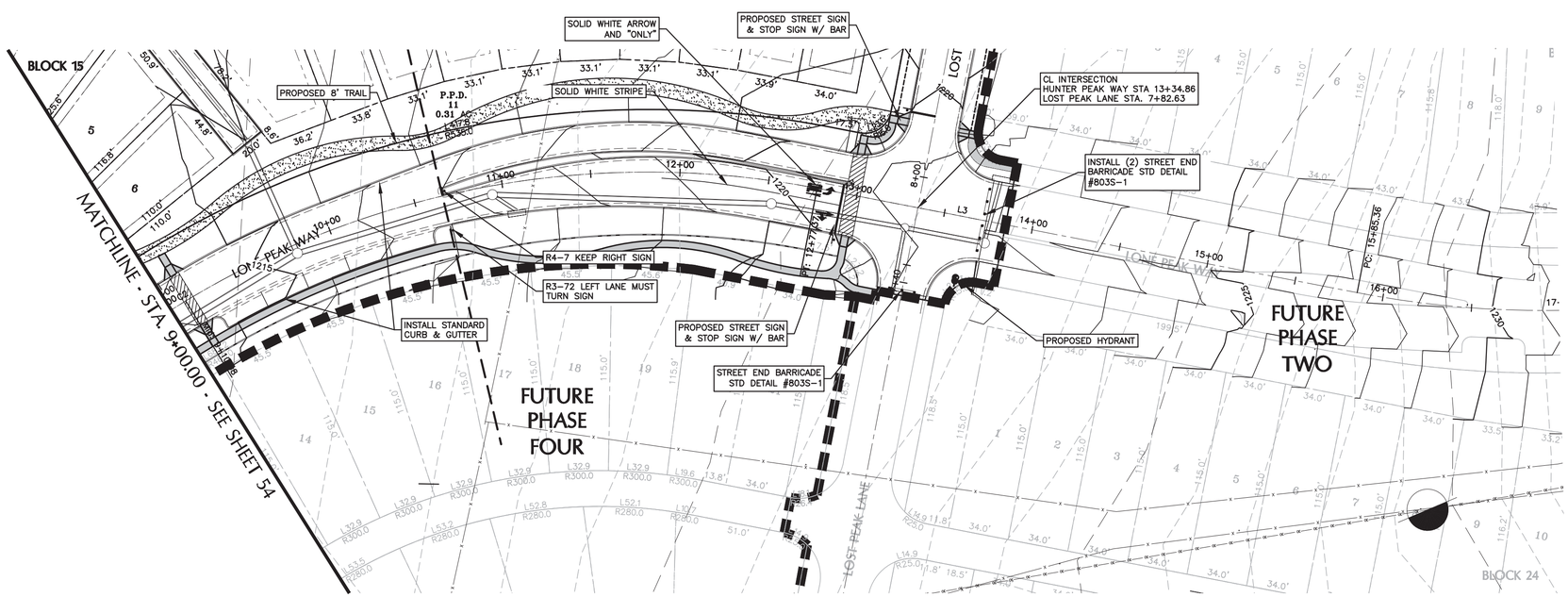

Lone Peak Way Line Table				
Line #	Length	Direction	Start Point	End Point
L1	122.69	N1° 25' 30.47"W	(2259698.70,13985128.57)	(2259695.65,13985251.23)
L2	263.62	N5° 02' 46.70"E	(2259697.43,13985307.65)	(2259720.62,13985570.25)
L3	97.72	N89° 13' 21.61"E	(2260211.90,13986026.22)	(2260308.38,13986027.53)

Lone Peak Way Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
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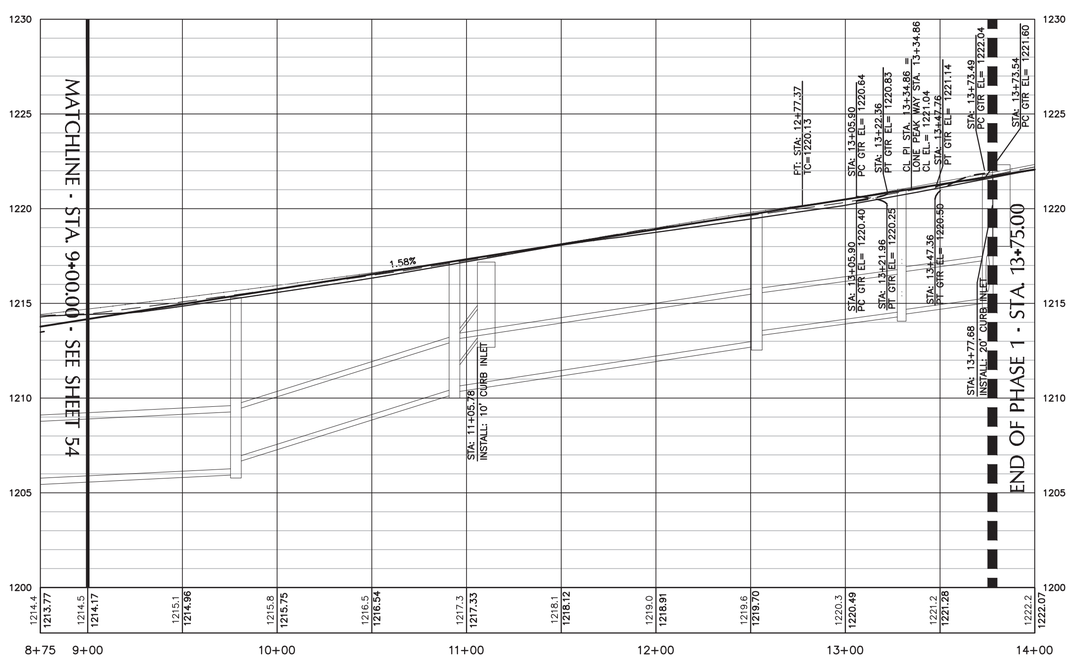
C2	500.00	734.58	N47° 08' 04.16"E	(2259720.62,13985570.25)	(2260211.90,13986026.22)



LONE PEAK WAY
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
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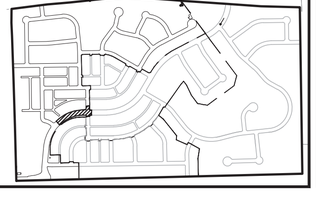
- CURB & GUTTER

LAYOUT KEY



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www.doucetengineers.com
Firm Registration Number: 3937

LONE PEAK WAY PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

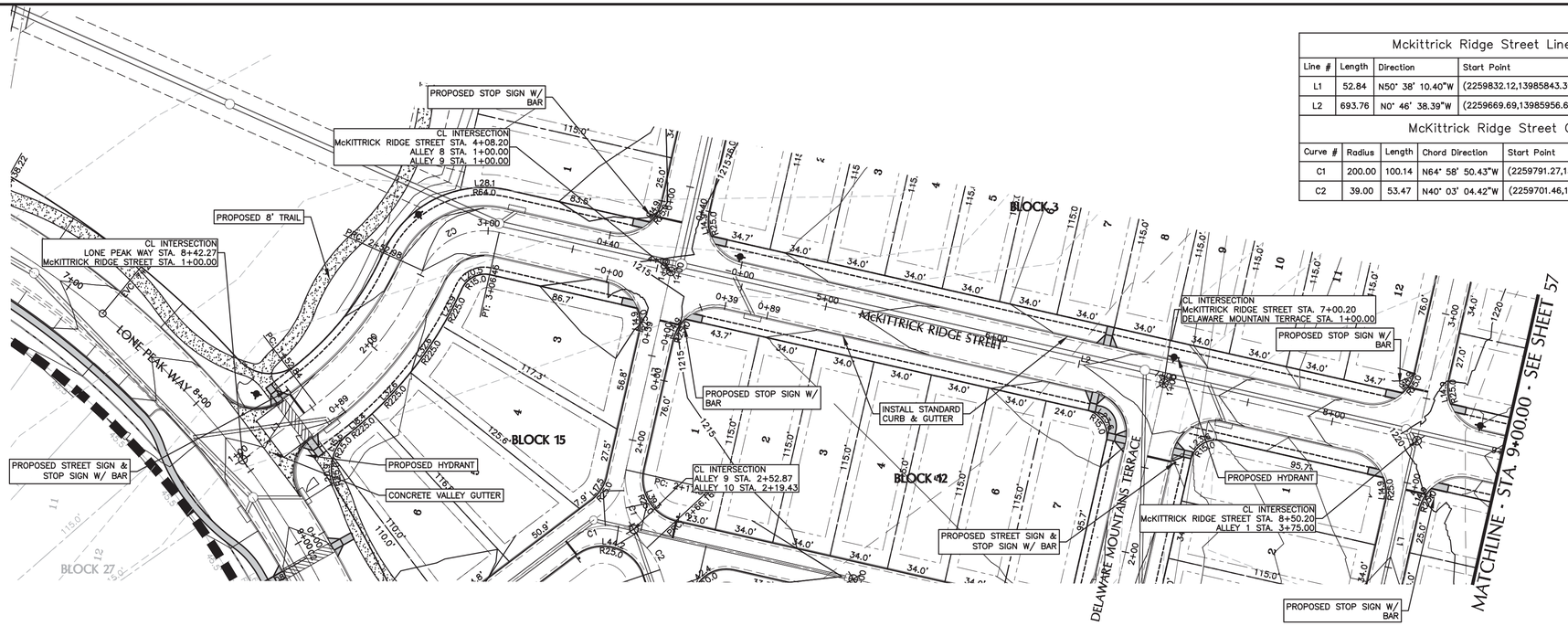
SHEET 55 OF 175

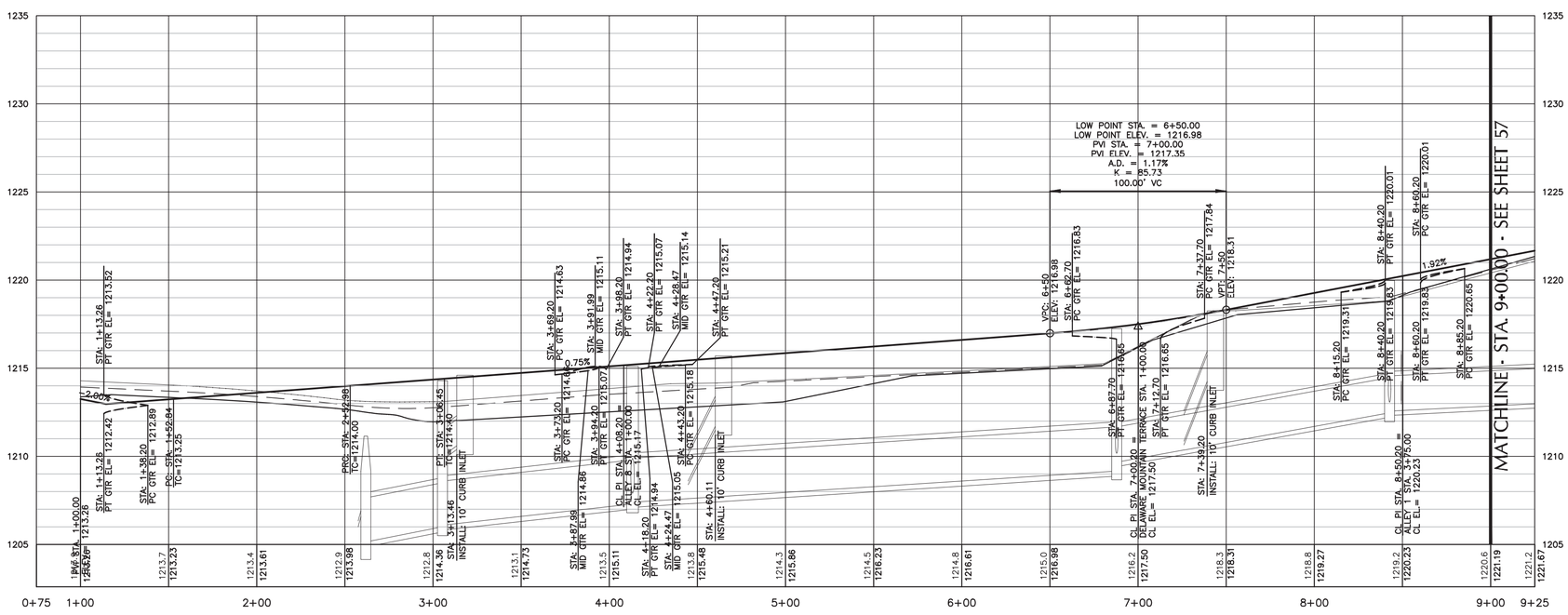
Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_PD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 19:33:40

Mckittrick Ridge Street Line Table				
Line #	Length	Direction	Start Point	End Point
L1	52.84	N50° 38' 10.40"W	(2259832.12,13985843.39)	(2259791.27,13985876.90)
L2	693.76	N0° 46' 38.39"W	(2259669.69,13985956.61)	(2259660.28,13986650.30)

McKittrick Ridge Street Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	200.00	100.14	N64° 58' 50.43"W	(2259791.27,13985876.90)	(2259701.46,13985918.81)
C2	39.00	53.47	N40° 03' 04.42"W	(2259701.46,13985918.81)	(2259669.69,13985956.61)





McKITTRICK RIDGE STREET
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

LEGEND
- CO CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
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- CHAIN LINK FENCE
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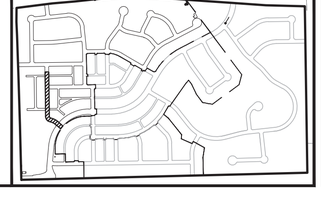
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

McKITTRICK RIDGE STREET PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
56
OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
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Last Modified: Mar. 15, 19 - 13:28
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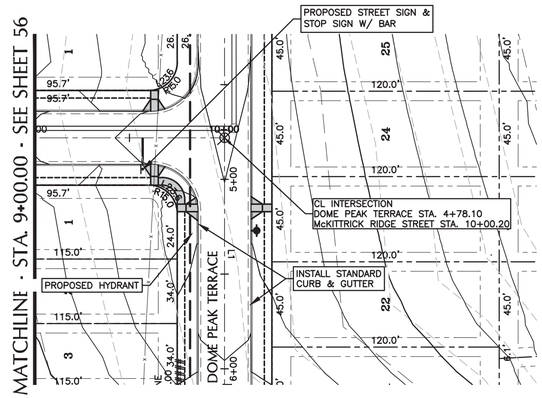

Mckittrick Ridge Street Line Table				
Line #	Length	Direction	Start Point	End Point
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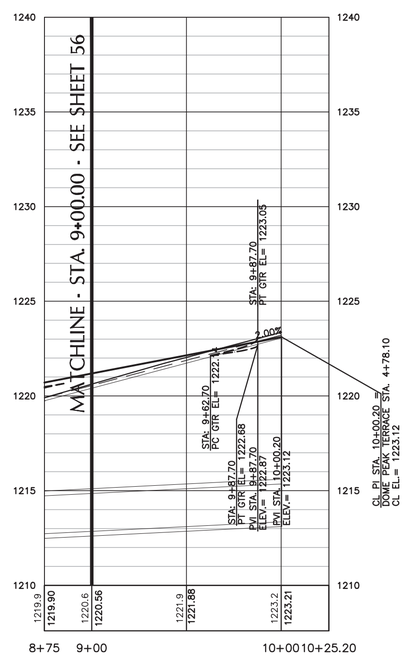
L2	693.76	N0° 46' 38.39"W	(2259669.69,13985956.61)	(2259660.28,13986650.30)

McKittrick Ridge Street Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	200.00	100.14	N64° 58' 50.43"W	(2259791.27,13985876.90)	(2259701.46,13985918.81)
C2	39.00	53.47	N40° 03' 04.42"W	(2259701.46,13985918.81)	(2259669.69,13985956.61)



McKITTRICK RIDGE STREET
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

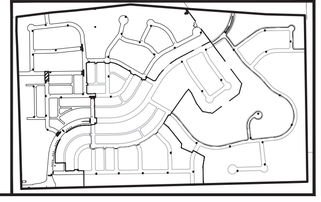
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

McKITTRICK RIDGE STREET PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

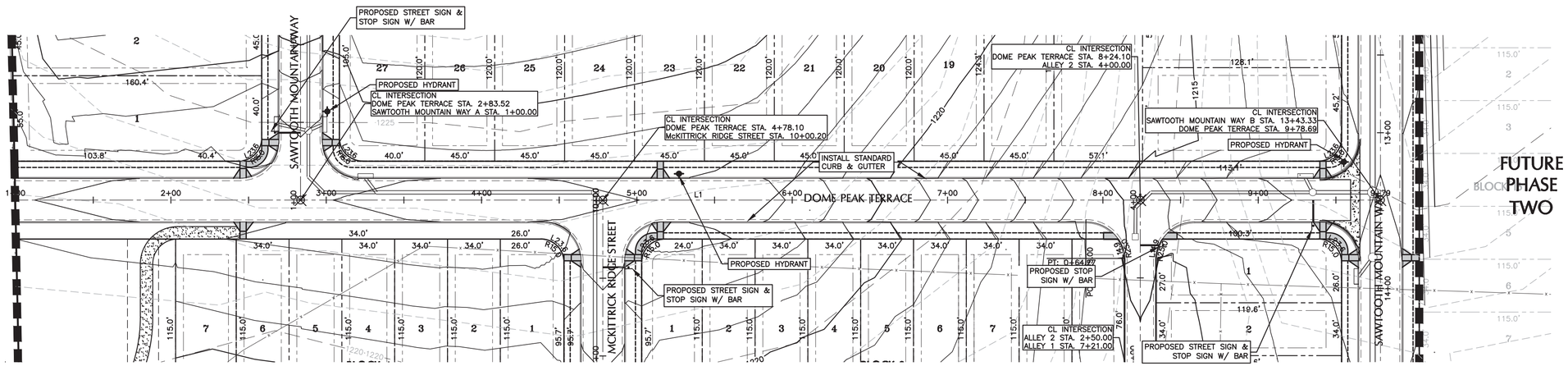
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

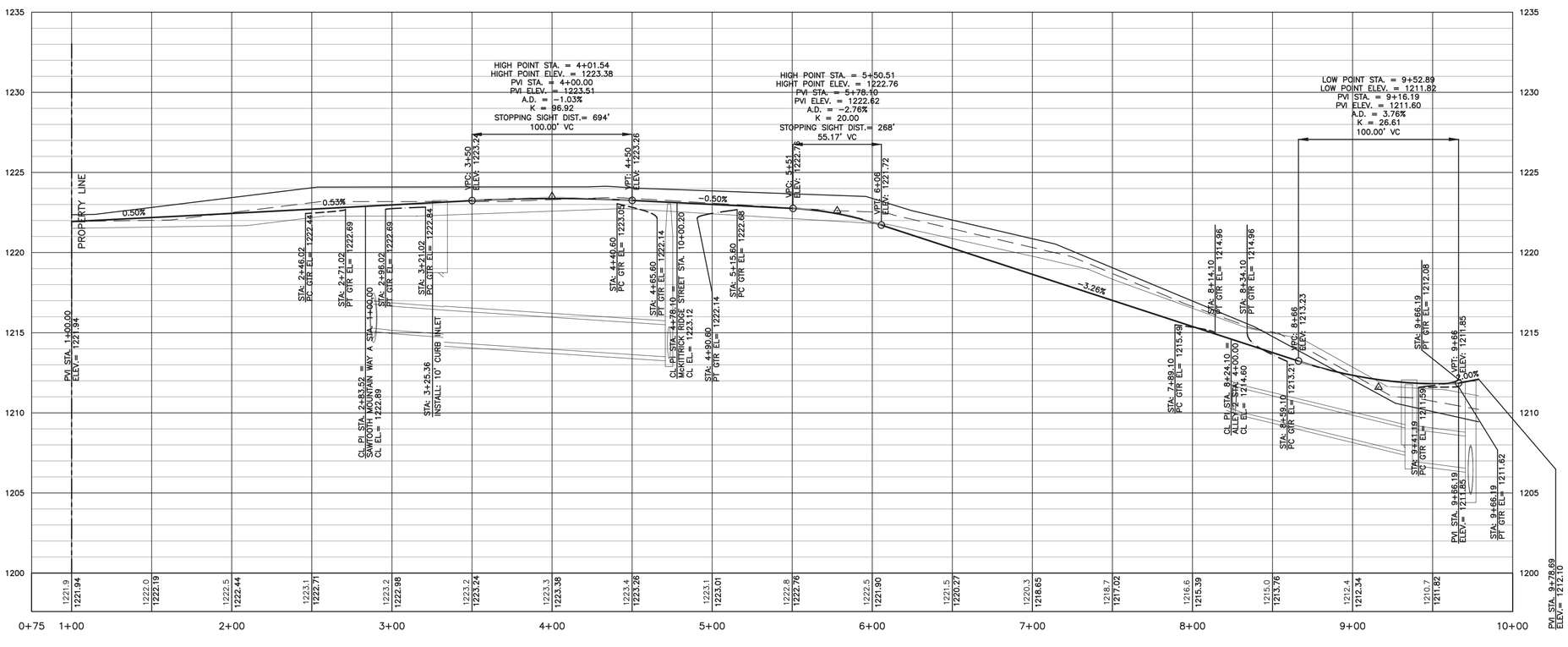
SHEET 57 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 19:38:27



Dome Peak Terrace Line Table				
Line #	Length	Direction	Start Point	End Point
L1	878.69	N89° 13' 21.61"E	(2259282.21,13986645.17)	(2260160.82,13986657.09)



DOME PEAK TERRACE
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

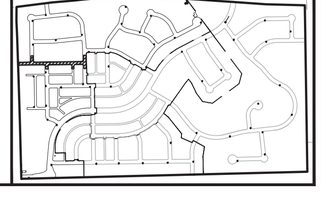
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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DOME PEAK TERRACE PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 58 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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Last Modified: Mar. 15, 19 - 13:28
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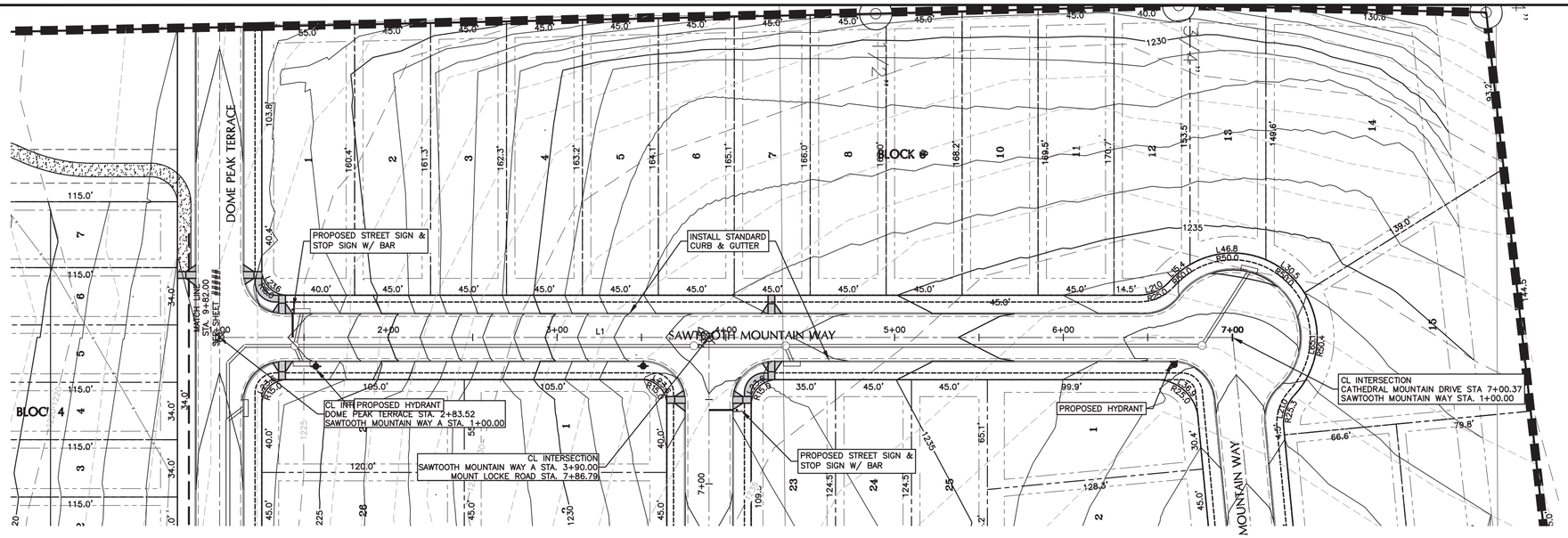
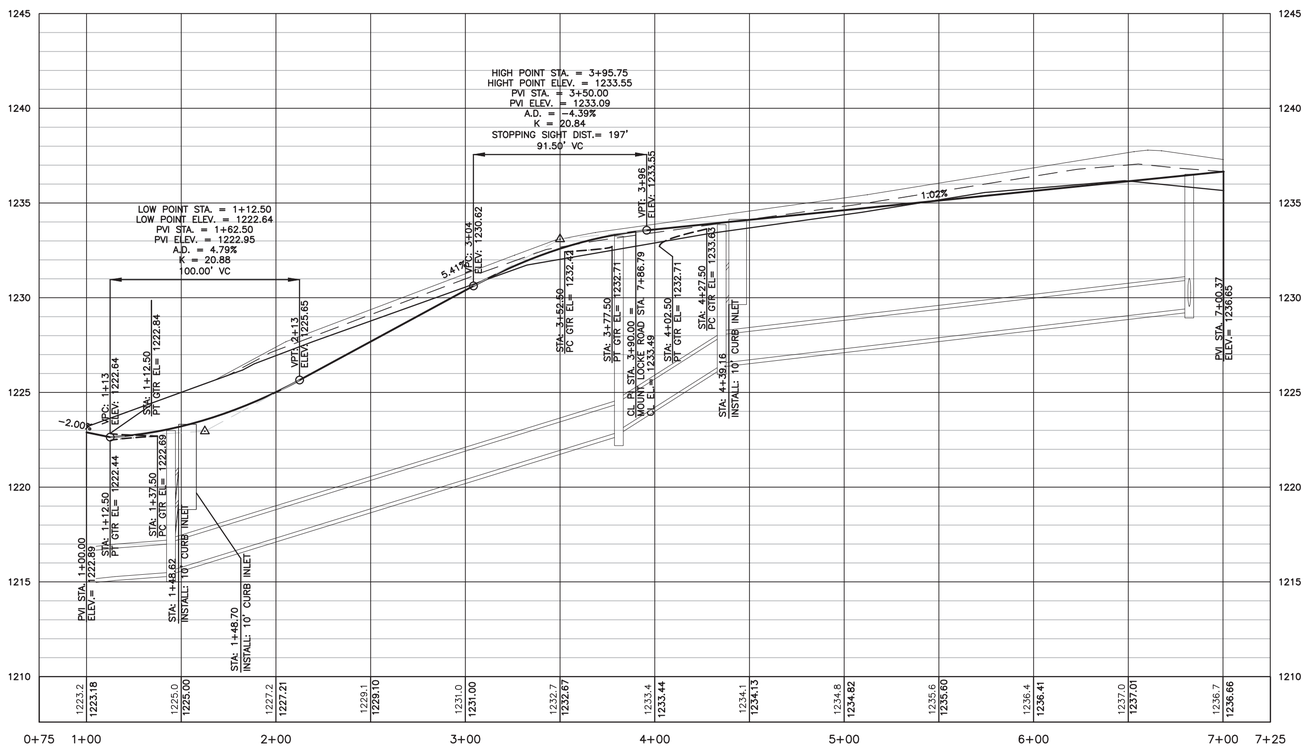


Sawtooth Mountain Way A Line Table				
Line #	Length	Direction	Start Point	End Point
L1	600.37	N0° 46' 38.39"W	(2259465.71,13986647.66)	(2259457.57,13987247.98)



SAWTOOTH MOUNTAIN WAY A
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

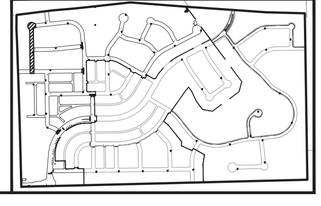
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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SAWTOOTH MOUNTAIN WAY PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 59 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\169102-CD-PH1_RD.dwg
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Last Modified: Mar. 15, 19 - 13:28
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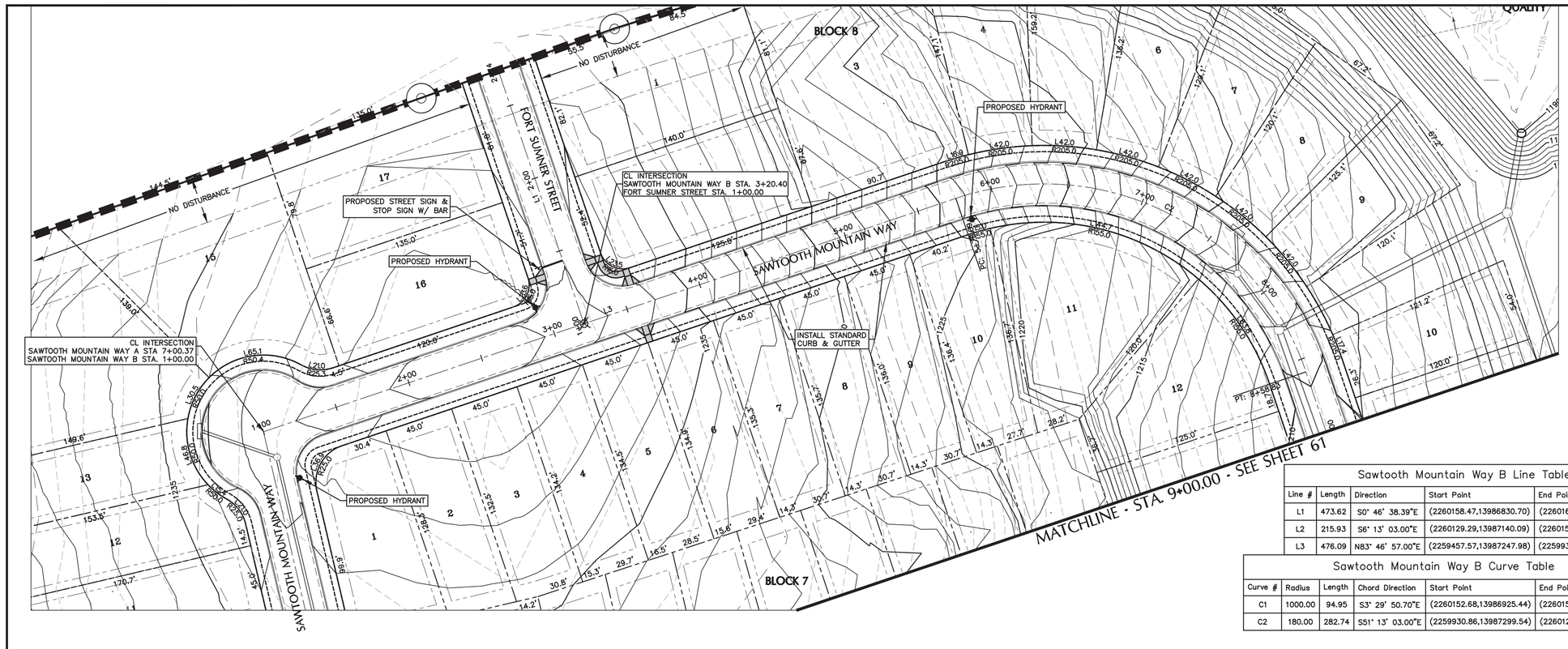


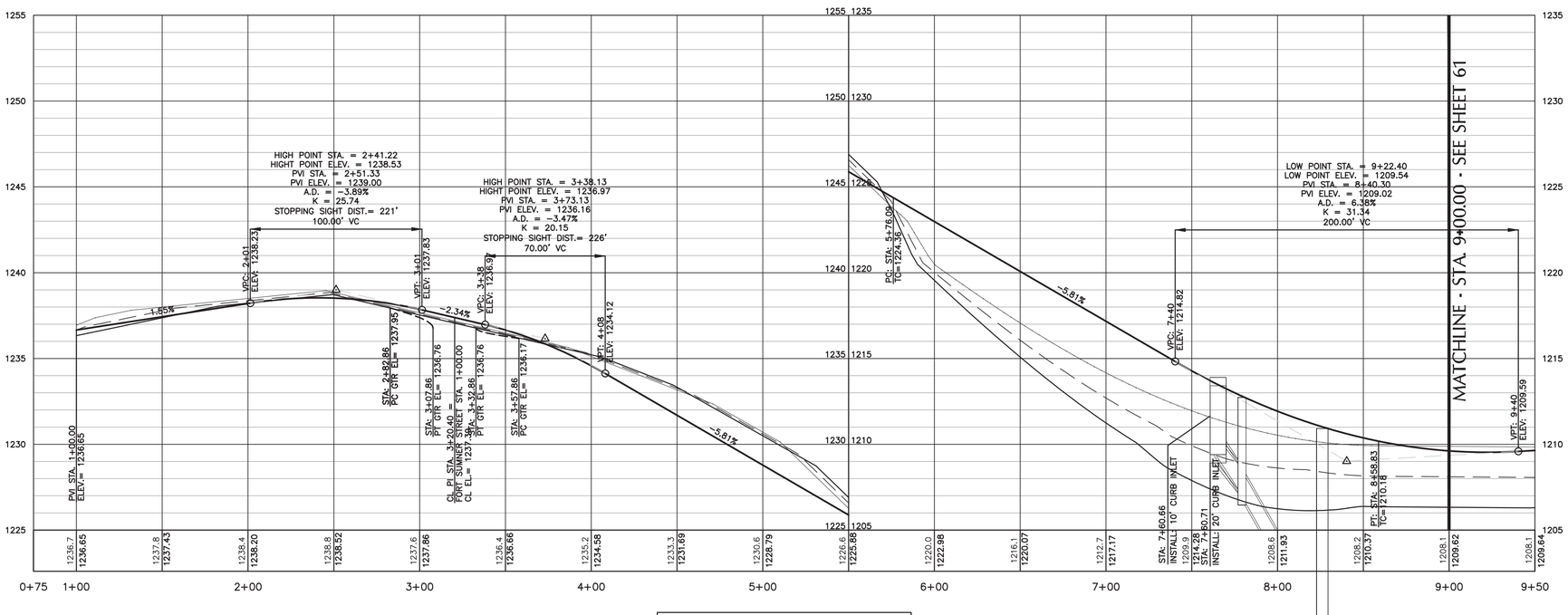
Sawtooth Mountain Way B Line Table				
Line #	Length	Direction	Start Point	End Point
L1	473.62	S0° 46' 38.39"E	(2260158.47,13986830.70)	(2260164.89,13986357.12)
L2	215.93	S6° 13' 03.00"E	(2260129.29,13987140.09)	(2260152.68,13986925.44)
L3	476.09	N83° 46' 57.00"E	(2259457.57,13987247.98)	(2259930.86,13987299.54)

Sawtooth Mountain Way B Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	1000.00	94.95	S3° 29' 50.70"E	(2260152.68,13986925.44)	(2260158.47,13986830.70)
C2	180.00	282.74	S51° 13' 03.00"E	(2259930.86,13987299.54)	(2260129.29,13987140.09)

GRAPHIC SCALE 1"=40'

LEGEND

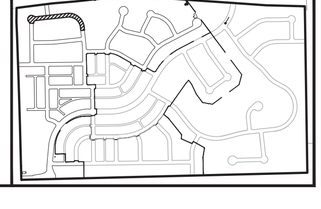
- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER



SAWTOOTH MOUNTAIN WAY B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

LAYOUT KEY



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SAWTOOTH MOUNTAIN WAY PLAN & PROFILE B

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
60
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
User: JBANISTER
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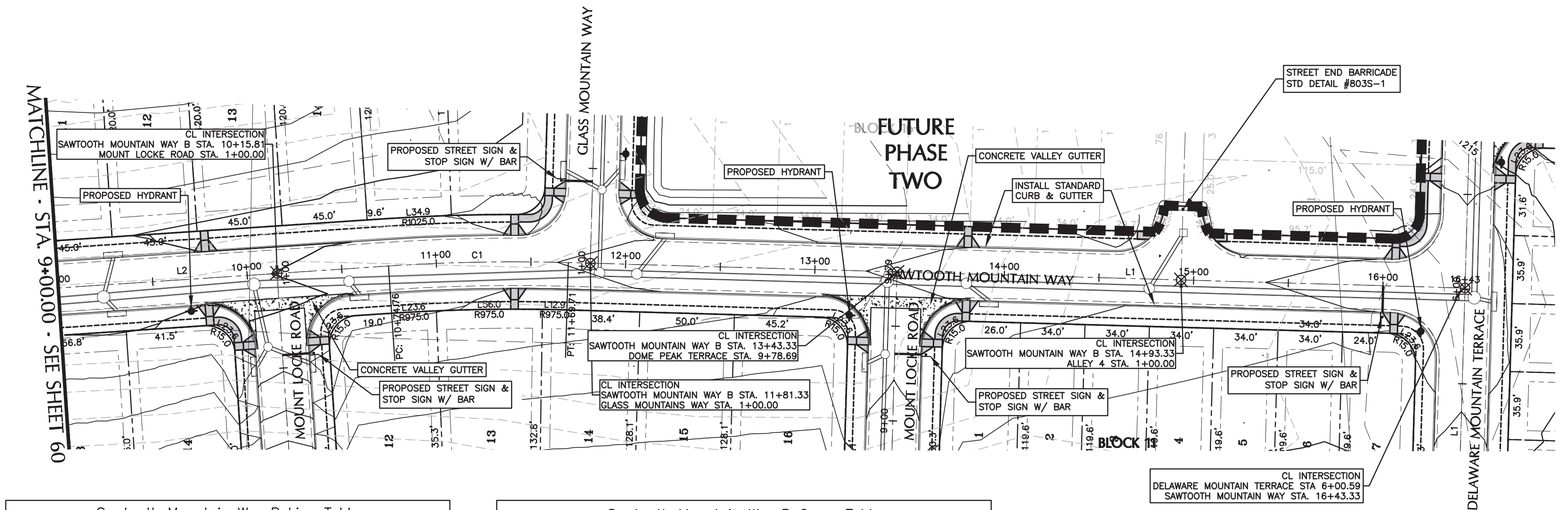
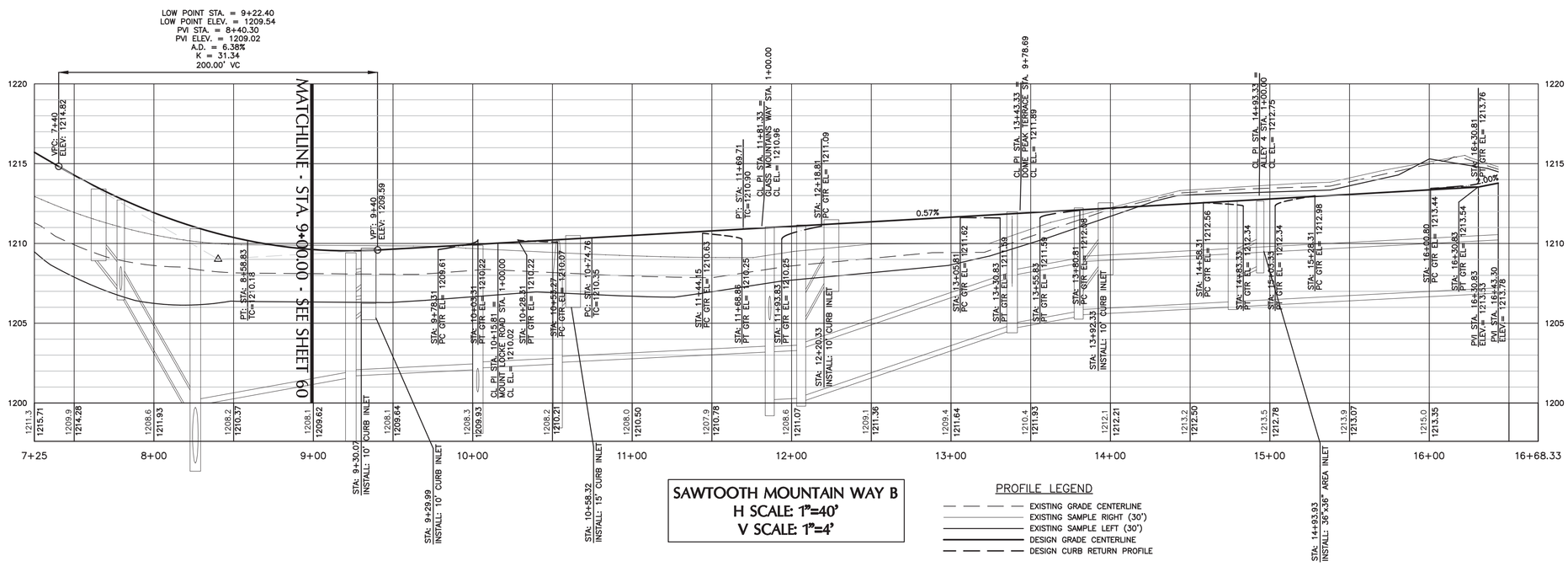


Sawtooth Mountain Way B Line Table				
Line #	Length	Direction	Start Point	End Point
L1	473.62	S0° 46' 38.39"E	(2260158.47,13986830.70)	(2260164.89,13986357.12)
L2	215.93	S6° 13' 03.00"E	(2260129.29,13987140.09)	(2260152.68,13986925.44)
L3	476.09	N83° 46' 57.00"E	(2259457.57,13987247.98)	(2259930.86,13987299.54)

Sawtooth Mountain Way B Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	1000.00	94.95	S3° 29' 50.70"E	(2260152.68,13986925.44)	(2260158.47,13986830.70)
C2	180.00	282.74	S51° 13' 03.00"E	(2259930.86,13987299.54)	(2260129.29,13987140.09)



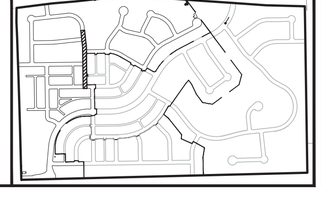
SAWTOOTH MOUNTAIN WAY B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND
- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

SAWTOOTH MOUNTAIN WAY PLAN & PROFILE C

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 61 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_PD.dwg
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Last Modified: Mar. 15, 19 - 13:28
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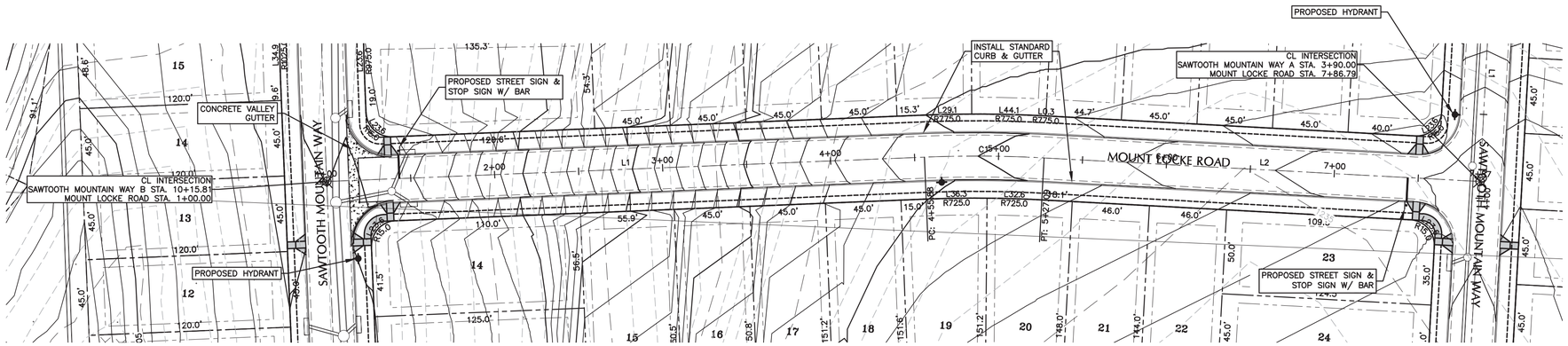
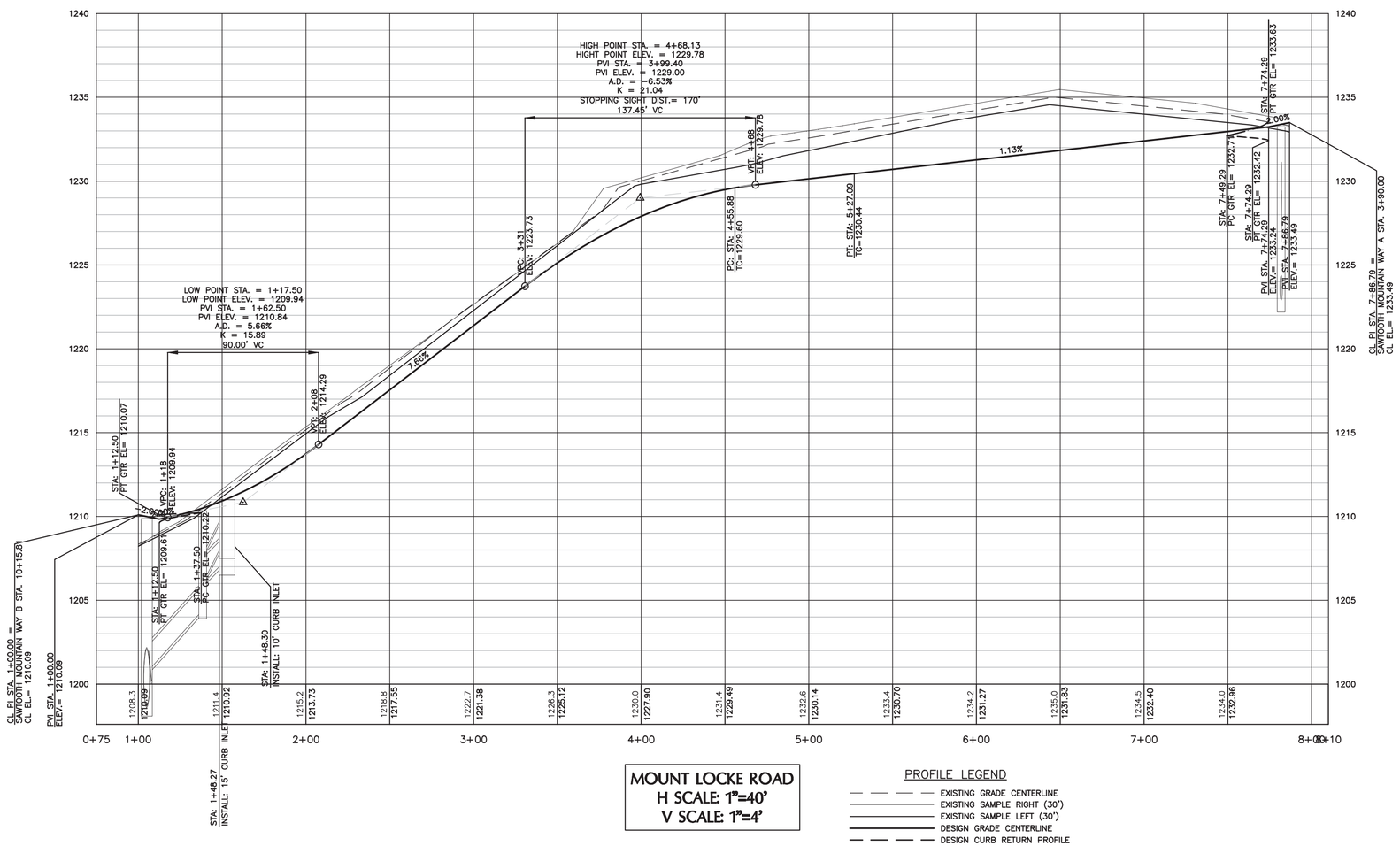


Mount Locke Road Line Table				
Line #	Length	Direction	Start Point	End Point
L1	355.88	S83° 46' 57.00"W	(2260146.29,13986984.04)	(2259792.50,13986945.50)
L2	259.70	S89° 13' 21.61"W	(2259721.45,13986941.16)	(2259461.78,13986937.64)

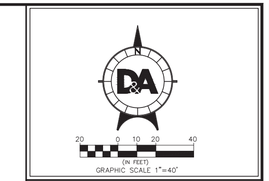
Mount Locke Road Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	750.00	71.21	S86° 30' 09.30"W	(2259792.50,13986945.50)	(2259721.45,13986941.16)



MOUNT LOCKE ROAD
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

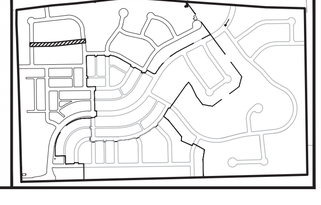
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE



LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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www.doucetengineers.com
Firm Registration Number: 3937

MOUNT LOCKE ROAD PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
62
OF 175

Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
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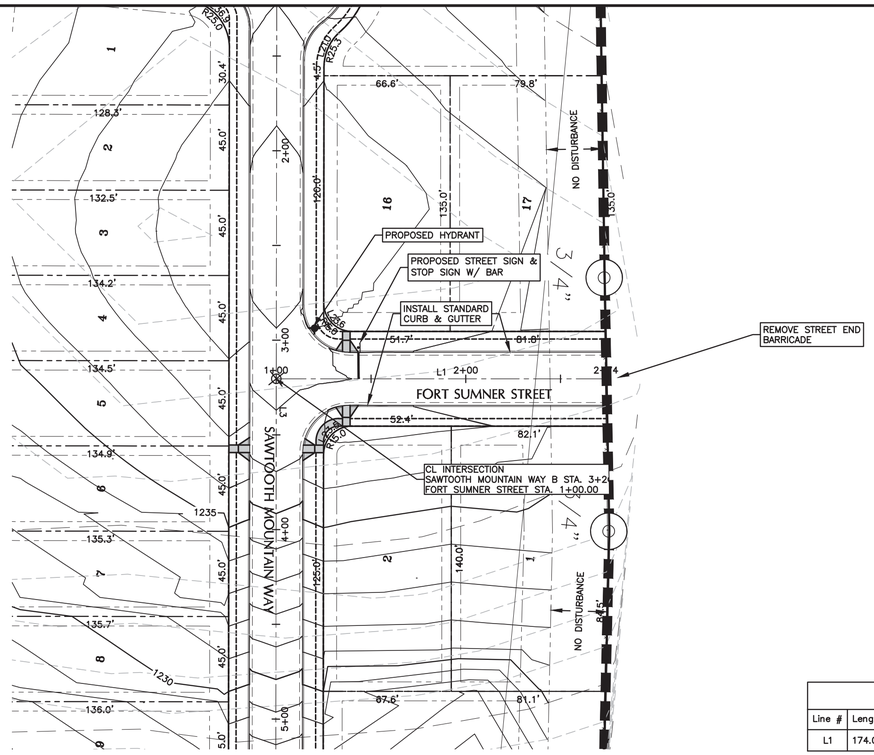
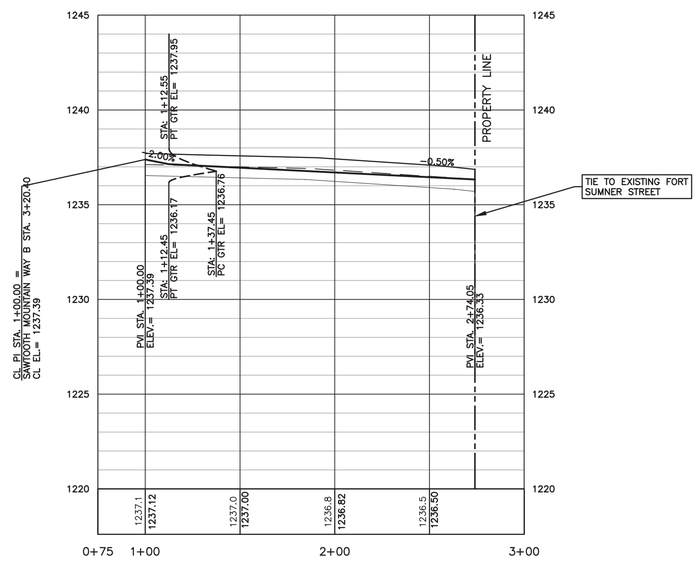


Fort Sumner Street Line Table				
Line #	Length	Direction	Start Point	End Point
L1	174.05	N6° 17' 12.73"W	(2259676.67,13987271.85)	(2259657.62,13987444.85)



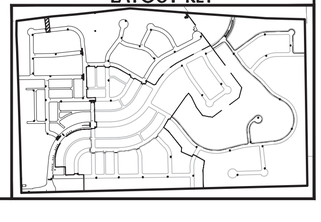
FORT SUMNER STREET
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

NOTE: NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET).

LAYOUT KEY



(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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Austin, Texas 78735, Phone: (512)-583-2600
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Firm Registration Number: 3937

FORT SUMNER STREET PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

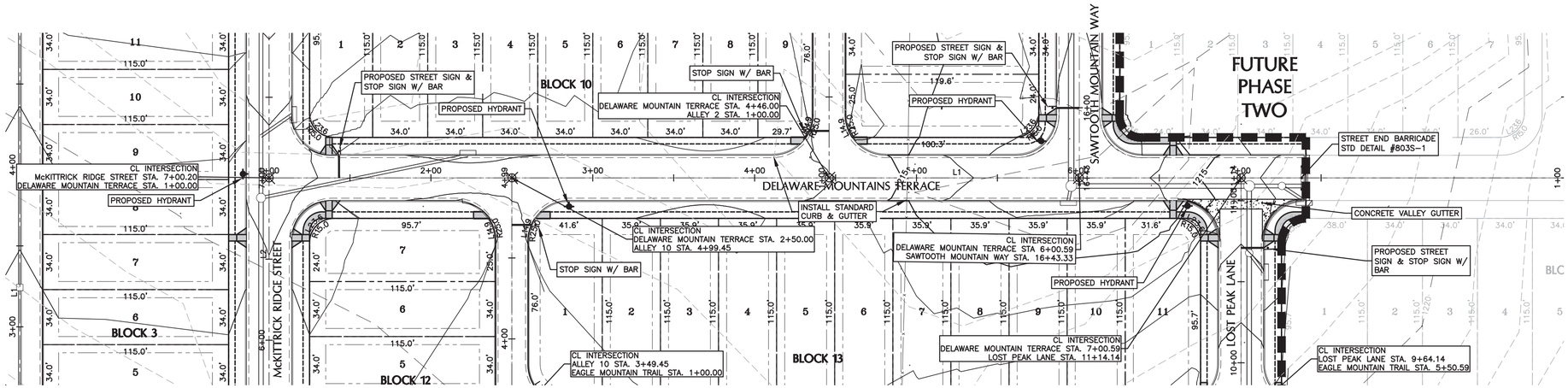
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

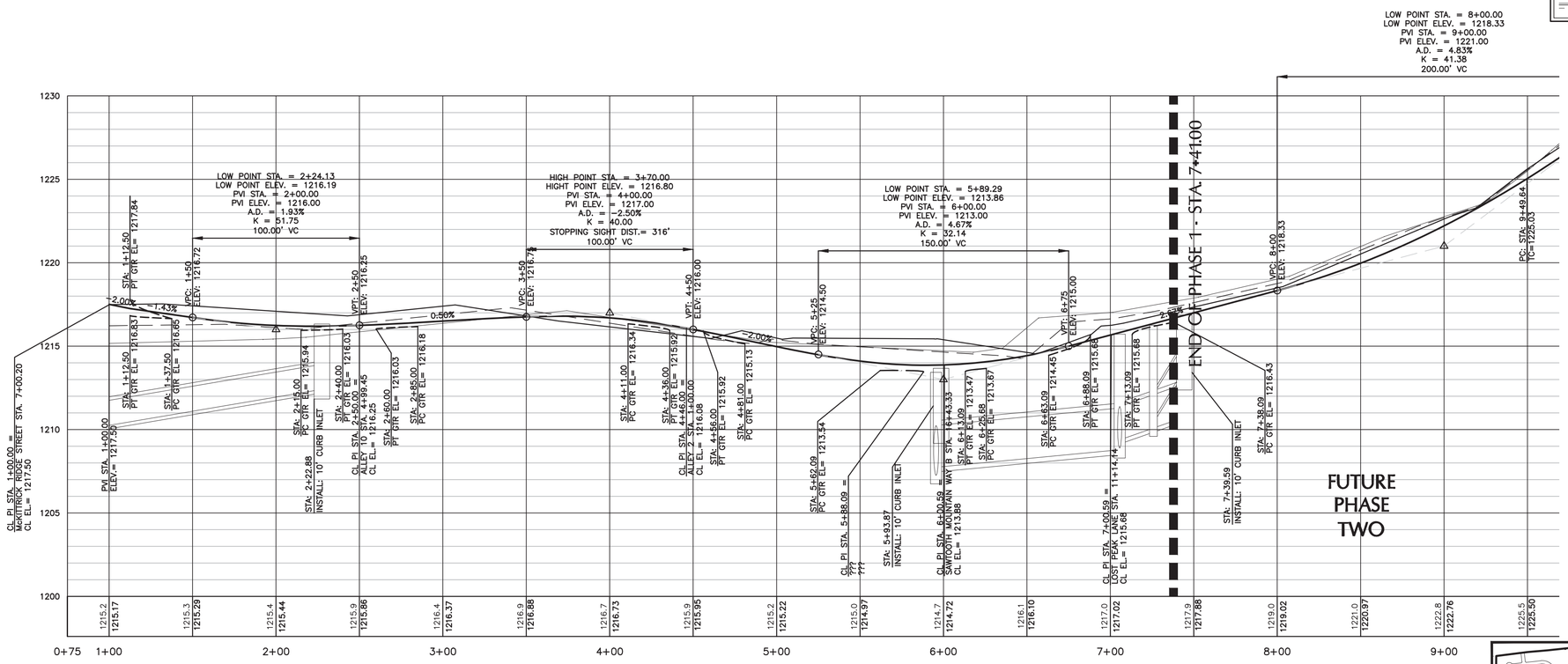
SHEET
63
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 19:54:00



Delaware Mountain Terrace Line Table				
Line #	Length	Direction	Start Point	End Point
L1	640.59	N89° 13' 21.61"E	(2259664.35,13986350.33)	(2260304.88,13986359.02)



DELAWARE MOUNTAIN TERRACE
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

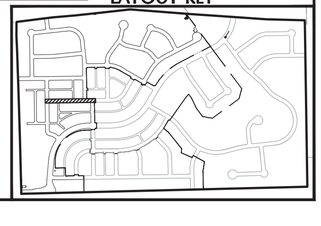
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OE — OE — OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

GRAPHIC SCALE 1"=40'

LAYOUT KEY



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Firm Registration Number: 3937

DELAWARE MOUNTAIN TERRACE PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

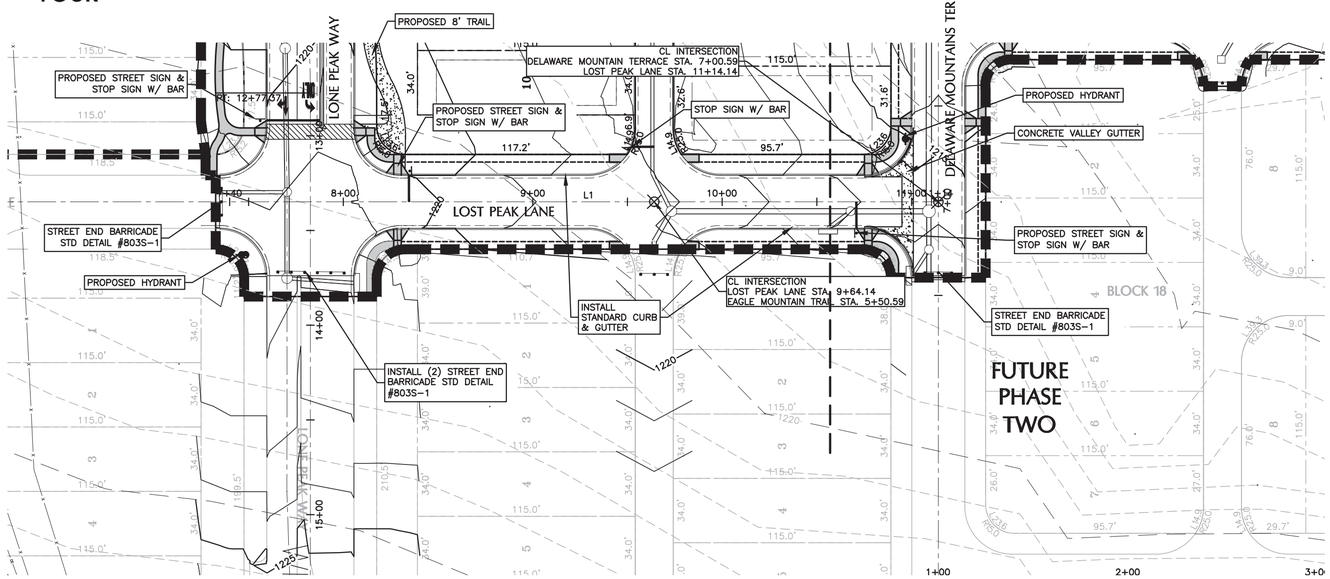
Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

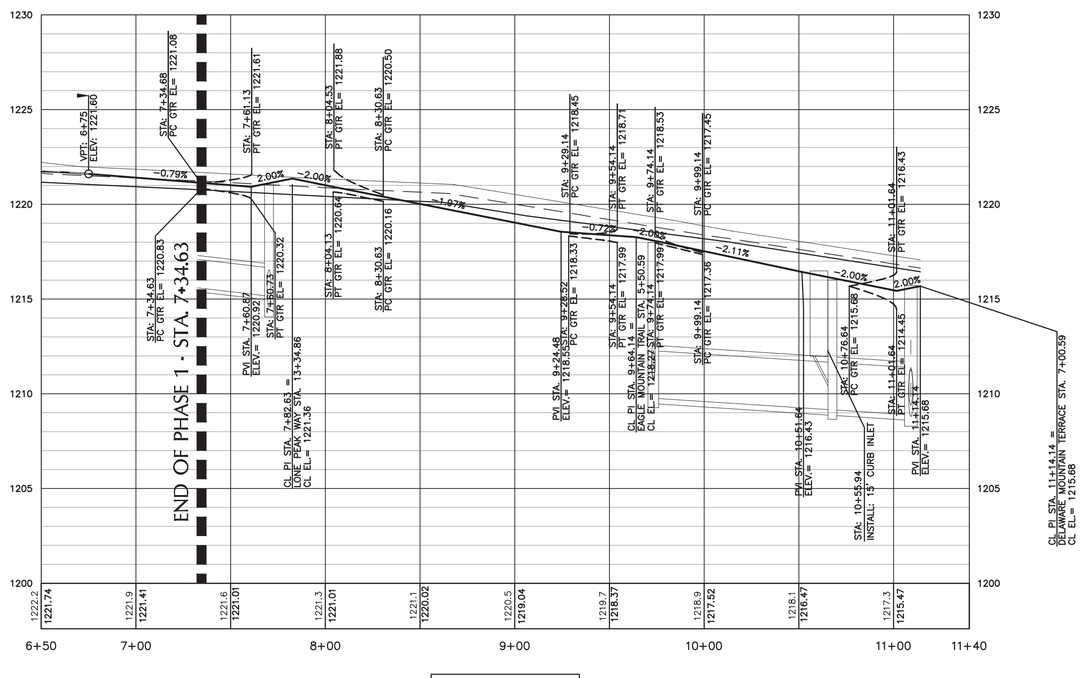
SHEET 64 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_PD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 19:57:02

Lost Peak Lane Line Table				
Line #	Length	Direction	Start Point	End Point
L1	381.51	N0° 46' 38.39"W	(2260278.64,13985344.43)	(2260264.89,13986358.48)





LOST PEAK LANE
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

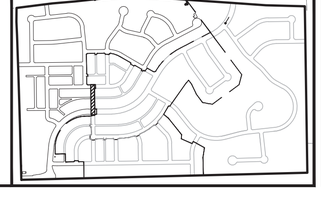
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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LOST PEAK LANE PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

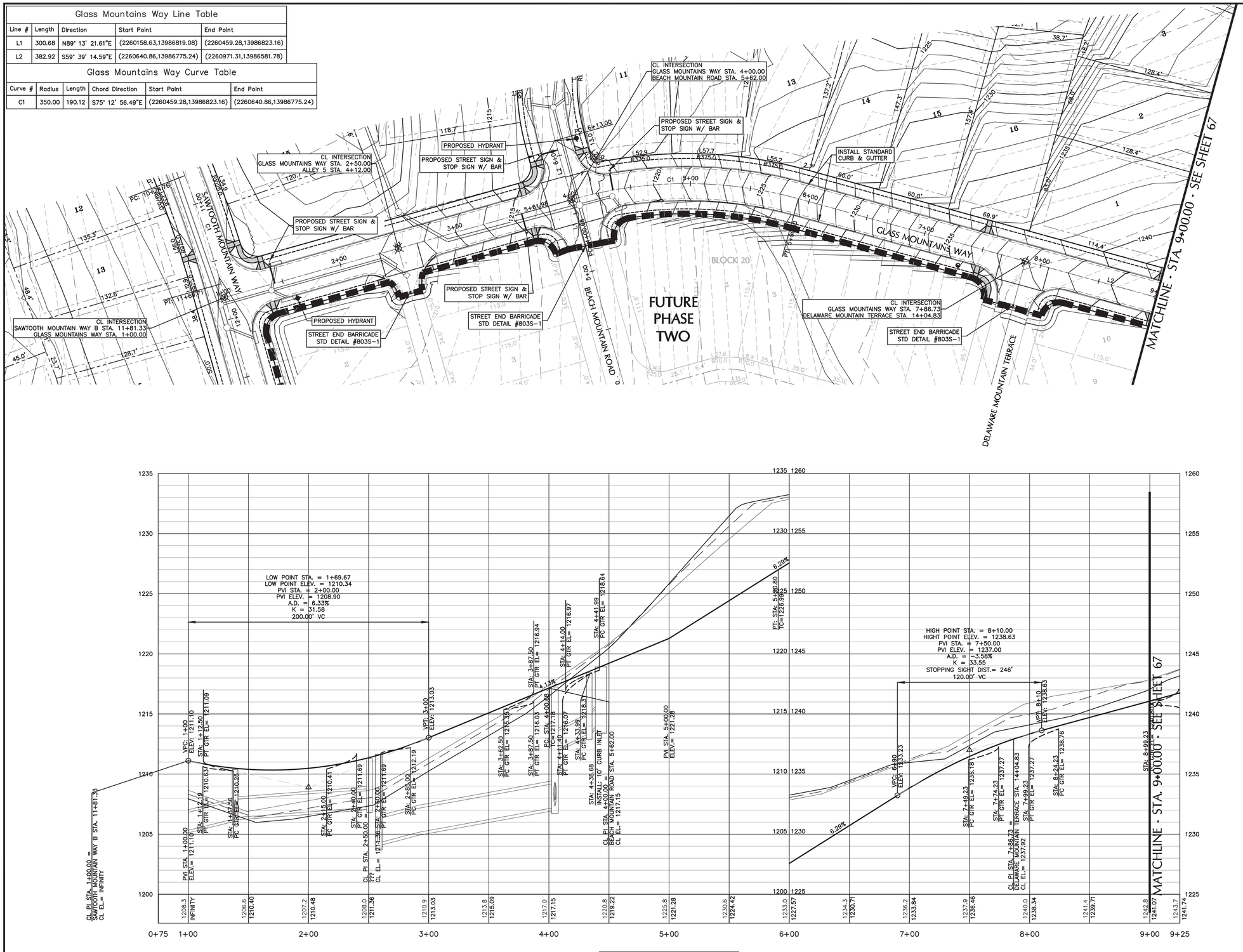
SHEET 65 OF 175

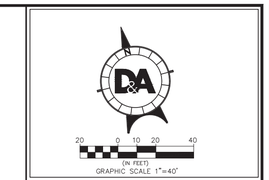
Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
Plot Date/Time: Apr. 26, 19 - 20:00:23

Glass Mountains Way Line Table				
Line #	Length	Direction	Start Point	End Point
L1	300.68	N89° 13' 21.61"E	(2260158.63,13986819.08)	(2260459.28,13986823.16)
L2	382.92	S59° 39' 14.59"E	(2260640.86,13986775.24)	(2260971.31,13986581.78)

Glass Mountains Way Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	350.00	190.12	S75° 12' 56.49"E	(2260459.28,13986823.16)	(2260640.86,13986775.24)





LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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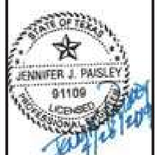
Firm Registration Number: 3937

GLASS MOUNTAINS WAY PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX



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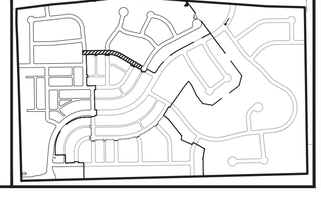

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 66 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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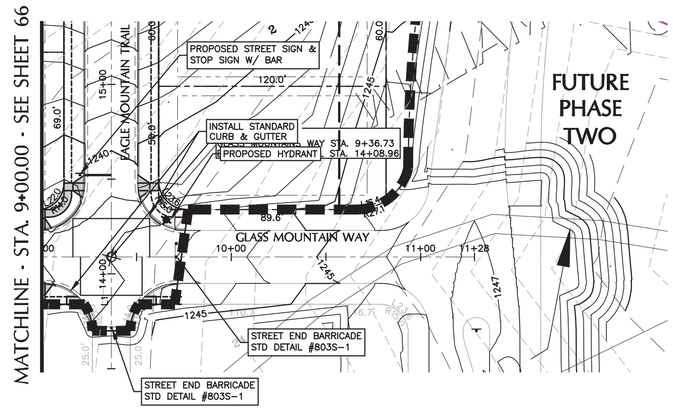
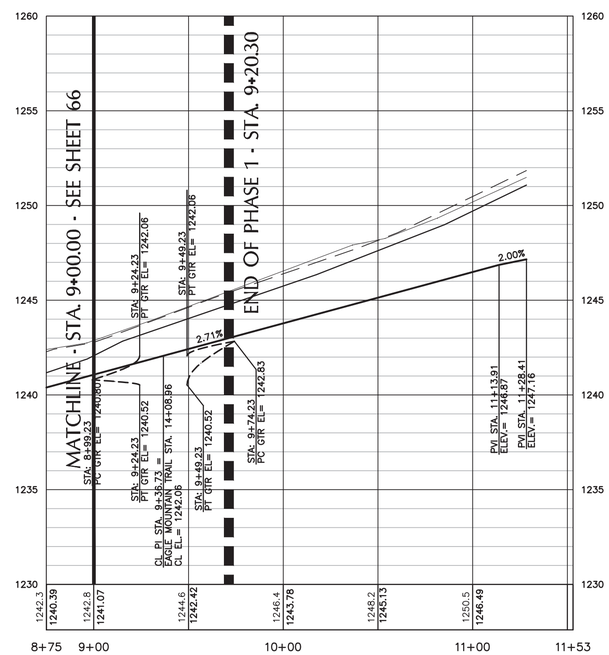




GLASS MOUNTAINS WAY
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

Glass Mountains Way Line Table

Line #	Length	Direction	Start Point	End Point
L1	300.68	N89° 13' 21.61"E	(2260158.63,13986819.08)	(2260459.28,13986823.16)
L2	382.92	S59° 39' 14.59"E	(2260640.86,13986775.24)	(2260971.31,13986581.78)

Glass Mountains Way Curve Table

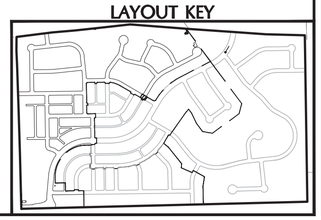
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	350.00	190.12	S75° 12' 56.49"E	(2260459.28,13986823.16)	(2260640.86,13986775.24)

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

GLASS MOUNTAINS WAY PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
67
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submittal\CD\Phase 1\1691002-CD-PH1_RD.dwg
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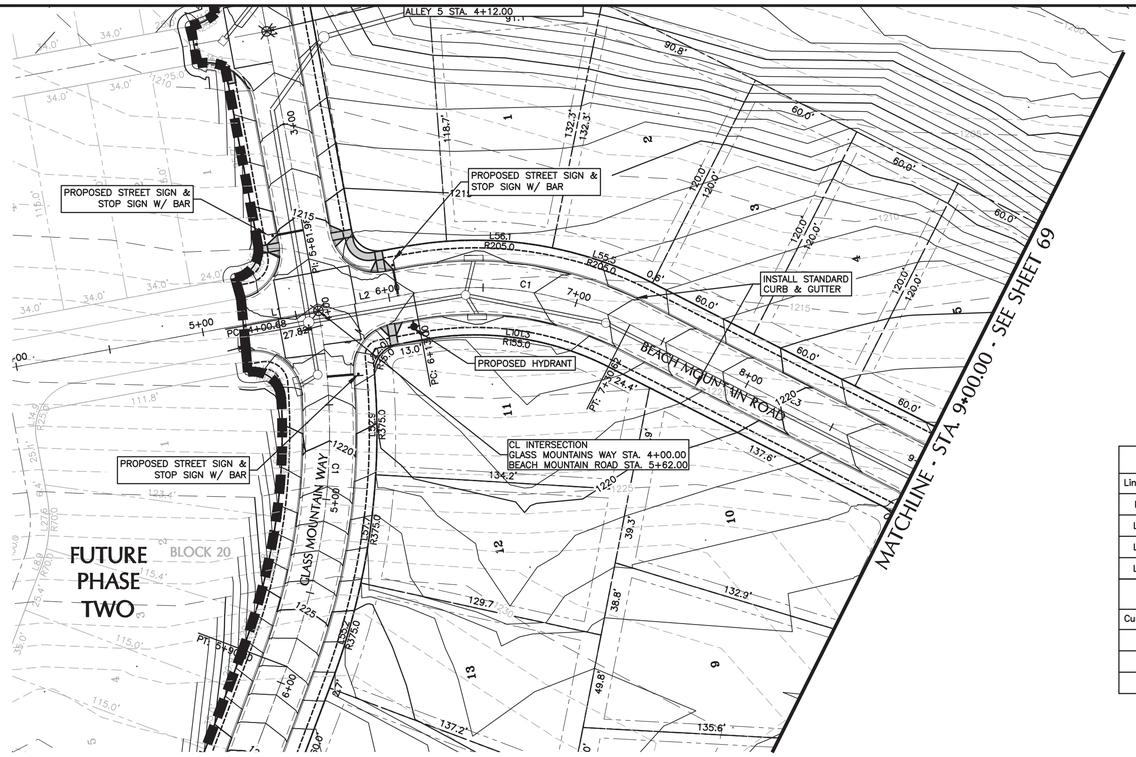
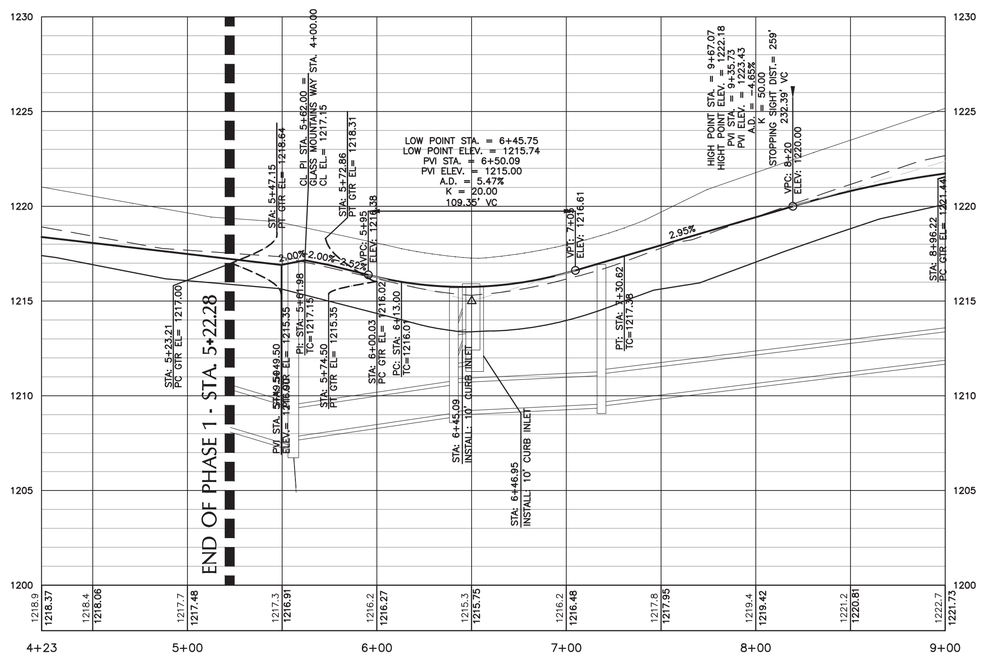


Beach Mountain Road Line Table				
Line #	Length	Direction	Start Point	End Point
L1	40.23	N0° 46' 38.39"W	(2260459.14,13986782.97)	(2260458.60,13986823.12)
L2	51.02	N0° 46' 38.39"W	(2260458.60,13986823.12)	(2260457.91,13986874.14)
L3	193.25	N36° 39' 45.69"E	(2260493.50,13986984.06)	(2260608.89,13987139.08)
L4	210.48	N12° 46' 02.21"E	(2260640.05,13987206.78)	(2260686.57,13987412.06)

Beach Mountain Road Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	180.00	117.62	N17° 56' 33.65"E	(2260457.91,13986874.14)	(2260493.50,13986984.06)
C2	180.00	7.14	N35° 31' 34.87"E	(2260608.89,13987139.08)	(2260613.04,13987144.89)
C3	180.00	67.93	N23° 34' 43.13"E	(2260613.04,13987144.89)	(2260640.05,13987206.78)

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

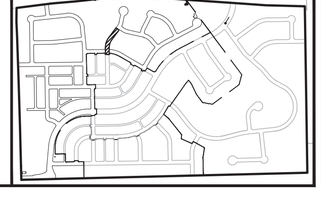


BEACH MOUNTAIN ROAD
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

LAYOUT KEY



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Firm Registration Number: 3937

BEACH MOUNTAIN ROAD PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 68 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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Last Modified: Mar. 15, 19 - 13:28
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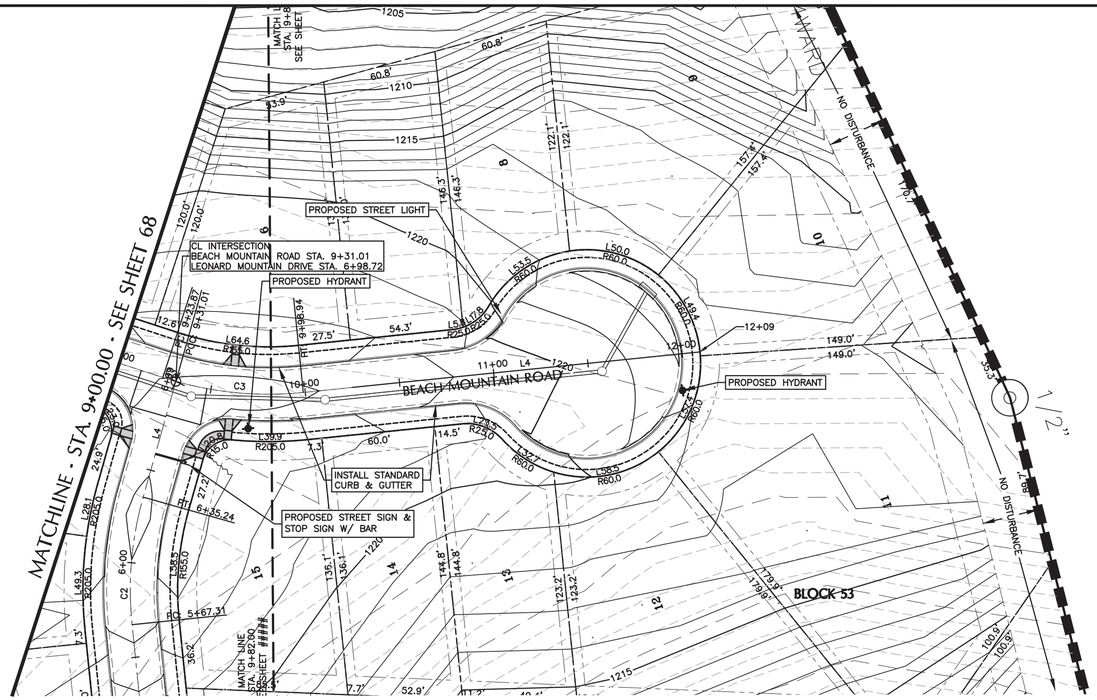
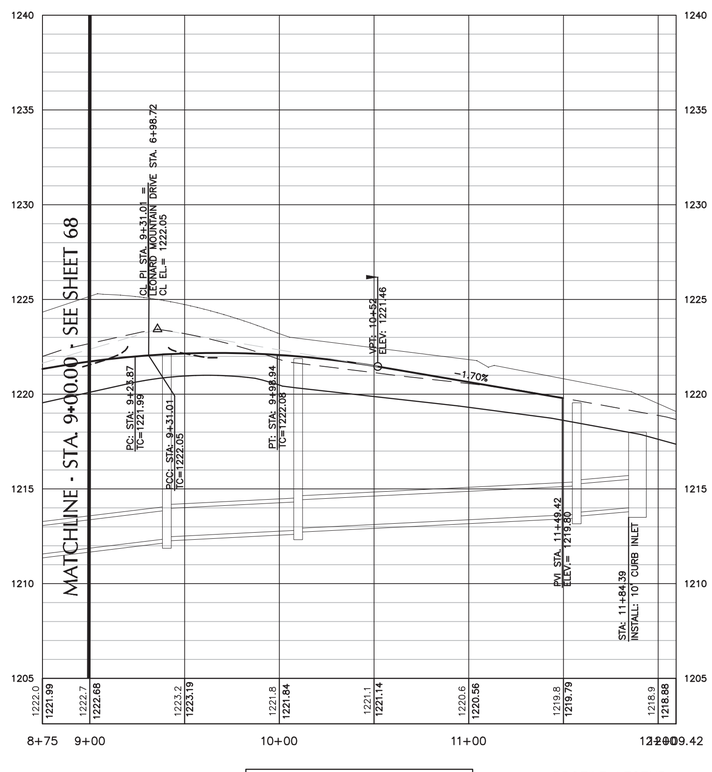




BEACH MOUNTAIN ROAD
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

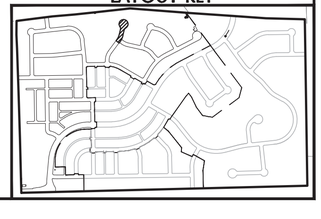
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

Beach Mountain Road Line Table				
Line #	Length	Direction	Start Point	End Point
L1	40.23	N0° 46' 38.39"W	(2260459.14,13986782.97)	(2260458.60,13986823.12)
L2	51.02	N0° 46' 38.39"W	(2260458.60,13986823.12)	(2260457.91,13986874.14)
L3	193.25	N36° 39' 45.69"E	(2260493.50,13986984.06)	(2260608.89,13987139.08)
L4	210.48	N12° 46' 02.21"E	(2260640.05,13987206.78)	(2260686.57,13987412.06)

Beach Mountain Road Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	180.00	117.62	N17° 56' 33.65"E	(2260457.91,13986874.14)	(2260493.50,13986984.06)
C2	180.00	7.14	N35° 31' 34.87"E	(2260608.89,13987139.08)	(2260613.04,13987144.89)
C3	180.00	67.93	N23° 34' 43.13"E	(2260613.04,13987144.89)	(2260640.05,13987206.78)

NOTE: NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET).

LAYOUT KEY



20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
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- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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Firm Registration Number: 3937

BEACH MOUNTAIN ROAD PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
69
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
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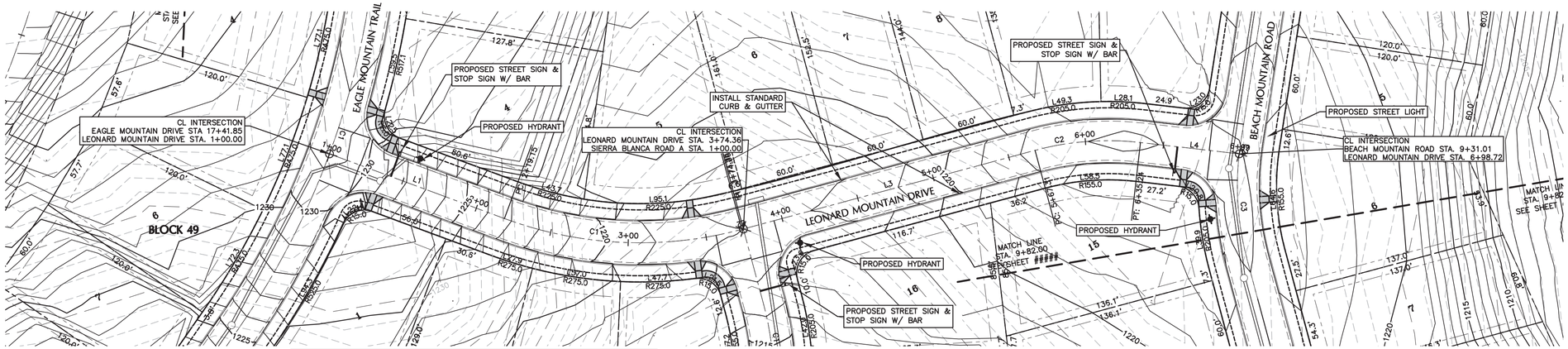
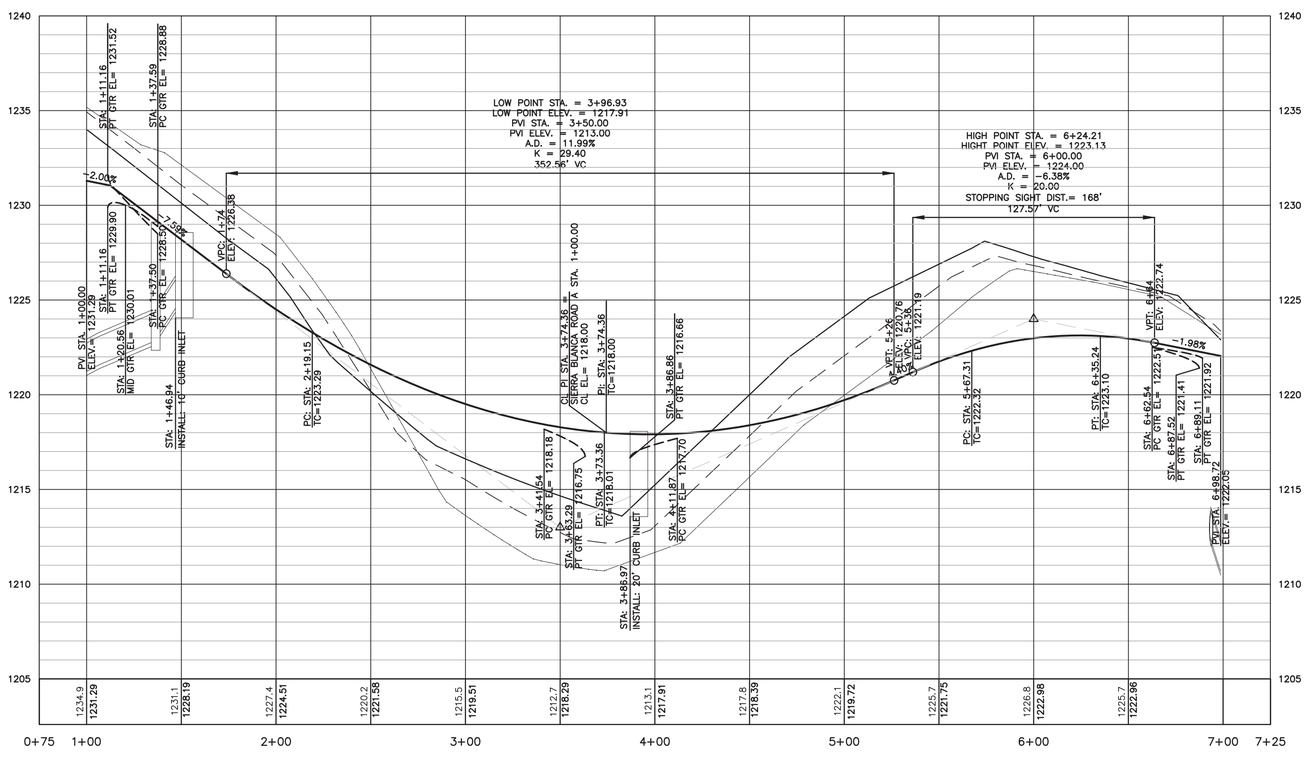


Leonard Mountain Drive Line Table				
Line #	Length	Direction	Start Point	End Point
L1	119.15	N41° 53' 24.91"W	(2261126.89,13986873.57)	(2261047.33,13986962.27)
L2	1.00	N77° 13' 57.79"W	(2260916.47,13987039.16)	(2260915.49,13987039.38)
L3	192.94	N77° 13' 57.79"W	(2260915.49,13987039.38)	(2260727.32,13987082.02)
L4	63.49	N55° 36' 35.95"W	(2260665.43,13987109.03)	(2260613.04,13987144.89)

Leonard Mountain Drive Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	250.00	154.21	N59° 33' 41.35"W	(2261047.33,13986962.27)	(2260916.47,13987039.16)
C2	180.00	67.93	N66° 25' 16.87"W	(2260727.32,13987082.02)	(2260665.43,13987109.03)



LEONARD MOUNTAIN DRIVE
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

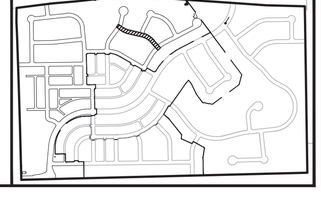
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

LEONARD MOUNTAIN DRIVE PLAN & PROFILE

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 70 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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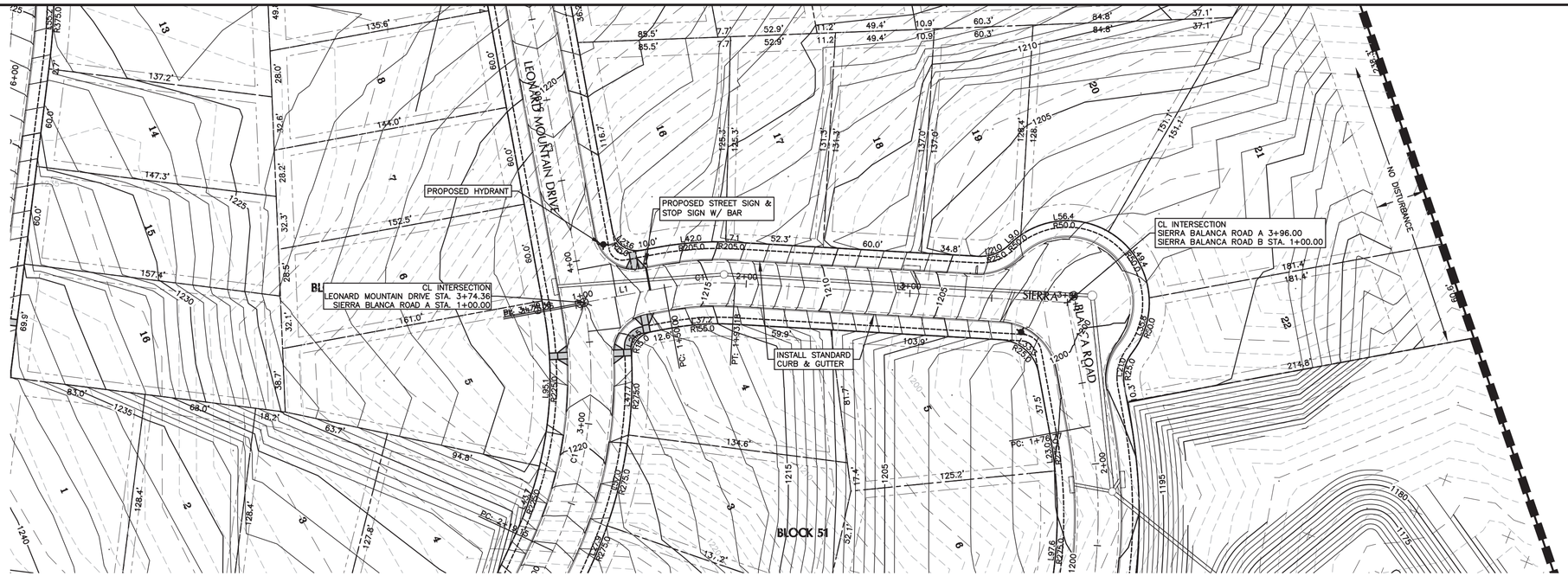
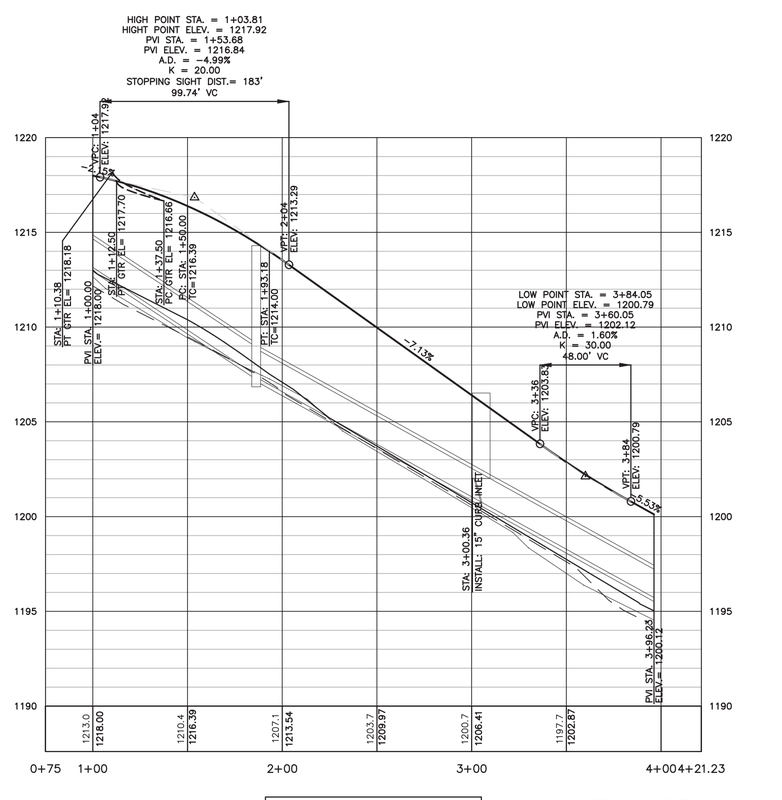




SIERRA BLANCA ROAD A
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

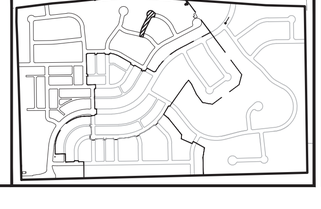
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

Sierra Blanca Road A Line Table				
Line #	Length	Direction	Start Point	End Point
L1	50.00	N12° 46' 02.21"E	(2260915.49,13987039.38)	(2260926.54,13987088.15)
L2	203.05	N26° 30' 40.86"E	(2260941.02,13987128.72)	(2261031.66,13987310.41)

Sierra Blanca Road A Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	180.00	43.18	N19° 38' 21.54"E	(2260926.54,13987088.15)	(2260941.02,13987128.72)

NOTE: NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET).

LAYOUT KEY



GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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SIERRA BLANCA ROAD PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 71 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
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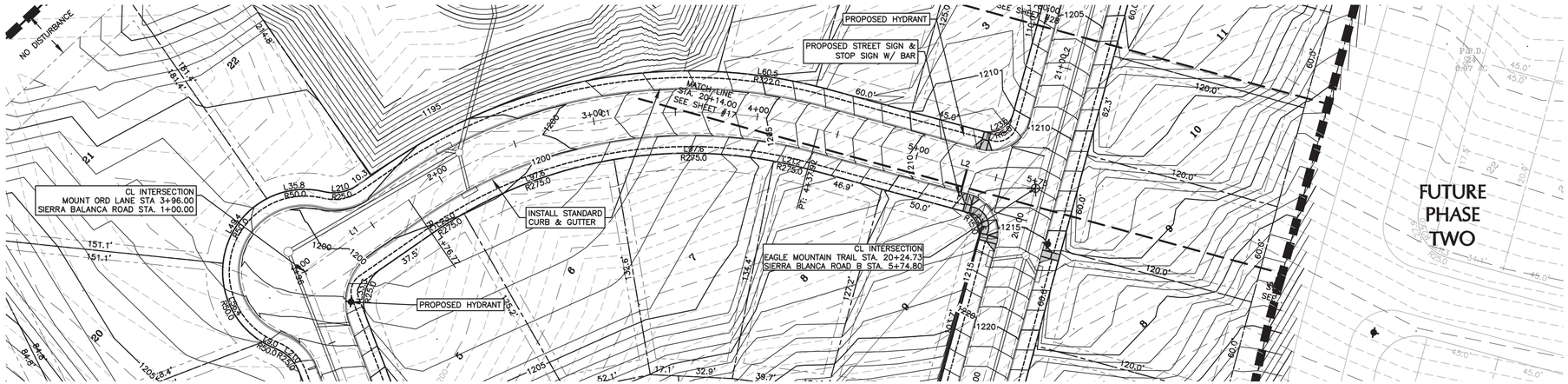
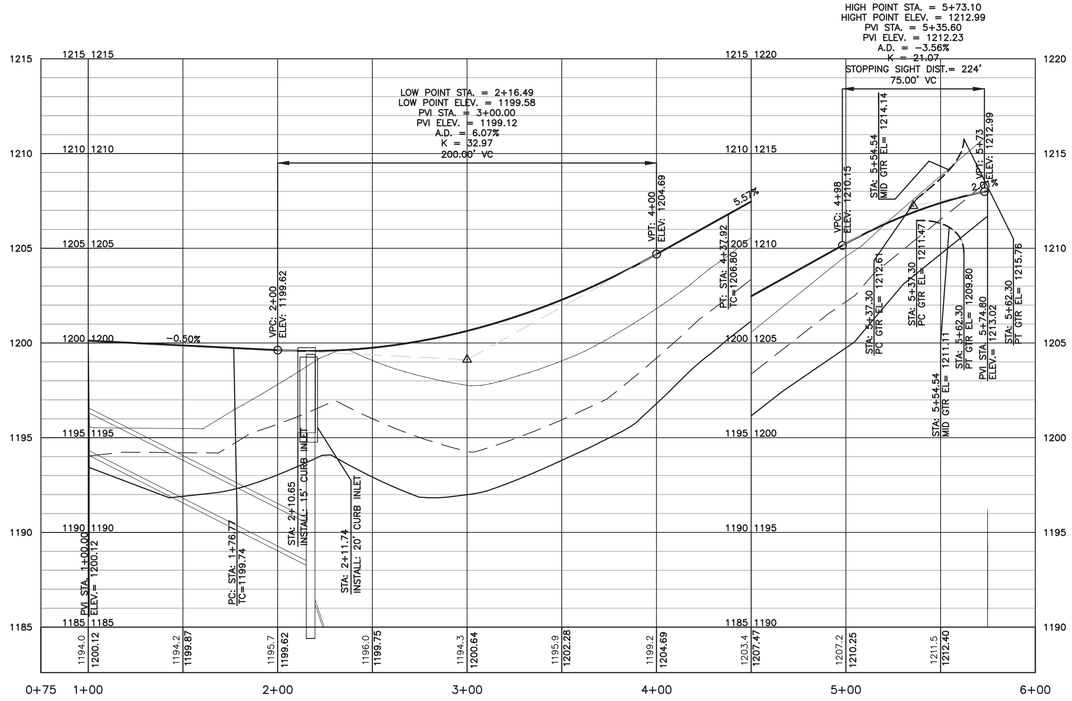


Sierra Blanca Road Line Table				
Line #	Length	Direction	Start Point	End Point
L1	76.77	S77° 13' 57.79"E	(2261031.66,13987310.41)	(2261106.52,13987293.45)
L2	136.88	S27° 21' 20.23"E	(2261306.68,13987138.72)	(2261369.58,13987017.14)

Sierra Blanca Road Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	300.00	261.16	S52° 17' 39.01"E	(2261106.52,13987293.45)	(2261306.68,13987138.72)



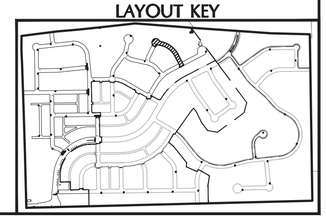
SIERRA BLANCA ROAD B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

NOTE: NO DISTURBANCE ALLOWED IN 30' SETBACK ALONG NORTHERN BOUNDARY OF SITE (EXCEPT FOR CONNECTION AT FORT SUMNER STREET).

LAYOUT KEY



GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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SIERRA BLANCA ROAD PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 72 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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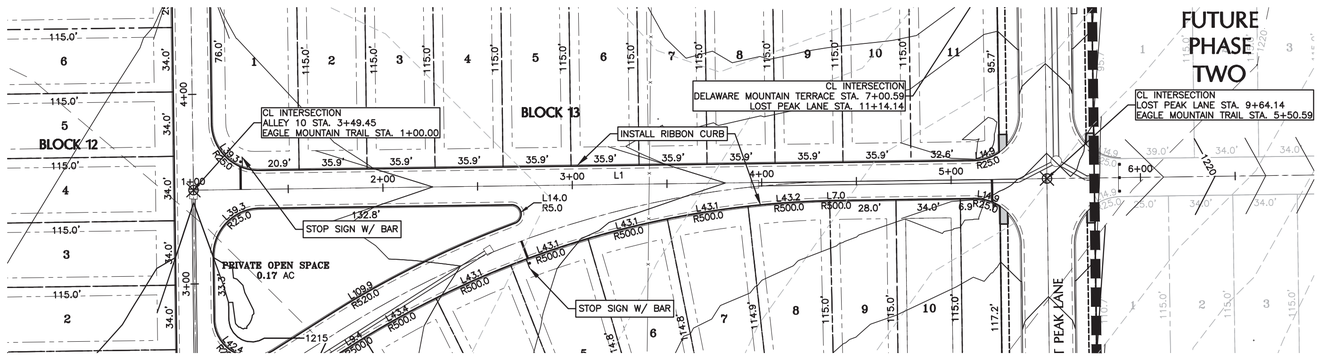
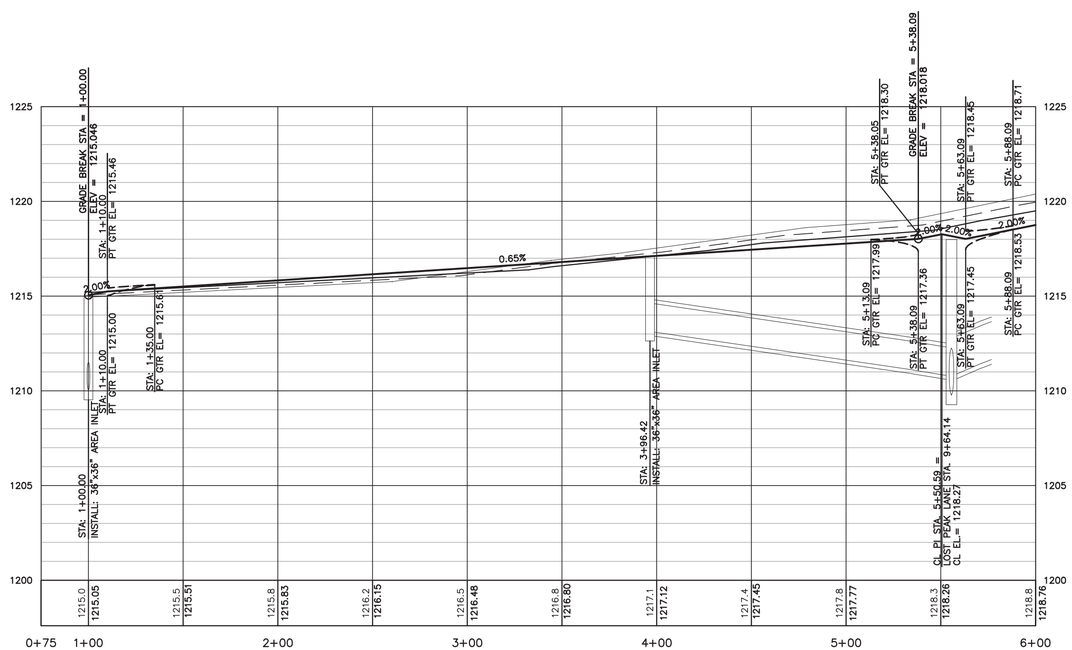




EAGLE MOUNTAIN TRAIL
H SCALE: 1"=40'
V SCALE: 1"=4'

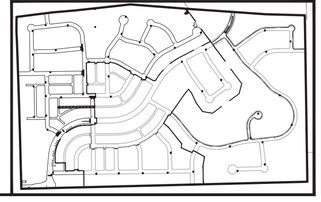
PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

Eagle Mountain Trail Line Table

Line #	Length	Direction	Start Point	End Point
L1	475.59	N89°13'21.61"E	(2259816.37,13986202.38)	(2260291.92,13986208.82)

LAYOUT KEY



GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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EAGLE MOUNTAIN TRAIL PLAN & PROFILE A

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 73 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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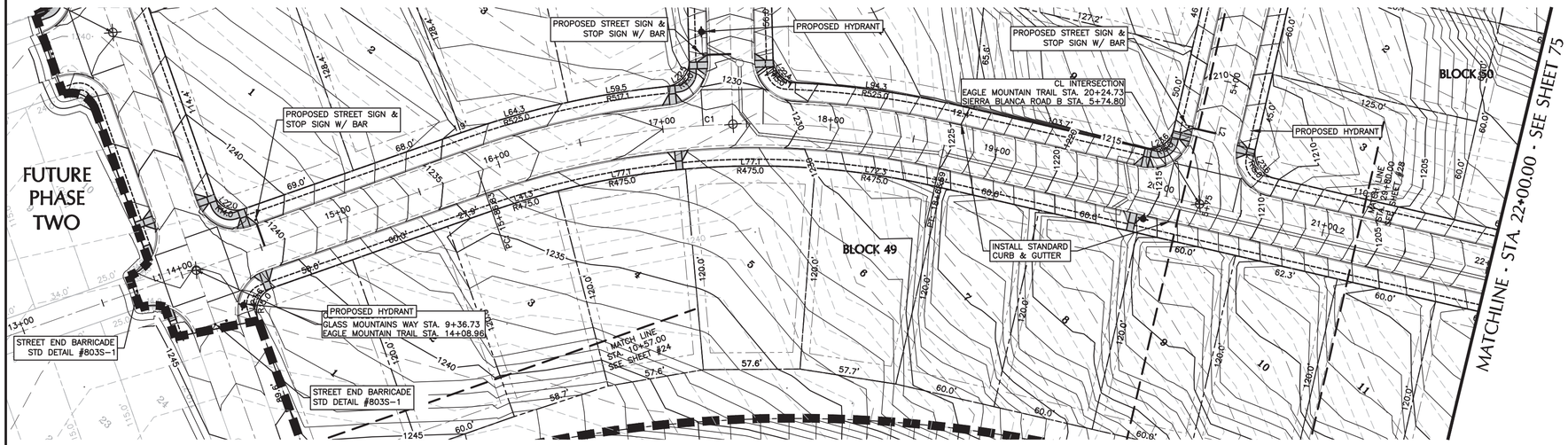
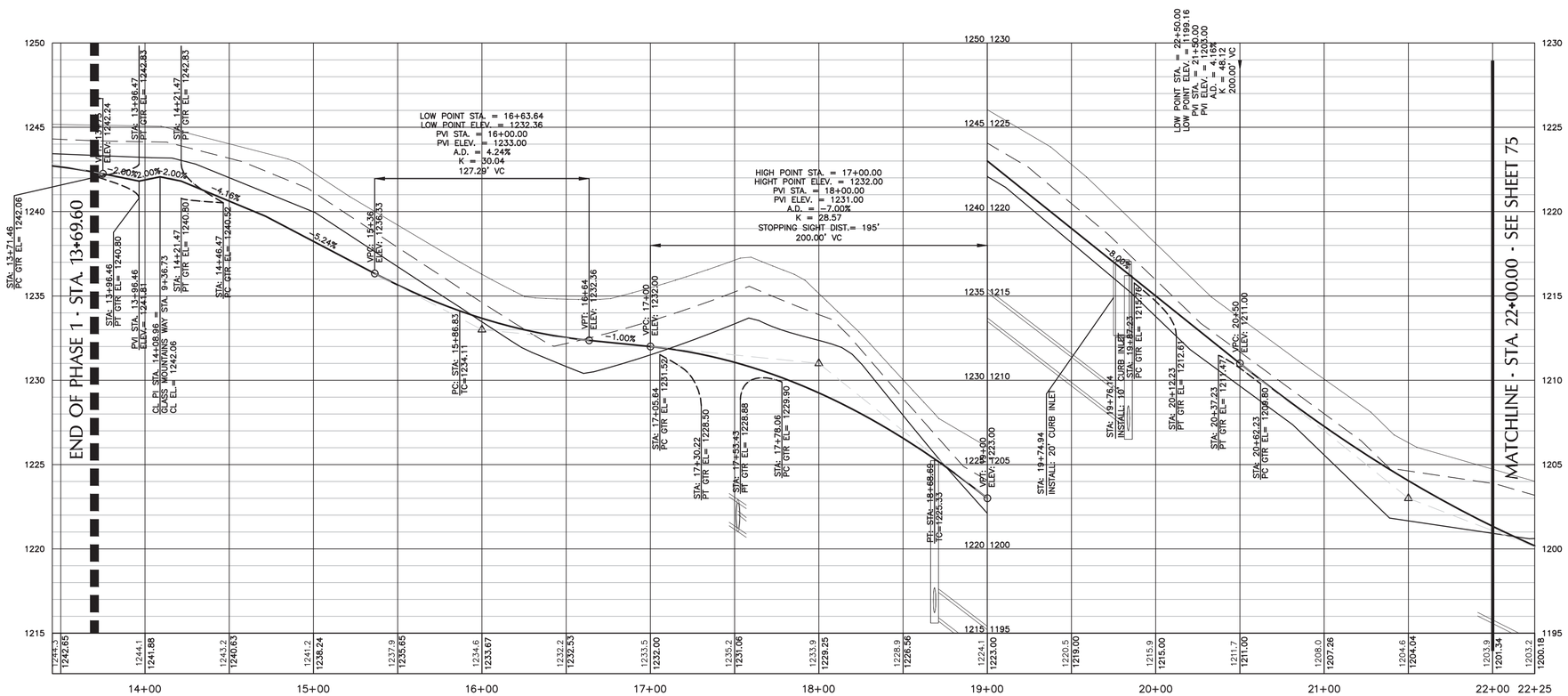


Eagle Mountain Trail Line Table				
Line #	Length	Direction	Start Point	End Point
L1	216.86	N30° 20' 45.41"E	(2260919.68,13986566.81)	(2261029.24,13986753.96)
L2	482.34	N62° 38' 39.77"E	(2261230.98,13986945.44)	(2261659.38,13987167.08)
L3	95.00	N27° 21' 20.23"W	(2261659.38,13987167.08)	(2261615.73,13987251.46)

Eagle Mountain Trail Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	500.00	281.86	N46° 29' 42.59"E	(2261029.24,13986753.96)	(2261230.98,13986945.44)



EAGLE MOUNTAIN TRAIL
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

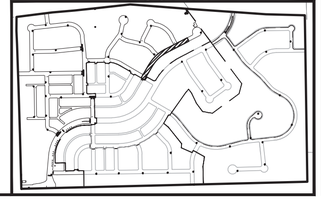
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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EAGLE MOUNTAIN TRAIL PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 74 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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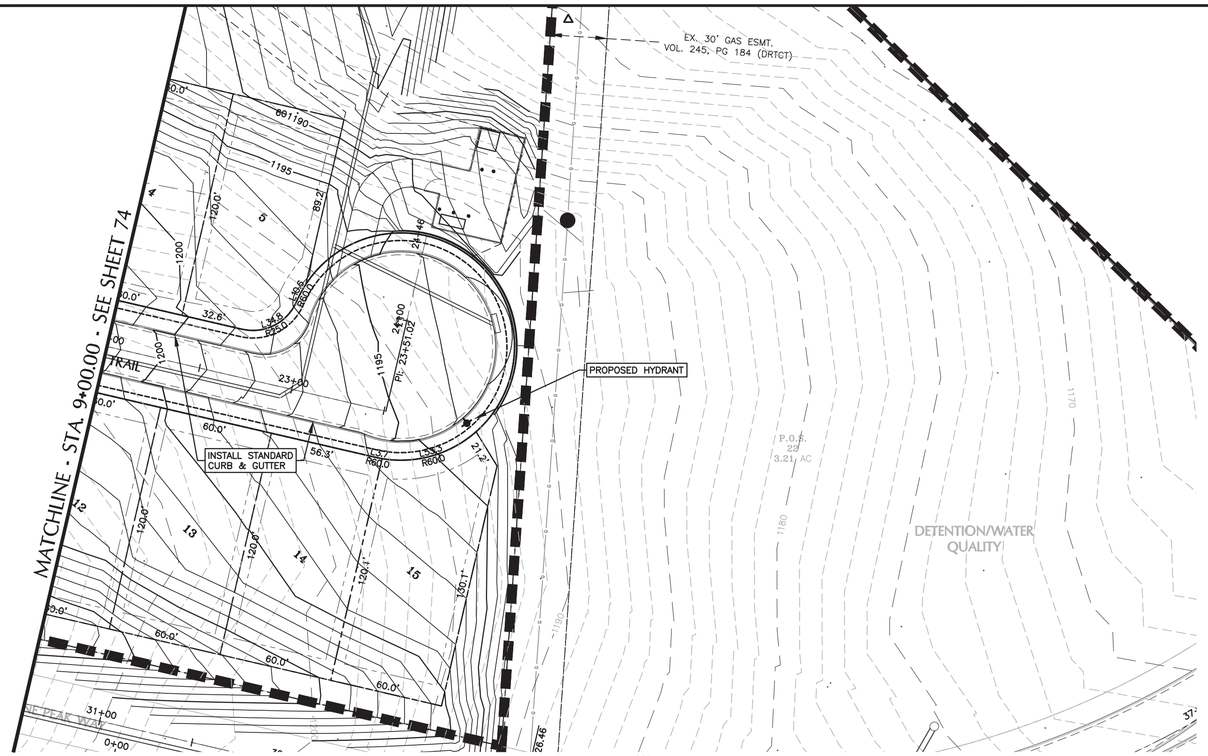
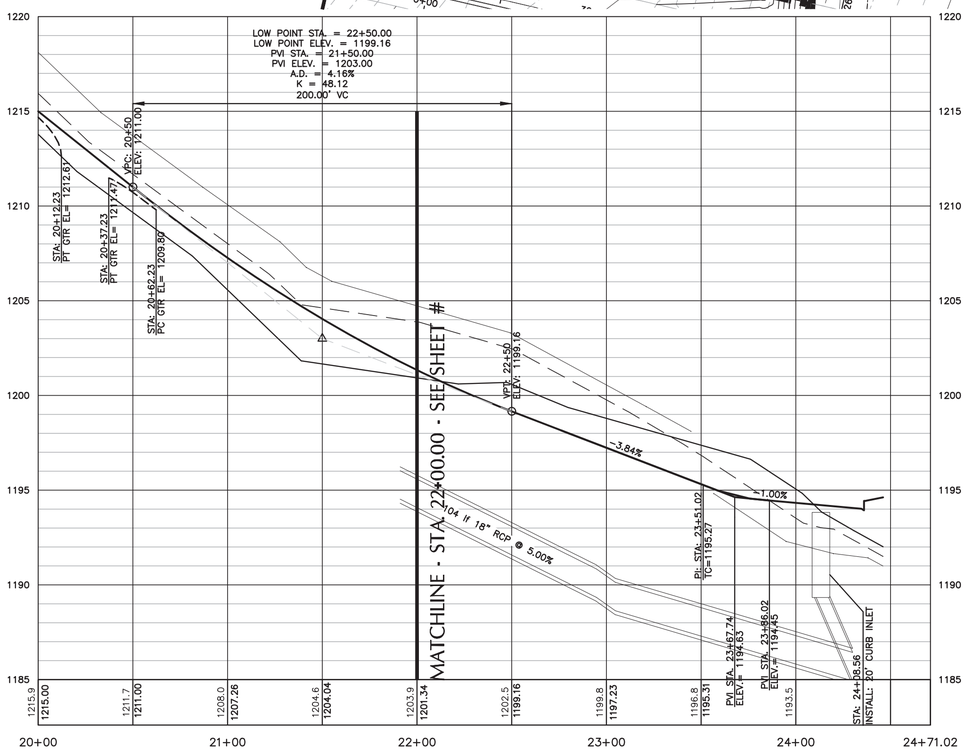




EAGLE MOUNTAIN TRAIL
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

Eagle Mountain Trail Line Table				
Line #	Length	Direction	Start Point	End Point
L1	216.86	N30° 20' 45.41"E	(2260919.68,13986566.81)	(2261029.24,13986753.96)
L2	482.34	N62° 38' 39.77"E	(2261230.98,13986945.44)	(2261659.38,13987167.08)
L3	95.00	N27° 21' 20.23"W	(2261659.38,13987167.08)	(2261615.73,13987251.46)

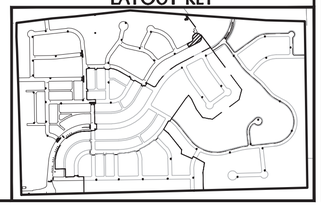
Eagle Mountain Trail Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	500.00	281.86	N46° 29' 42.59"E	(2261029.24,13986753.96)	(2261230.98,13986945.44)

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- W — WATER METER
- S — STORM SEWER MANHOLE
- WW — WASTEWATER MANHOLE
- W — WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OE — OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

EAGLE MOUNTAIN TRAIL PLAN & PROFILE C

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 75 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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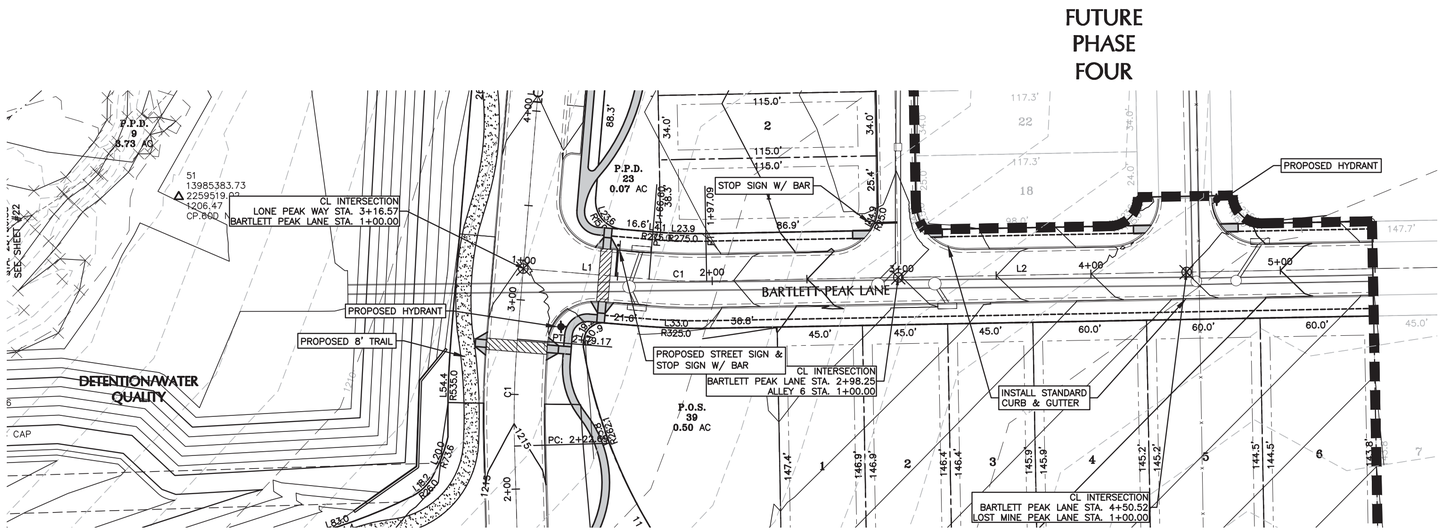
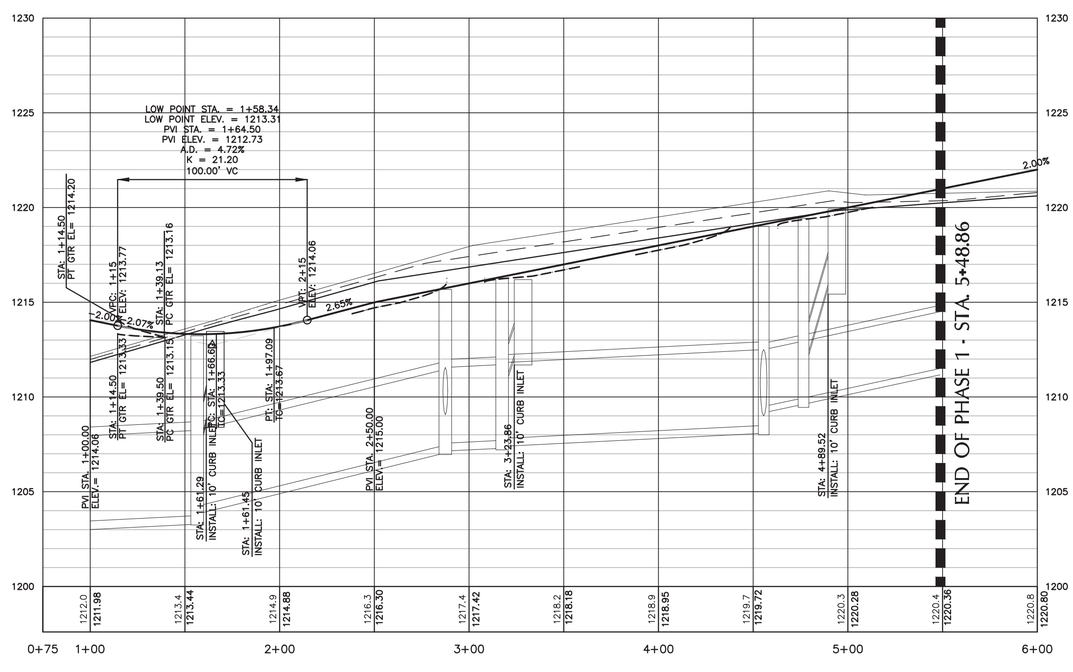




BARTLETT PEAK LANE
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

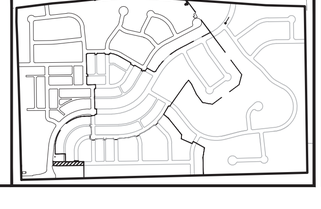
Bartlett Peak Lane Line Table				
Line #	Length	Direction	Start Point	End Point
L1	66.60	S84° 57' 13.30"E	(2259700.72,13985344.90)	(2259767.06,13985339.04)
L2	351.77	N89° 13' 21.61"E	(2259797.52,13985337.91)	(2260149.26,13985342.68)

Bartlett Peak Lane Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	300.00	30.49	S87° 51' 55.84"E	(2259767.06,13985339.04)	(2259797.52,13985337.91)

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

BARTLETT PEAK LANE PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
76
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
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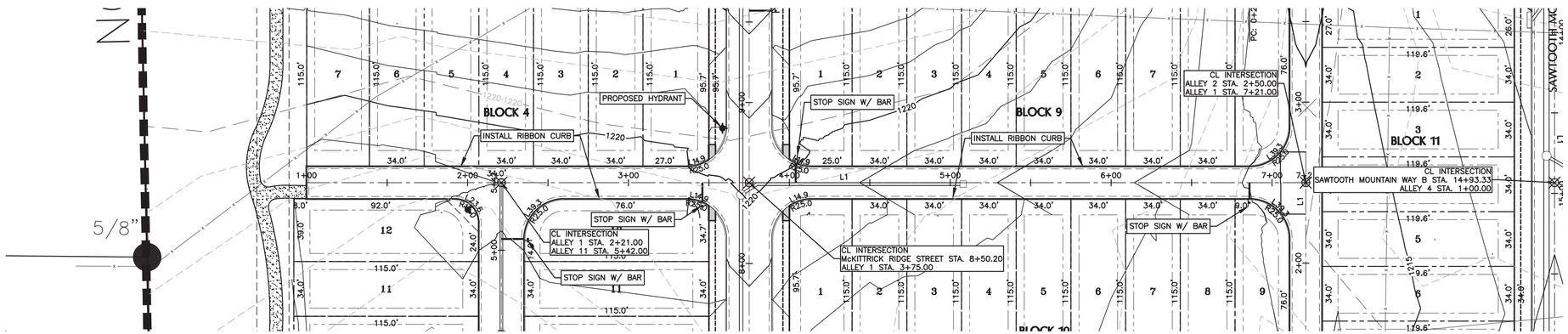
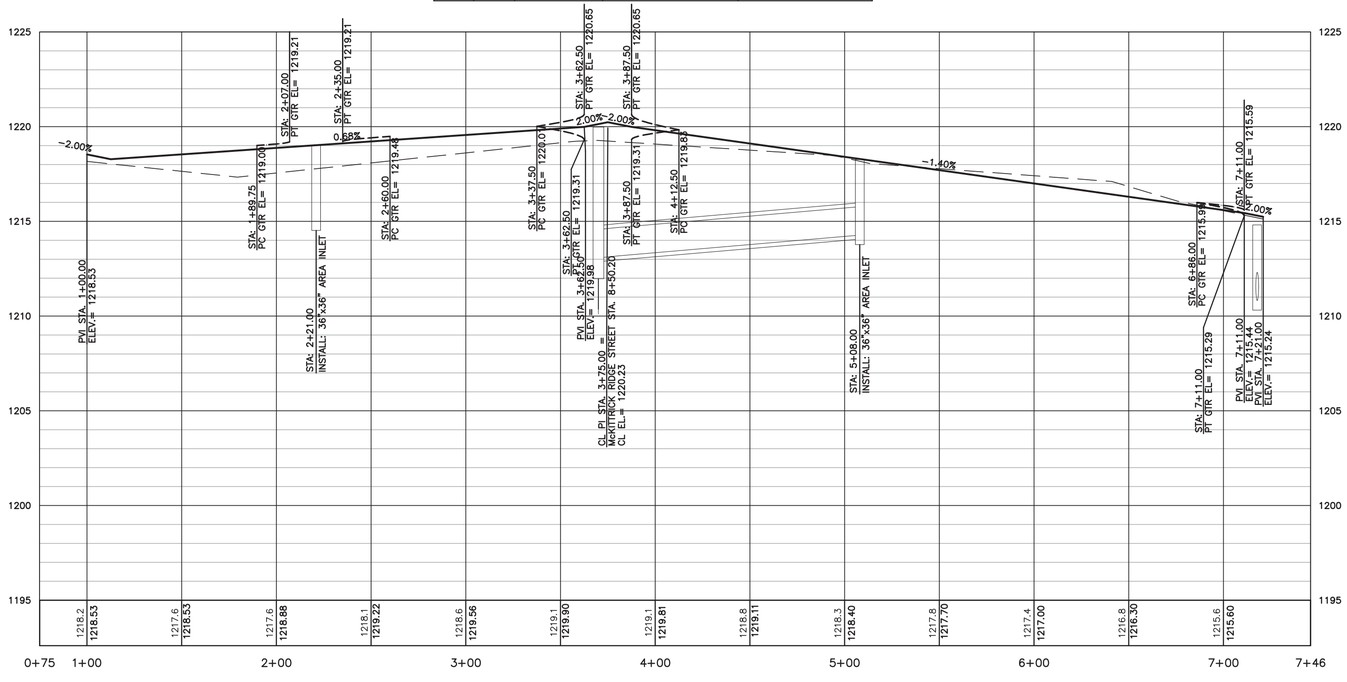


Alley 1 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	621.00	N89° 13' 21.61"E	(2259387.34,13986496.58)	(2260008.28,13986505.01)



ALLEY 1
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

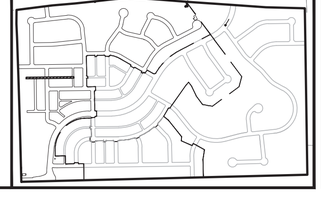
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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Firm Registration Number: 3937

ALLEY 1 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED PROFESSIONAL ENGINEER
4/26/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
77
OF 175

Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_R0.dwg
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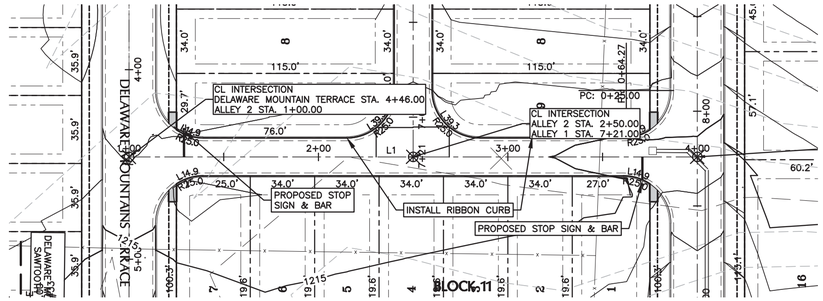
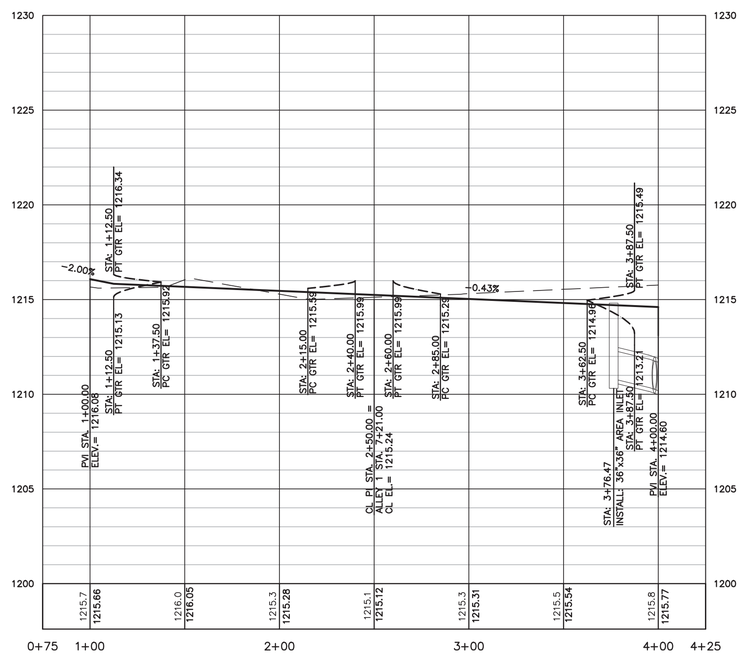


Alley 2 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	300.00	N0° 46' 38.39"W	(2260010.32,13986355.02)	(2260006.25,13986655.00)



ALLEY 2
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

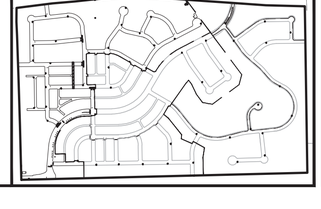
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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ALLEY 2 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
78
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_PD.dwg
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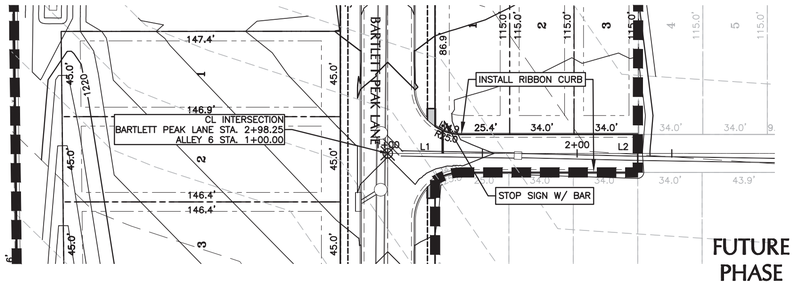
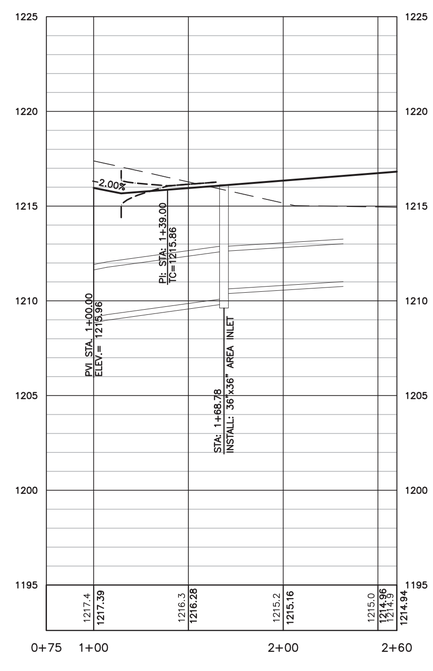


FUTURE PHASE FOUR

Alley 6 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	39.00	N0° 46' 20.65"W	(2259898.67,13985339.28)	(2259898.15,13985378.28)
L2	93.02	N0° 46' 38.39"W	(2259898.15,13985378.28)	(2259896.89,13985471.29)



ALLEY 6
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

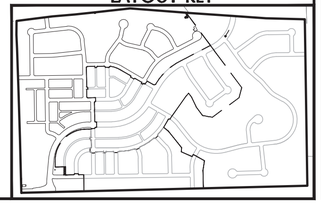
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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ALLEY 6 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
79
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
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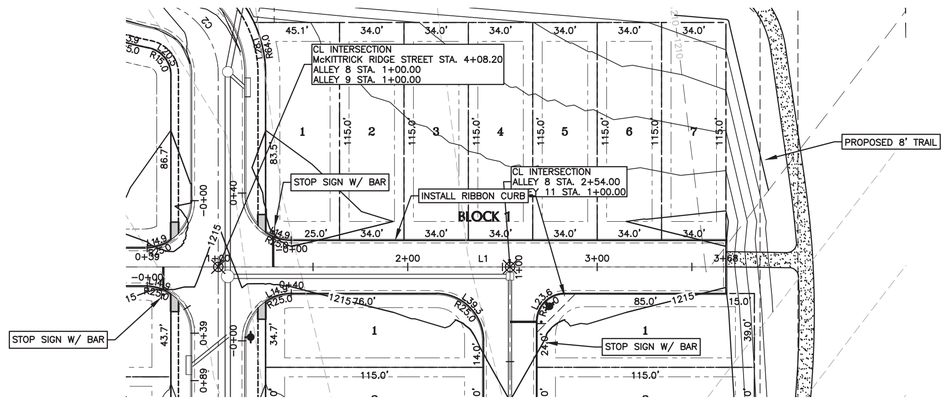
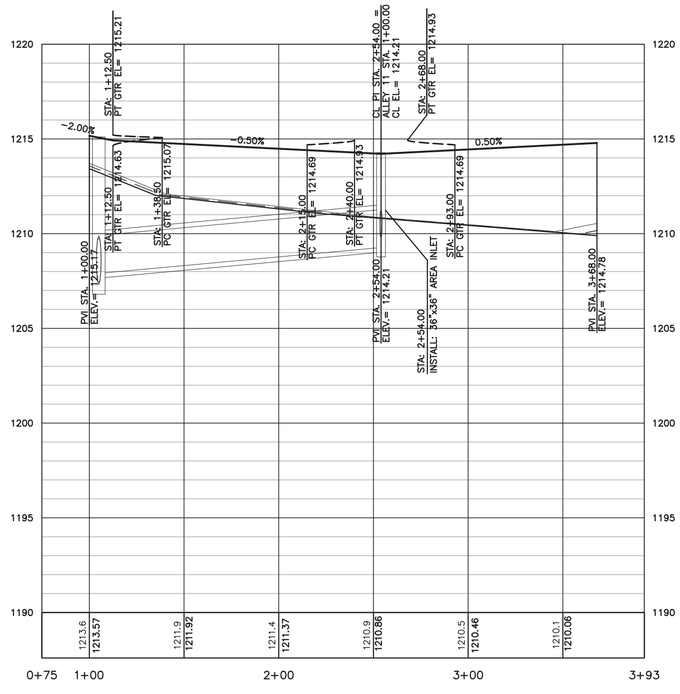


Alley 8 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	268.00	S89° 13' 21.61"W	(2259668.31,13986058.36)	(2259400.34,13986054.72)

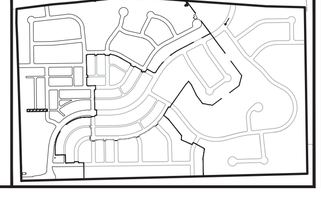


ALLEY 8
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

LAYOUT KEY



GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

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ALLEY 8 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
80
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
User: JBANISTER
Last Modified: Mar. 15, 19 - 13:28
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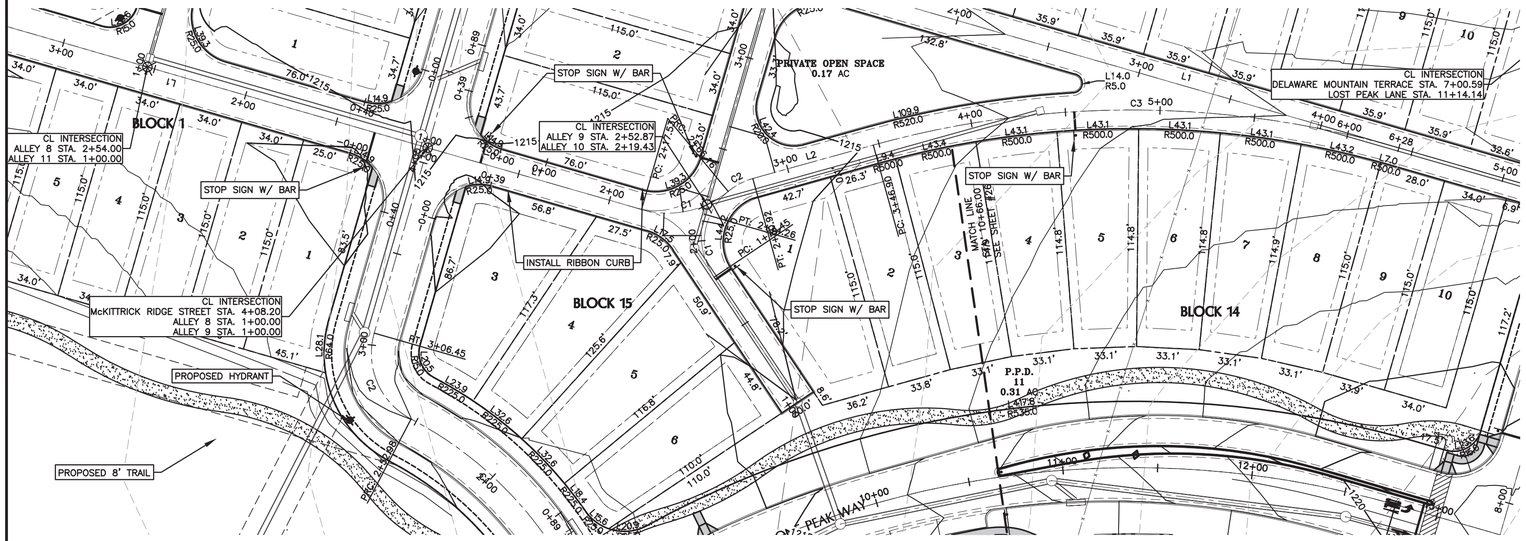
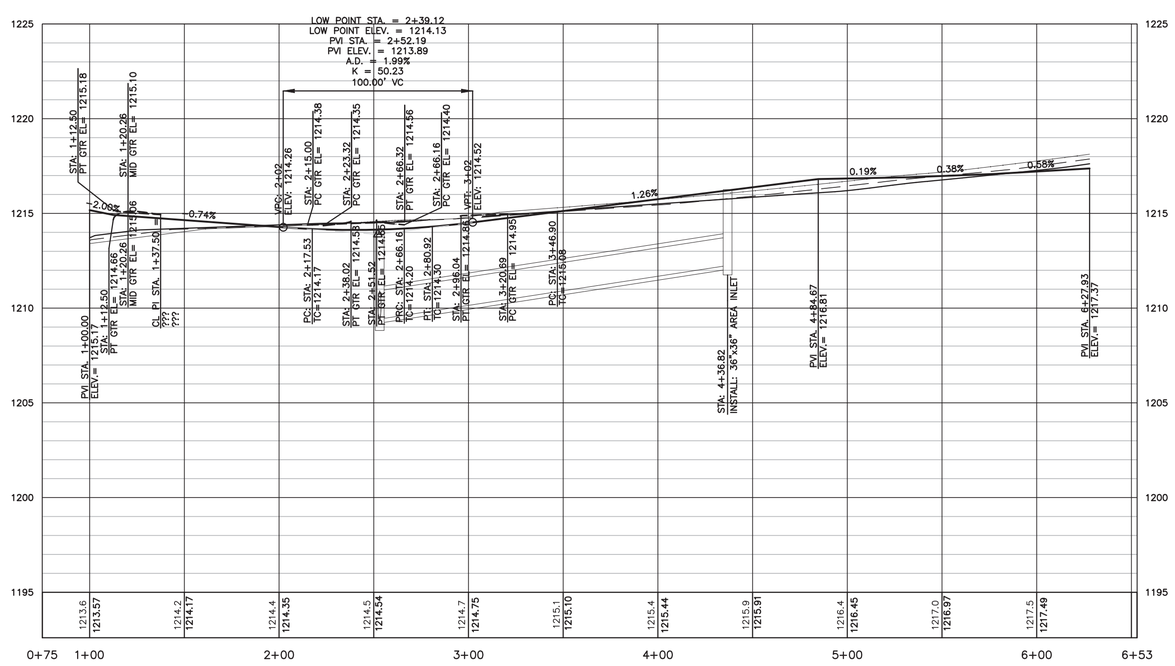


Alley 9 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	117.53	N89° 13' 21.61"E	(2259668.31,13986058.36)	(2259785.83,13986059.95)
L2	65.98	N57° 39' 01.96"E	(2259837.31,13986092.62)	(2259893.05,13986127.92)

Alley 9 Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	50.00	48.64	N61° 21' 15.12"E	(2259785.83,13986059.95)	(2259826.85,13986082.36)
C2	35.03	14.76	N45° 33' 24.16"E	(2259826.85,13986082.36)	(2259837.31,13986092.62)
C3	510.00	281.03	N73° 26' 11.79"E	(2259893.05,13986127.92)	(2260159.02,13986207.03)



ALLEY 9
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

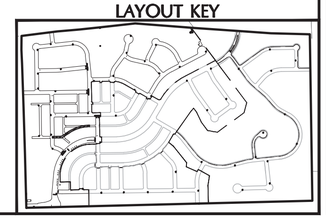
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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ALLEY 9 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
81
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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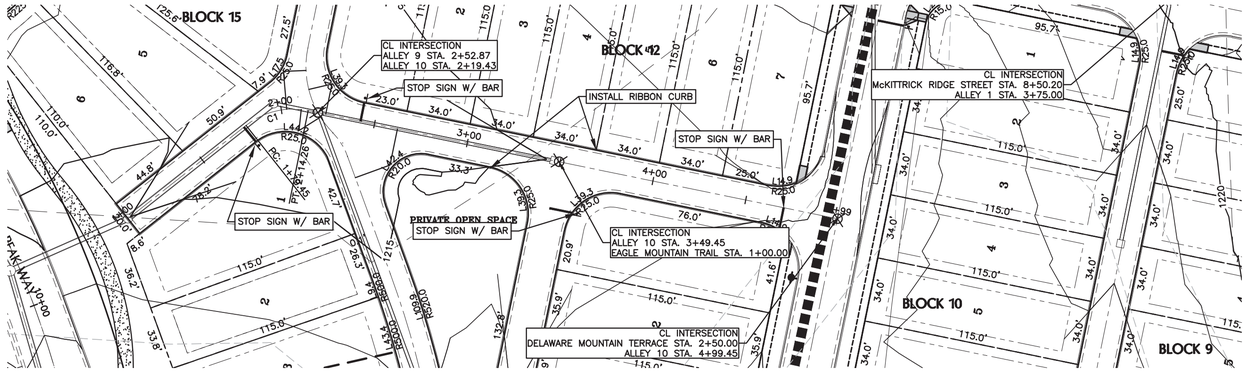
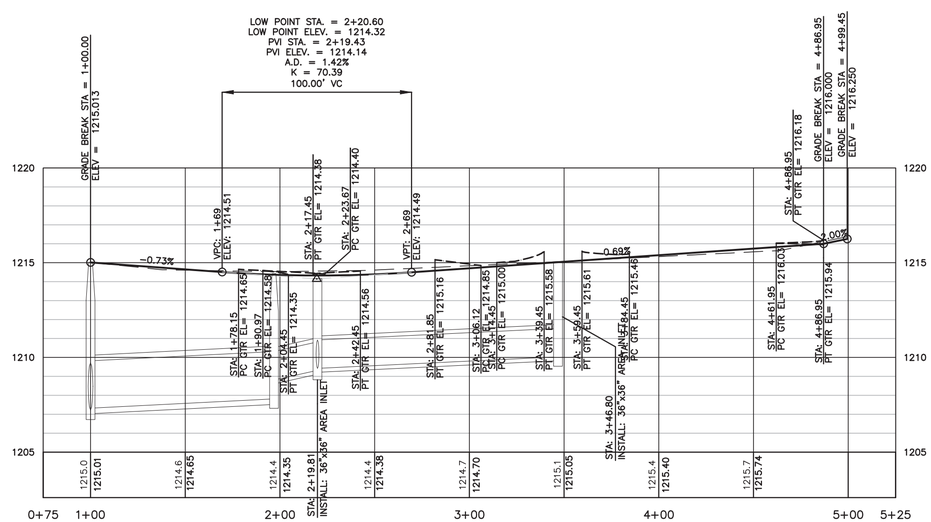


Alley 10 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	79.45	N50° 38' 10.40"W	(2259894.26,13985986.42)	(2259832.83,13986036.82)
L2	285.19	N0° 46' 38.39"W	(2259818.21,13986067.20)	(2259814.34,13986352.36)

Alley 10 Curve Table					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	40.00	34.81	N25° 42' 24.39"W	(2259832.83,13986036.82)	(2259818.21,13986067.20)



ALLEY 10
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

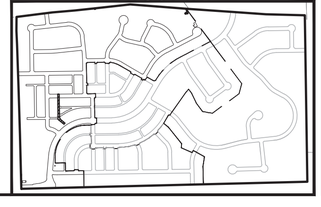
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE
- DESIGN CURB RETURN PROFILE

GRAPHIC SCALE 1"=40'

LEGEND

- CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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ALLEY 10 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
82
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_RD.dwg
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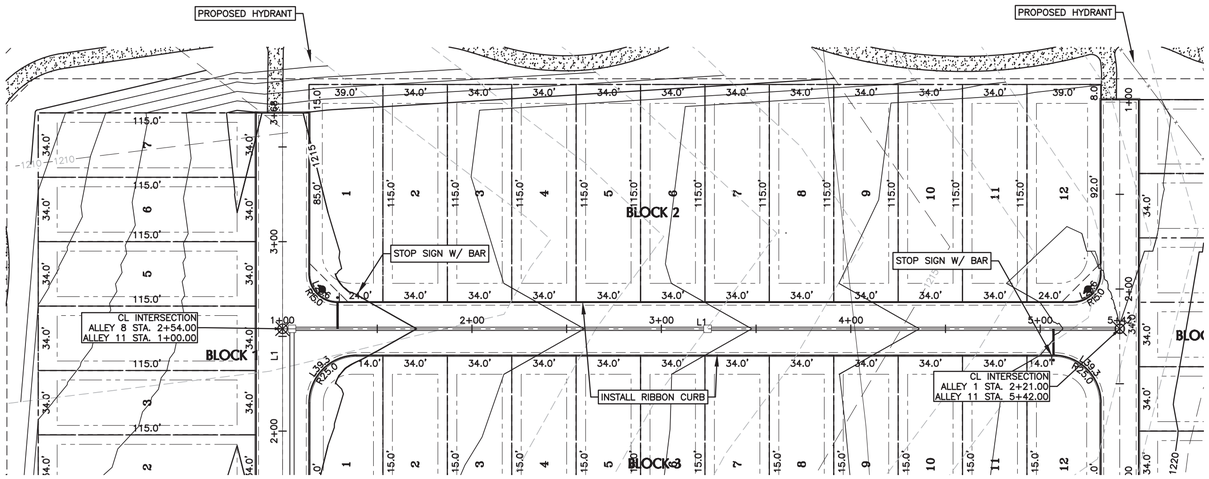
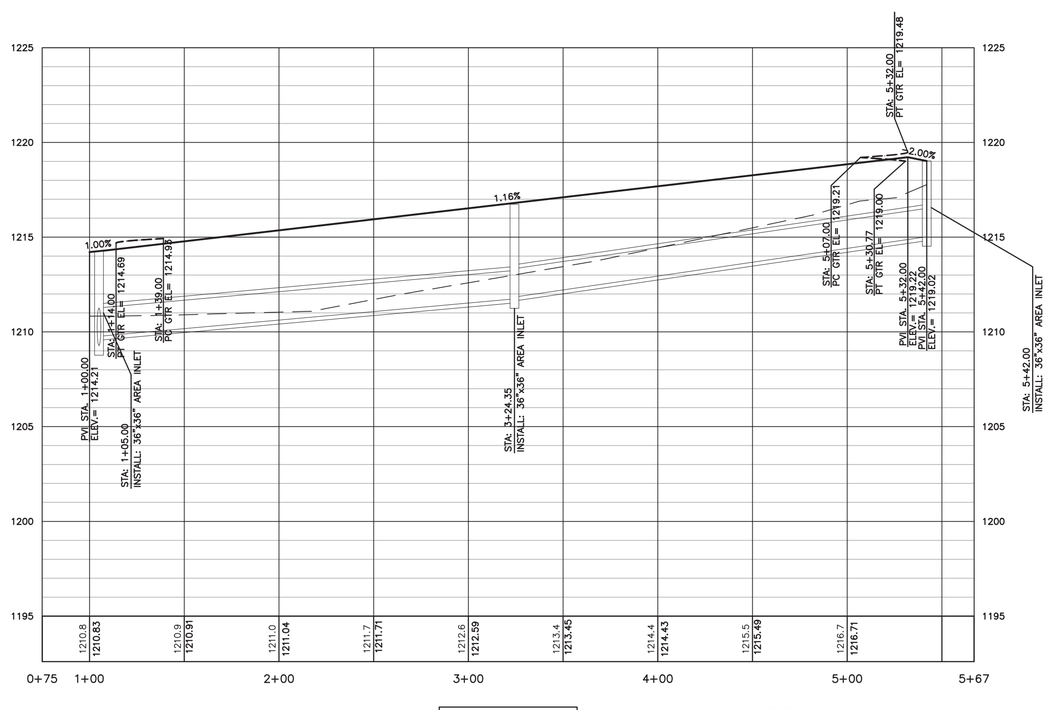


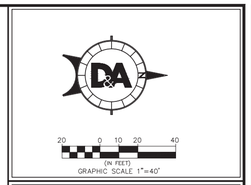
Alley 11 Line Table				
Line #	Length	Direction	Start Point	End Point
L1	442.00	N0° 46' 38.39"W	(2259514.33,13986056.27)	(2259508.33,13986498.23)



ALLEY 11
H SCALE: 1"=40'
V SCALE: 1"=4'

PROFILE LEGEND

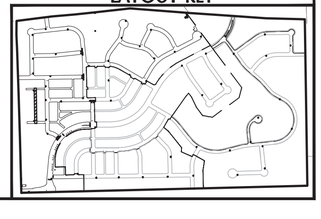
- EXISTING GRADE CENTERLINE
- EXISTING SAMPLE RIGHT (30')
- EXISTING SAMPLE LEFT (30')
- DESIGN GRADE CENTERLINE



LEGEND

- CO — CLEAN OUT
- BOLLARD (SIZE NOTED)
- FIRE HYDRANT
- VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- SIGN (AS NOTED)
- POWER POLE
- DOWN GUY
- CONCRETE
- BUILDING
- BOUNDARY LINE
- PROPERTY LINES
- EASEMENTS
- WIRE FENCE
- WOOD FENCE
- CHAIN LINK FENCE
- OVERHEAD ELECTRIC
- EDGE OF EXISTING ASPHALT
- SIDEWALK TO BE INSTALLED
- CURB & GUTTER

LAYOUT KEY



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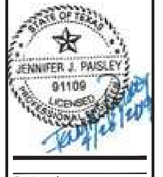
ALLEY 11 PLAN & PROFILE

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
83
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-Ph1_RD.dwg
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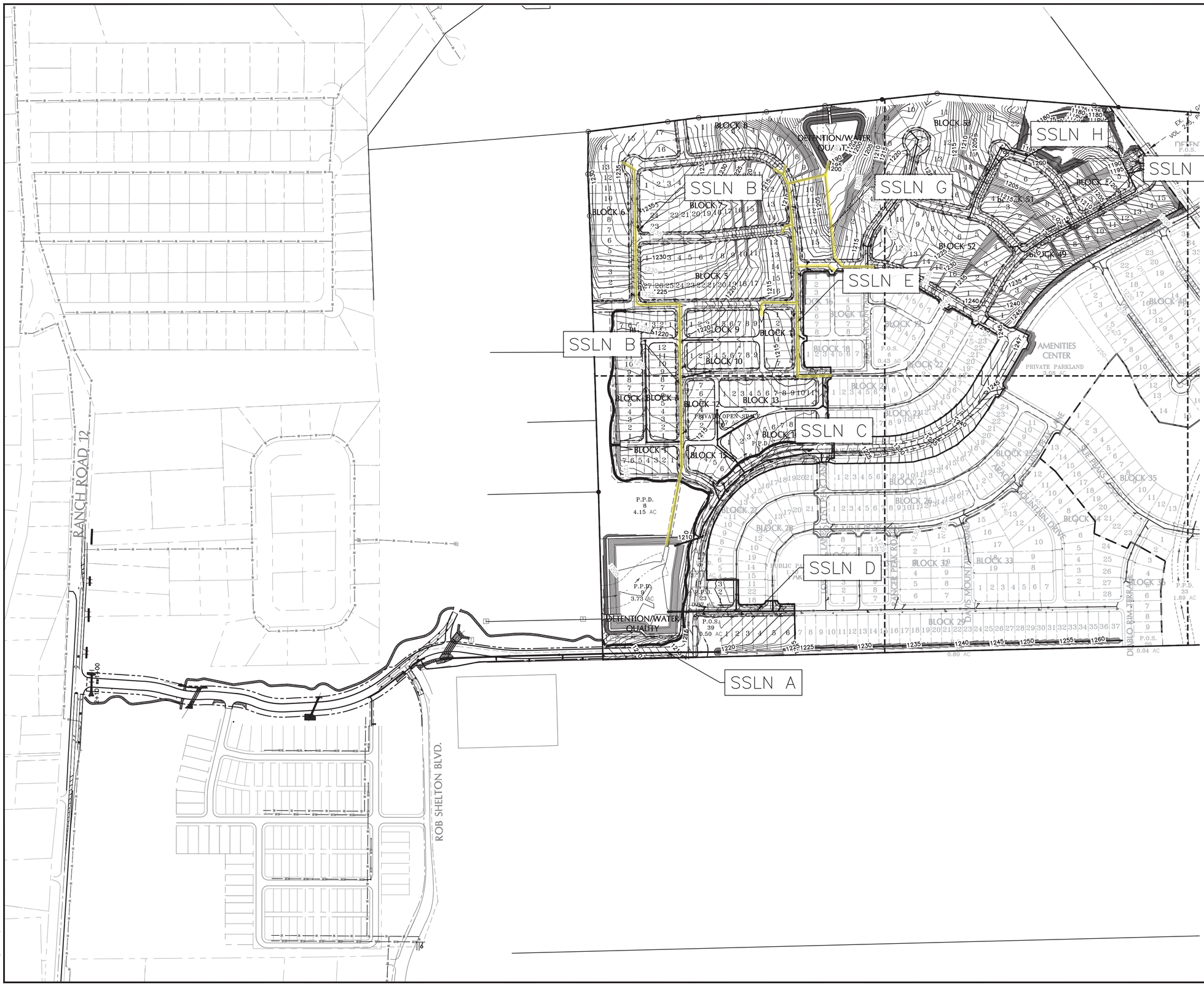
Plot Date/Time: Apr 26, 19 - 20:40:36



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

GRAPHIC SCALE 1"=10' (IN FEET)

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Firm Registration Number: 3937

OVERALL STORM SEWER LAYOUT PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

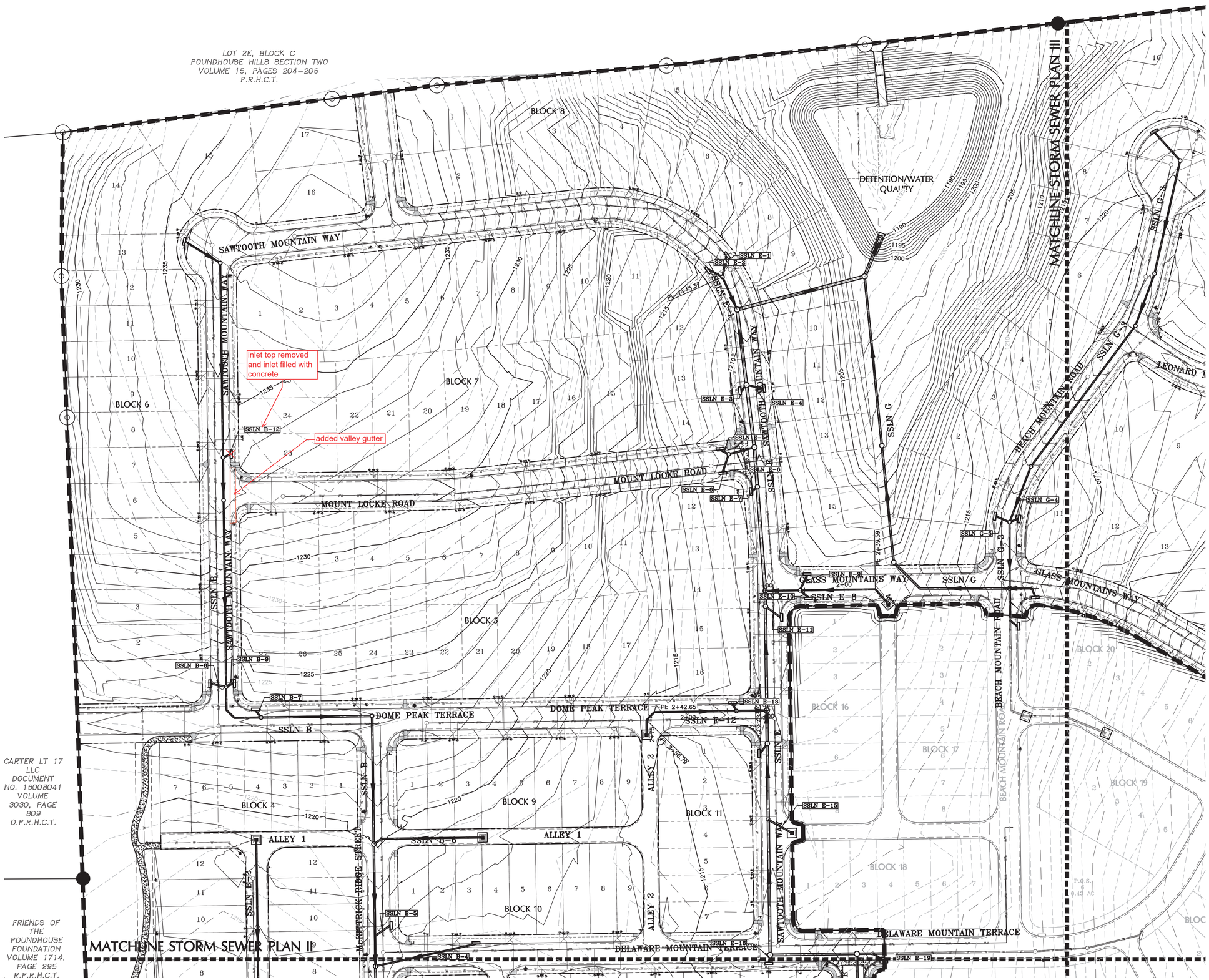
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 84 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:43:11



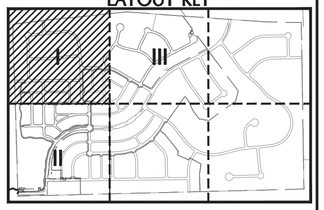
GRAPHIC SCALE 1"=40'

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

ABBREVIATIONS:
SSLN = STORM SEWER LINE

LAYOUT KEY



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www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LAYOUT I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

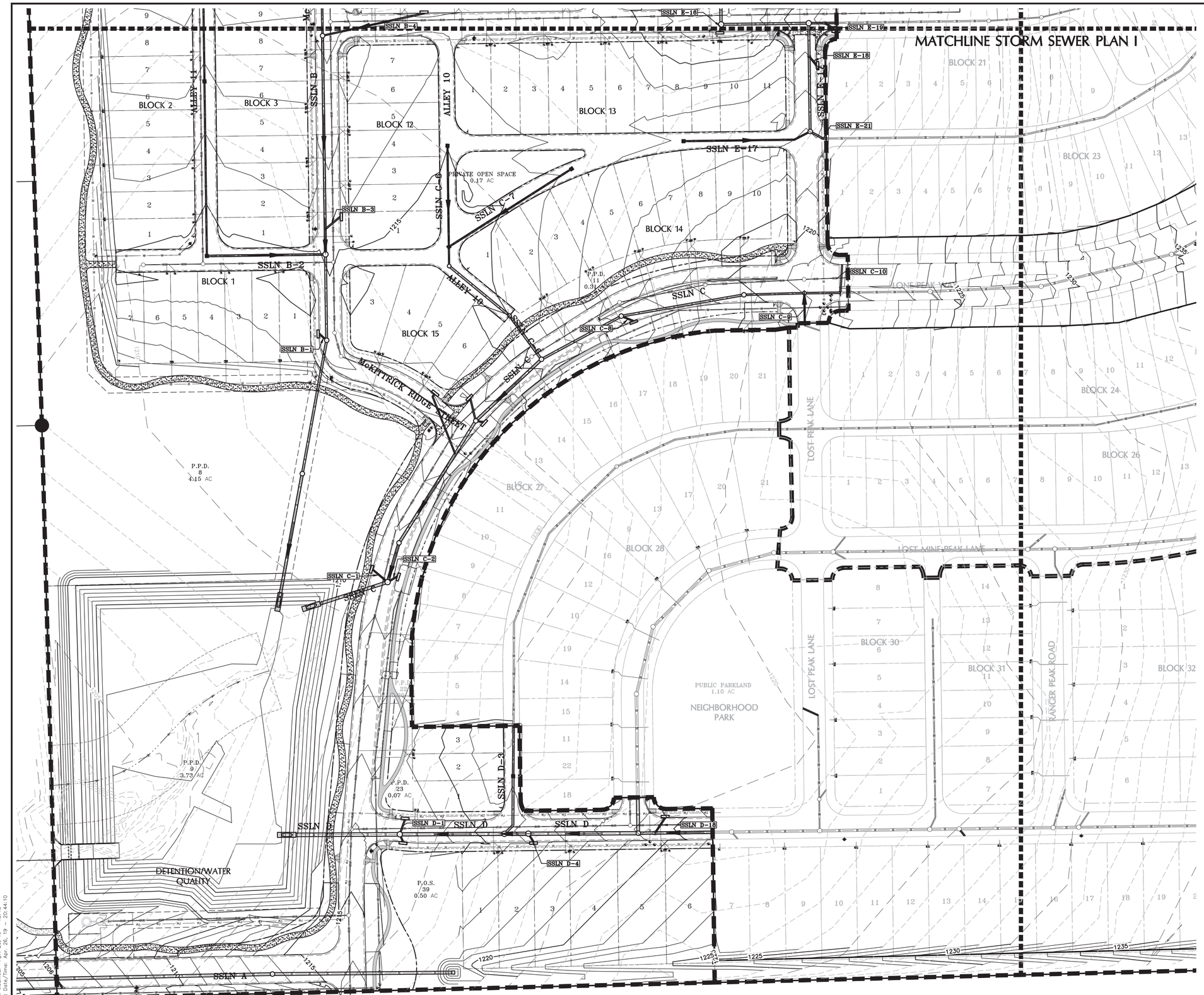
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED

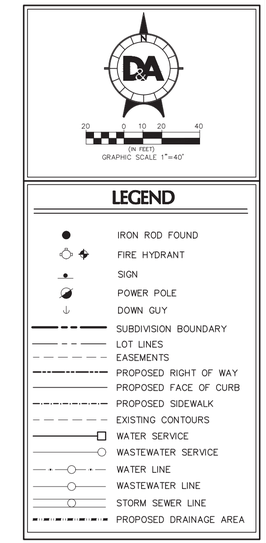
Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 85 OF 175

Project No: 1691-002

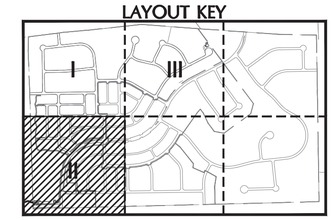
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_LIT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:43:40





ABBREVIATIONS:
SSLN = STORM SEWER LINE

LAYOUT KEY



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Firm Registration Number: 3937

STORM SEWER LAYOUT II

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

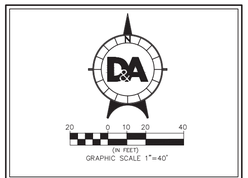
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/19

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET
86
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT1_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:44:10



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

ABBREVIATIONS:
SSLN - STORM SEWER LINE

LAYOUT KEY

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www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LAYOUT III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 87 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT1_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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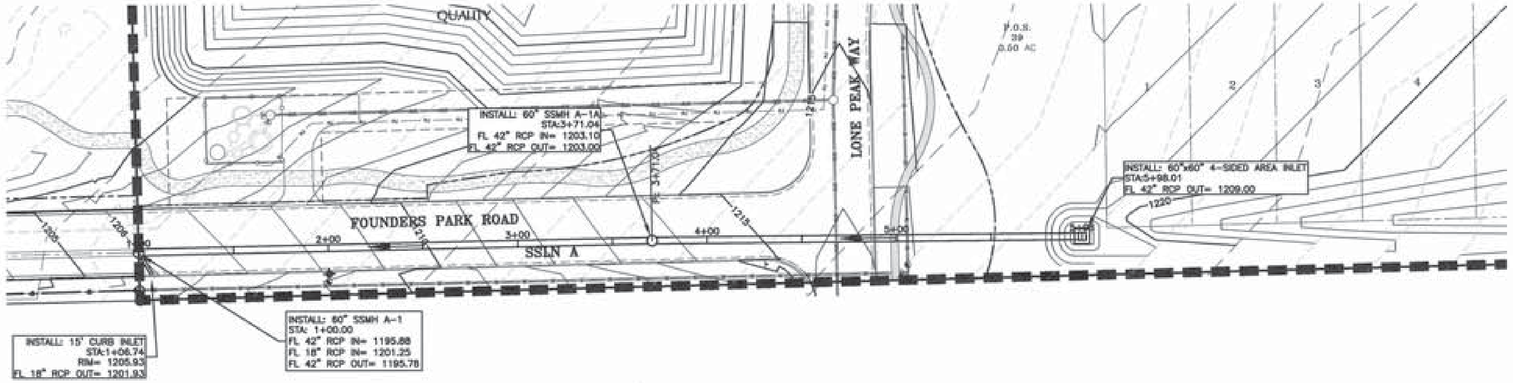
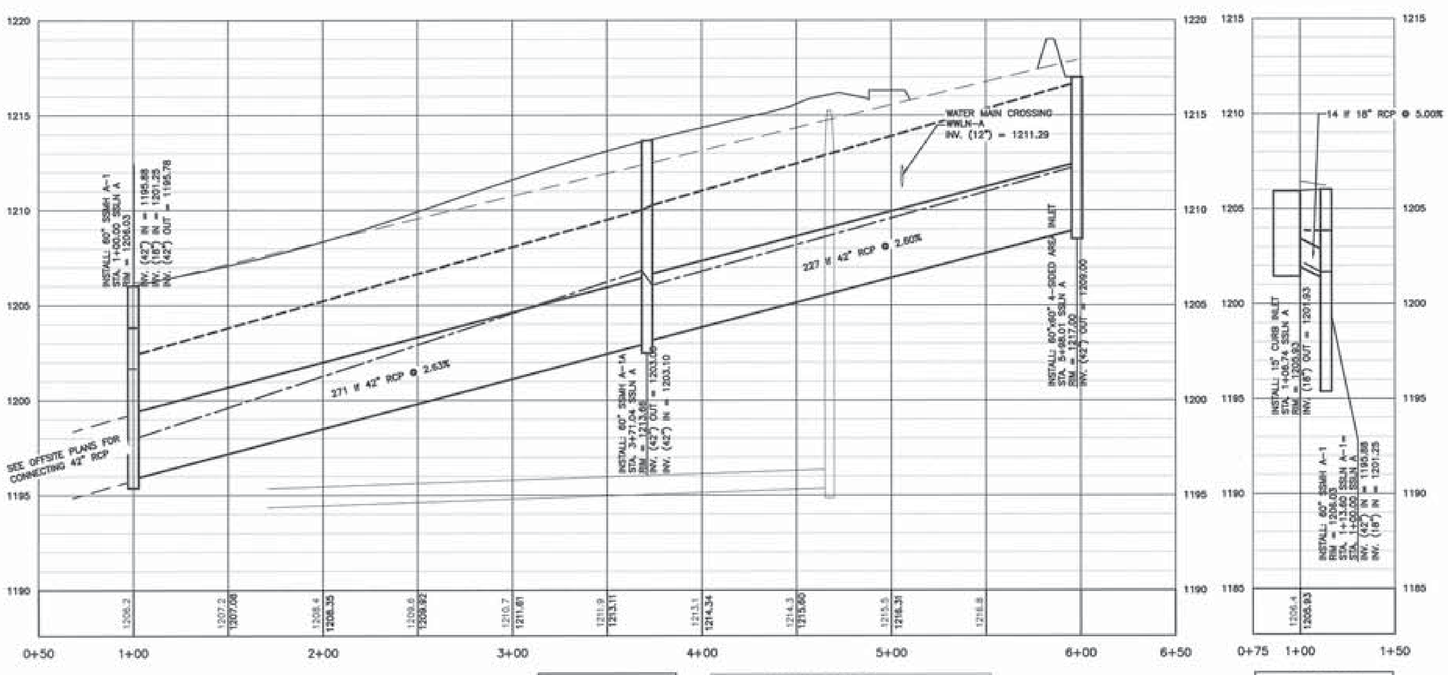


STORM SEWER LINE A

SCALE: 1"=40'



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)	
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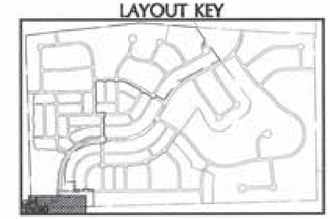
SSLN A	271	42	118.06	18.65	167.71	17.43	
SSLN A1	13.8	18	3.2	7.7	4.42	2.5	
SSLN A	185	42	119.45	17.86	169.67	17.64	OFFSITE
SSLN A	214	42	118.97	12.37	168.99	17.56	OFFSITE
SSLN A	268	48	118.41	10.74	168.2	13.82	OFFSITE

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



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www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN A

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

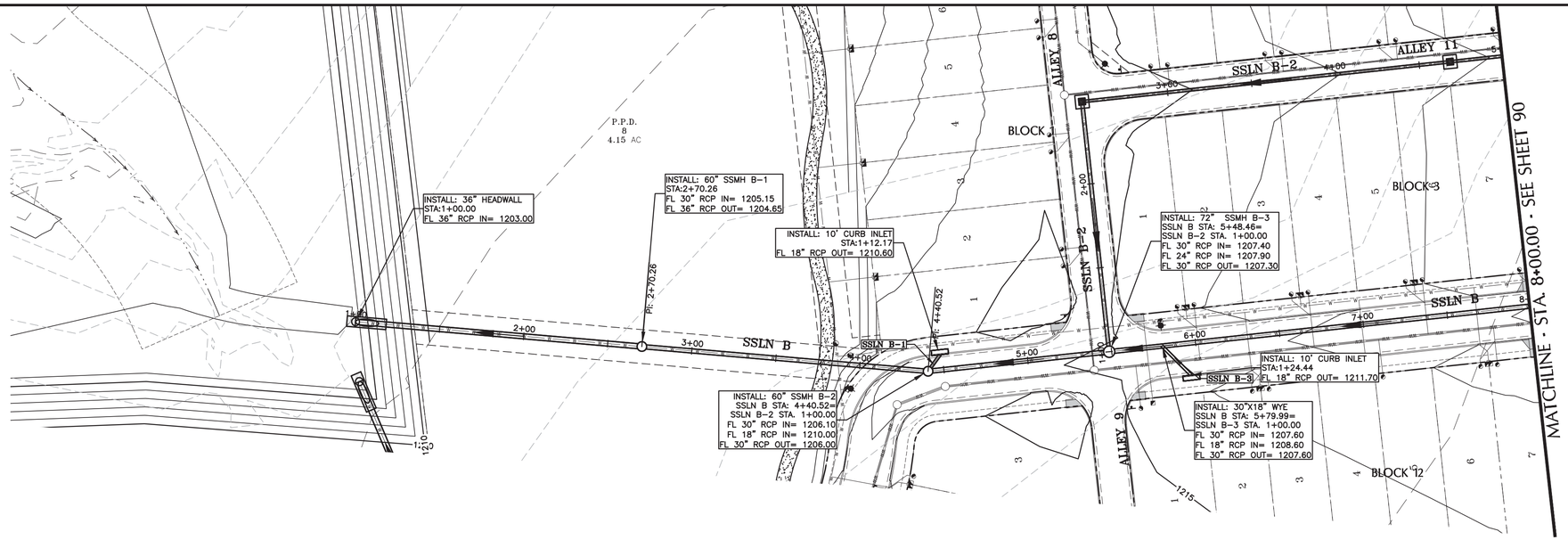
STATE OF TEXAS
JENNIFER J. PAISLE
91109
LICENSED
PROFESSIONAL ENGINEER
2-MAY-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
88
OF 175

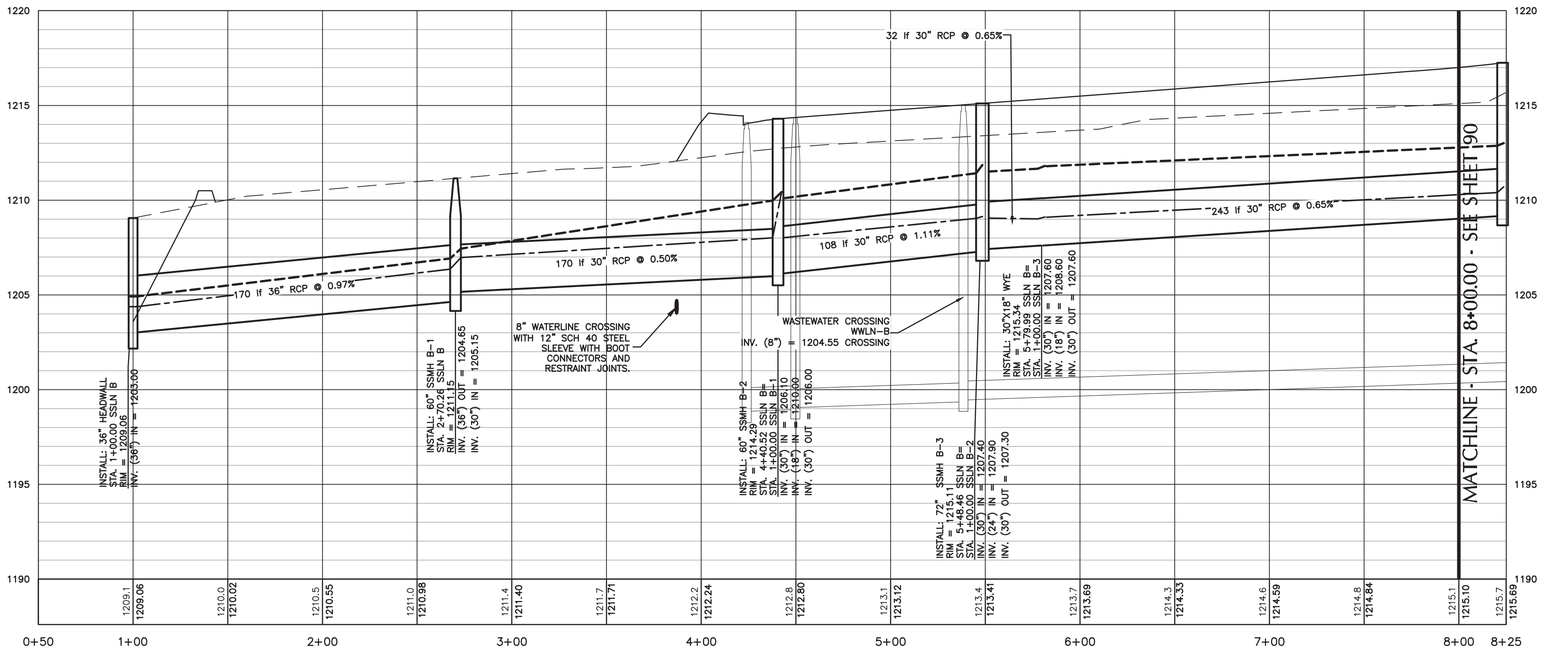
Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submittal\CD1\Phase 1\1691002-CD-PH1_PP_STORM.dwg
User: JJohnson
Last Saved: May 02, 19 - 15:06
Plot Date/Time: May 02, 19 - 15:40:00



STORM SEWER LINE B

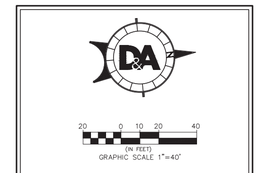
SCALE: 1"=40'



SSLN B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

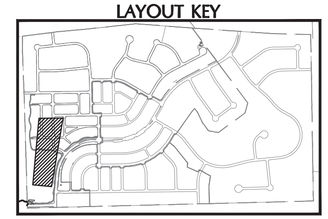
Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN B	170	36	28.19	8.94	48.68	10.18
SSLN B	170	30	28.61	7.46	49.13	10.43
SSLN B	107.9	30	26.09	6.42	4S.S9	9.29
SSLN B	31.S	30	14.14	4.11	28.21	S.7S
SSLN B	243.1	30	13.46	4.36	27.48	S.6



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



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Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN B

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

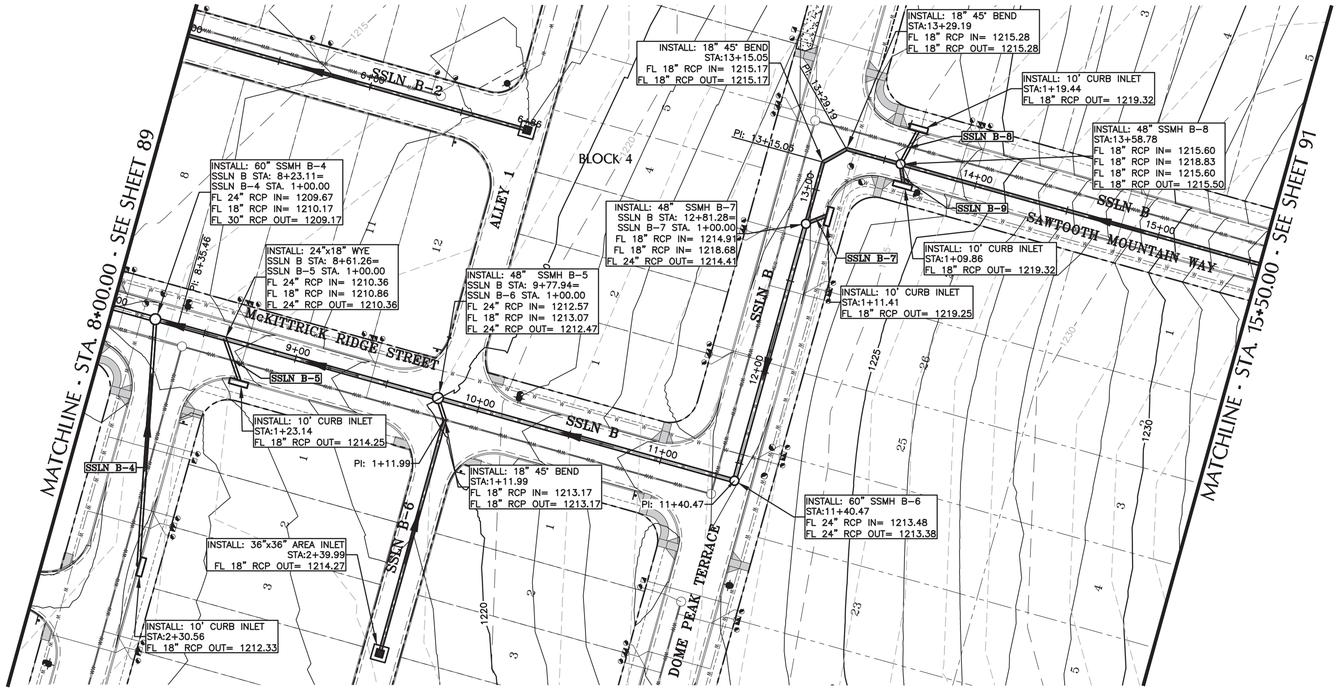
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

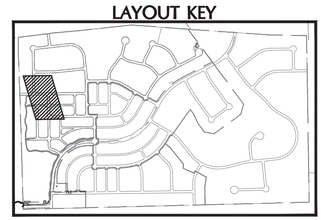
Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

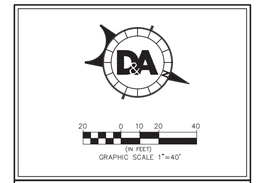
SHEET
89
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:45:31





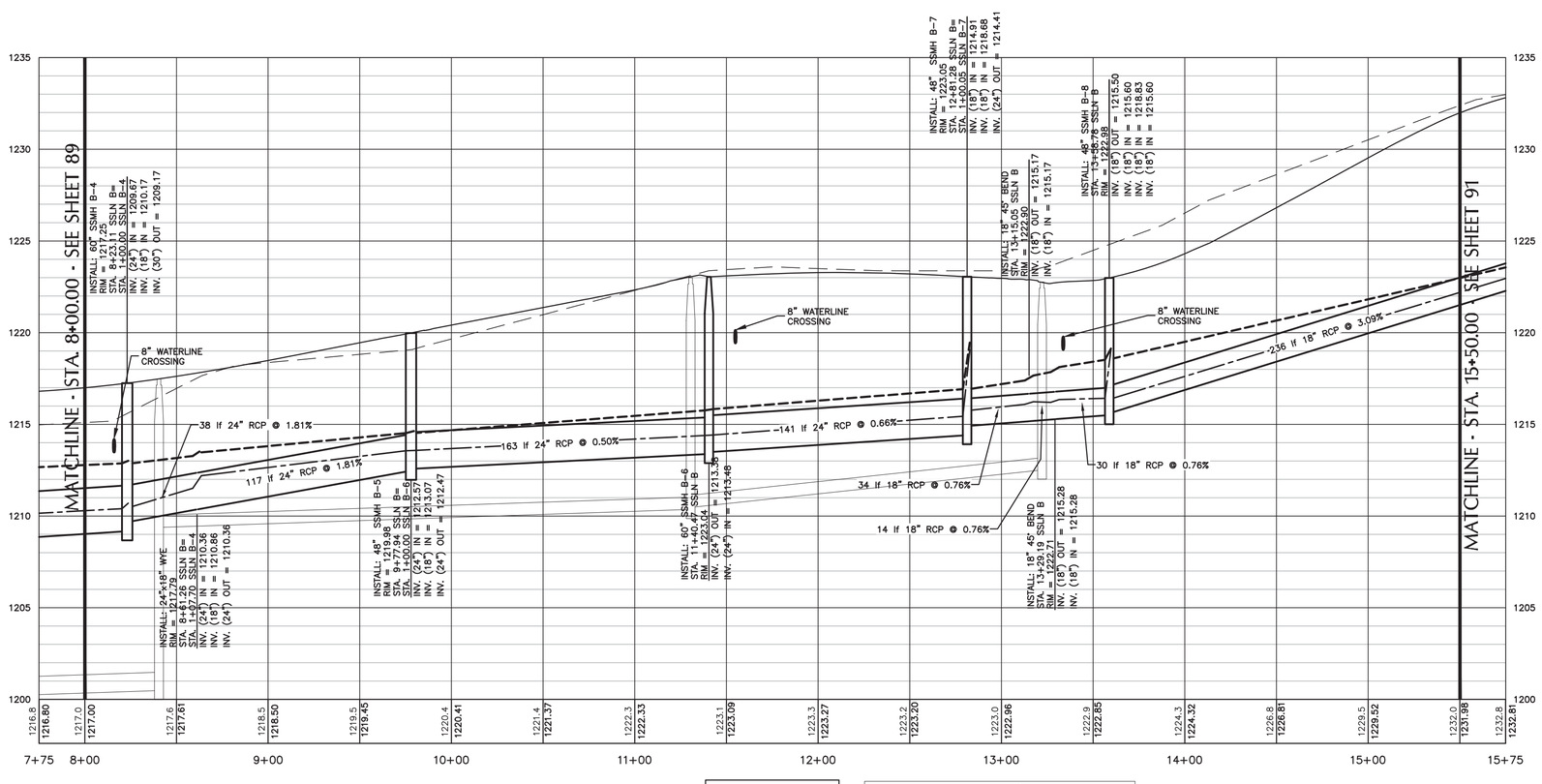


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

STORM SEWER LINE B

SCALE: 1"=40'



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
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SSLN B	116.7	24	9.38	6.86	21.53	6.85
SSLN B	163	24	8.16	5.11	19.75	6.29
SSLN B	141	24	8.29	5.7	20.01	6.37
SSLN B	34	18	5.72	5.48	12.14	6.87
SSLN B	14.1	18	5.73	4.26	12.15	6.88
SSLN B	30	18	5.75	4.27	12.18	6.89
SSLN B	236.6	18	2.48	2.47	7.63	4.32

SSLN B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

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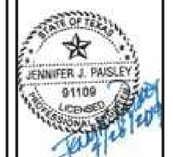
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN B

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

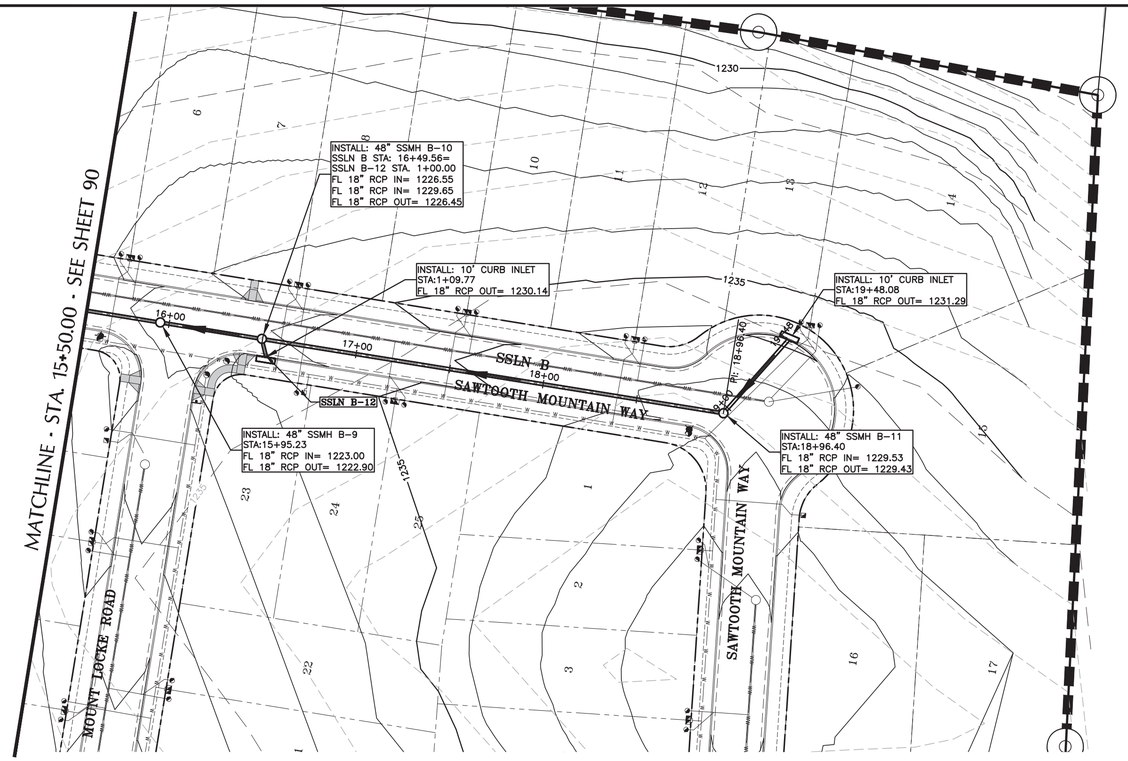


Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
90
OF 175

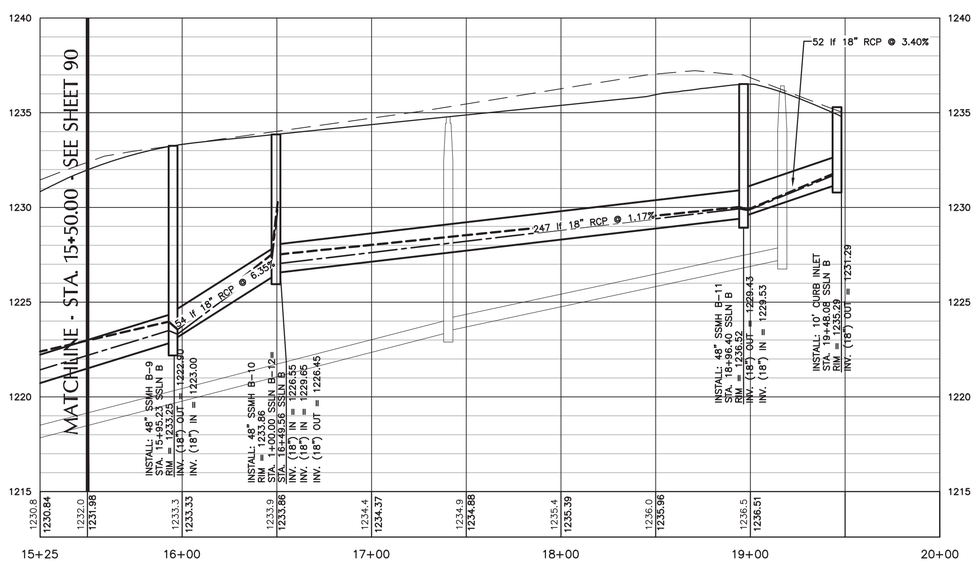
Project No.:
1691-002

Drawing: P:\1691-002\CADD\eng\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:48:00



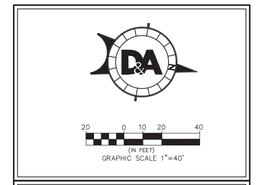
STORM SEWER LINE B

SCALE: 1"=40'



SSLN B
H SCALE: 1"=40'
V SCALE: 1"=4'

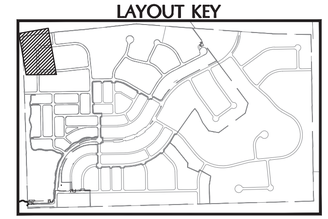
PROPOSED GRADE	PIPE CROSSING
EXISTING GRADE	SS STRUCTURE
PROPOSED SSLN	100 YR HGL
FUTURE SSLN	25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN B	54.4	18	2.49	9.4	7.65	12.42
SSLN B	247	18	1.57	3.04	2.17	1.78
SSLN B	46	18	1.57	6.84	2.17	7.52

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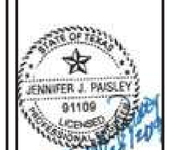
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN B

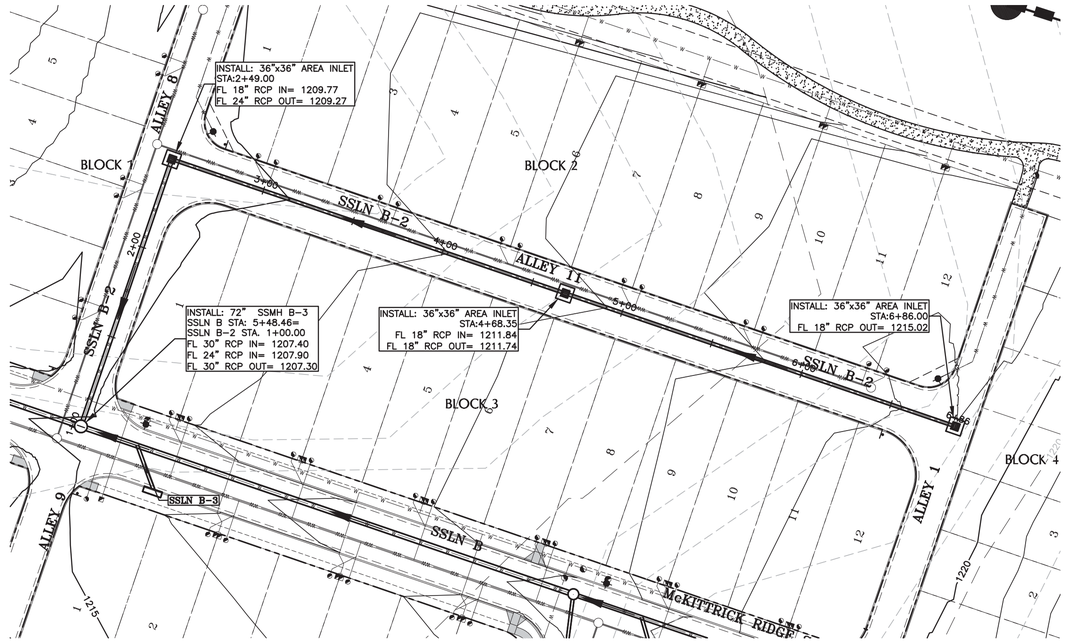
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

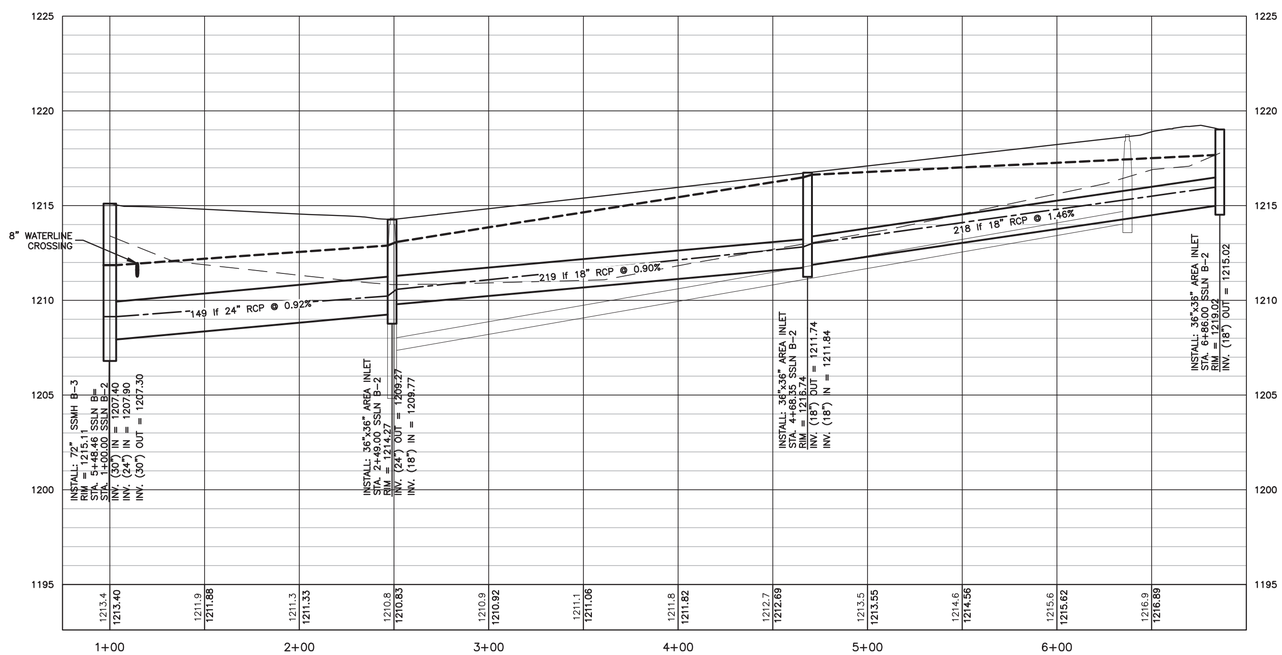
Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: ABANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:46:26



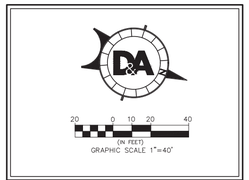
STORM SEWER LINE B-2

SCALE: 1"=40'



SSLN B-2
H SCALE: 1"=40'
V SCALE: 1"=4'

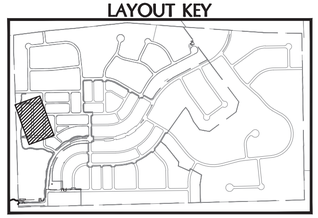
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN B2	149	24	13.36	7.28	18.84	6
SSLN B2	219.4	18	10.09	6.54	13.08	7.4
SSLN B2	217.7	18	6.02	4.11	7.26	4.11

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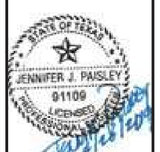
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN B-2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

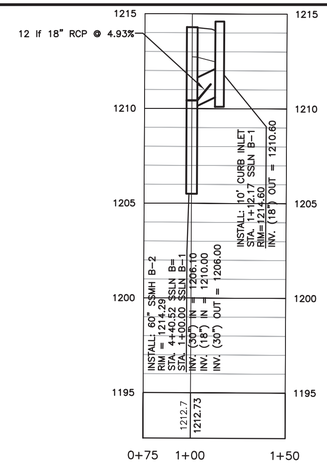


Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

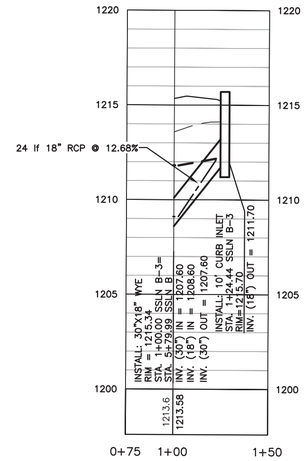
SHEET
92
OF 175

Project No:
1691-002

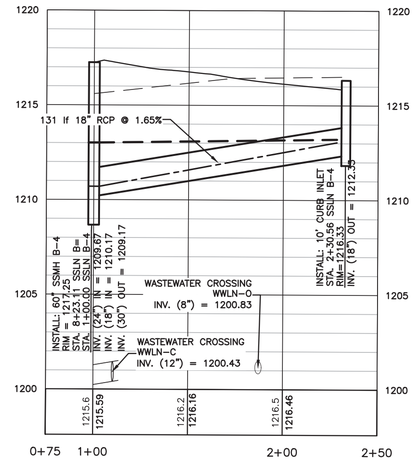
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:46:54



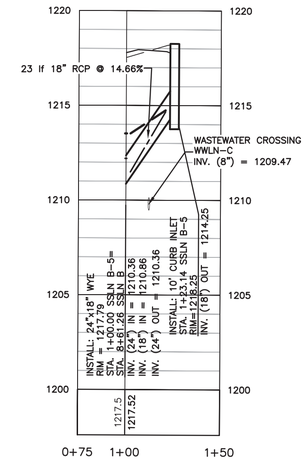
SSLN B-1
H SCALE: 1"=40'
V SCALE: 1"=4'



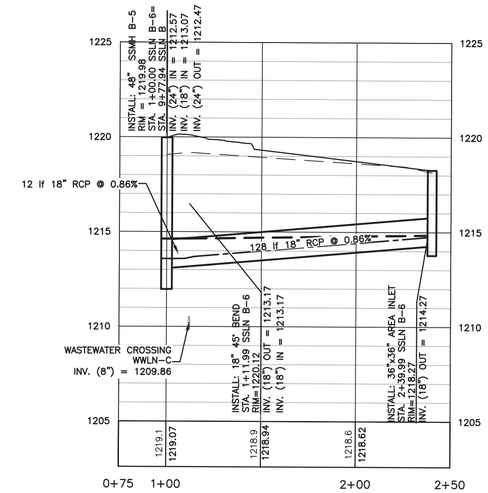
SSLN B-3
H SCALE: 1"=40'
V SCALE: 1"=4'



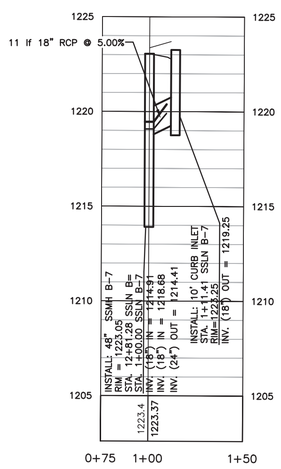
SSLN B-4
H SCALE: 1"=40'
V SCALE: 1"=4'



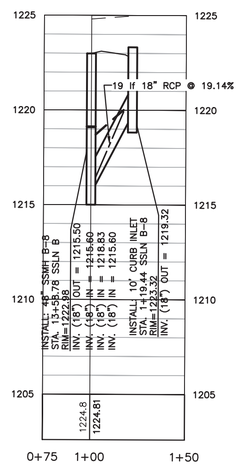
SSLN B-5
H SCALE: 1"=40'
V SCALE: 1"=4'



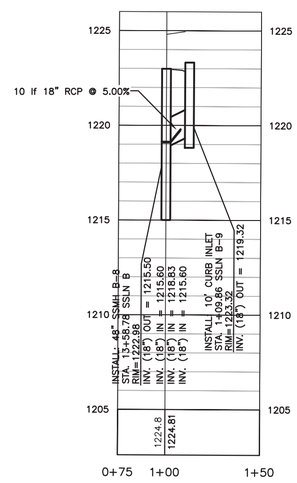
SSLN B-6
H SCALE: 1"=40'
V SCALE: 1"=4'



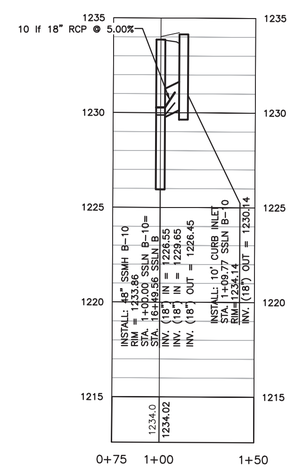
SSLN B-7
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN B-8
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN B-9
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN B-10
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN B1	12.2	18	3.17	7.52	4.37	7.98
SSLN B3	24.5	18	1.14	2.18	1.57	0.89
SSLN B4	131	18	3.57	6.44	5.2	2.94
SSLN B5	23.2	18	1.21	9.72	1.67	0.95
SSLN B6	12	18	1.52	2.86	2.23	1.26
SSLN B6	128	18	1.56	2.83	2.27	1.29
SSLN B7	10.9	18	2.8	7.38	8.39	9.11
SSLN B8	19.5	18	2.41	2.38	3.32	1.88
SSLN B9	9.9	18	1.15	6.02	1.59	6.4
SSLN B10	9.8	18	1.03	5.89	5.75	8.12

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Firm Registration Number: 3937

STORM SEWER LINE
B LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

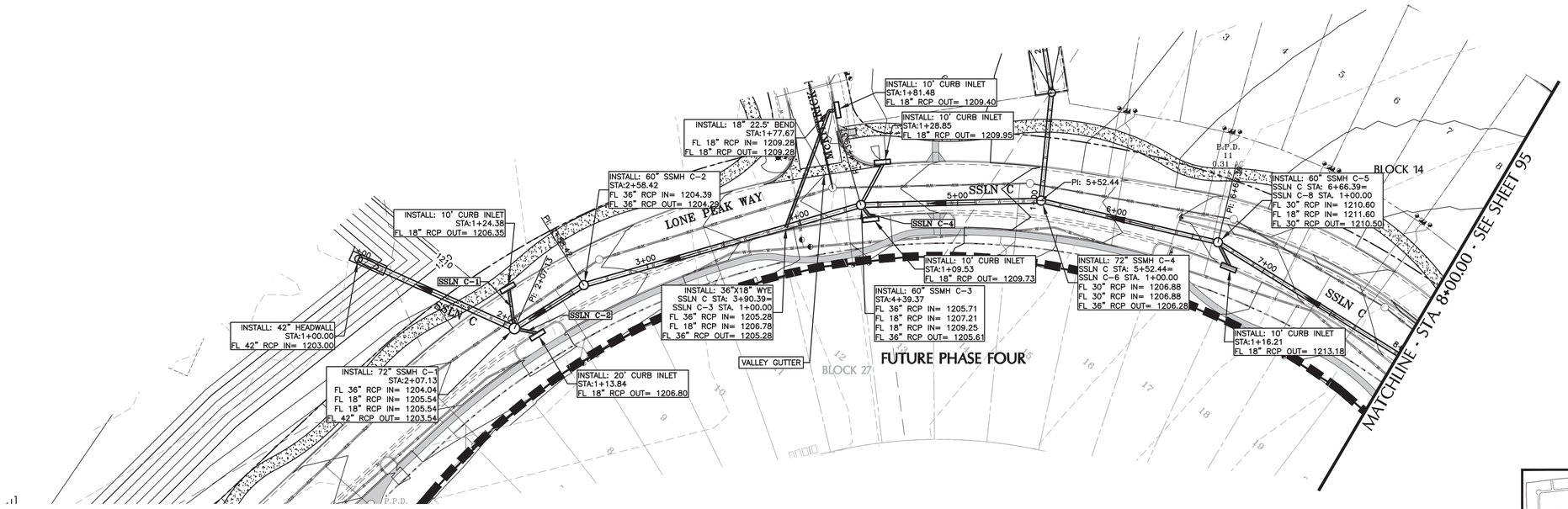
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
93
OF 175

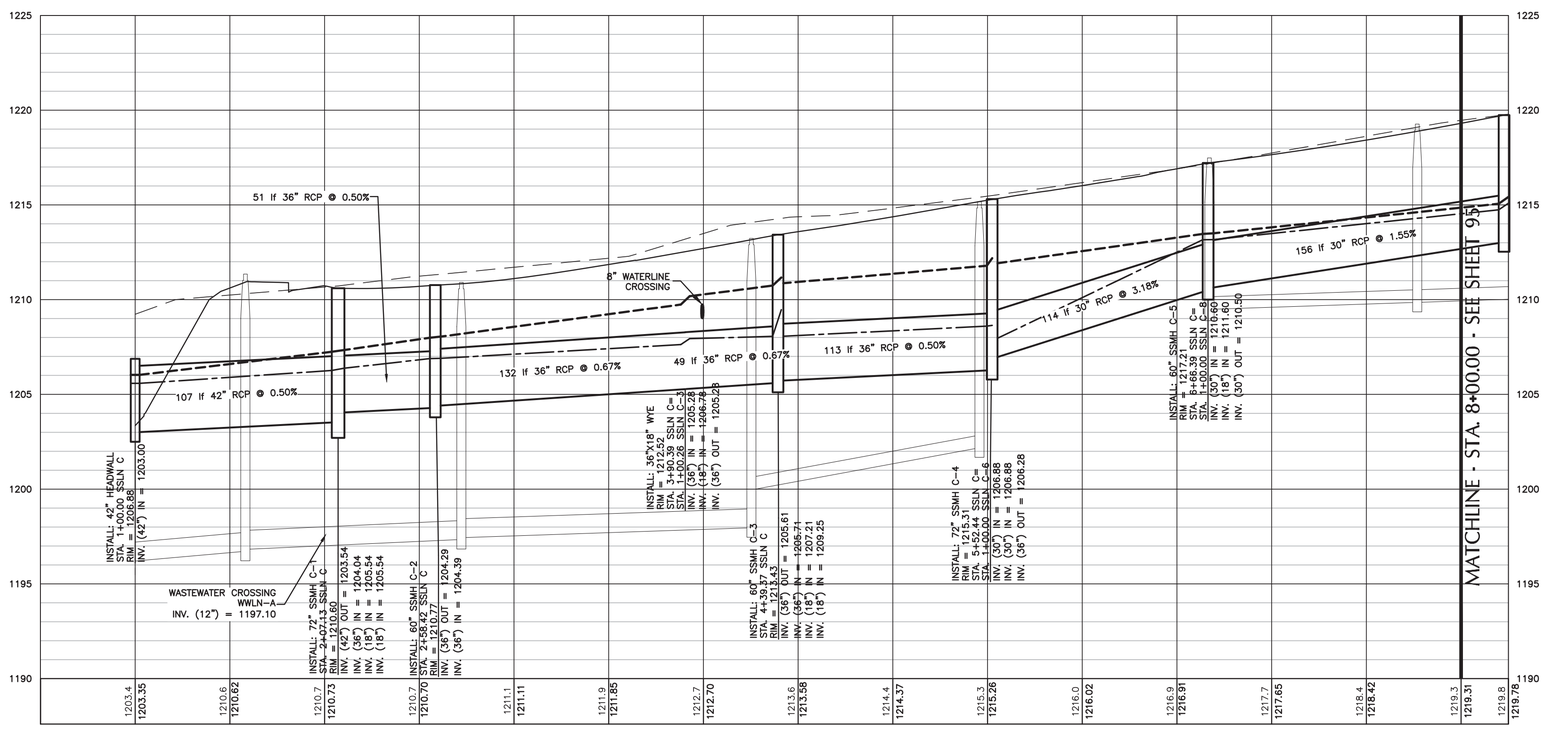
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:47:53



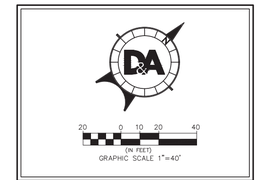
STORM SEWER LINE C

SCALE: 1"=40'



SSLN C
H SCALE: 1"=40'
V SCALE: 1"=4'

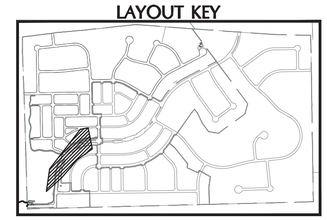
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
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SSLN C	51.3	36	52.15	8.79	74.9	10.6
SSLN C	132	36	52.68	8.3	75.43	10.67
SSLN C	49	36	49.66	7.48	71.25	10.08
SSLN C	113.1	36	44.64	7.45	60.18	8.51
SSLN C	114	30	29.69	13.56	42.28	8.61
SSLN C	156	30	25.19	6.38	35.79	7.29

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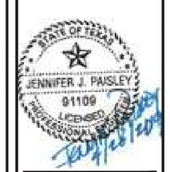
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN C

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

Drawing: P:\1691-002\CAD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
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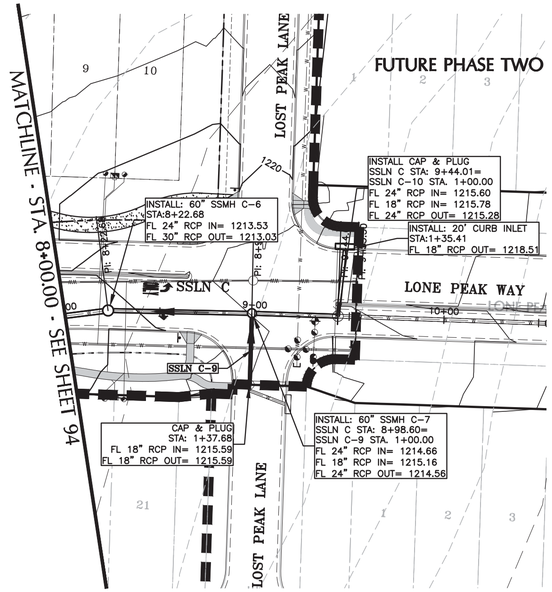
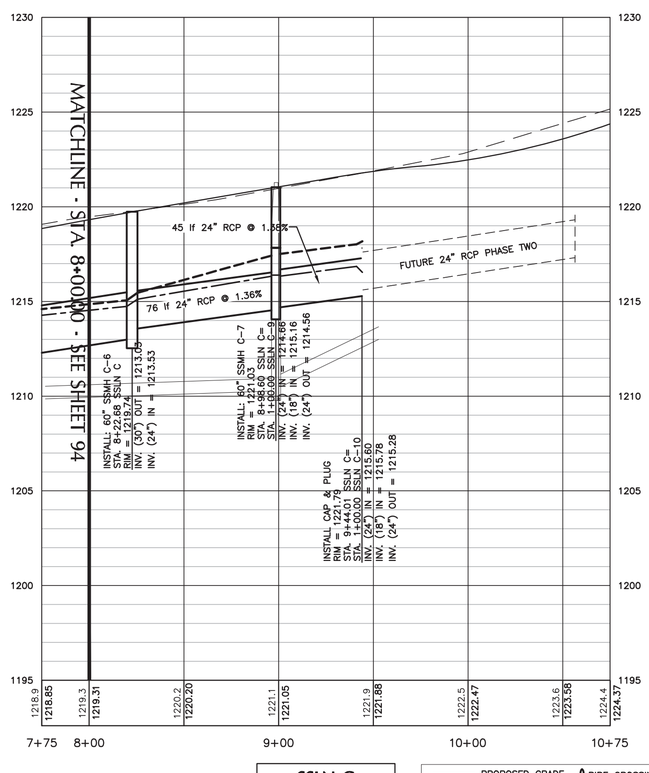
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:48:20



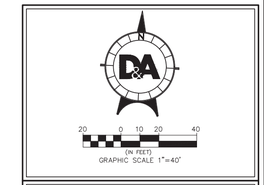
STORM SEWER LINE C

SCALE: 1"=40'



SSLN C
H SCALE: 1"=40'
V SCALE: 1"=4'

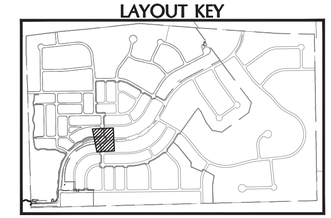
PROPOSED GRADE	PIPE CROSSING
EXISTING GRADE	SS STRUCTURE
PROPOSED SSLN	100 YR HGL
FUTURE SSLN	25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN C	76	24	25.33	9.48	35.95	11.58
SSLN C	36.1	24	18.99	6.73	26.93	8.57
SSLN C	18.6	24	12.34	4.66	17.75	5.65

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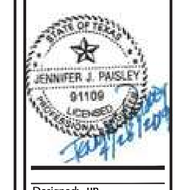
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN C

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

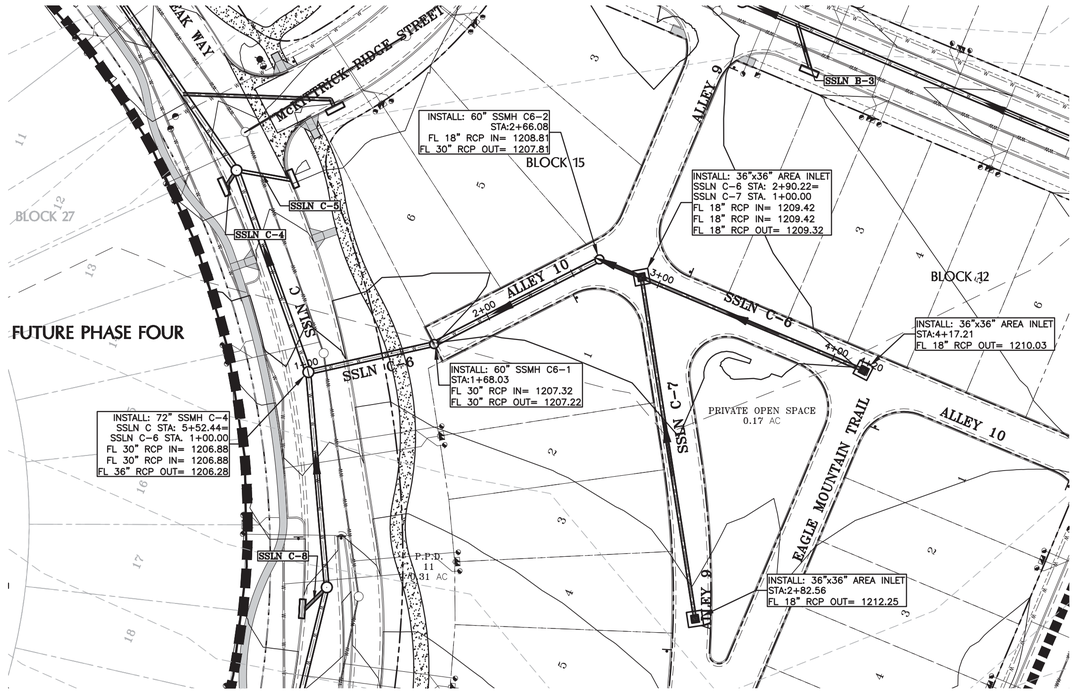


Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
95
OF 175

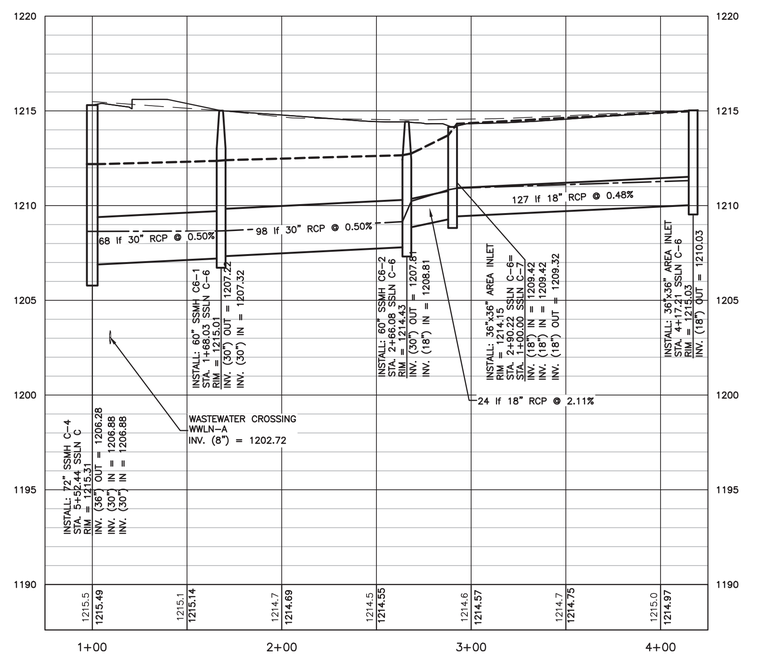
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:48:45



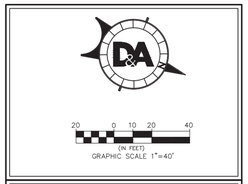
STORM SEWER LINE C-6

SCALE: 1"=40'



SSLN C-6
H SCALE: 1"=40'
V SCALE: 1"=4'

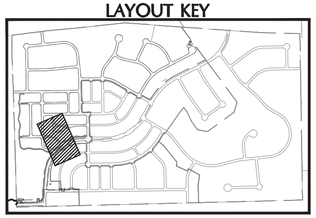
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN C6	68	30	15.74	4.23	20.7	4.22
SSLN C6	98	30	15.92	5.83	20.98	4.27
SSLN C6	24.1	18	15.95	9.56	21.01	11.89
SSLN C6	127	18	5.9	3.51	7.56	4.28

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Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN C-6

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

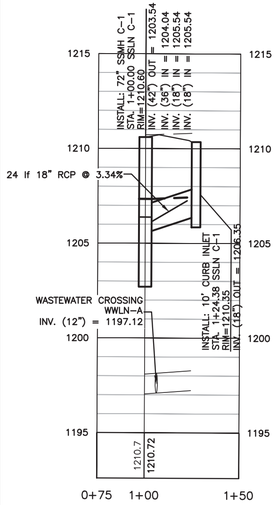
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/29/2020

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

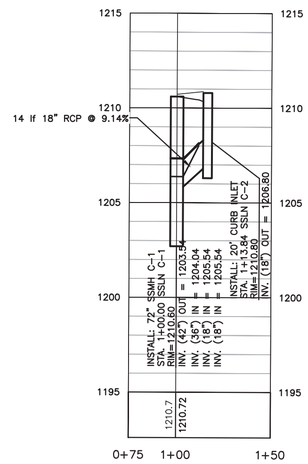
SHEET
96
OF 175

Project No.:
1691-002

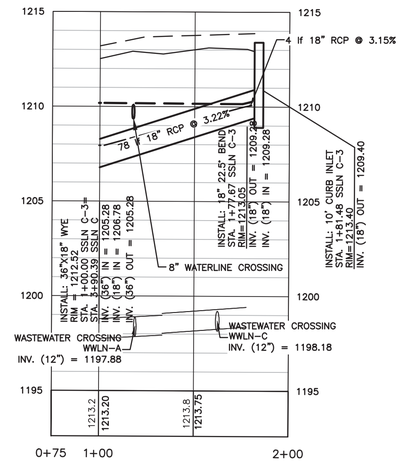
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_U1_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:49:11



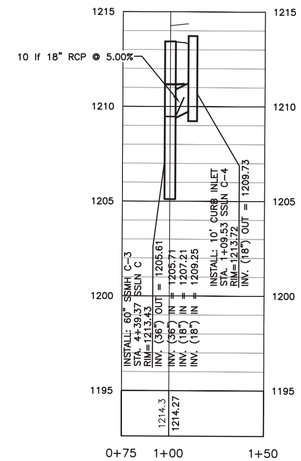
SSLN C-1
H SCALE: 1"=40'
V SCALE: 1"=4'



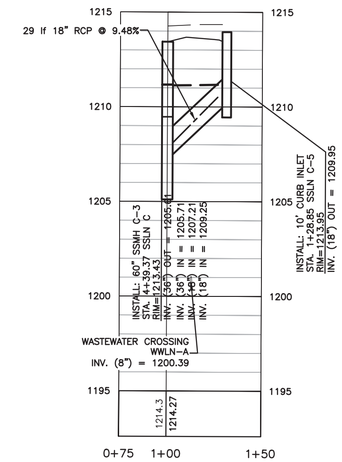
SSLN C-2
H SCALE: 1"=40'
V SCALE: 1"=4'



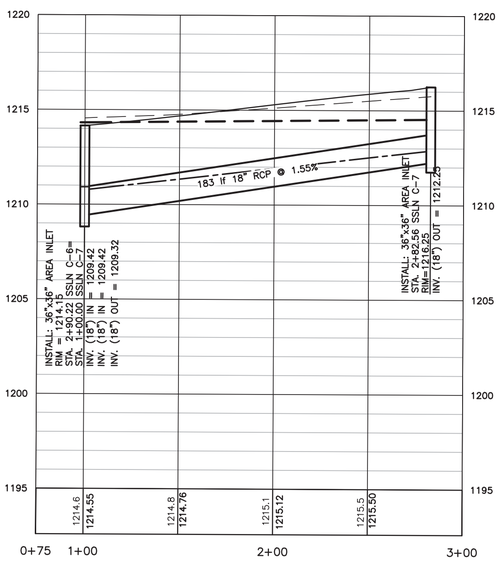
SSLN C-3
H SCALE: 1"=40'
V SCALE: 1"=4'



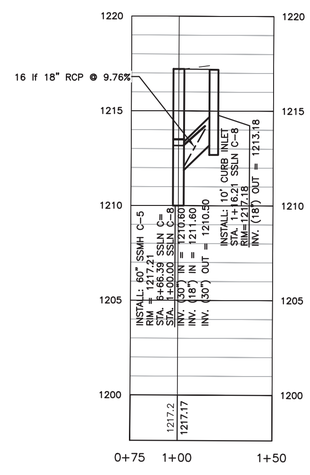
SSLN C-4
H SCALE: 1"=40'
V SCALE: 1"=4'



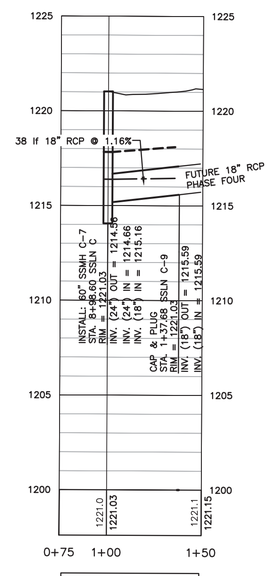
SSLN C-5
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN C-7
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN C-8
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN C-9
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN C1	24.4	18	5.48	8.3	7.57	4.28
SSLN C2	13.9	18	11.92	11.64	16.78	9.5
SSLN C3	4	18	3.39	3.52	4.8	3.89
SSLN C3	78	18	3.39	2.3	4.8	2.72
SSLN C4	9.6	18	3.72	7.44	5.29	2.99
SSLN C5	28.9	18	2.05	1.86	7.31	4.14
SSLN C7	182.6	18	2.56	1.51	3.52	1.99
SSLN C8	16.2	18	4.86	10.73	6.92	3.91
SSLN C9	38	18	6.42	4.14	9.13	5.17

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Firm Registration Number: 3937

STORM SEWER LINE
C LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

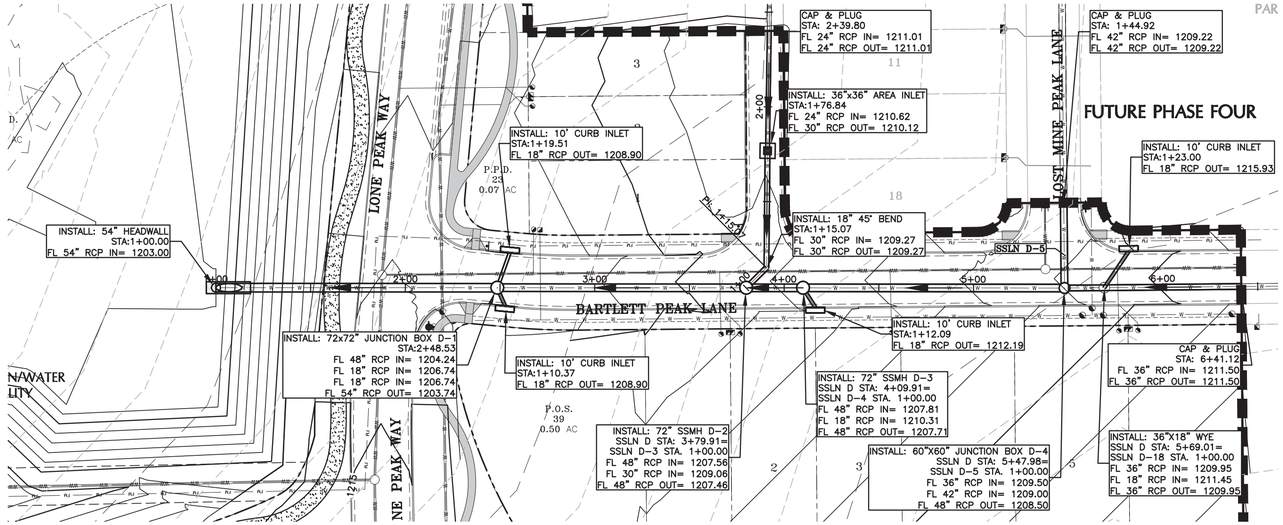
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
97
OF 175

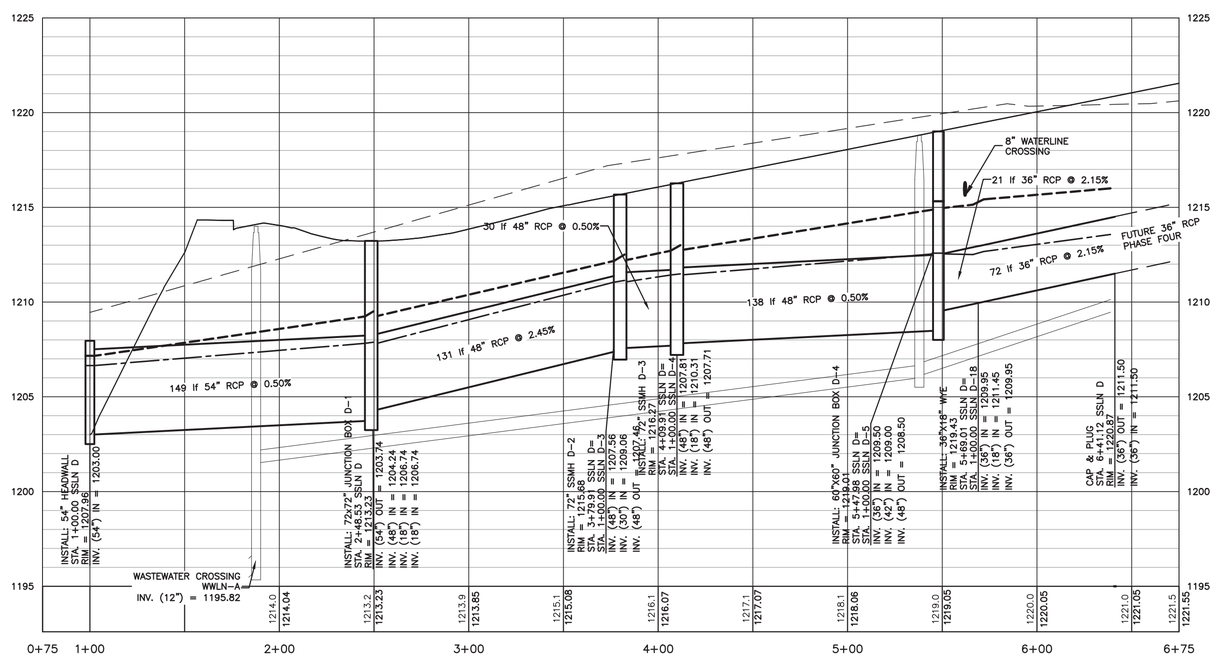
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:50:15



STORM SEWER LINE D

SCALE: 1"=40'



SSLN D
H SCALE: 1"=40'
V SCALE: 1"=4'

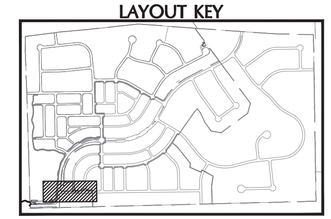
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN D	149	54	154.79	11.21	220.84	14.39
SSLN D	131	48	149.74	12.17	213.77	17.01
SSLN D	30	48	128.67	11.02	184.18	14.66
SSLN D	138	48	125.04	10.44	178.36	14.19
SSLN D	21	36	41.19	5.83	60.55	8.57
SSLN D	72.1	36	40.36	6	59.51	8.42

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



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Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN D

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

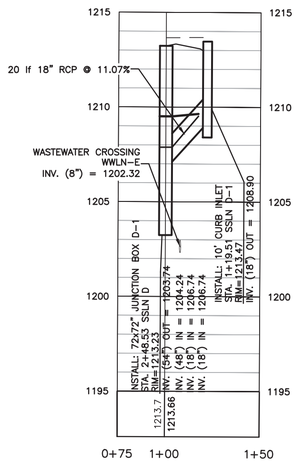
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

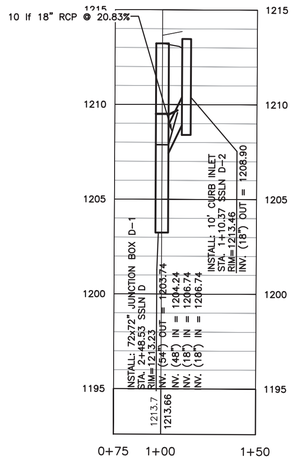
SHEET
98
OF 175

Project No.:
1691-002

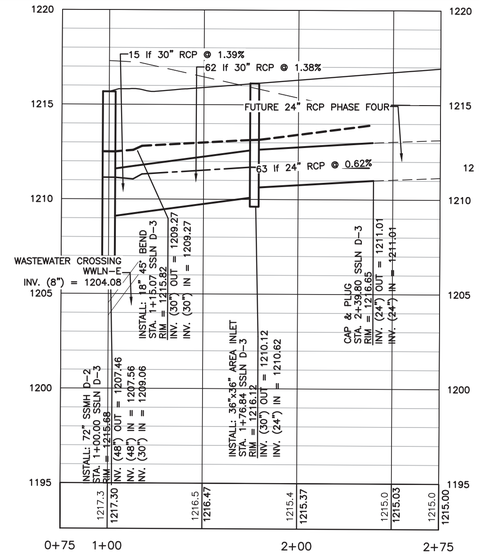
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:50:40



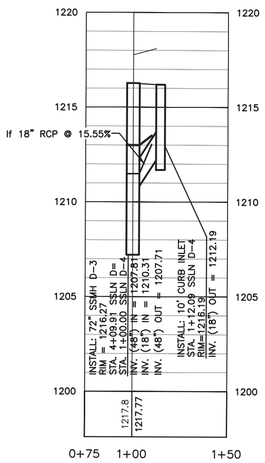
SSLN D-1
H SCALE: 1"=40'
V SCALE: 1"=4'



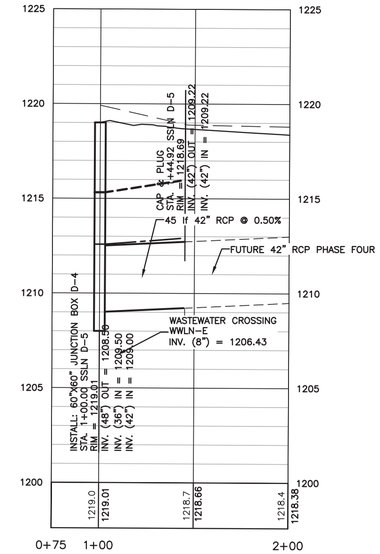
SSLN D-2
H SCALE: 1"=40'
V SCALE: 1"=4'



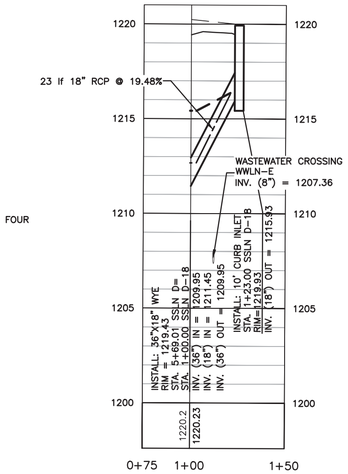
SSLN D-3
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN D-4
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN D-5
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN D-18
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN D1	23.6	18	2.81	1.68	3.9	2.2
SSLN D2	15.9	18	3.07	1.85	4.37	2.47
SSLN D3	15.1	30	21.39	4.9	29.93	6.1
SSLN D3	61.8	30	21.49	5.17	30.12	6.14
SSLN D3	63	24	3.69	2.14	25.02	7.97
SSLN D4	12	18	4.93	3.31	7.01	3.97
SSLN D5	45	42	84.33	8.77	118.74	12.34
SSLN D18	23	18	0.99	0.65	1.37	0.78

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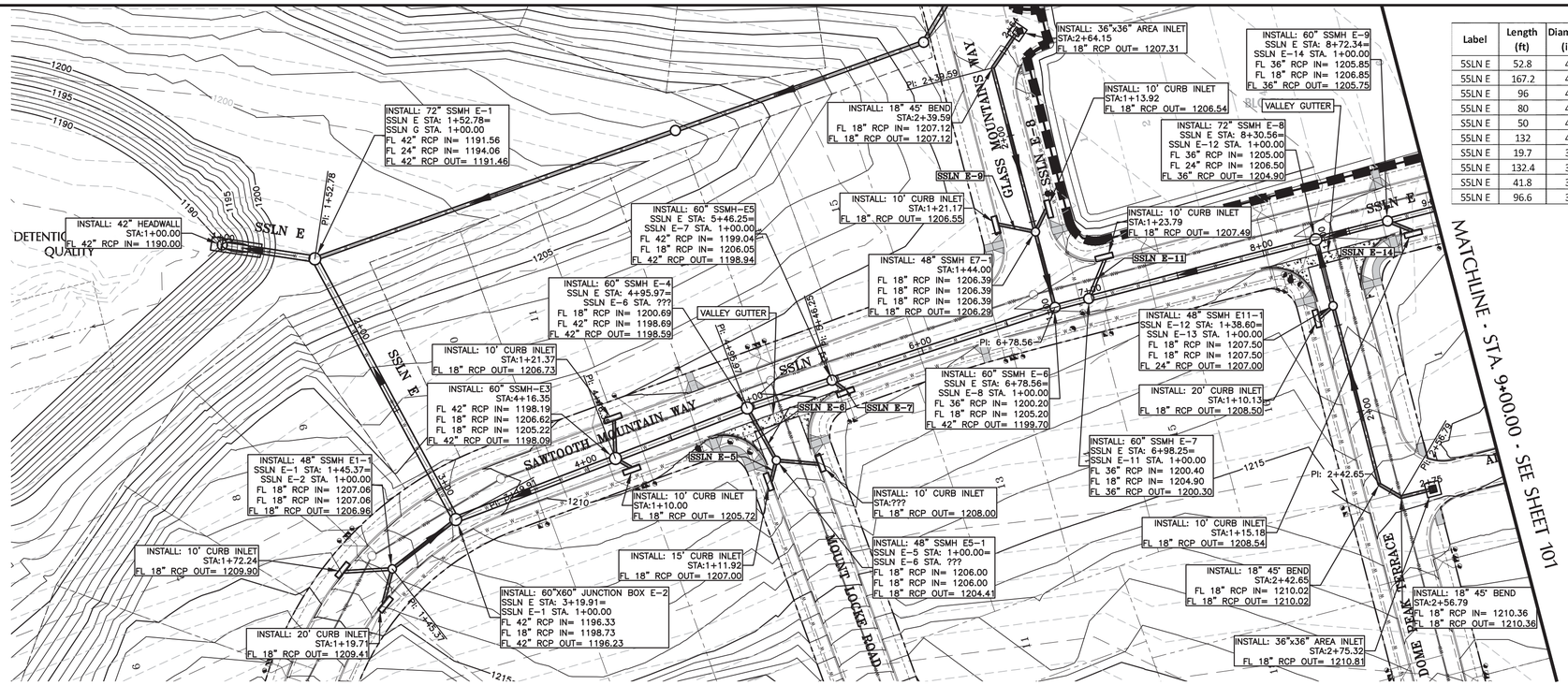
STORM SEWER LINE
D LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019
SHEET
99
OF 175
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\169102-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 -- 18:48
Plot Date/Time: Apr. 26, 19 -- 20:51:34



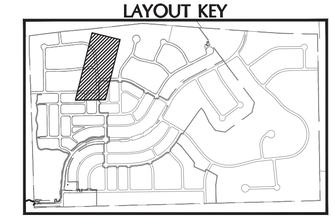
Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
5SLN E	52.8	42	130.19	16.34	182.46	19.61
5SLN E	167.2	42	109.55	11.59	151.53	16.35
5SLN E	96	42	101.08	10.8	139.88	15.1
5SLN E	80	42	94.32	10.74	130.17	14.05
5SLN E	50	42	83.81	8.73	115.39	12.46
5SLN E	132	42	78.23	8.15	107.35	11.59
5SLN E	19.7	36	69.05	9.77	94.78	13.93
5SLN E	132.4	36	66.66	9.43	91.58	13.46
5SLN E	41.8	36	50.04	7.9	68.47	10.06
5SLN E	96.6	36	44.8	8.03	61.24	9

(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

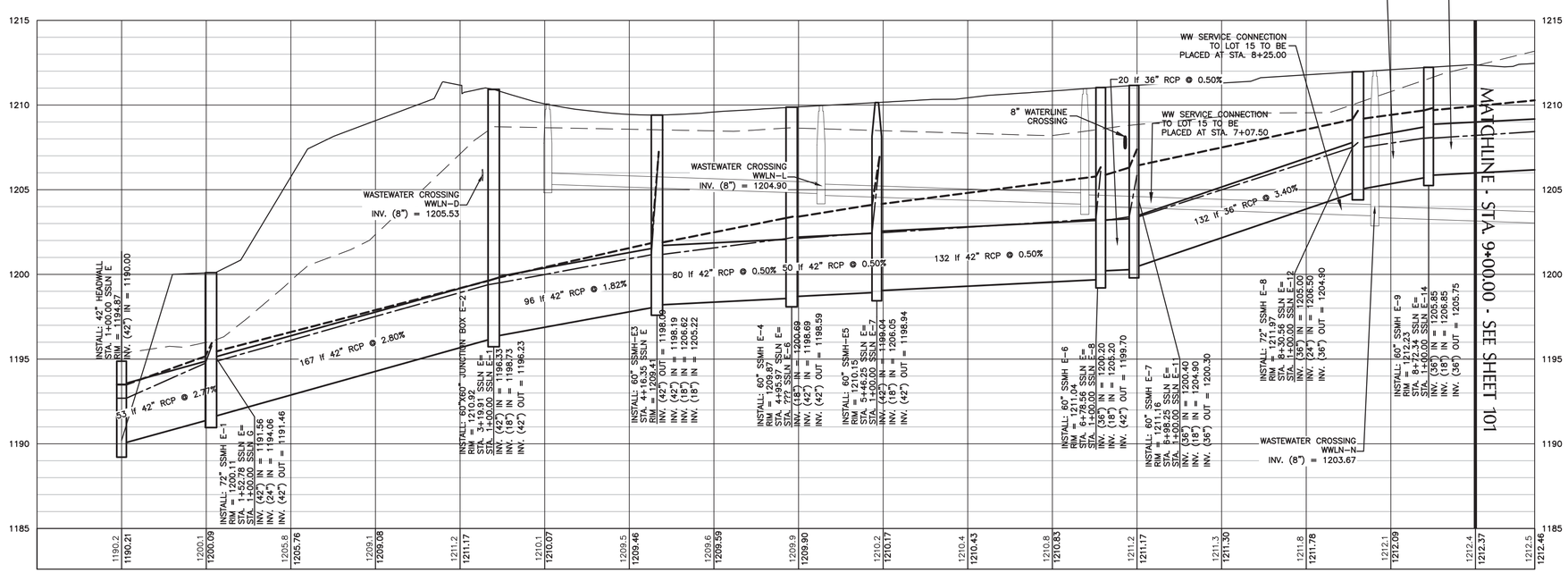
- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



STORM SEWER LINE E

SCALE: 1"=40'



SSLN E
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

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Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN E

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
100
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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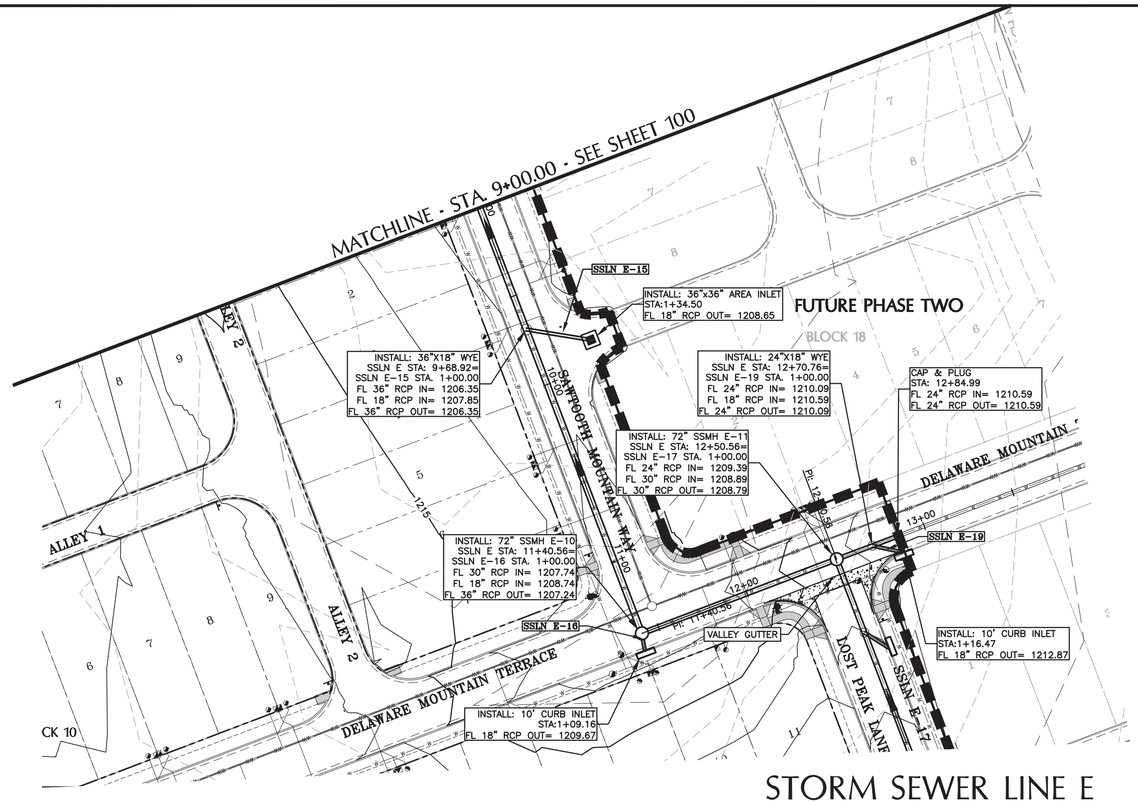
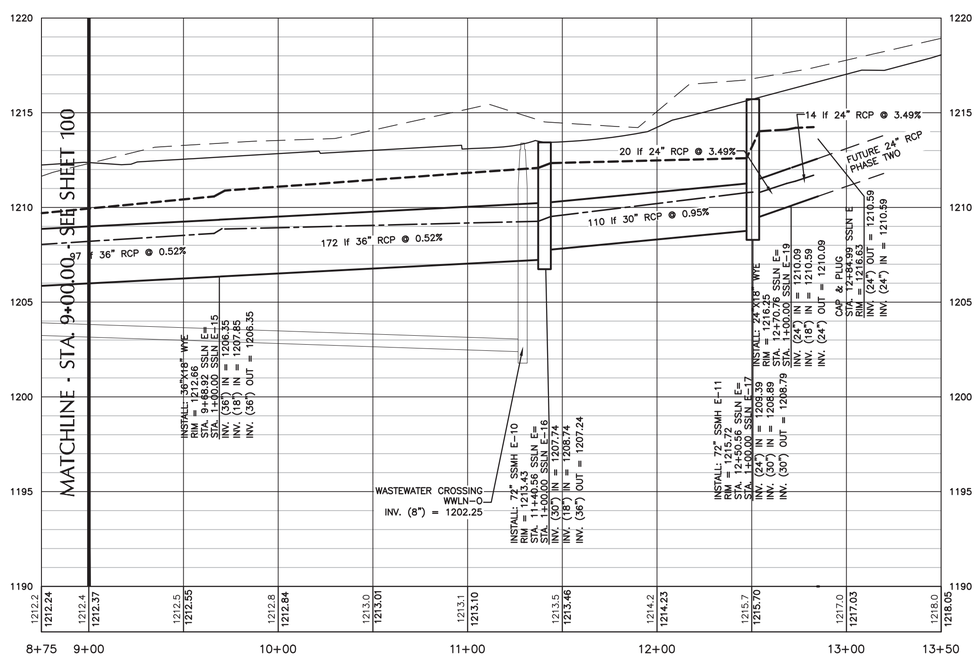


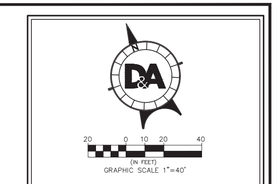
STORM SEWER LINE E

SCALE: 1"=40'



SSLN E
H SCALE: 1"=40'
V SCALE: 1"=4'

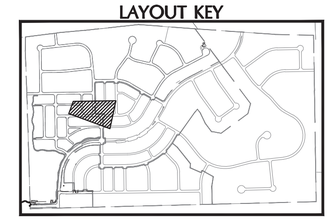
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN E	172	36	39.14	6.16	53.45	7.86
SSLN E	110	30	34.64	9.18	47.23	10
SSLN E	20.2	24	10.83	4.59	15.18	4.85
SSLN E	14.2	24	8.26	3.81	11.6	3.69

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STORM SEWER LINE
PLAN & PROFILE
SSLN E

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
101
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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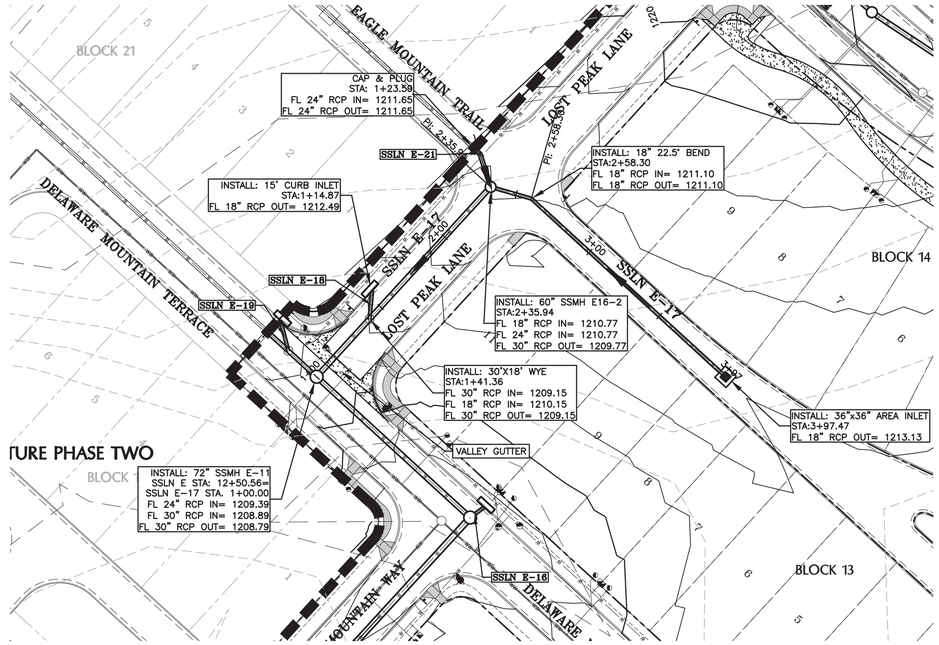
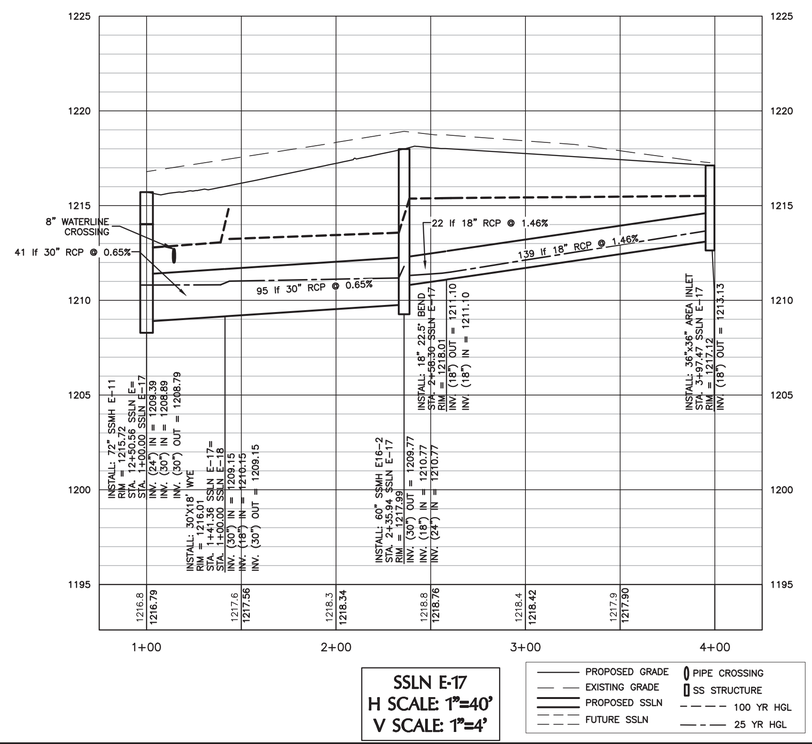


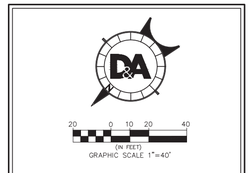
STORM SEWER LINE E-17

SCALE: 1"=40'



SSLN E-17
H SCALE: 1"=40'
V SCALE: 1"=4'

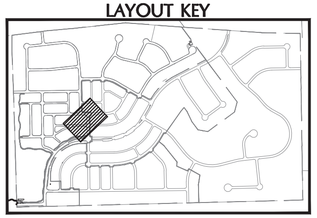
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
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SSLN E17	94.6	30	17.57	4.47	24.21	5.12
SSLN E17	22.4	18	2.03	3.65	2.78	1.64
SSLN E17	139.2	18	2.07	3.06	2.94	1.66

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STORM SEWER LINE
PLAN & PROFILE
SSLN E-17

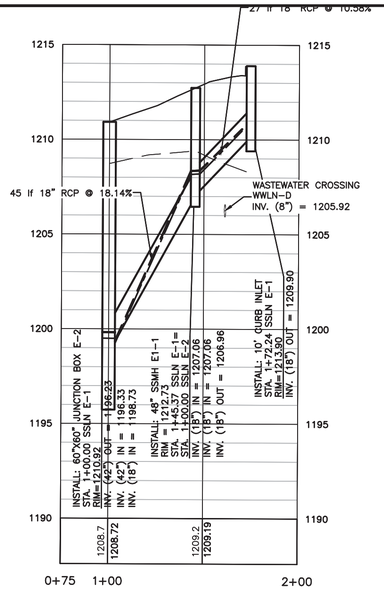
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

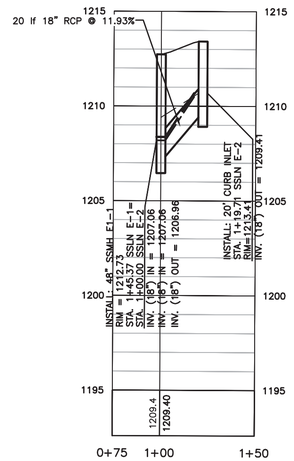
SHEET
102
OF 175

Project No.:
1691-002

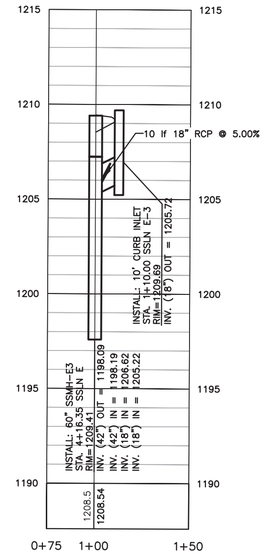
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:53:00



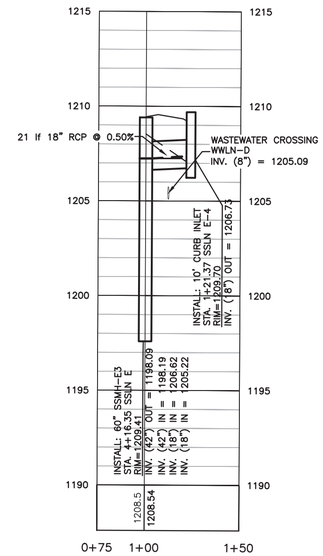
SSLN E-1
H SCALE: 1"=40'
V SCALE: 1"=4'



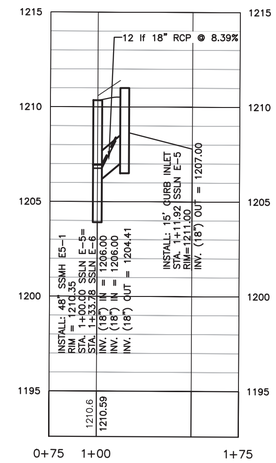
SSLN E-2
H SCALE: 1"=40'
V SCALE: 1"=4'



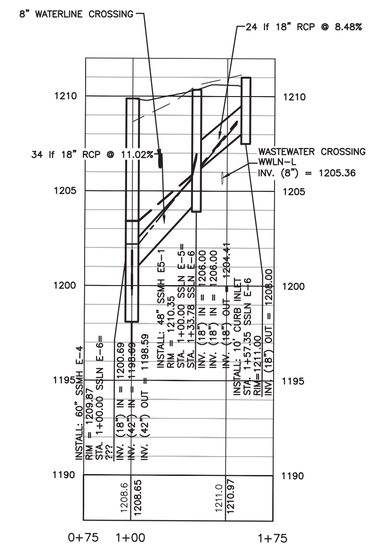
SSLN E-3
H SCALE: 1"=40'
V SCALE: 1"=4'



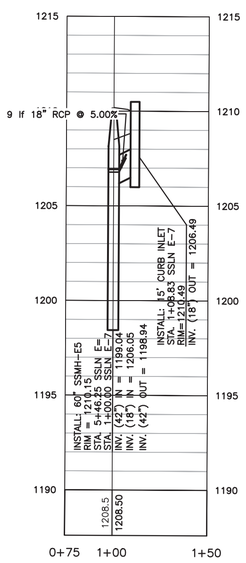
SSLN E-4
H SCALE: 1"=40'
V SCALE: 1"=4'



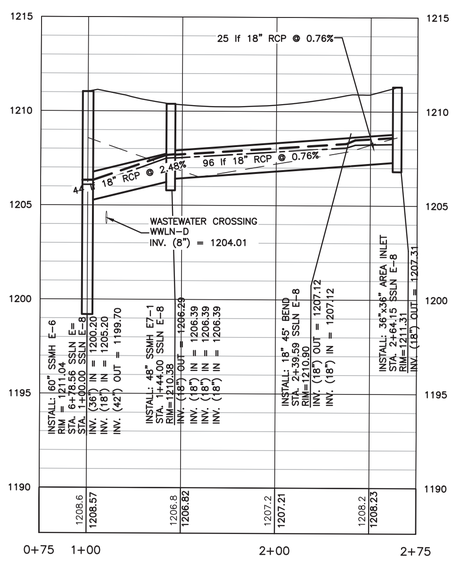
SSLN E-5
H SCALE: 1"=40'
V SCALE: 1"=4'



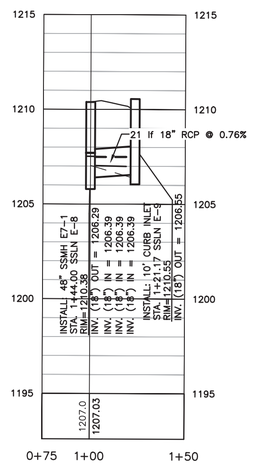
SSLN E-6
H SCALE: 1"=40'
V SCALE: 1"=4'



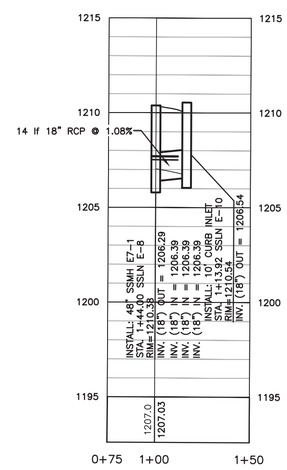
SSLN E-7
H SCALE: 1"=40'
V SCALE: 1"=4'



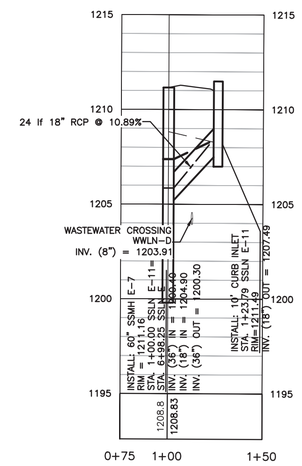
SSLN E-8
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-9
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-10
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-11
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN E1	45	18	9.81	18.96	13.83	20.11
SSLN E1	26.9	18	2.17	1.52	2.98	1.82
SSLN E2	19.7	18	7.66	5.36	10.86	6.62
SSLN E3	10	18	6.09	8.24	8.86	8.96
SSLN E4	21	18	1.93	3.51	2.65	3.87
SSLN E5	11.9	18	9.71	10.79	13.93	11.83
SSLN E6	33.9	18	11.86	6.71	16.99	9.62
SSLN E6	23.6	18	2.18	9.51	3.09	10.17
SSLN E7	9	18	7.03	8.3	9.88	9.04
SSLN E8	44	18	9.87	9.17	13.98	7.93
SSLN E8	95.6	18	6.18	4.37	8.77	5.41
SSLN E8	24.6	18	6.2	4.4	8.79	5.18
SSLN E9	21.2	18	1.35	0.95	1.86	1.15
SSLN E10	13.9	18	2.48	1.74	3.52	2.15
SSLN E11	23.8	18	2.95	10.02	4.19	2.37

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Firm Registration Number: 3937

STORM SEWER LINE
E LATERAL PROFILES
1

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

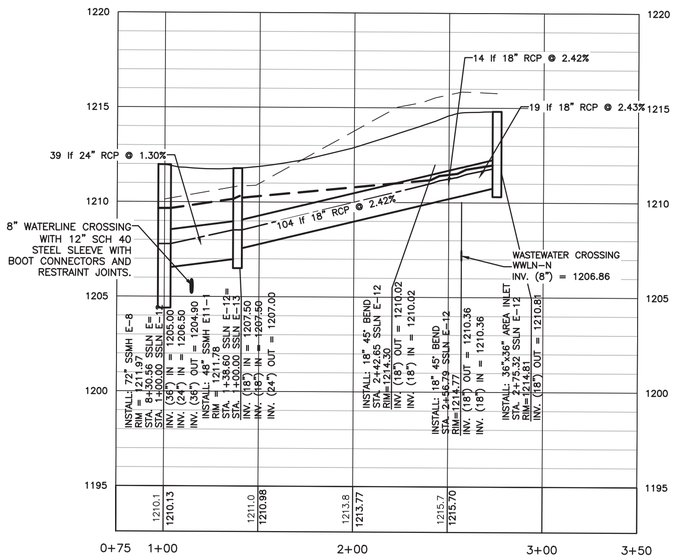
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

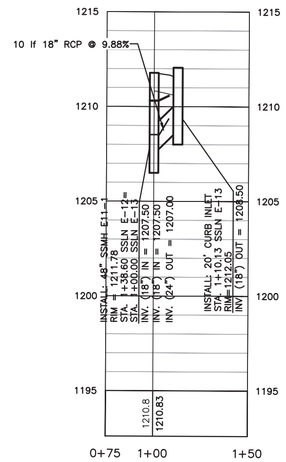
SHEET
103
OF 175

Project No.:
1691-002

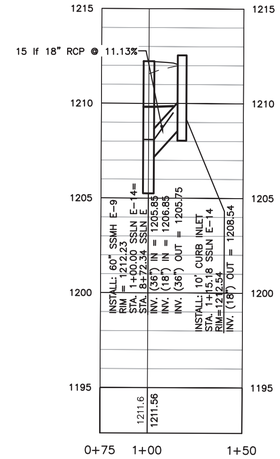
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:54:30



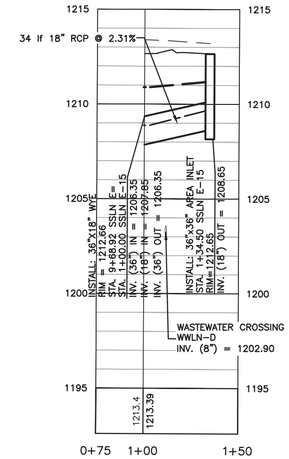
SSLN E-12
H SCALE: 1"=40'
V SCALE: 1"=4'



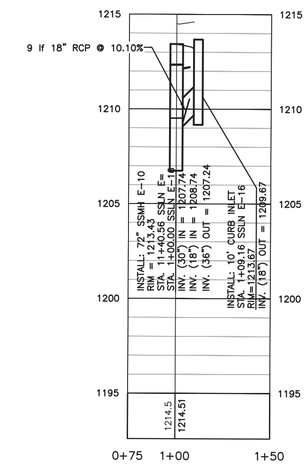
SSLN E-13
H SCALE: 1"=40'
V SCALE: 1"=4'



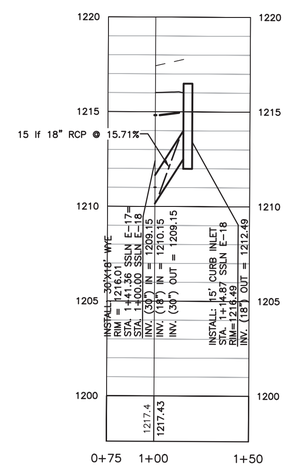
SSLN E-14
H SCALE: 1"=40'
V SCALE: 1"=4'



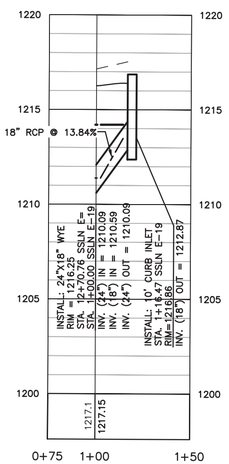
SSLN E-15
H SCALE: 1"=40'
V SCALE: 1"=4'



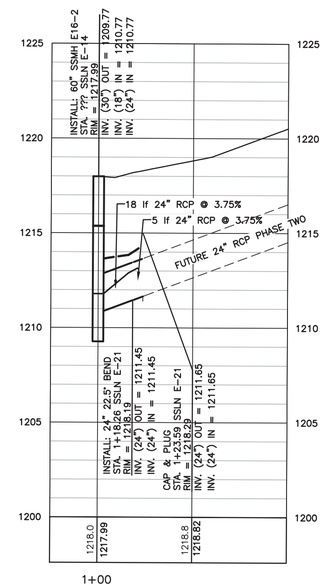
SSLN E-16
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-18
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-19
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN E-21
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN E12	38.6	24	17.77	8.42	25.66	8.17
SSLN E12	104.1	18	6.46	5.01	9.17	5.19
SSLN E12	14.1	18	6.47	4.48	9.18	5.37
SSLN E12	19	18	6.48	4.48	9.19	5.37
SSLN E13	10.1	18	11.49	9.86	16.72	9.46
SSLN E14	15.2	18	6.03	3.87	8.47	4.79
SSLN E15	34.5	18	6.68	5.18	9.38	5.31
SSLN E16	14.1	18	5.01	9.17	7.11	4.02
SSLN E18	14.9	18	7.13	13.2	10.02	5.67
SSLN E19	16.5	18	2.58	2.68	3.66	2.07
SSLN E21	18.3	24	15.91	9.89	22.82	7.26
SSLN E21	5	24	15.91	5.63	22.83	7.27

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Firm Registration Number: 3937

STORM SEWER LINE
E LATERAL PROFILES
2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

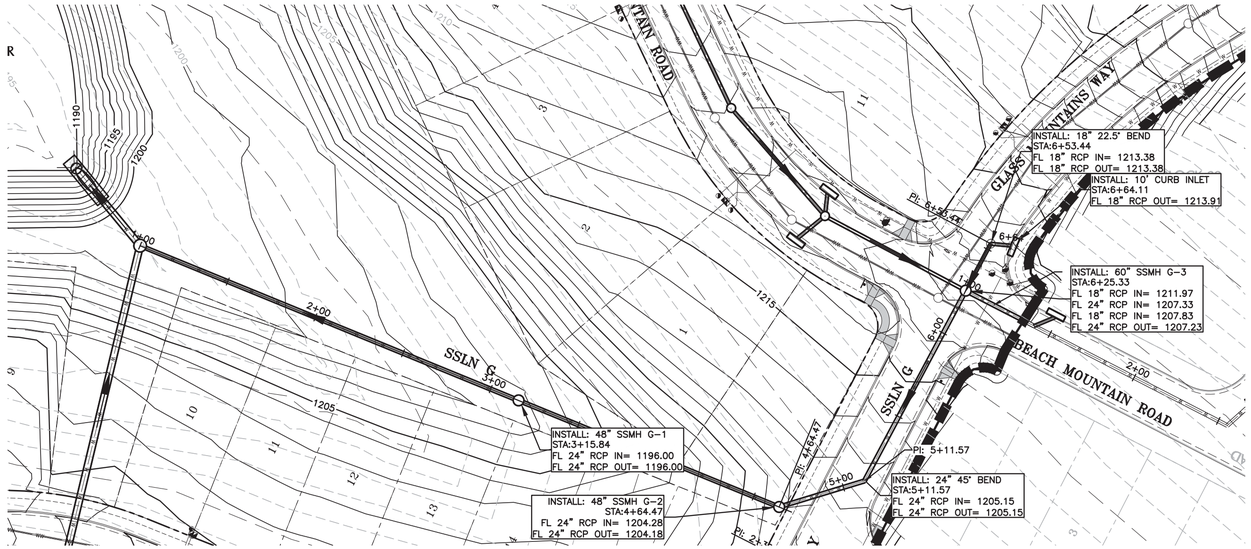
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
104
OF 175

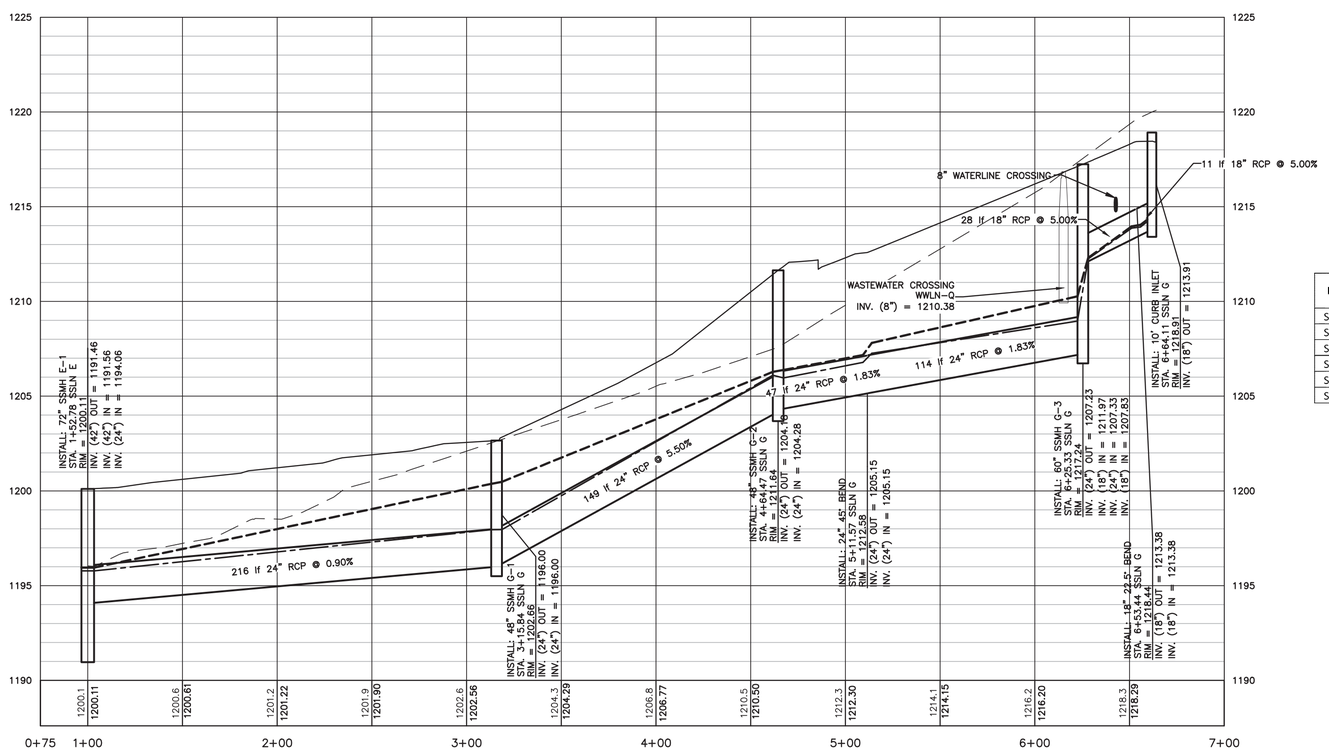
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:54:57



STORM SEWER LINE G

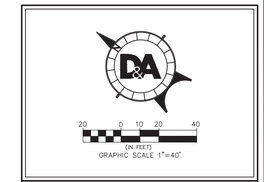
SCALE: 1"=40'



SSLN G
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

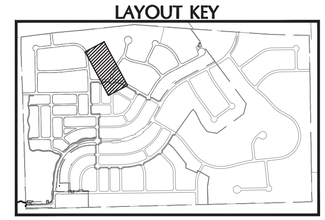
Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN G	215.9	24	23.58	8.19	32.58	10.88
SSLN G	155.9	24	23.72	7.55	32.74	10.75
SSLN G	38.1	24	23.78	9.88	32.81	10.95
SSLN G	118.8	24	23.96	7.63	33.02	10.84
SSLN G	28.6	18	1.69	7.56	2.32	8.11
SSLN G	10.7	18	1.69	2.85	2.32	3.13



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



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STORM SEWER LINE
PLAN & PROFILE
SSLN G

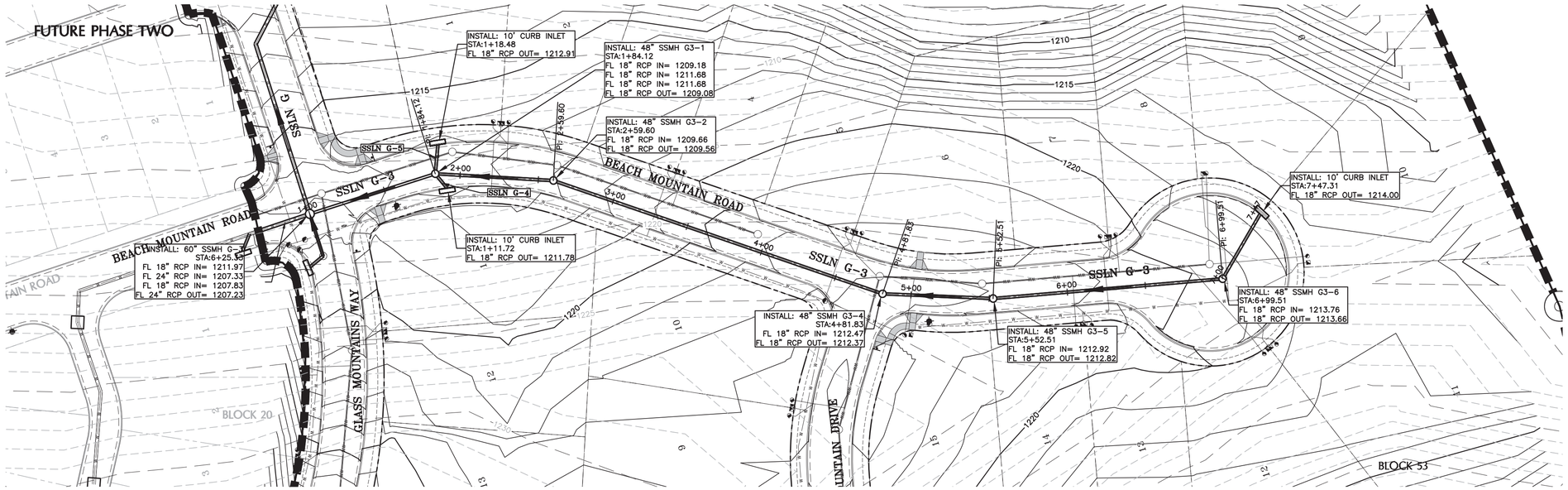
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
105
OF 175

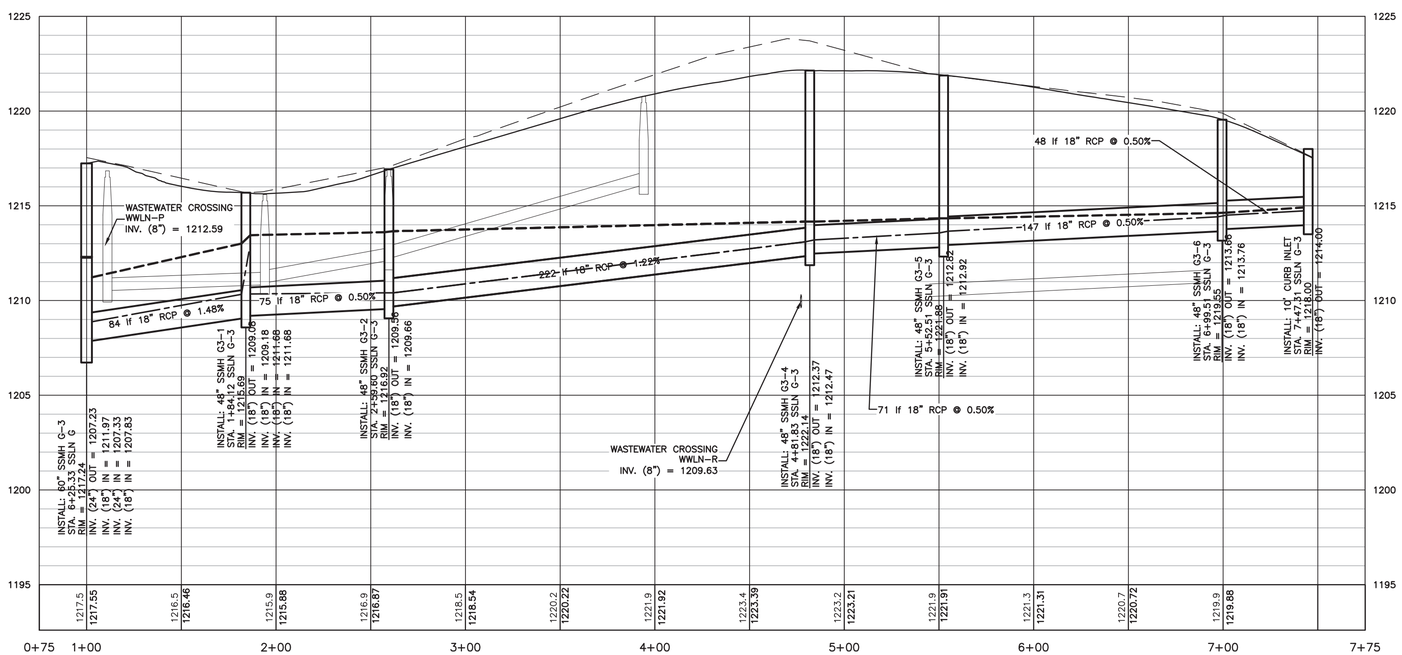
Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:55:20



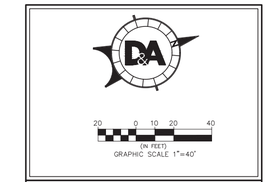
STORM SEWER LINE G-3

SCALE: 1"=40'



SSLN G-3
H SCALE: 1"=40'
V SCALE: 1"=4'

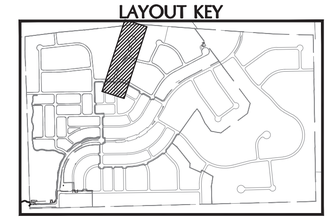
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
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SSLN G3	75.5	18	3.54	2.39	4.78	2.79
SSLN G3	222.2	18	3.63	4.14	5.02	2.85
SSLN G3	71	18	3.68	4.29	5.09	2.88
SSLN G3	147	18	3.77	4.33	5.2	3
SSLN G3	47.8	18	3.8	4.34	5.24	4.85

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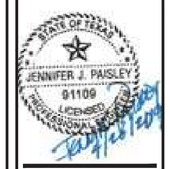
STORM SEWER LINE
PLAN & PROFILE
SSLN G-3

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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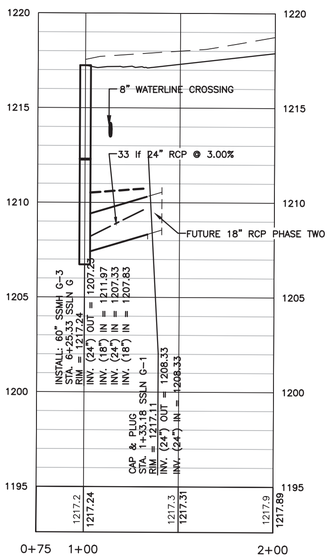
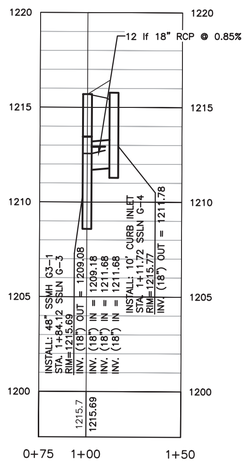
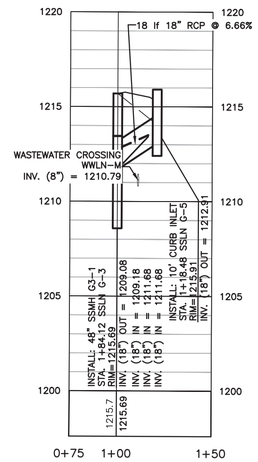


SSLN G-1
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN G-4
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN G-5
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN G1	33.2	24	12.94	4.48	18.18	5.79
SSLN G5	18.5	18	1.75	8	2.4	1.36
SSLN G4	11.8	18	6.07	5.64	8.83	5

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STORM SEWER LINE
G LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

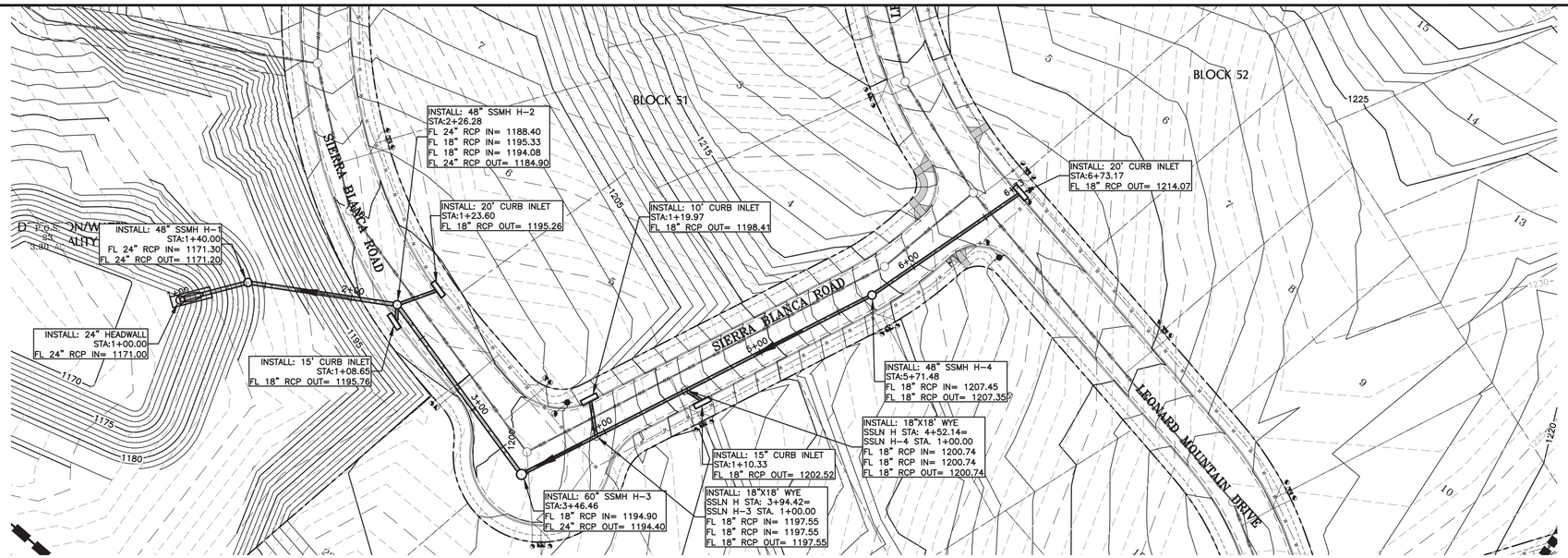
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
107
OF 175

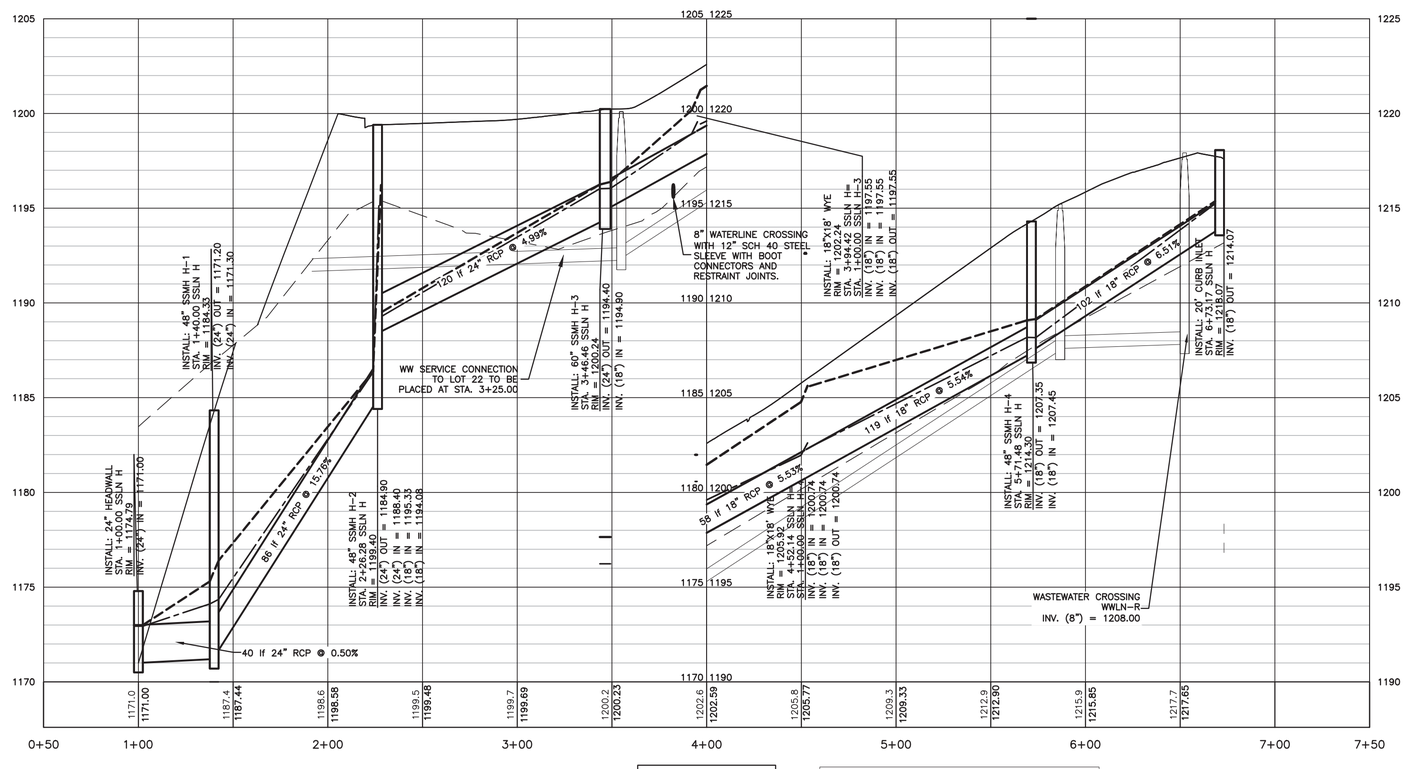
Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:56:11



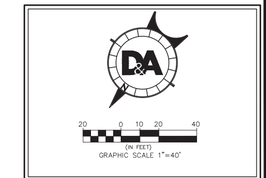
STORM SEWER LINE H

SCALE: 1"=40'



SSLN H
H SCALE: 1"=40'
V SCALE: 1"=4'

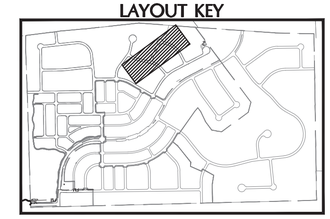
PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
55LN H	40	24	38.09	12.23	54.32	17.31
55LN H	87.3	24	38.18	12.15	54.43	17.32
SSLN H	120.3	24	20.58	15.08	29.38	16.17
SSLN H	48	18	20.63	14.4	29.44	16.67
SSLN H	57.8	18	18.16	10.28	25.99	14.71
SSLN H	119.S	18	12.S4	7.1	17.91	10.13
SSLN H	102	18	12.61	14.92	17.99	10.18

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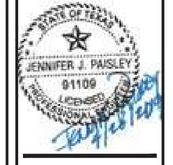
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN H

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
108
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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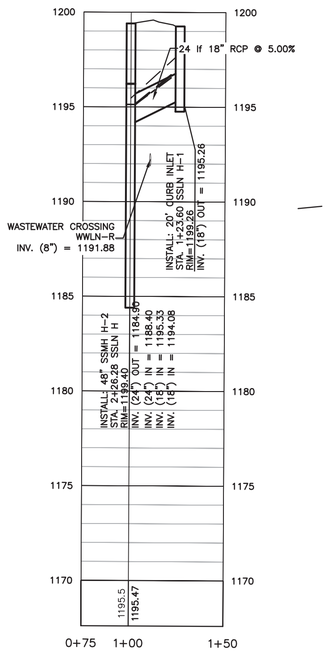
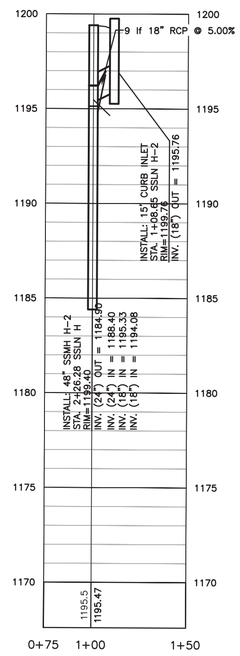
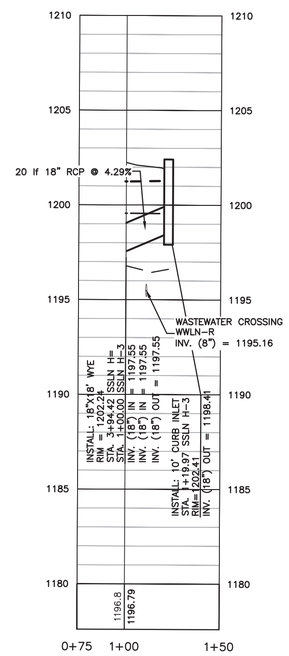


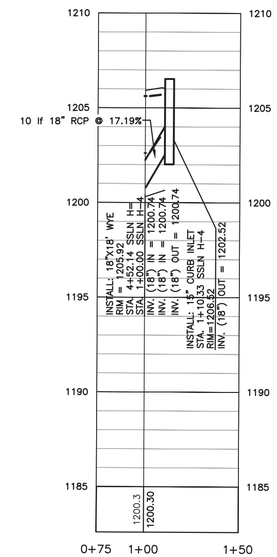
SSLN H-1
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN H-2
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN H-3
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN H-4
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN H1	23.6	18	11.22	10.89	15.99	12
SSLN H2	8.8	18	6.94	8.25	9.78	8.98
SSLN H3	20	18	2.56	1.45	3.57	2.02
SSLN H4	10.4	18	5.77	3.27	8.34	4.72

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Firm Registration Number: 3937

STORM SEWER LINE
H LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

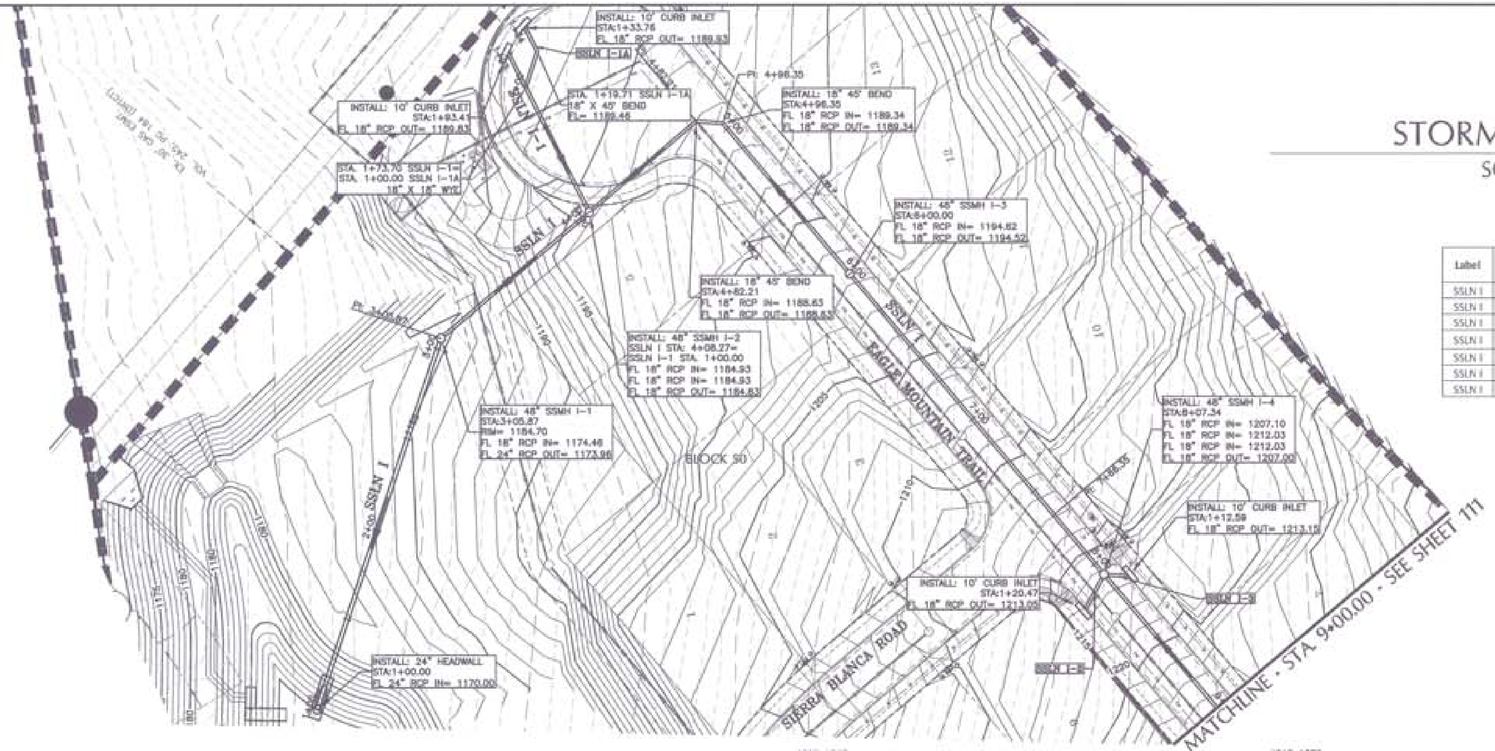
SHEET
109
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 20:56:48

STORM SEWER LINE I

SCALE: 1"=40'

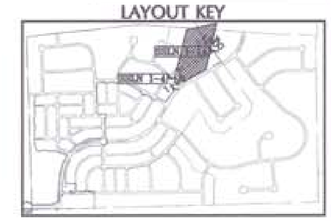


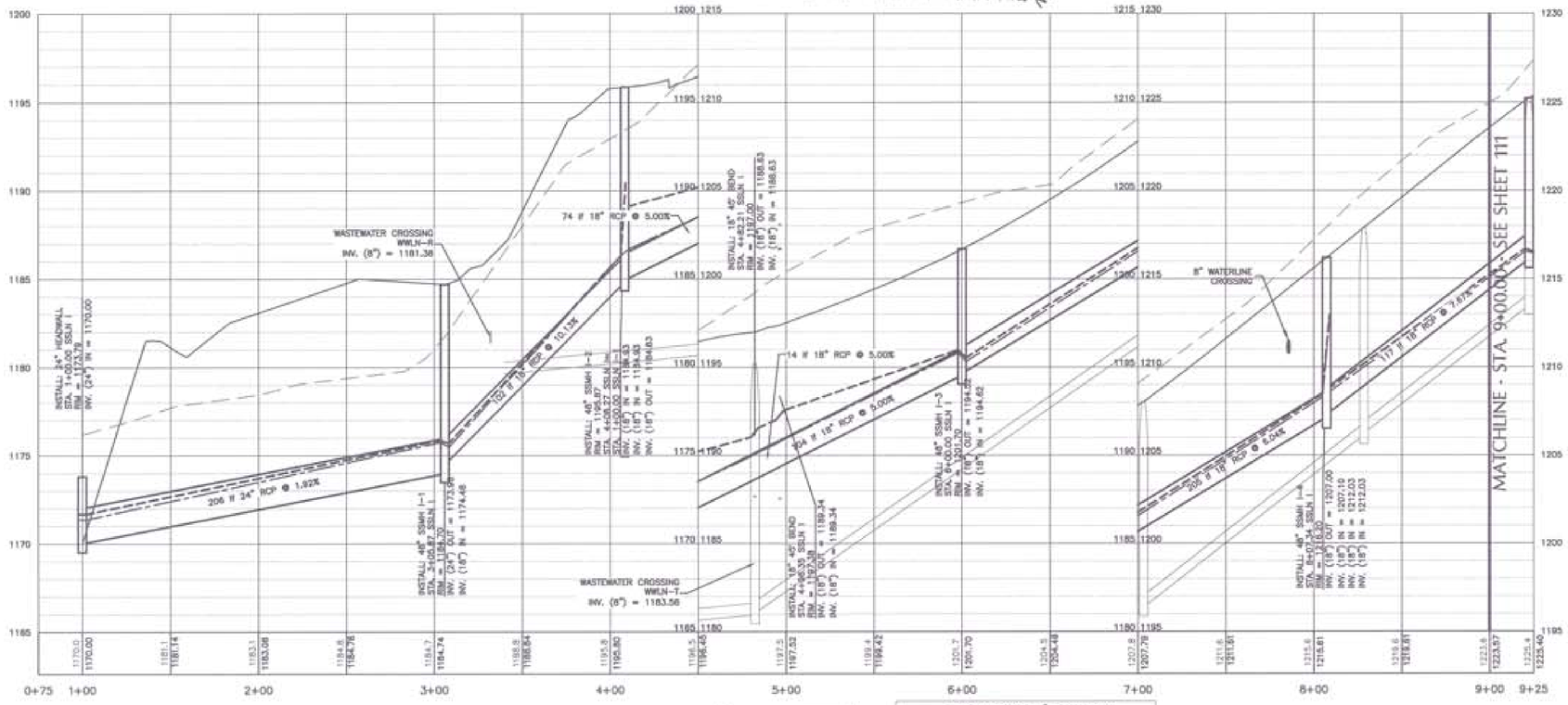
Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN I	206	24	25.16	13.05	31.97	13.7
SSLN I	102	18	25.27	18.38	32.1	18.17
SSLN I	74	18	11.14	6.33	17.54	9.92
SSLN I	14.2	18	11.15	6.31	17.55	9.93
SSLN I	104	18	11.21	6.35	17.64	9.98
SSLN I	205	18	11.34	14.14	17.8	15.75
SSLN I	117.8	18	1.28	0.84	2.41	1.41

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY





SSLN I
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

* FOR AS-BUILT RECORDS

ADD SSL I-1A WITH 10' CURB INLET

CHANGE SSL I1 & I3 TO HAVE 10' CURB INLETS

** SEE SHEET 112R FOR PROFILES

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www.douceteng.com
Firm Registration Number: 3737

STORM SEWER LINE
PLAN & PROFILE
SSLN I

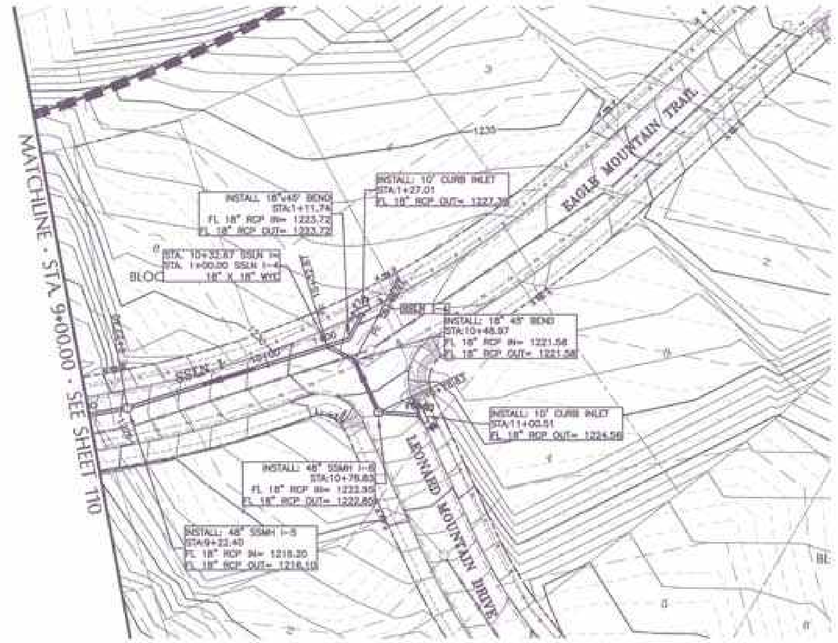
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAGLEY
91139
LICENSED
PROFESSIONAL ENGINEER
10-9-19

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

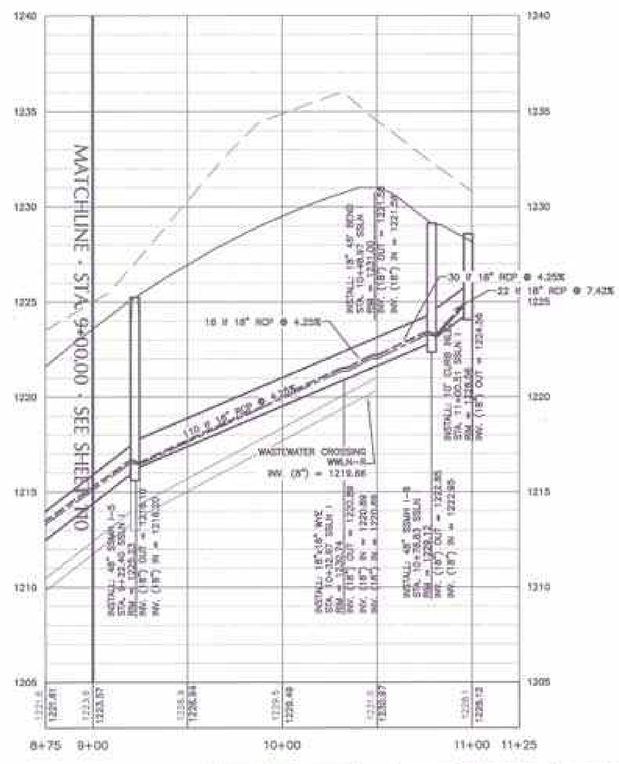
SHEET
110R
OF 175

Project No.:
1691-002



STORM SEWER LINE I

SCALE: 1"=40'



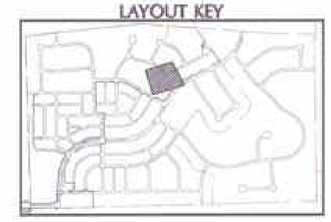
SSLN I
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED SSLN
FUTURE SSLN
PIPE CROSSING
SS STRUCTURE
100 YR HGL
25 YR HGL

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN OUT
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE
- PROPOSED DRAINAGE AREA

LAYOUT KEY



Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN I	110.4	18	1.3	6.75	2.43	8.51
SSLN I	16.5	18	1.3	2.65	2.44	3.18
SSLN I	29.9	18	1.31	2.65	2.44	3.18
SSLN I	21.7	18	1.31	8.04	2.45	9.13

* FOR AS-BUILT RECORDS
ADD SSL I-4
WITH 10' CURB INLET
** SEE SHEET 112R
FOR PROFILES

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www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LINE
PLAN & PROFILE
SSLN I

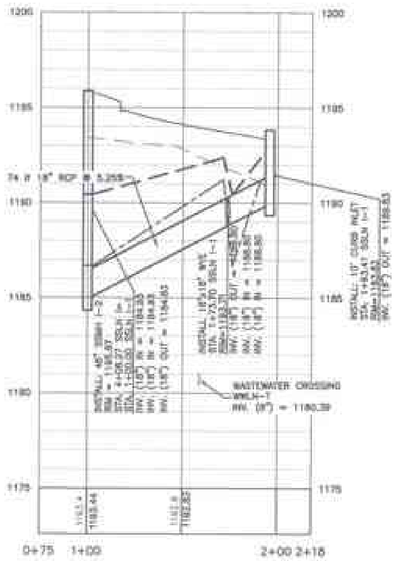
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. FINLEY
61139
LICENSED PROFESSIONAL ENGINEER
10-9-2019

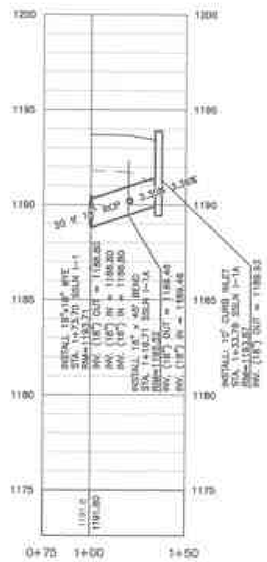
Designed: JJF
Drawn: AD & JBB
Reviewed: JJF
Date: 2/8/2019

SHEET
111R
OF 175

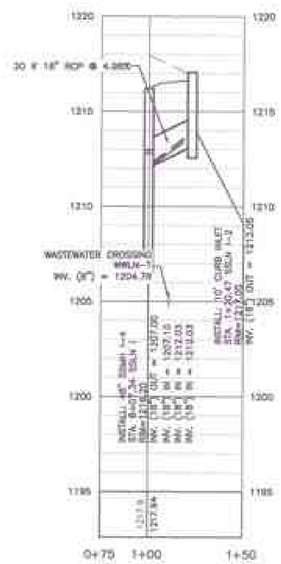
Project No.: 1693-002



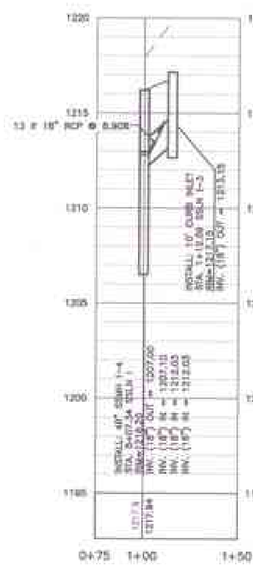
SSLN I-1
H SCALE 1"=40'
V SCALE 1"=4'



SSLN I-1A
H SCALE 1"=40'
V SCALE 1"=4'



SSLN I-2
H SCALE 1"=40'
V SCALE 1"=4'



SSLN I-3
H SCALE 1"=40'
V SCALE 1"=4'

SSLN I-4
H SCALE 1"=40'
V SCALE 1"=4'

Label	Length (ft)	Diameter (in)	Q_{DS} (cfs)	V_{DS} (fps)	Q_{MS} (cfs)	V_{MS} (fps)
SSLN I1	93	18	2.5	8.81	3.4	9.63
SSLN I1A	35.8	18	7.3	10.31	10.4	11.11
SSLN I2	20.8	36	0.75	6.09	1.05	7.39
SSLN I3	12.9	18	4.5	13.90	9.3	15.42
SSLN I4	27	18	5.8	10.39	8.2	11.31

* FIRE AS-BUILT RECORDS

ADD SSL I-2A & I-4
CHANGE SSL I-1 & I-3
TO BE IN LINES
INFLOWS

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Civil Engineering · Entitlements · Surveying/Mapping
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www.doucetengineers.com
Firm Registration Number: 3937

STORM SEWER LINE I
LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

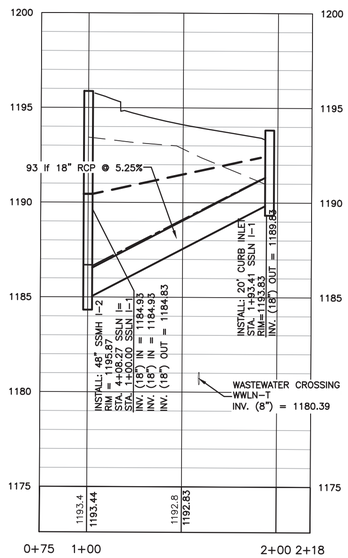
STATE OF TEXAS
JENNIFER J. PAGLEY
91106
PROFESSIONAL ENGINEER

10-9-2019

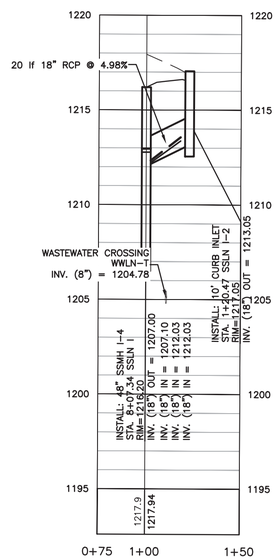
Designed: JJP
Drawn: AD & JBR
Reviewed: JJP
Date: 2/8/2019

SHEET
112R
OF 175

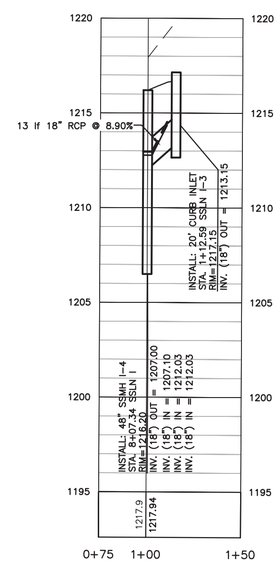
Project No: 16031-002



SSLN I-1
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN I-2
H SCALE: 1"=40'
V SCALE: 1"=4'



SSLN I-3
H SCALE: 1"=40'
V SCALE: 1"=4'

Label	Length (ft)	Diameter (in)	Q_{25} (cfs)	V_{25} (fps)	Q_{100} (cfs)	V_{100} (fps)
SSLN I1	92	18	14.95	13.18	15.28	8.65
SSLN I2	20.8	18	0.75	6.04	1.85	7.39
SSLN I3	12.9	18	9.64	11.06	13.92	12.09

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Firm Registration Number: 3937

STORM SEWER LINE I
LATERAL PROFILES

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
112
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_STORM.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 -- 18:48
Plot Date/Time: Apr. 26, 19 -- 20:58:02

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

(IN FEET)
GRAPHIC SCALE 1"=10'

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

OVERALL WASTEWATER LAYOUT PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 113 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CAD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
Last Modified: Apr. 29, 19 - 12:34
Plot Date/Time: Apr. 29, 19 - 12:37:18

LOT 2E, BLOCK C
POUNDHOUSE HILLS SECTION TWO
VOLUME 15, PAGES 204–206
P.R.H.C.T.

WATER MAIN CONNECTION
CONNECT TO TO EXISTING 8" WLN

FORT SUMNER STREET
SAWTOOTH MOUNTAIN WAY B
MOUNT LOCKE ROAD
DOME PEAK TERRACE
GLASS MOUNTAINS WAY
BEACH MOUNTAIN ROAD
DELAWARE MOUNTAIN TERRACE
McKITTRICK RIDGE STREET
ALLEY 1
ALLEY 2
MATCHLINE WASTEWATER PLAN III
MATCHLINE WASTEWATER PLAN II
DETENTION/WATER QUALITY
FUTURE PHASE TWO
20.00' WASTEWATER EASEMENT
BLOCK 4
BLOCK 5
BLOCK 6
BLOCK 7
BLOCK 8
BLOCK 9
BLOCK 10
BLOCK 11
BLOCK 16
BLOCK 17
BLOCK 18
BLOCK 19
BLOCK 20
P.O.S. 6 0.43 AC

CARTER LT 17 LLC
DOCUMENT NO. 16008041
VOLUME 3030, PAGE 809
O.P.R.H.C.T.

FRIENDS OF THE POUNDHOUSE FOUNDATION
VOLUME 1714, PAGE 295
R.P.R.H.C.T.

WWLN C
WWLN D
WWLN L
WWLN M
WWLN N

Change services as shown :
WW Line C (Block 4, Lot 7)
WW Line D (Block 13, Lots 9 & 10)
Be sure to log in AS_BUILT plans.
J. Paisley @ Doucet 6/9/19

(IN FEET)
GRAPHIC SCALE 1"=60'

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

ABBREVIATIONS:
WWLN = WASTEWATER LINE

LAYOUT KEY

DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WASTEWATER LAYOUT PLAN I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 114 OF 175

Project No.: 1691-002

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Last Modified: Apr. 29, 19 – 12:34
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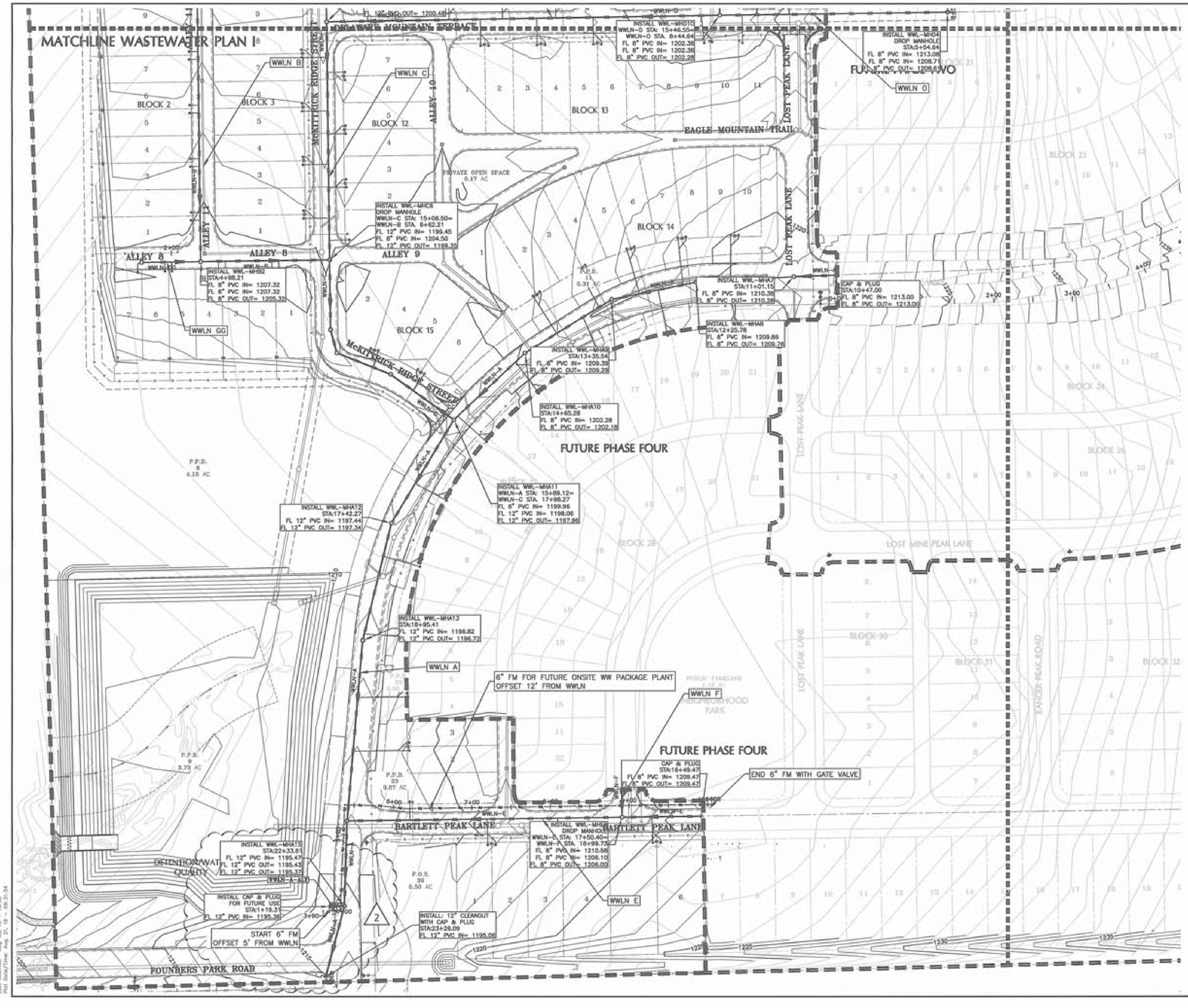
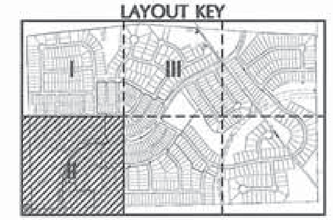


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

ABBREVIATIONS:
WWLN = WASTEWATER LINE

LAYOUT KEY



REVISIONS:

NO.	DESCRIPTION	APPROVED DATE
2	REVISE WATER & WASTEWATER OFFSITE CONNECTIONS	8/6/2019

D&A DOUCET & ASSOCIATES
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Austin, Texas 78735, Phone: (512)-583-2600
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Firm Registration Number: 3937

WASTEWATER LAYOUT PLAN II

BIG SKY RANCH PHASE ONE PLAN

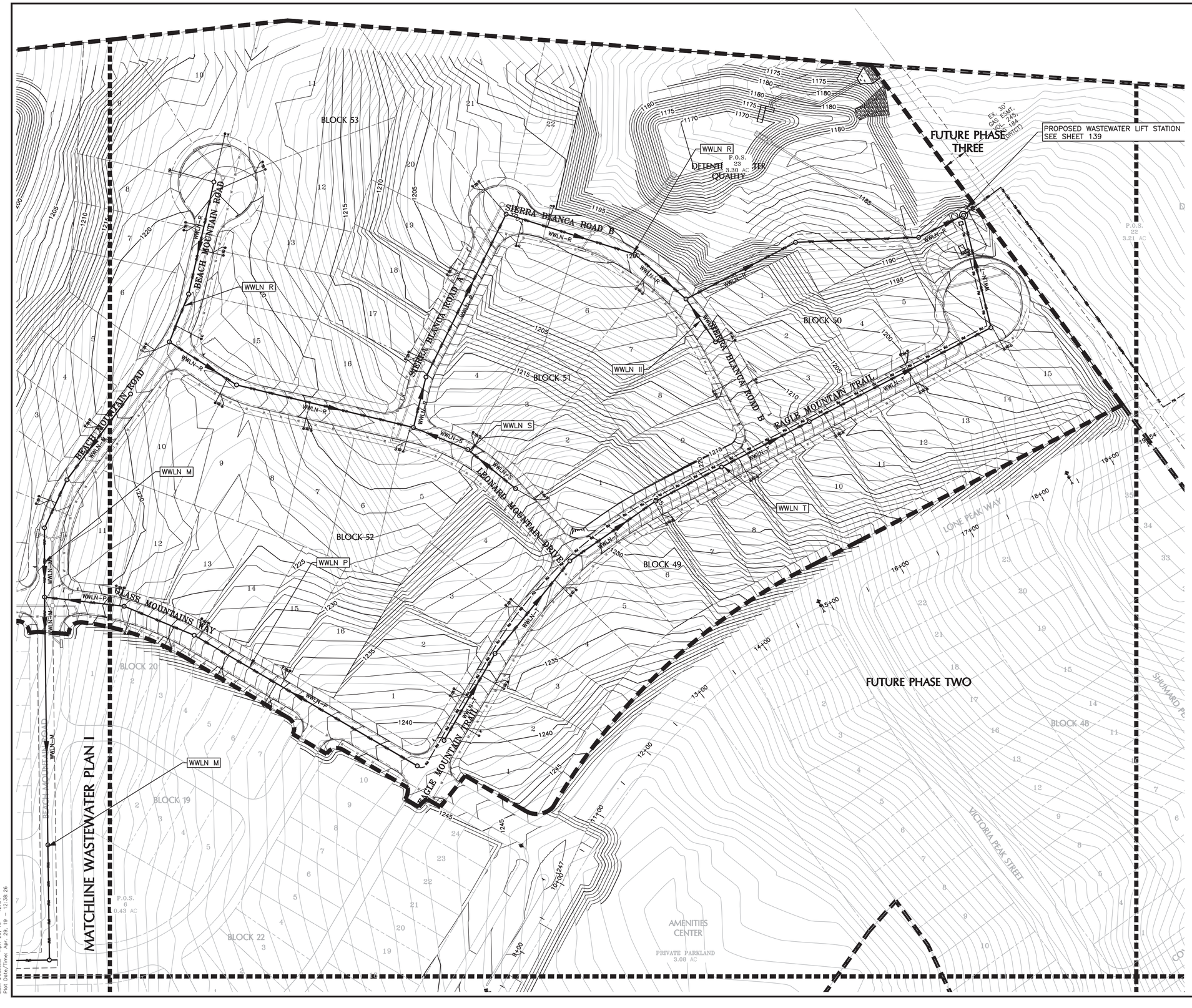
DRIPPINGS SPRINGS, TX

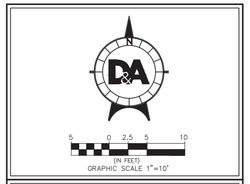
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED PROFESSIONAL ENGINEER
21 August 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 115 OF 175

Project No.: 1691-002



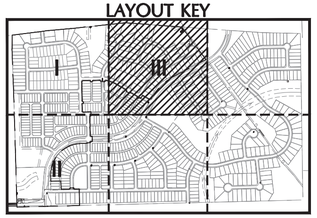


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

ABBREVIATIONS:
WWLN - WASTEWATER LINE

LAYOUT KEY



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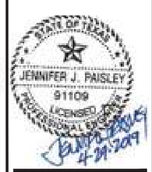
WASTEWATER LAYOUT PLAN III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX



Designed:	JJP
Drawn:	AD & JBB
Reviewed:	JJP
Date:	2/8/2019

SHEET 116 OF 175

Project No.: 1691-002

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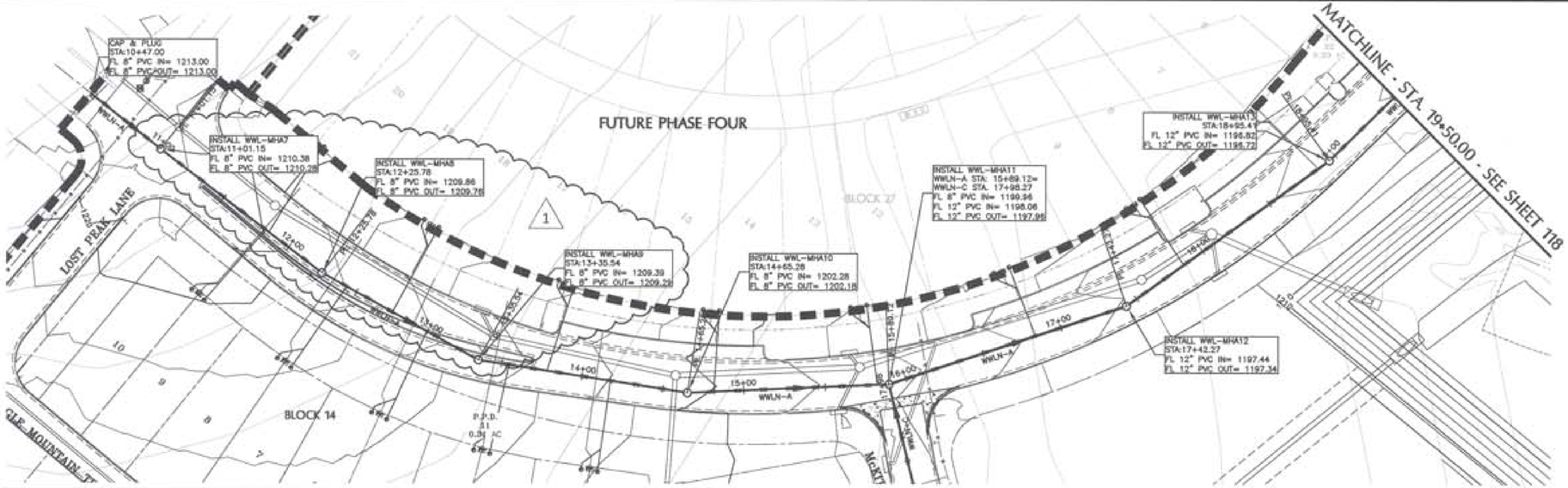
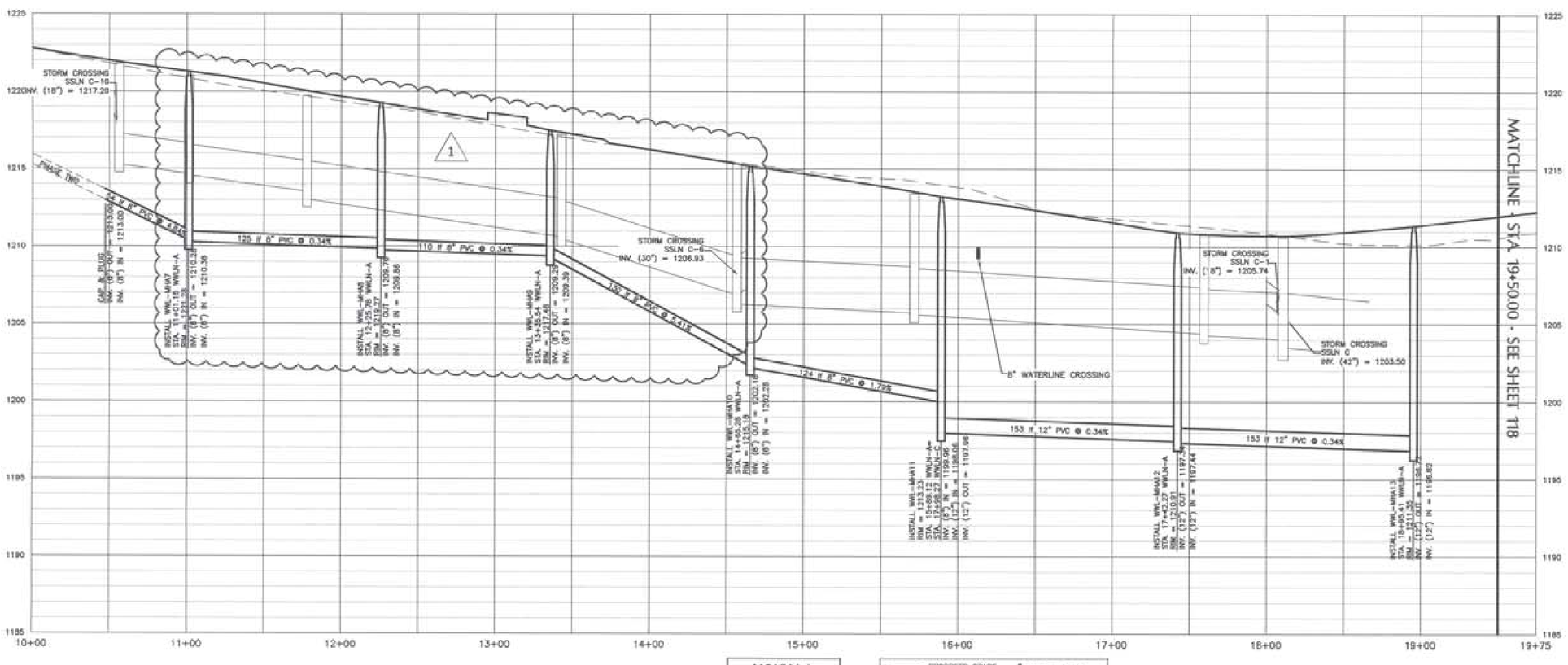


WWLN-A

SCALE: 1"=40'

Waste Water Pipe Capacity Calculations												
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (ft/s)
Future Flow to A7	n/a	54	8.06	26.90	18.00	8.75	37.65	n/a	n/a	n/a	n/a
A7	11+01.83	58	8.66	31.05	18.00	8.75	39.80	0.34%	8	1.68	2.62
A8	12+26.28	64	9.56	34.26	18.00	8.75	43.01	1.31%	8	1.25	5.15
A9	13+34.35	70	10.45	37.47	18.00	8.75	46.22	4.08%	8	0.99	9.10
A10	14+63.73	74	11.05	39.61	18.00	8.75	48.36	8.00%	8	0.86	12.78
A11+C8	15+67.58	627	93.61	335.61	139.64	67.88	403.49	0.34%	12	4.77	3.44
A12	17+40.70	632	94.36	338.28	139.64	67.88	406.17	0.34%	12	4.79	3.44
A13	18+93.84	636	94.96	340.43	139.64	67.88	408.31	0.34%	12	4.80	3.44



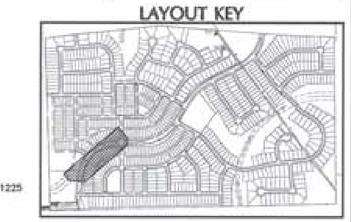
WWLN-A
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



REVISIONS:

NO.	DESCRIPTION	APPROVED DATE
1	UPDATED WWLN A & WWLN B, UPDATED WATER AND WASTE WATER SERVICE DETAILS.	5/30/2019

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Firm Registration Number: 3937

WASTEWATER PLAN & PROFILE WWLN-A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

5-29-19

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 117 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submittal\01\Phase 1\1691002-CD-Ph1_01_WASTEWATER.dwg
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Last Modified: May. 28, 19 - 10:22
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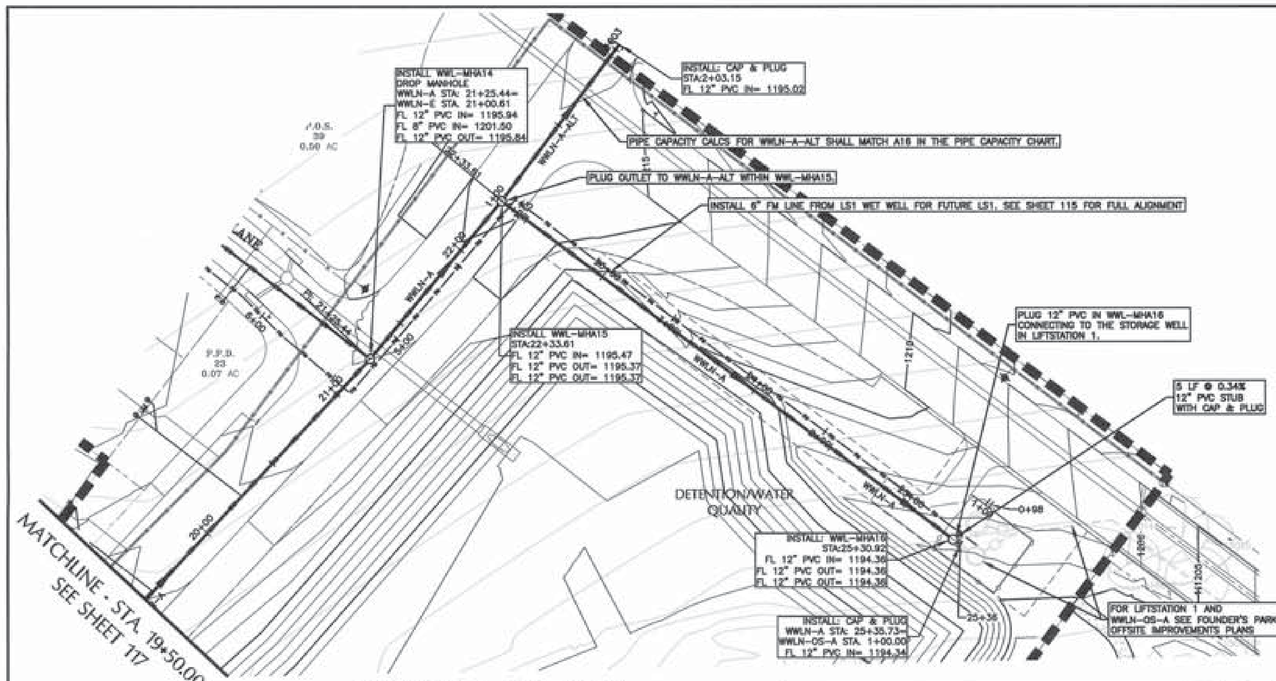
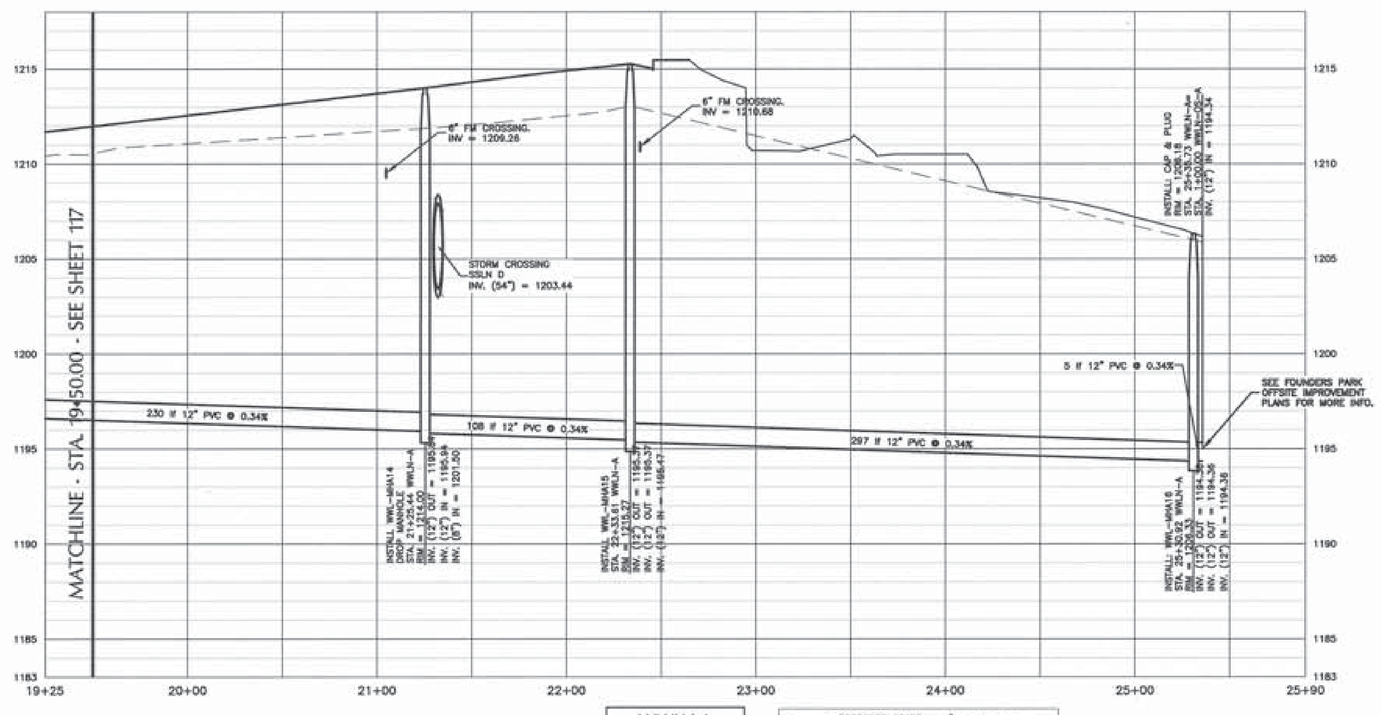


WWLN-A (CONT.)

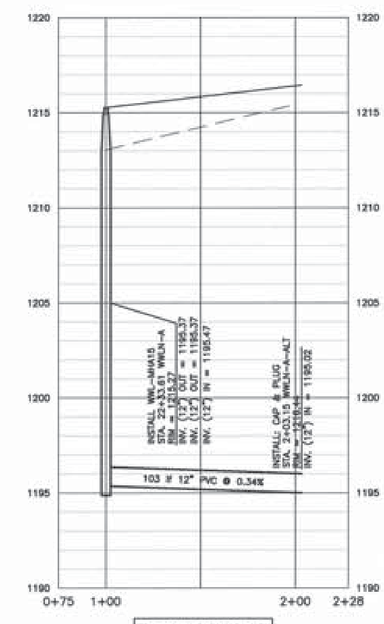
SCALE: 1"=40'

Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
A14+E8	21+25.44	780	116.46	417.50	200.40	97.42	514.92	0.34%	12	5.46	3.44
A15	22+31.61	780	116.46	417.50	200.40	97.42	514.92	0.34%	12	5.46	3.44
A16	25+30.92	780	116.46	417.50	200.40	97.42	514.92	0.34%	12	5.46	3.44

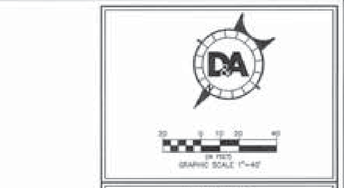


WWLN-A
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



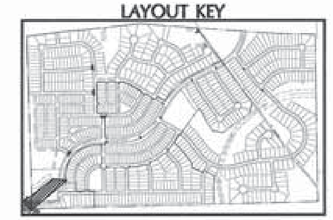
WWLN-A-ALT
H SCALE: 1"=40'
V SCALE: 1"=4'



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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Firm Registration Number: 3937

WASTEWATER PLAN & PROFILE WWLN-A

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2 MAY 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
118
OF 175

Project No.:
1691-002

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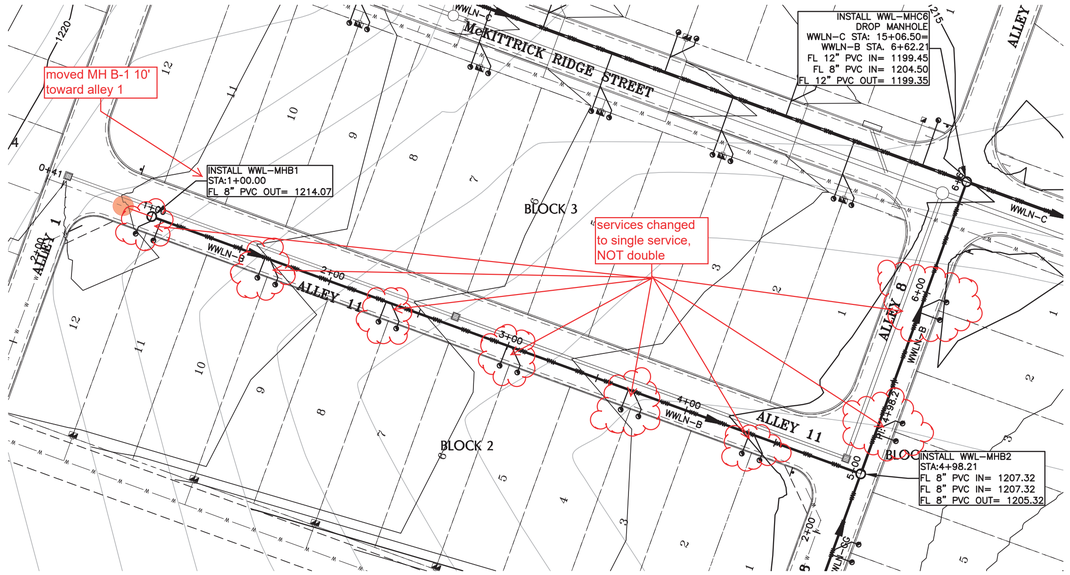
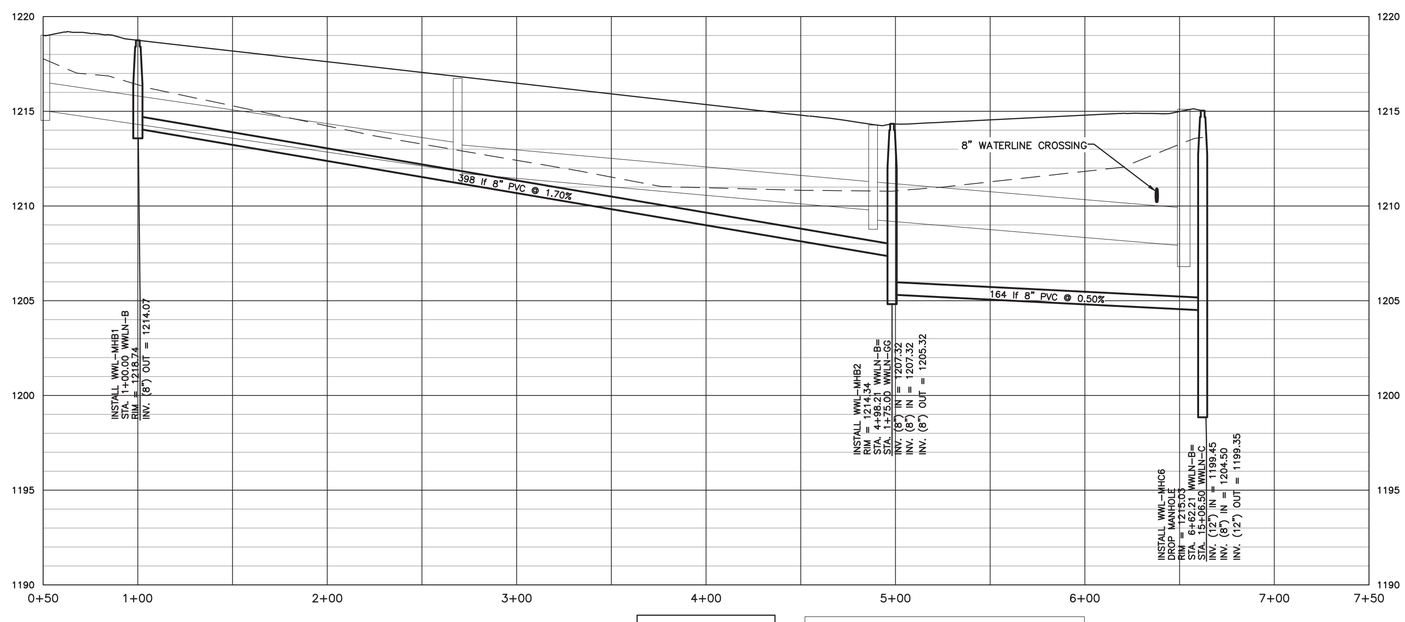


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
B1	1+00.00	12	1.79	6.42	20.00	9.72	16.15	1.70%	8	0.74	5.87
B2+GG1	4+98.21	19	2.84	10.17	20.00	9.72	19.89	0.50%	8	1.09	3.18

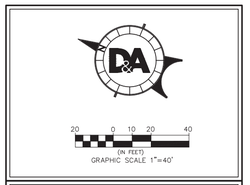
WWLN-B

SCALE: 1"=40'



WWLN-B
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
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- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
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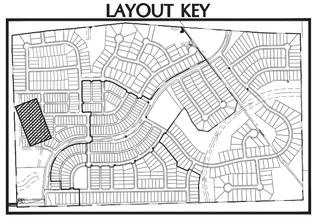
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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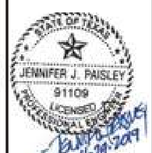
Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-B

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
119
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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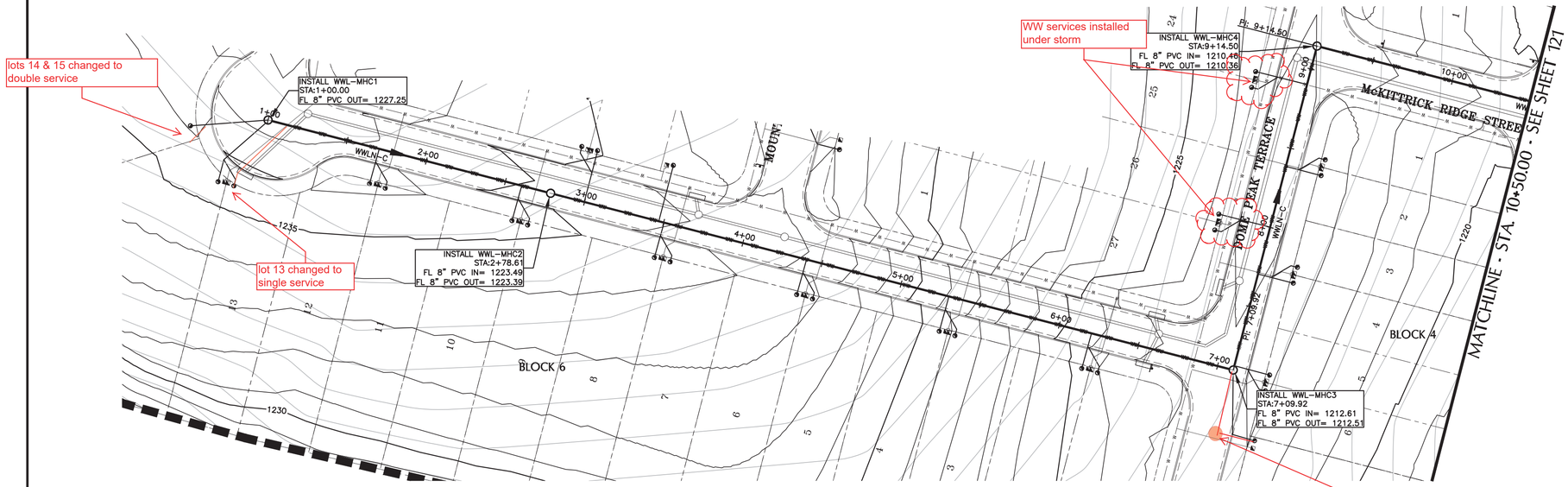
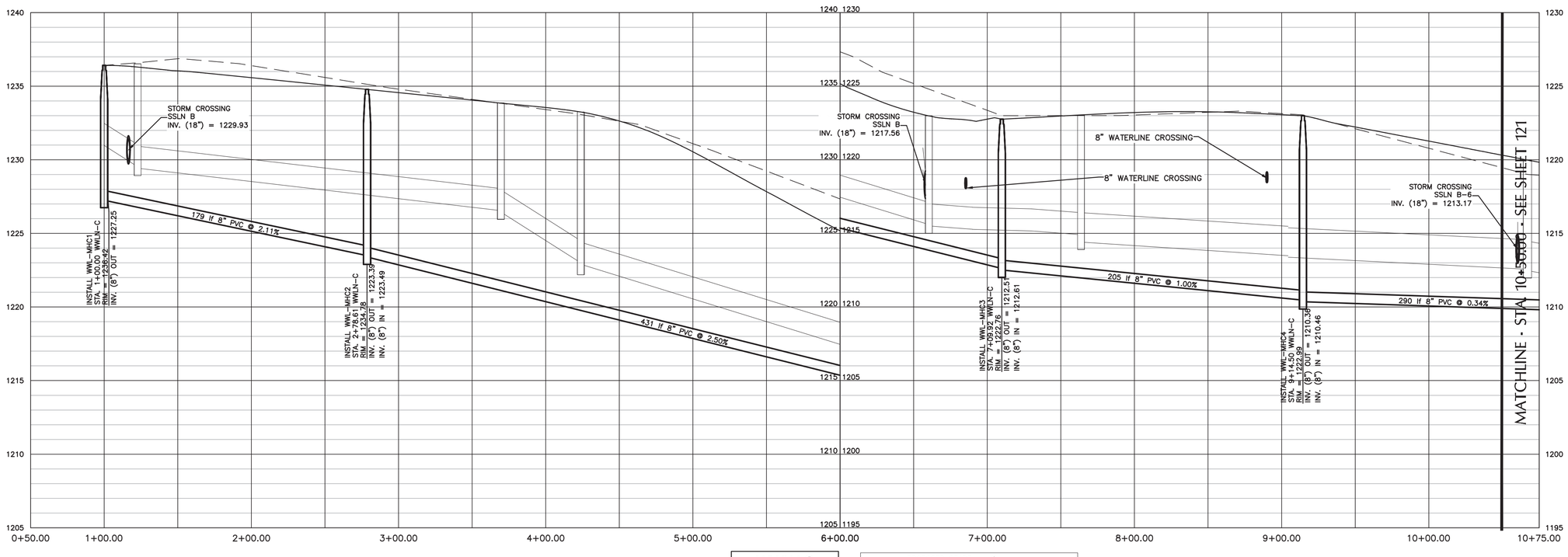


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
C1	1+00.00	6	0.90	3.58	133.24	64.77	68.35	2.11%	8	1.47	5.94
C2	2+78.61	18	2.69	10.75	133.24	64.77	75.52	2.50%	8	1.48	6.47
C3	7+09.92	28	4.18	16.72	133.24	64.77	81.49	1.00%	8	1.93	4.09
C4	9+14.50	32	4.78	19.11	133.24	64.77	83.88	0.34%	8	2.57	2.39

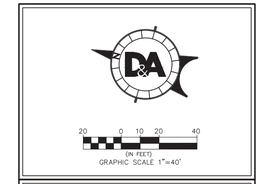
WWLN-C

SCALE: 1"=40'



WWLN-C
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
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- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
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- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
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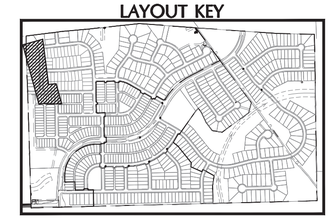
LAYOUT KEY



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www.doucetengineers.com
Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-C

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
120
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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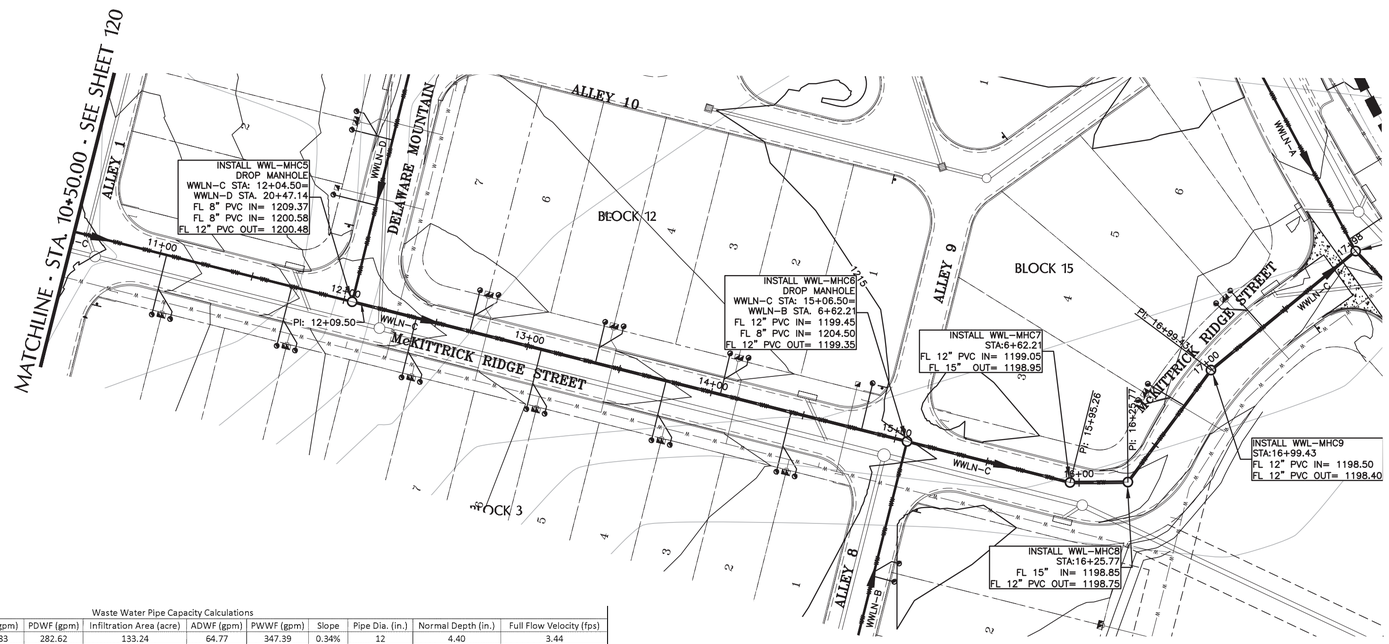
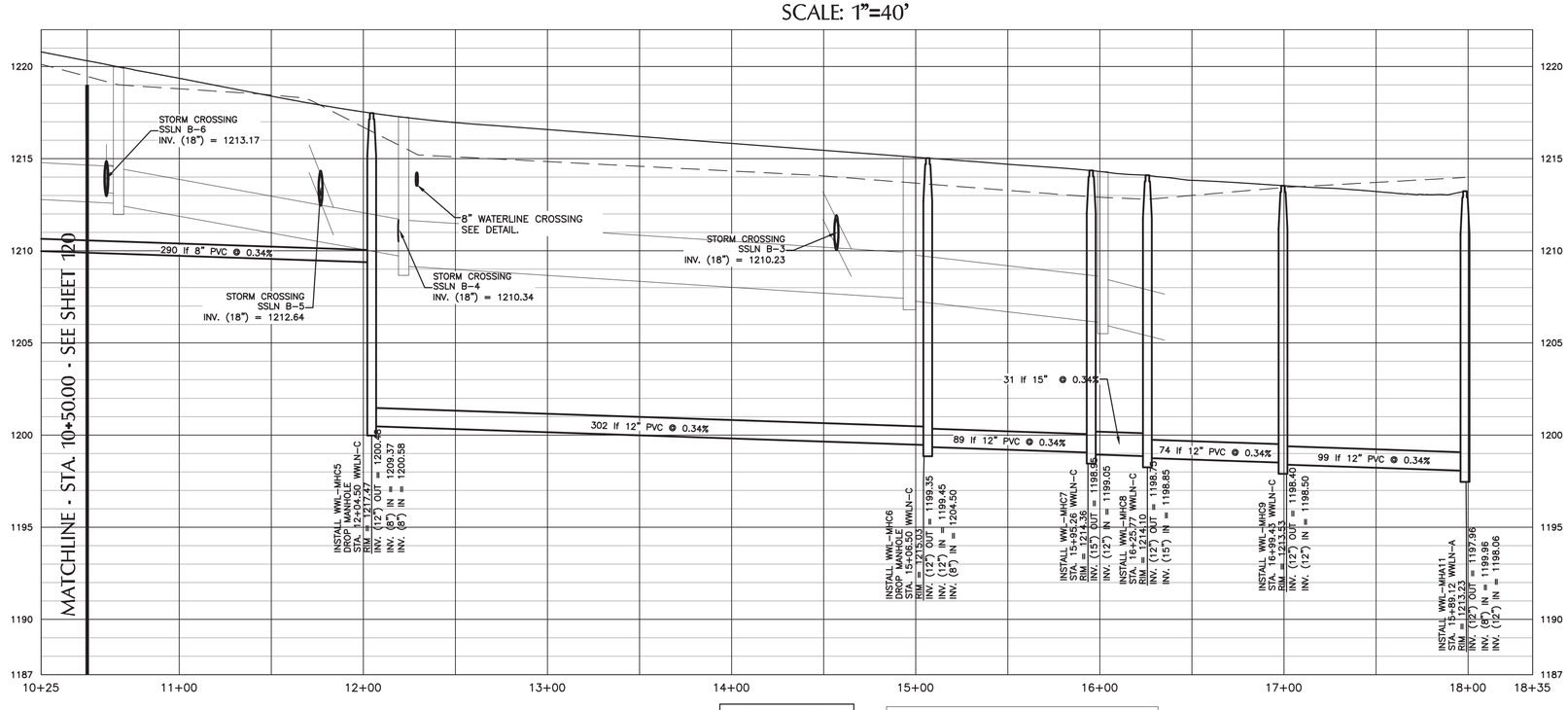


Waste Water Pipe Capacity Calculations

Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
C5+D10	12+04.50	528	78.83	282.62	133.24	64.77	347.39	0.34%	12	4.40	3.44
C6+B2	15+06.50	547	81.67	292.79	133.24	64.77	357.56	0.34%	12	4.46	3.44
C7	15+95.26	547	81.67	292.79	133.24	64.77	357.56	0.34%	12	4.46	3.44
C8	16+25.77	549	81.97	293.86	133.24	64.77	358.63	0.34%	12	4.47	3.44
C9	16+99.43	551	82.27	294.93	133.24	64.77	359.70	0.34%	12	4.48	3.44

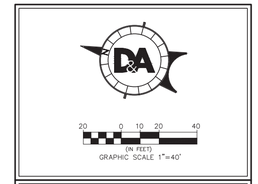
WWLN-C (CONT.)

SCALE: 1"=40'



WWLN-C
H SCALE: 1"=40'
V SCALE: 1"=4'

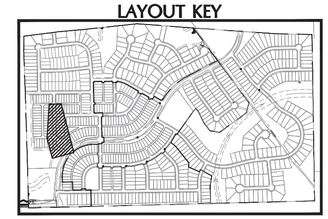
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-C

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

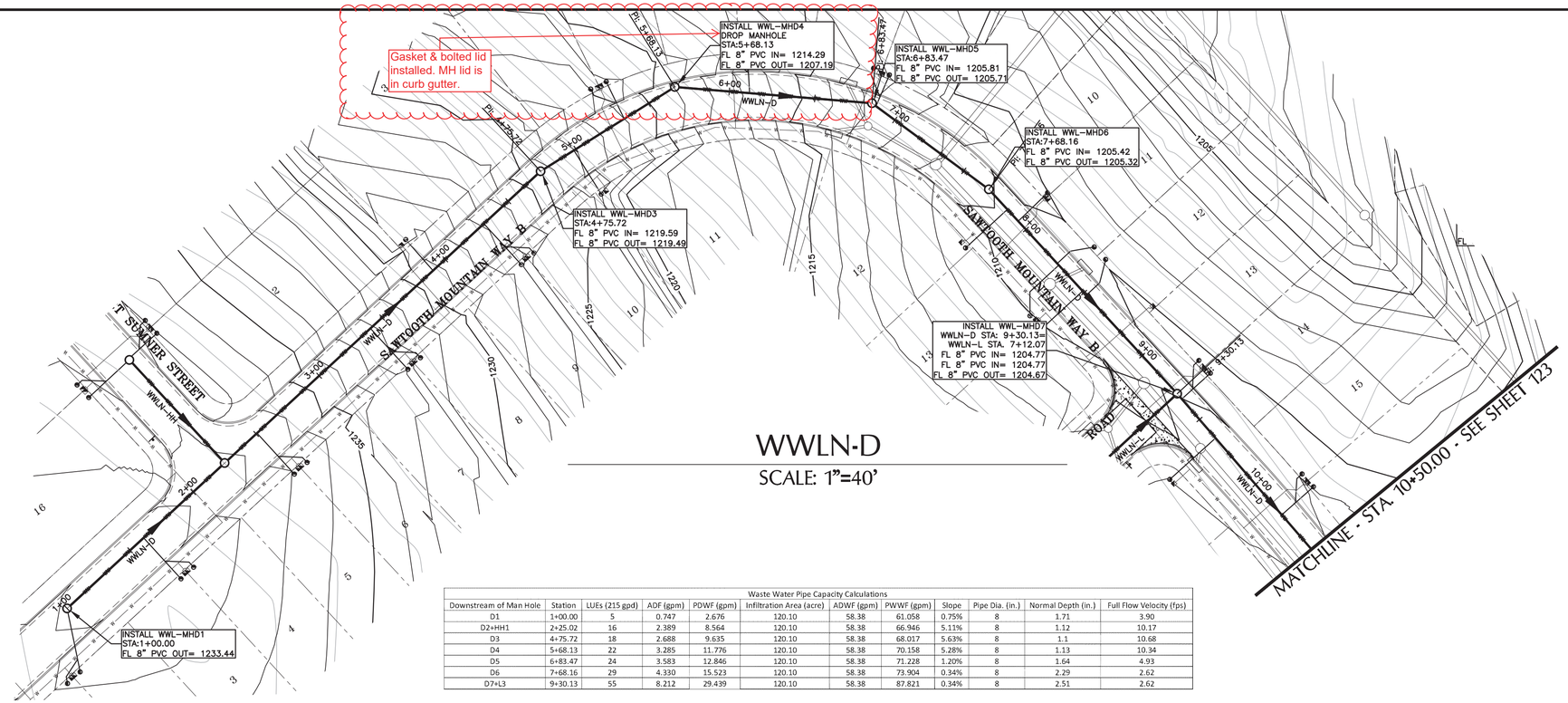
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
121
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
Last Modified: Apr. 29, 19 - 12:34
Plot Date/Time: Apr. 29, 19 - 12:39:53



WWLN-D

SCALE: 1"=40'

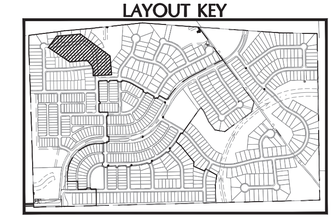
Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
D1	1+00.00	5	0.747	2.676	120.10	58.38	61.058	0.75%	8	1.71	3.90
D2+HH1	2+25.02	16	2.389	8.564	120.10	58.38	66.946	5.11%	8	1.12	10.17
D3	4+75.72	18	2.688	9.635	120.10	58.38	68.017	5.63%	8	1.1	10.68
D4	5+68.13	22	3.285	11.776	120.10	58.38	70.158	5.28%	8	1.13	10.34
D5	6+83.47	24	3.583	12.846	120.10	58.38	71.228	1.20%	8	1.64	4.93
D6	7+68.16	29	4.330	15.523	120.10	58.38	73.904	0.34%	8	2.29	2.62
D7+L3	9+30.13	55	8.212	29.439	120.10	58.38	87.821	0.34%	8	2.51	2.62

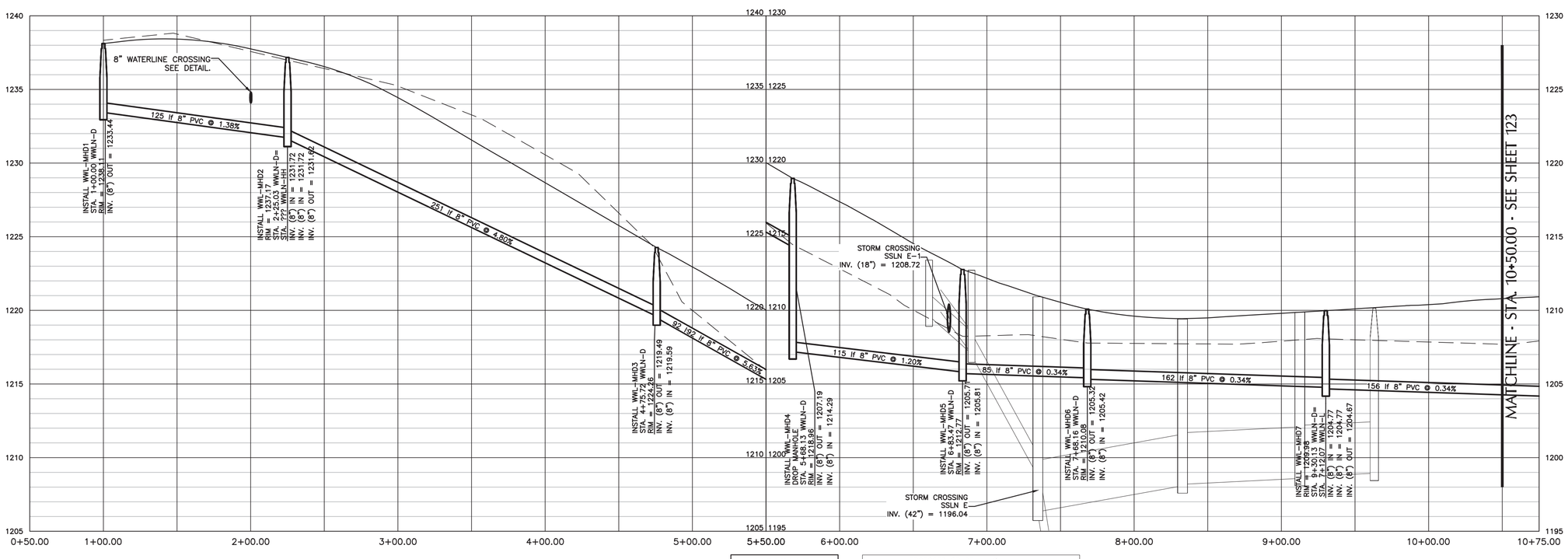
LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

GRAPHIC SCALE 1"=40' (IN FEET)

LAYOUT KEY





WWLN-D
H SCALE: 1"=40'
V SCALE: 1"=4'

- PROPOSED GRADE
- EXISTING GRADE
- PROPOSED WWLN
- FUTURE WWLN
- PIPE CROSSING
- WW STRUCTURE

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Firm Registration Number: 3937

WASTEWATER PLAN & PROFILE WWLN-D

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 122 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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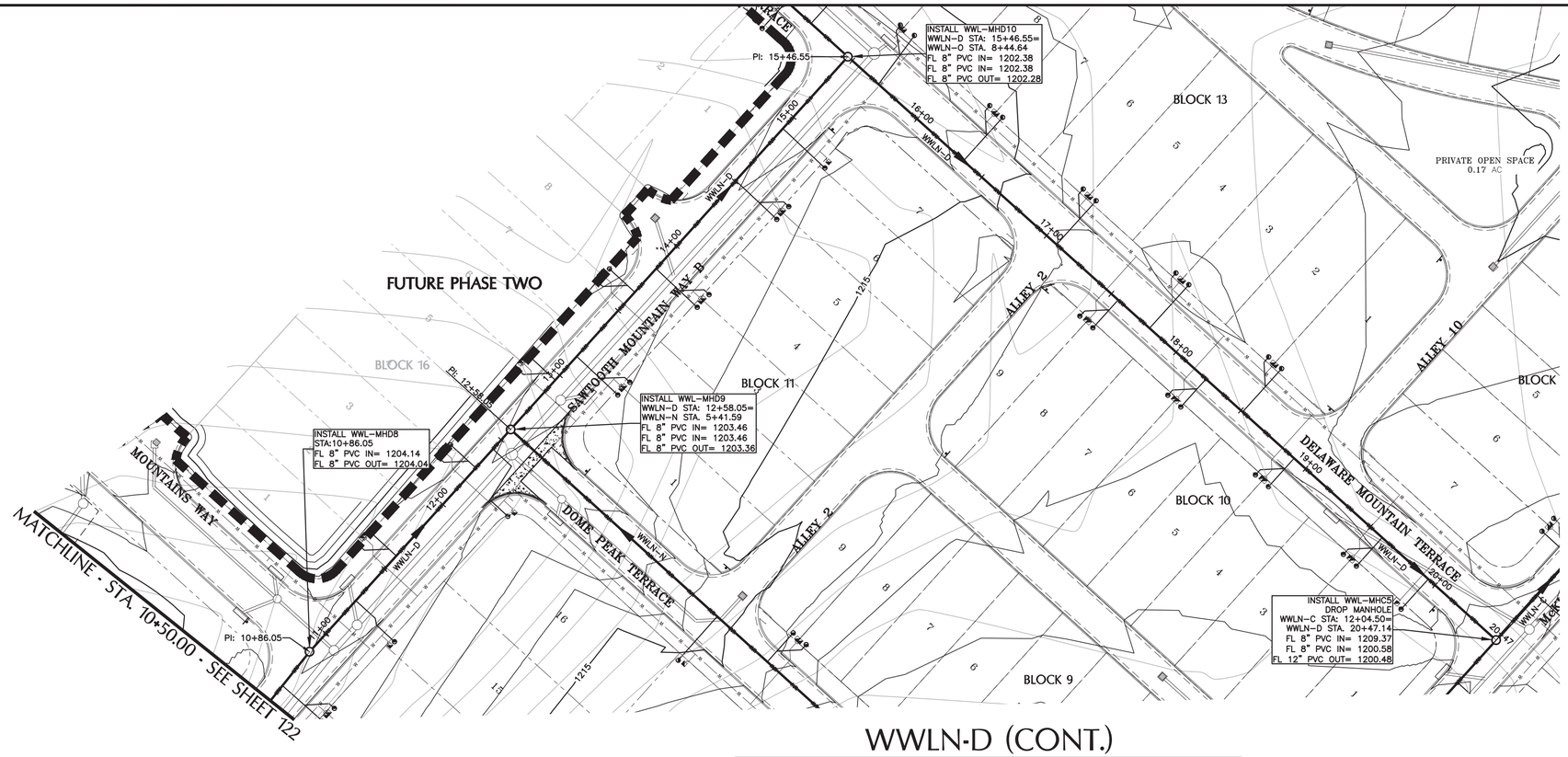
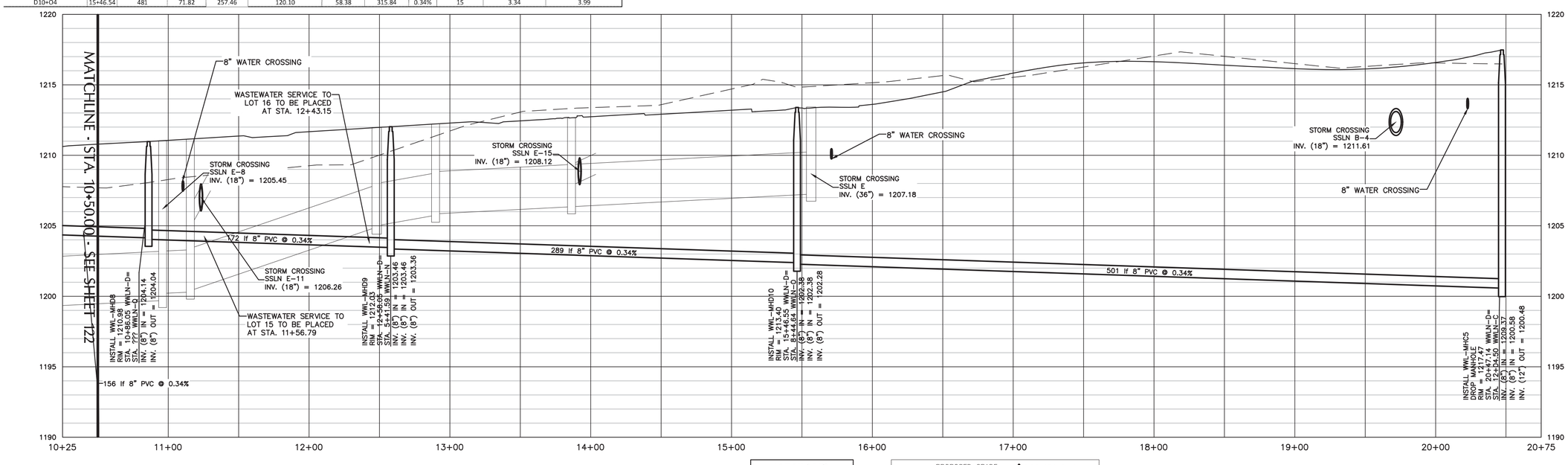


WWLN-D (CONT.)

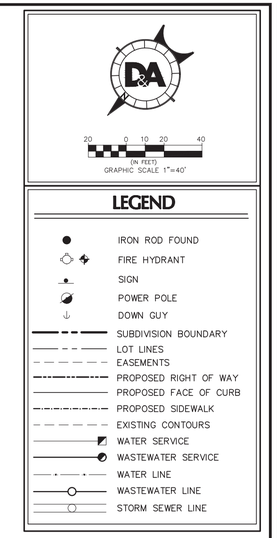
SCALE: 1"=40'

Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
D8	10+86.04	61	9.11	32.65	120.10	58.38	91.03	0.34%	8	2.56	2.62
D9+N2	12+58.04	88	13.14	47.10	120.10	58.38	105.48	0.34%	8	2.99	2.62
D10+O4	15+46.54	481	71.82	257.46	120.10	58.38	315.84	0.34%	15	3.34	3.99

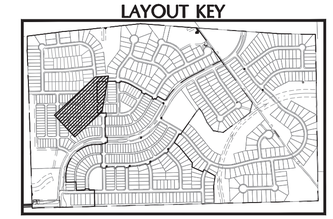


WWLN-D
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LAYOUT KEY



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Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-D

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
123
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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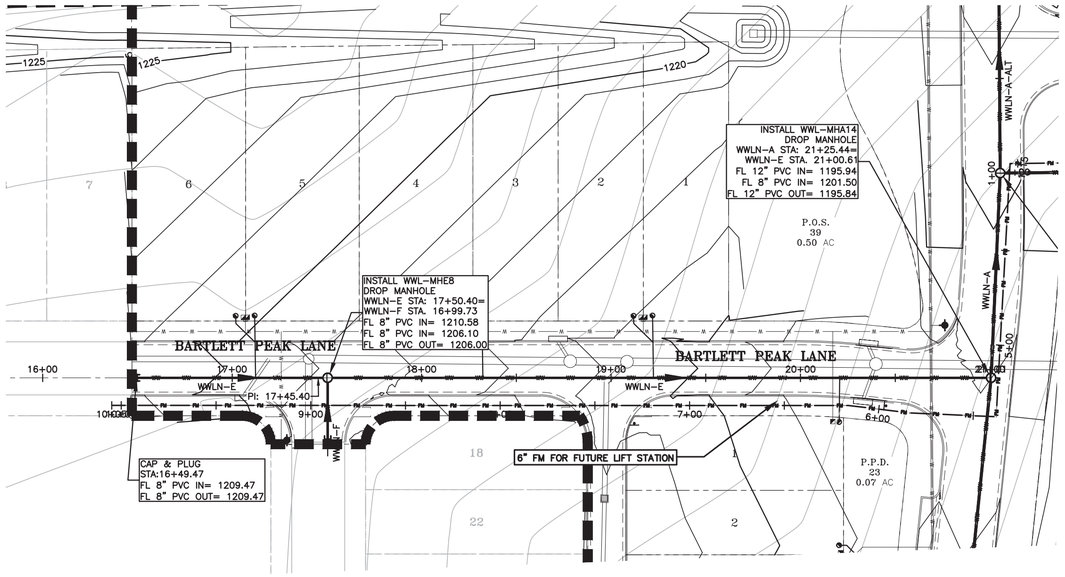
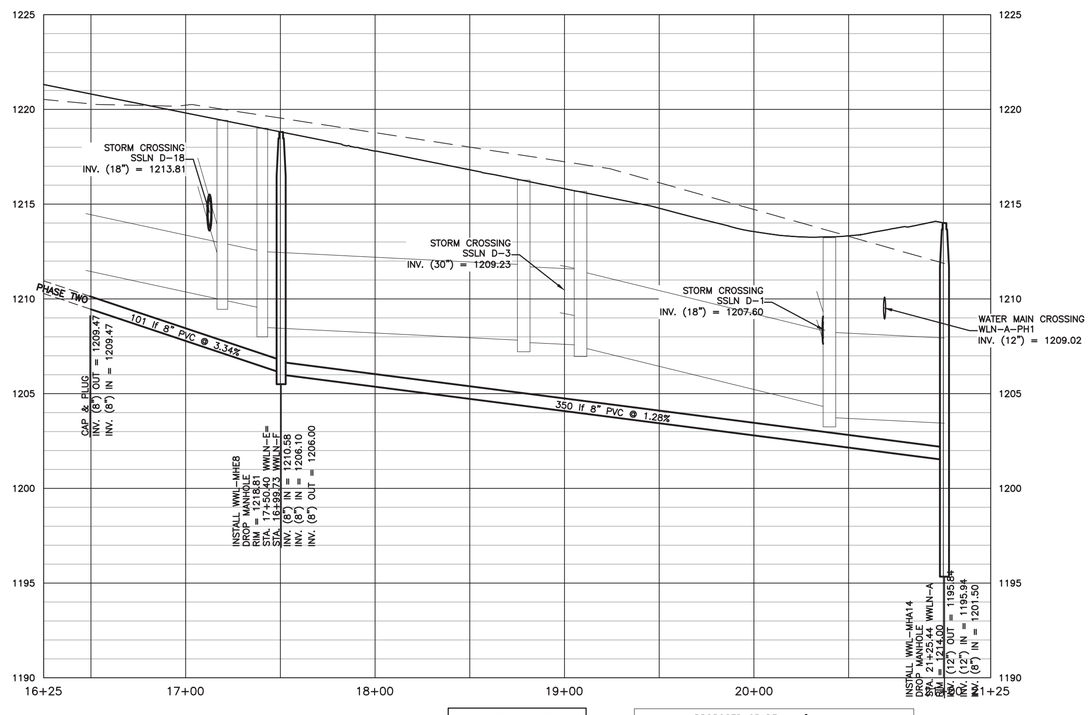


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
Future Flow to E8	n/a	140	20.90	74.94	24.86	12.08	87.02	n/a	n/a	n/a	n/a
E8	16+99.73	145	21.65	77.61	24.86	12.08	89.70	2.56%	8	1.52	7.20

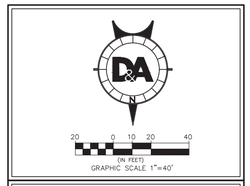
WWLN-E

SCALE: 1"=40'



WWLN-E
H SCALE: 1"=40'
V SCALE: 1"=4'

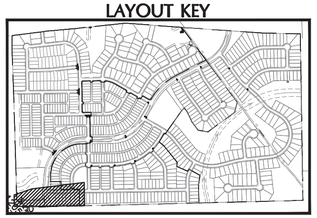
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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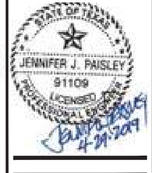
WASTEWATER PLAN & PROFILE WWLN-E

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
124
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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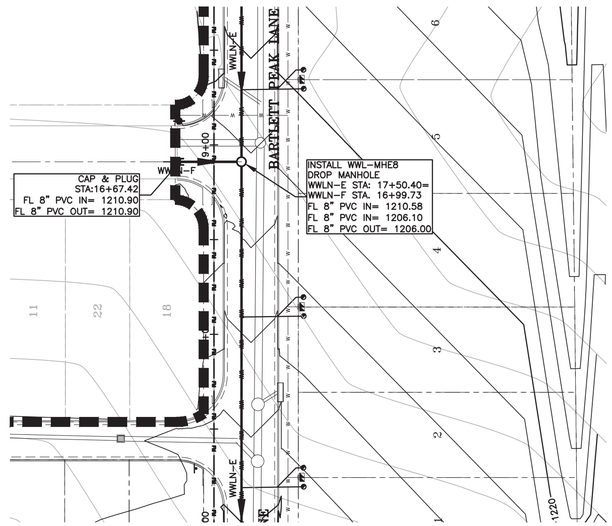
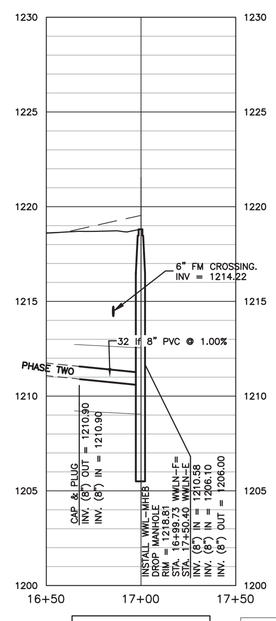


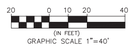
WWLN-F

SCALE: 1"=40'



WWLN-F
H SCALE: 1"=40'
V SCALE: 1"=4'

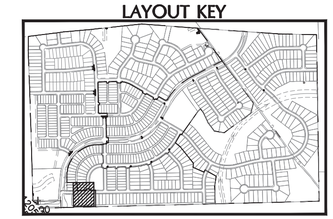
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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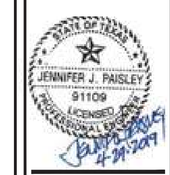
WASTEWATER
PLAN & PROFILE
WWLN-F

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
125
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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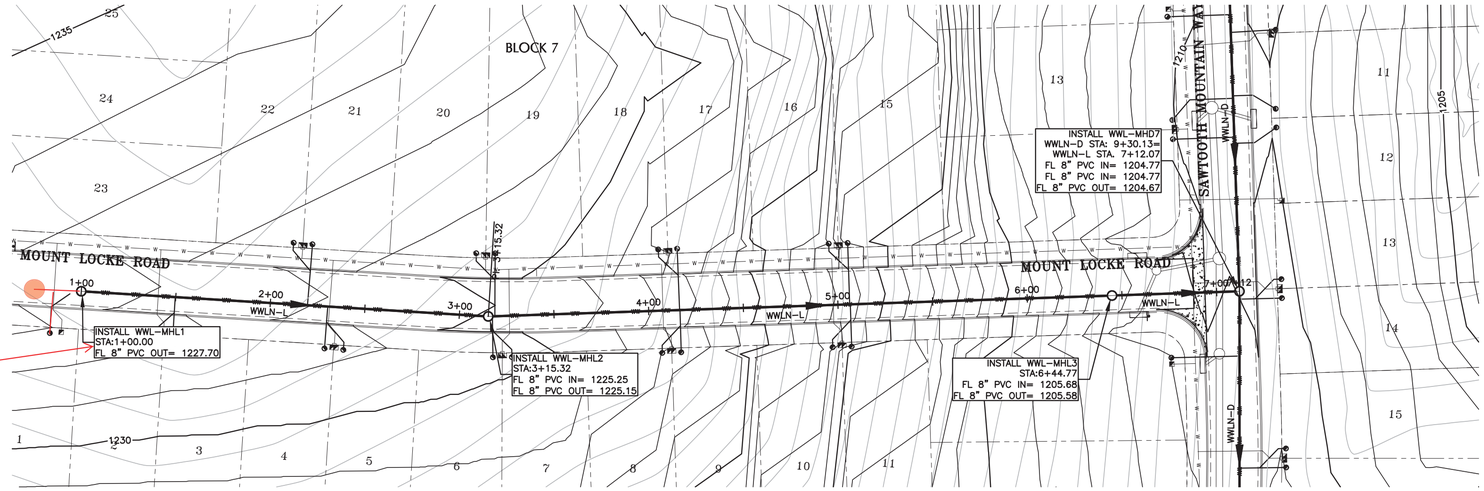
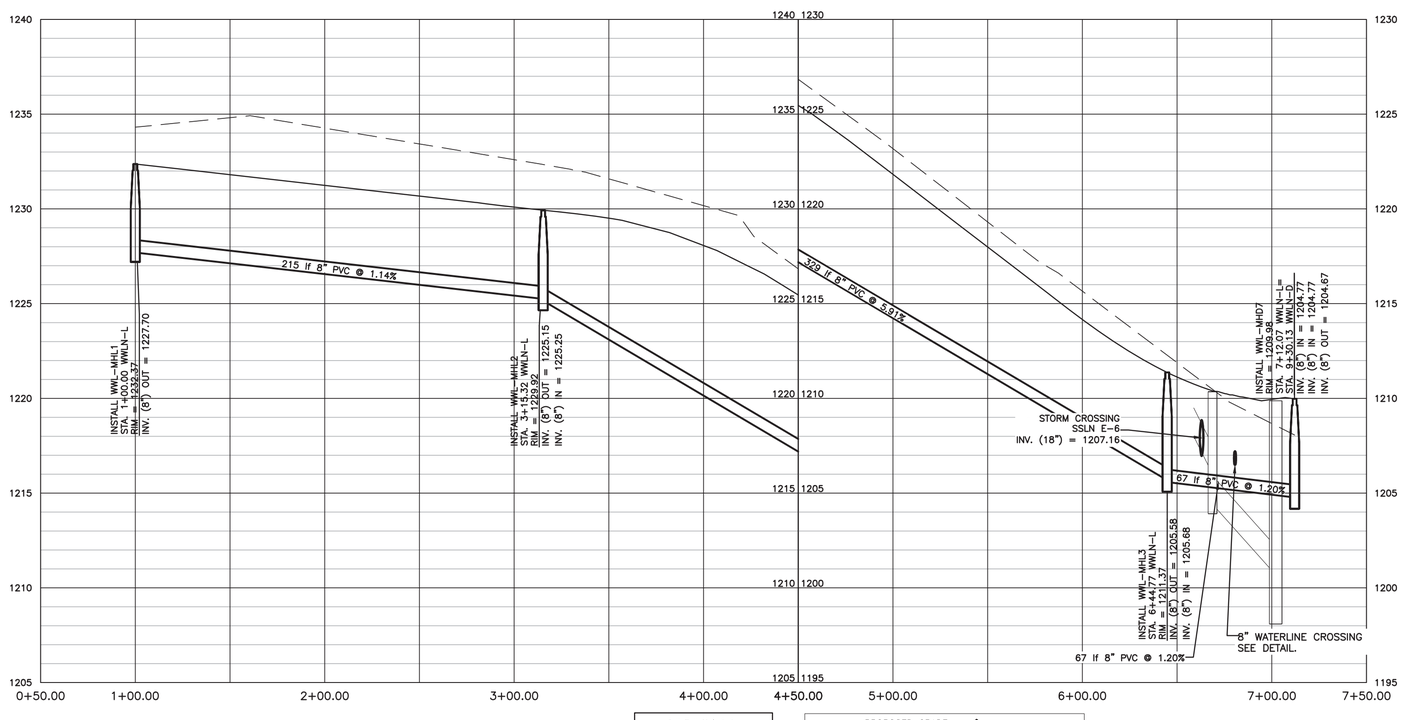


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (cfs)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
L1	1+00.00	7	1.045	3.747	6.40	3.11	6.86	1.40%	8	0.52	5.32
L2	3+15.32	19	2.837	10.170	6.40	3.11	13.28	5.91%	8	0.5	10.94
L3	6+44.77	19	2.837	10.170	6.40	3.11	13.28	2.32%	8	0.63	6.85

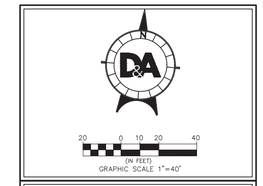
WWLN-L

SCALE: 1"=40'



WWLN-L
H SCALE: 1"=40'
V SCALE: 1"=4'

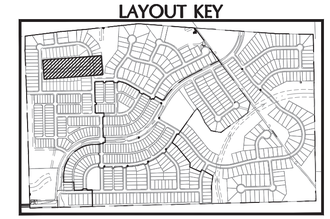
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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WASTEWATER
PLAN & PROFILE
WWLN-L

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
126
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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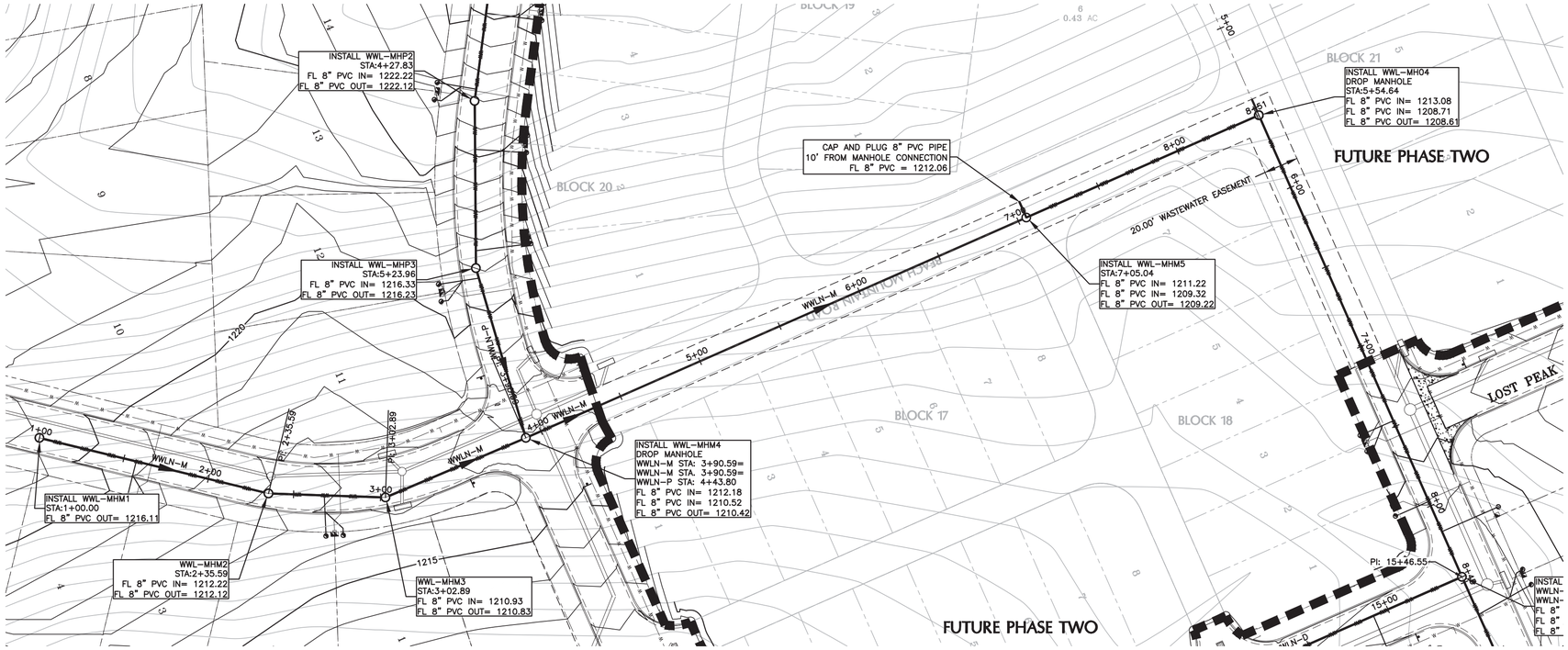
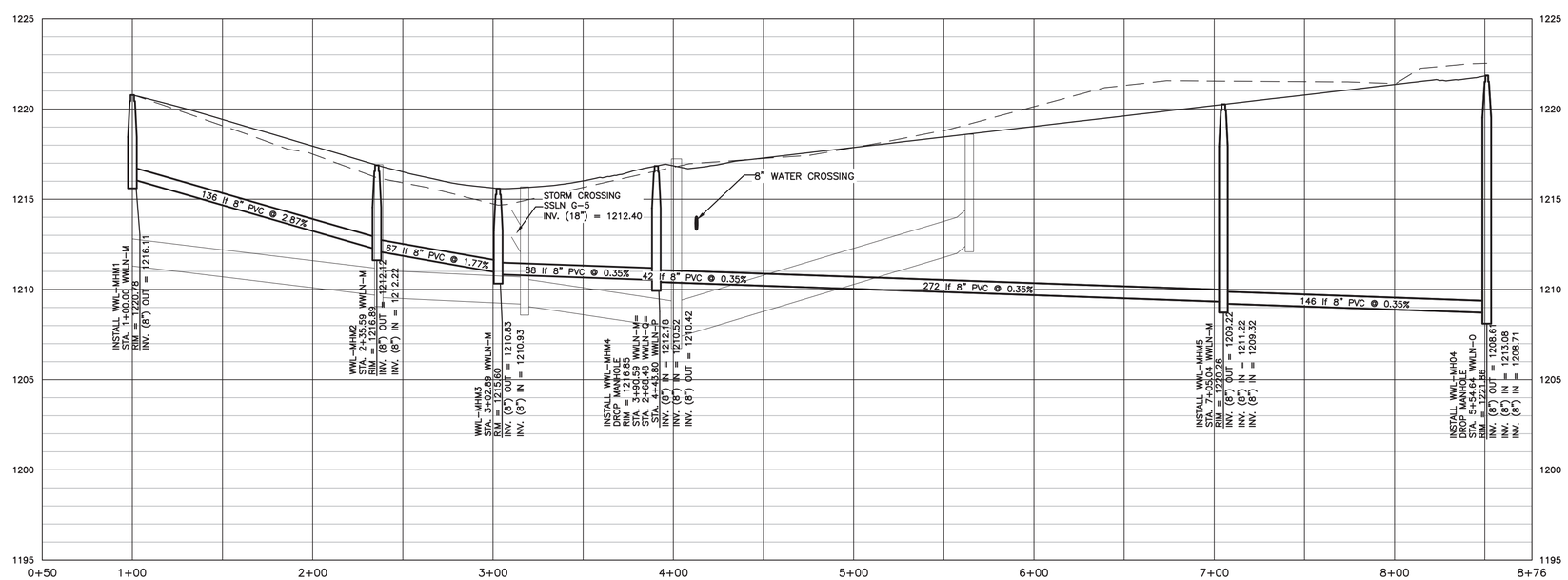


WWLN-M

SCALE: 1"=40'

Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
M1	1+00.00	2	0.30	1.07	23.00	11.18	12.25	2.87%	8	0.57	7.62
M2	2+35.59	4	0.60	2.14	23.00	11.18	13.32	1.77%	8	0.66	5.99
M3	3+02.89	334	49.87	178.78	23.00	11.18	189.96	0.35%	8	3.79	2.66
M4+P3	3+90.59	342	51.06	183.06	23.00	11.18	194.24	0.35%	8	3.84	2.66
M5+Q2 (Future)	7+05.04	347	51.81	185.74	23.00	11.18	196.92	0.35%	8	3.87	2.66



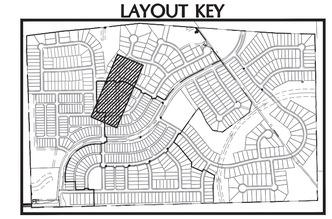
WWLN-M
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-M

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

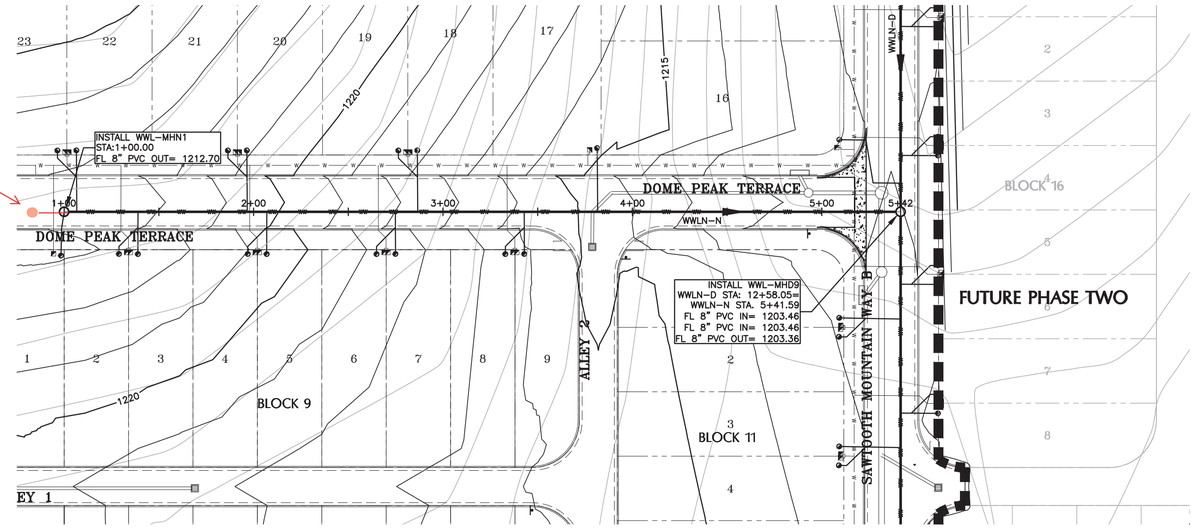
Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
127
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
Last Modified: Apr. 29, 19 - 12:34
Plot Date/Time: Apr. 29, 19 - 12:42:10

moved manhole N1

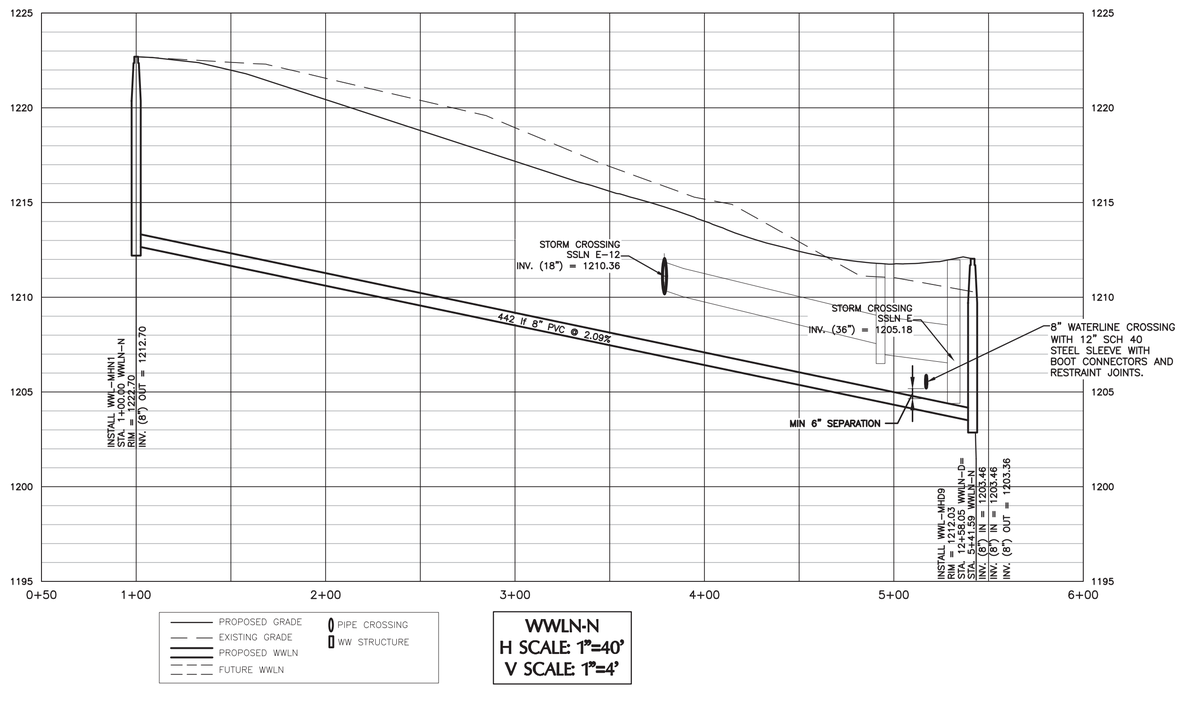


WWLN-N

SCALE: 1"=40'

Waste Water Pipe Capacity Calculations

Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
N1	8+44.24	16	2.39	8.56	4.50	2.19	10.75	2.09%	8	0.58	6.51



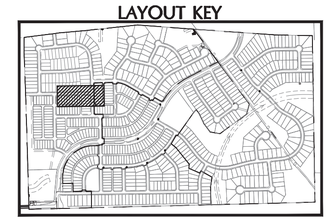
WWLN-N
H SCALE: 1"=40'
V SCALE: 1"=4'

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

GRAPHIC SCALE 1"=40'

LAYOUT KEY



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WASTEWATER PLAN & PROFILE WWLN-N

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 128 OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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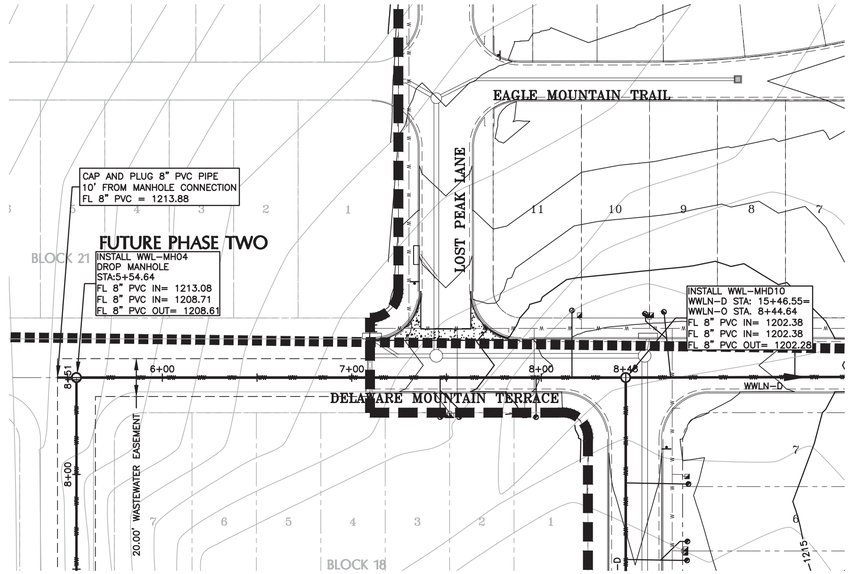
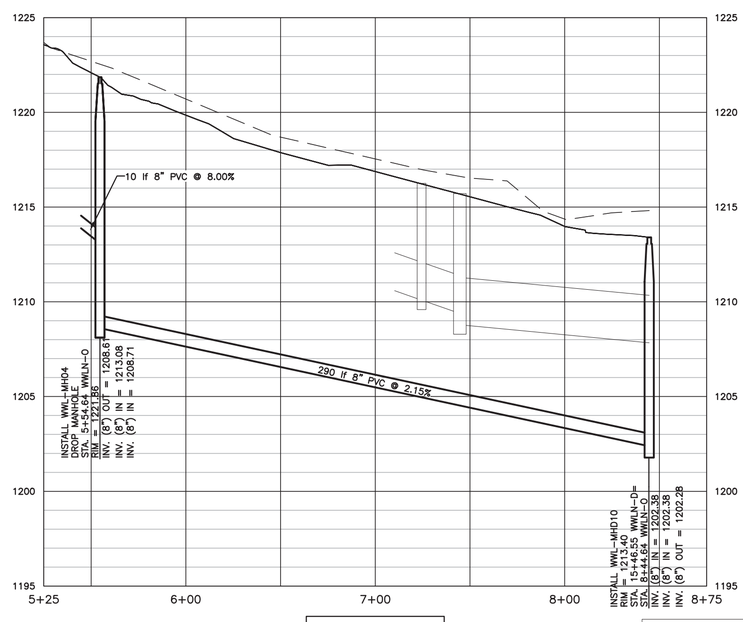


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
O4	5+54.64	363	54.20	194.30	4.50	2.19	196.49	2.22%	8	2.35	6.71

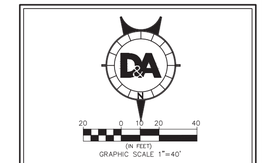
WWLN-O

SCALE: 1"=40'



WWLN-O
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
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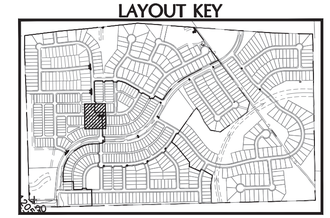
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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WASTEWATER
PLAN & PROFILE
WWLN-O

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
129
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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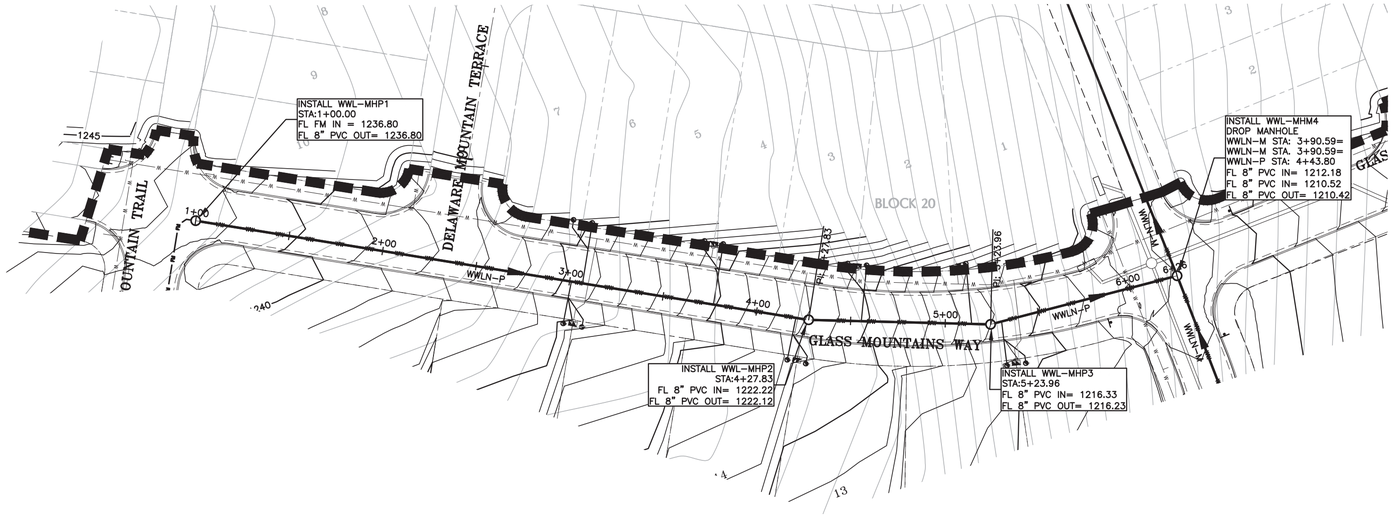
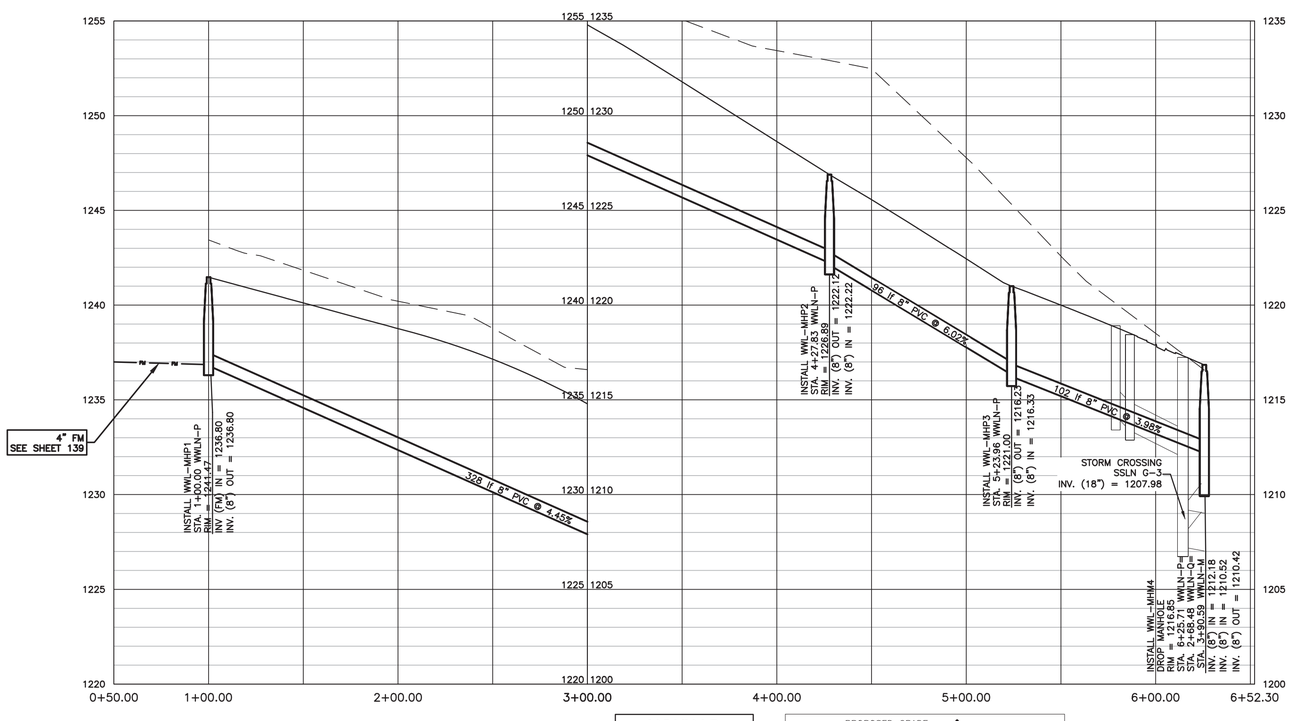


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
P1+LS2	1+00.00	314	46.88	168.07	139.64	67.88	235.95	4.45%	8	2.15	9.5
P2	4+27.83	317	47.33	169.68	70.20	34.13	203.80	6.02%	8	1.85	11.04
P3	5+23.96	319	47.63	170.75	70.20	34.13	204.87	3.98%	8	2.06	8.98

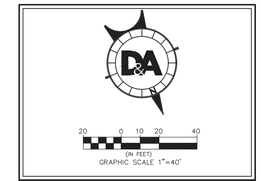
WWLN-P

SCALE: 1"=40'



WWLN-P
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
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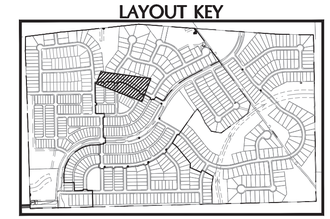
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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WASTEWATER
PLAN & PROFILE
WWLN-P

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
130
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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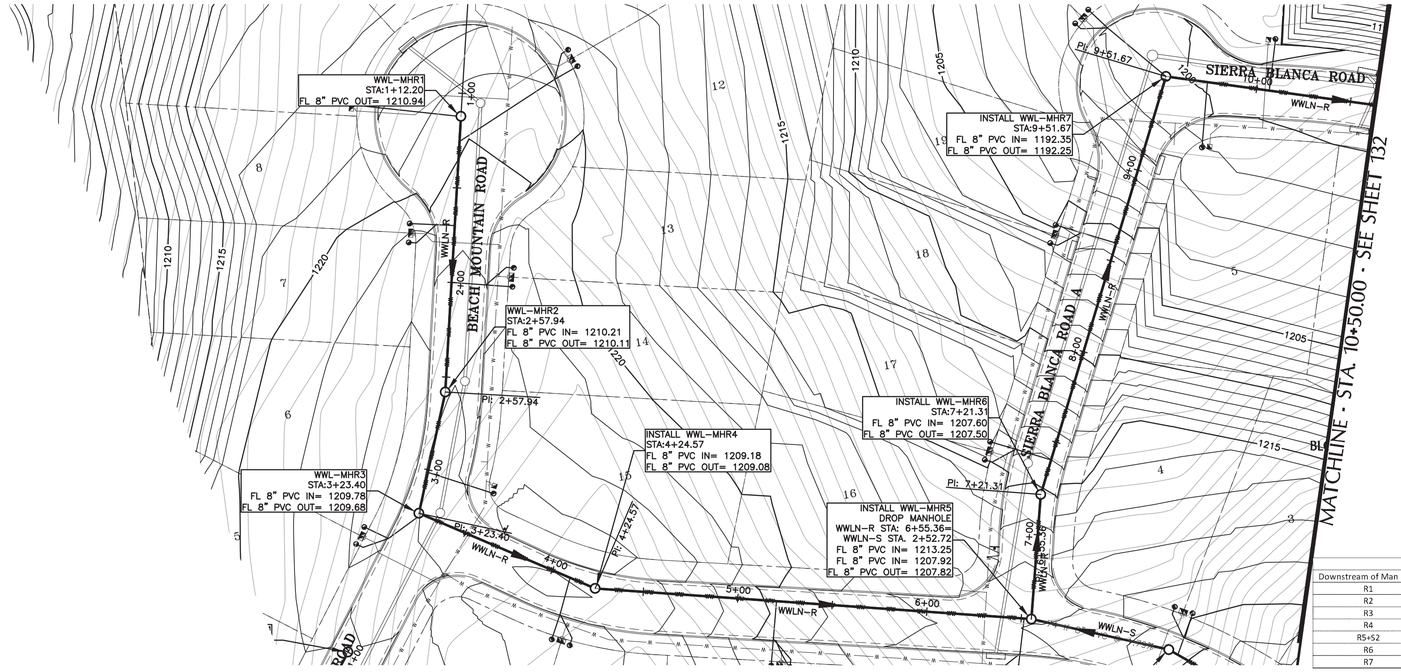
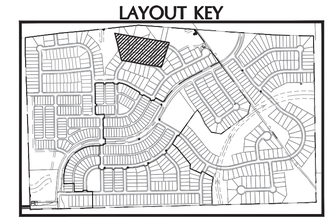
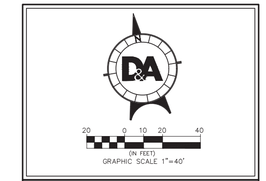


WWLN-R

SCALE: 1"=40'



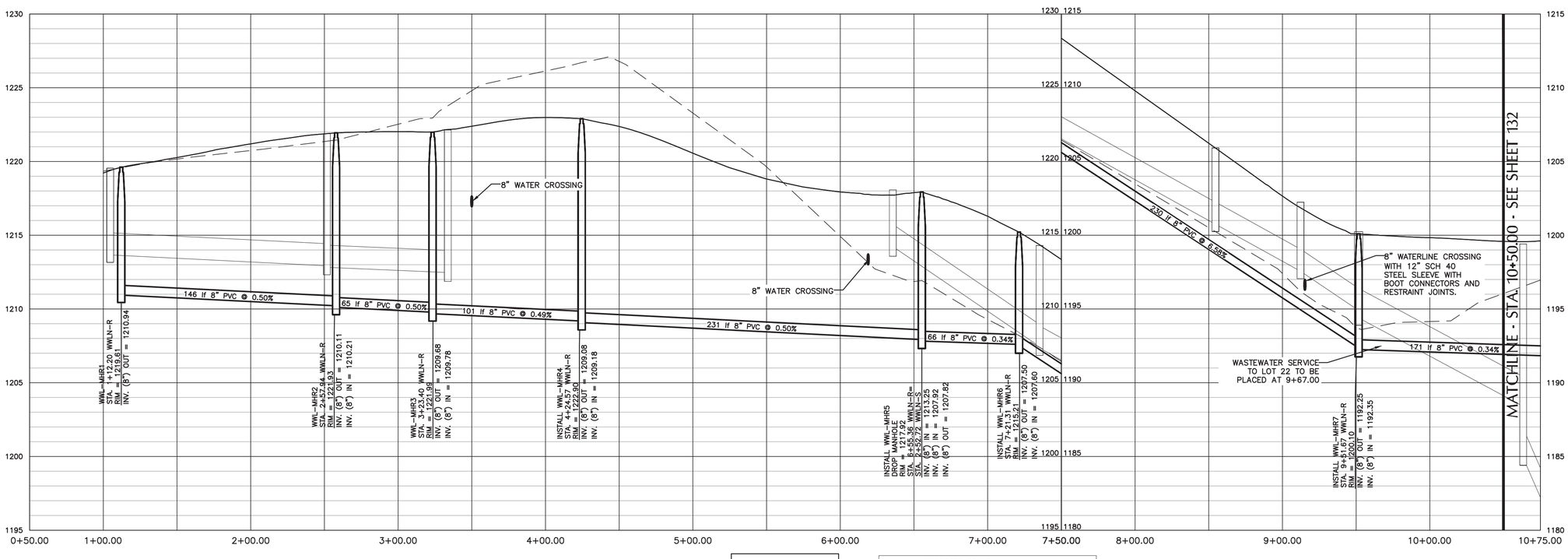


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

Waste Water Pipe Capacity Calculations

Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
R1	1+00.00	8	1.19	4.28	13.25	6.44	10.72	0.50%	8	0.81	3.18
R2	2+45.75	9	1.34	4.82	13.25	6.44	11.26	0.50%	8	0.83	3.18
R3	3+11.20	13	1.94	6.96	13.25	6.44	13.40	0.49%	8	0.91	3.15
R4	4+12.37	16	2.39	8.56	13.25	6.44	15.01	0.50%	8	0.95	3.18
R5+S2	6+43.16	21	3.14	11.24	13.25	6.44	17.68	0.34%	8	1.13	2.62
R6	7+09.12	25	3.73	13.38	13.25	6.44	19.82	6.58%	8	0.59	11.54
R7	9+39.48	29	4.33	15.52	13.25	6.44	21.96	0.34%	8	1.37	2.62



WWLN-R
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

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WASTEWATER PLAN & PROFILE WWLN-R

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
131
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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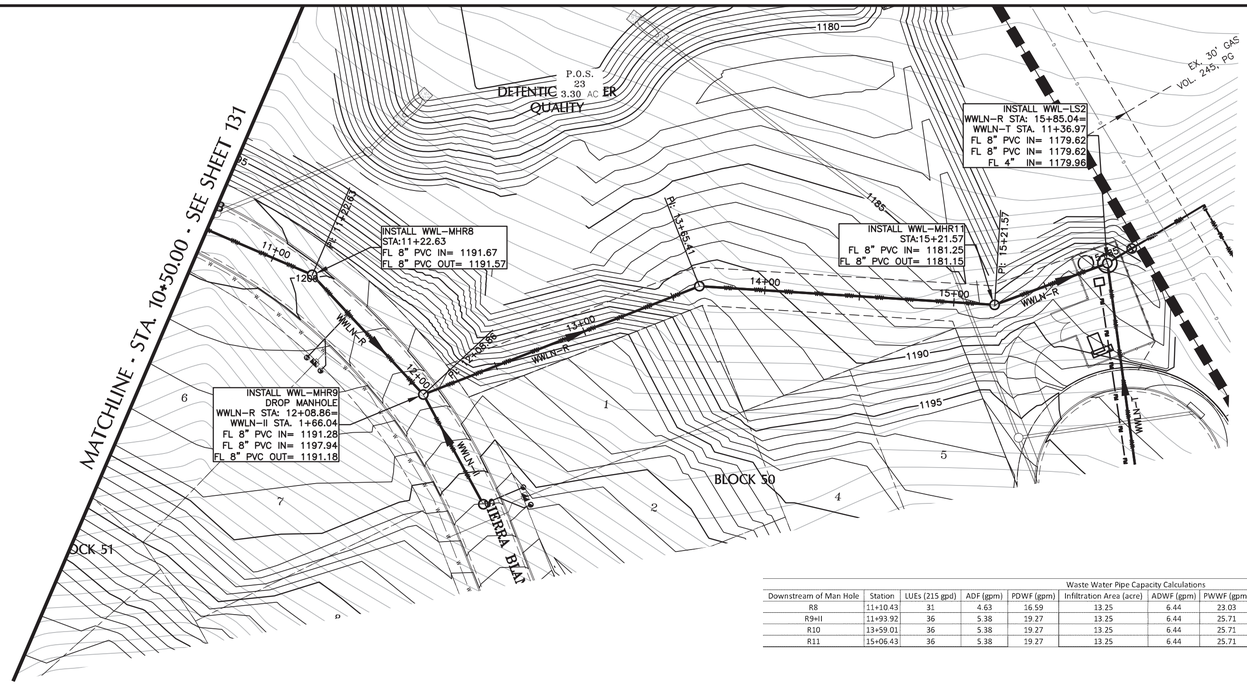
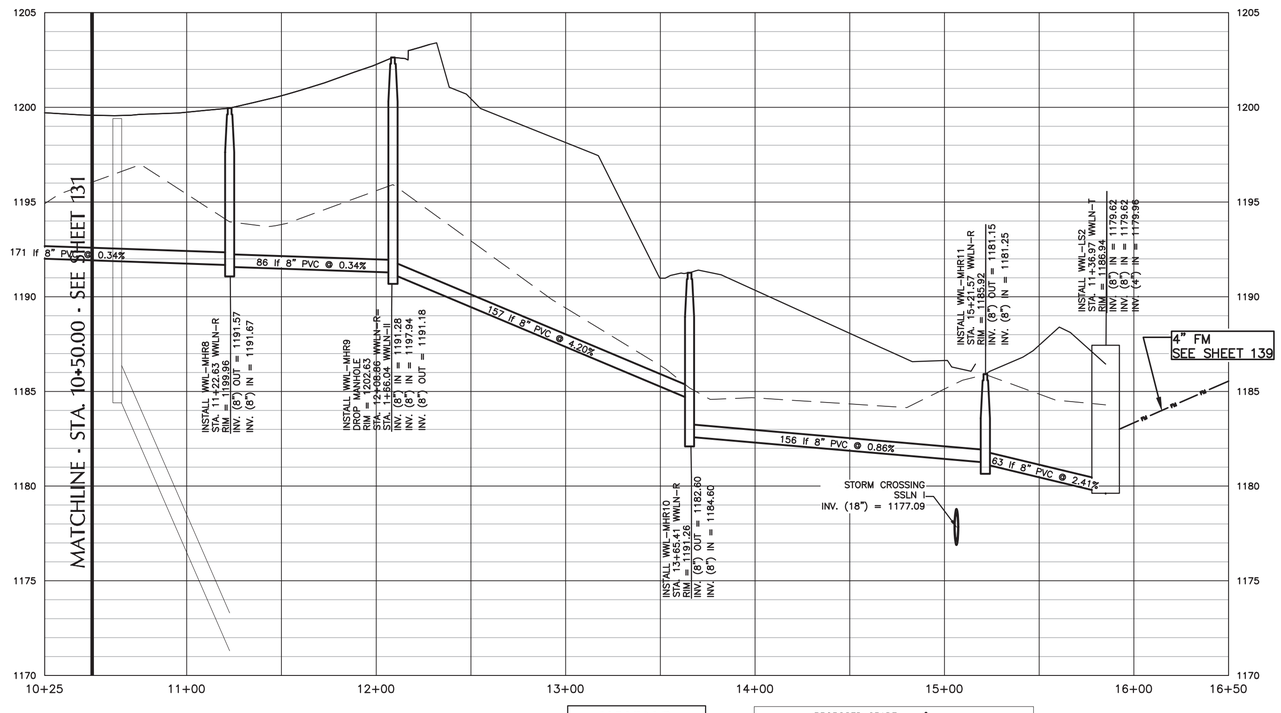


Waste Water Pipe Capacity Calculations												
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
R8	11+10.43	31	4.63	16.59	13.25	6.44	23.03	0.34%	8	1.29	2.62
R9=II	11+93.92	36	5.38	19.27	13.25	6.44	25.71	4.20%	8	0.74	9.22
R10	13+59.01	36	5.38	19.27	13.25	6.44	25.71	4.50%	8	0.73	9.55
R11	15+06.43	36	5.38	19.27	13.25	6.44	25.71	0.39%	8	1.31	2.81

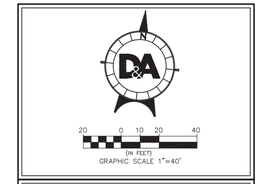
WWLN-R (CONT.)

SCALE: 1"=40'



WWLN-R
H SCALE: 1"=40'
V SCALE: 1"=4'

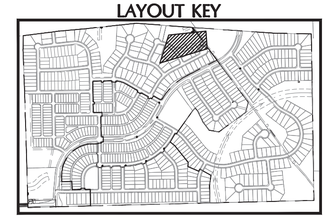
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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WASTEWATER
PLAN & PROFILE
WWLN-R

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
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4-29-2019

Designed: JJP
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Reviewed: JJP
Date: 2/8/2019

SHEET
132
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
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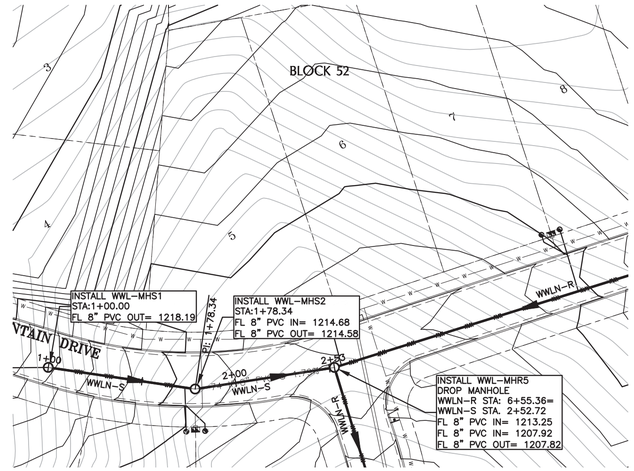
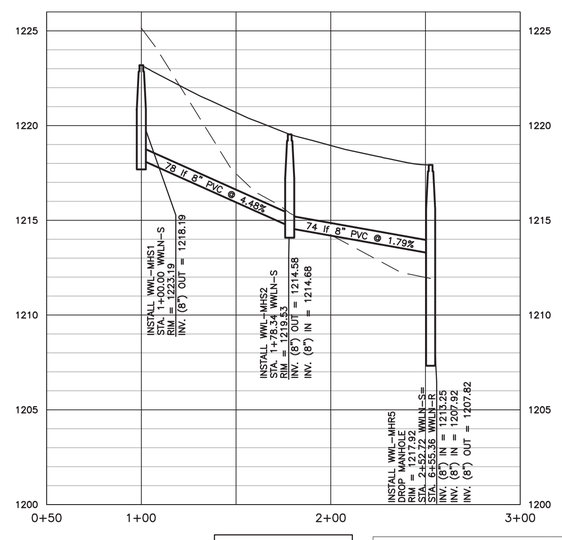


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
S1	1+00.00	4	0.60	2.14	2.50	0.35	2.49	4.48%	8	0.25	9.53
S2	1+78.34	4	0.60	2.14	2.50	0.35	2.49	1.79%	8	0.30	6.02

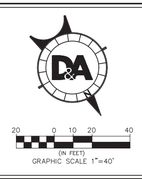
WWLN-S

SCALE: 1"=40'



WWLN-S
H SCALE: 1"=40'
V SCALE: 1"=4'

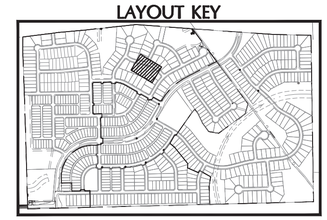
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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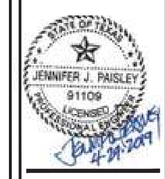
Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-S

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

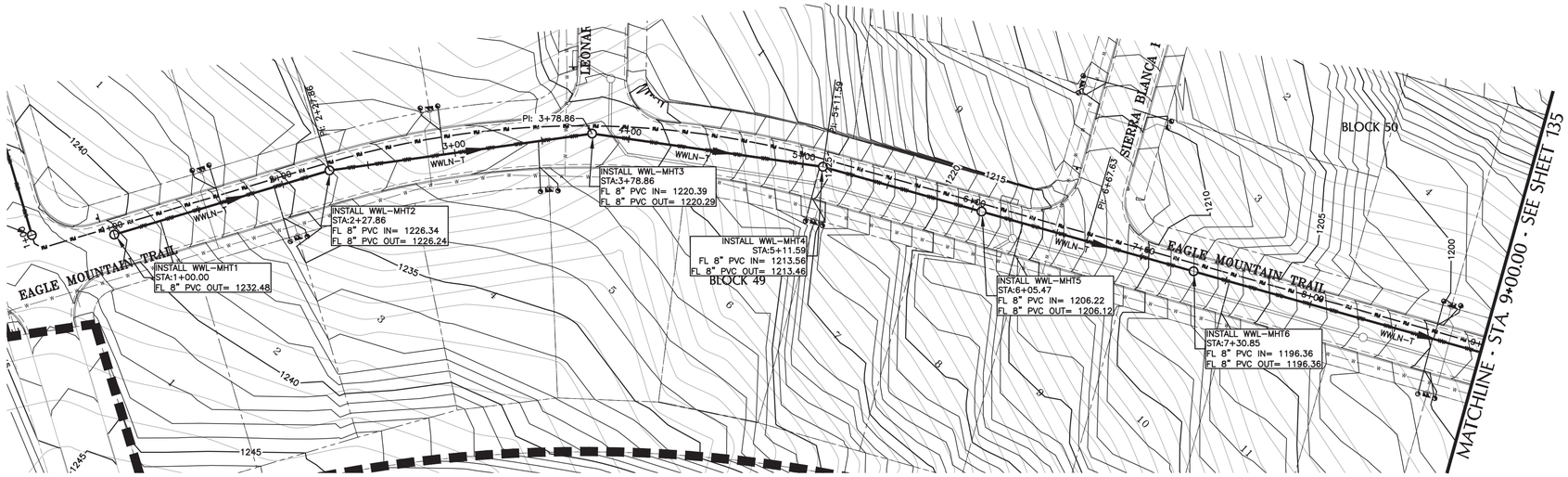


Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
133
OF 175

Project No.:
1691-002

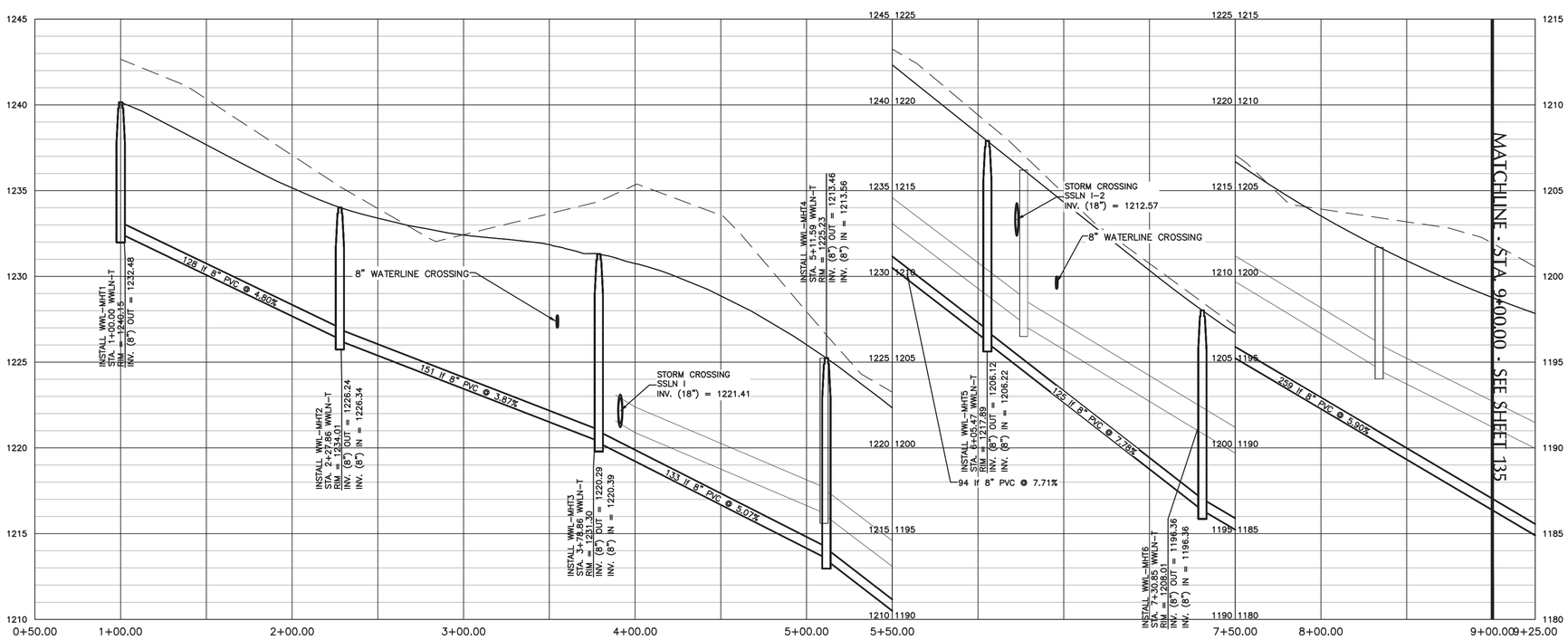
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
Last Modified: Apr. 29, 19 - 12:34
Plot Date/Time: Apr. 29, 19 - 12:44:00



Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
T1	1+00.00	5	0.75	2.68	6.00	2.92	5.59	4.80%	8	0.35	9.86
T2	2+27.86	9	1.34	4.82	6.00	2.92	7.73	3.87%	8	0.43	8.85
T3	3+78.86	11	1.64	5.89	6.00	2.92	8.80	5.07%	8	0.43	10.13
T4	5+11.59	11	1.64	5.89	6.00	2.92	8.80	7.71%	8	0.39	12.50
T5	6+05.47	13	1.94	6.96	6.00	2.92	9.88	7.78%	8	0.41	12.55
T6	7+30.85	19	2.84	10.17	6.00	2.92	13.09	5.90%	8	0.50	10.93
T7	7+30.86	20	2.99	10.71	7.00	3.40	14.11	5.90%	8	0.50	10.93
T8	7+30.87	20	2.99	10.71	7.00	3.40	14.11	3.91%	8	0.57	8.90

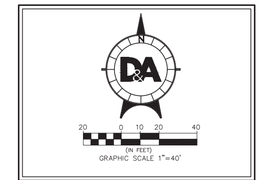
WWLN-T

SCALE: 1"=40'



WWLN-T
H SCALE: 1"=40'
V SCALE: 1"=4'

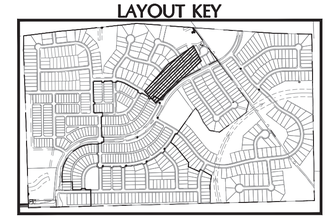
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-T

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

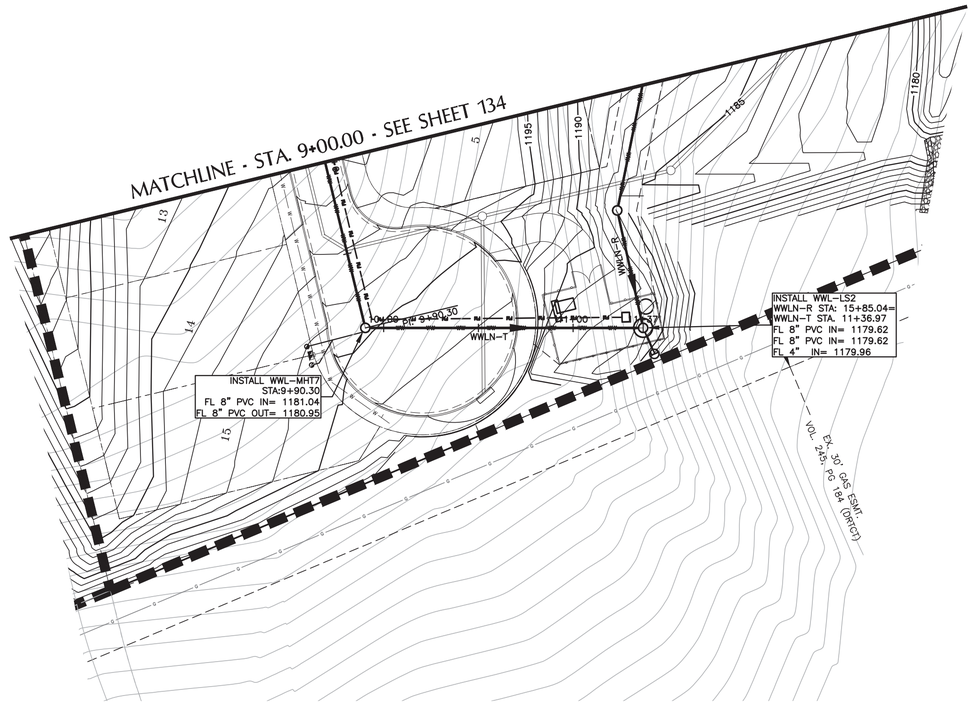
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
134
OF 175

Project No.:
1691-002

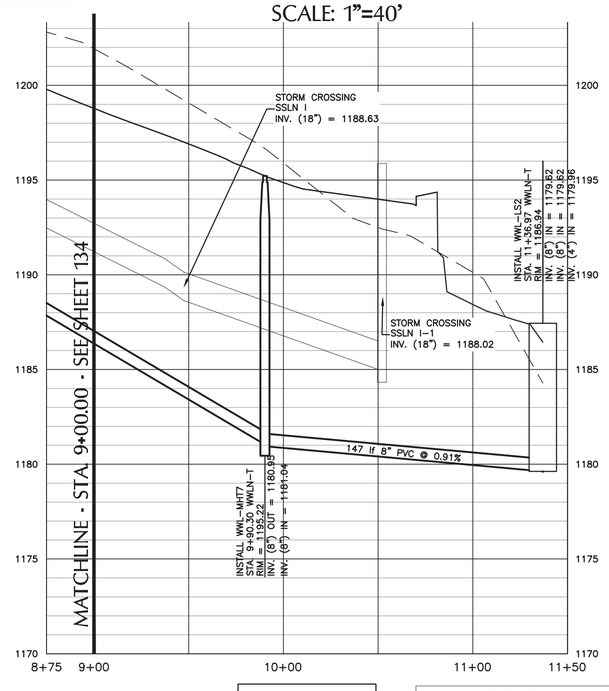
Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
Last Modified: Apr. 29, 19 - 12:34
Plot Date/Time: Apr. 29, 19 - 12:44:18



Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
T7	9+90.30	21	3.14	11.24	6.00	2.92	14.16	3.91%	8	0.57	8.90

WWLN-T (CONT.)

SCALE: 1"=40'



WWLN-T
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

D&A

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
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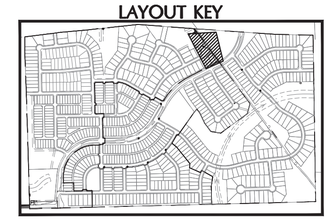
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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WASTEWATER
PLAN & PROFILE
WWLN-T

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
135
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
User: JHELMBURG
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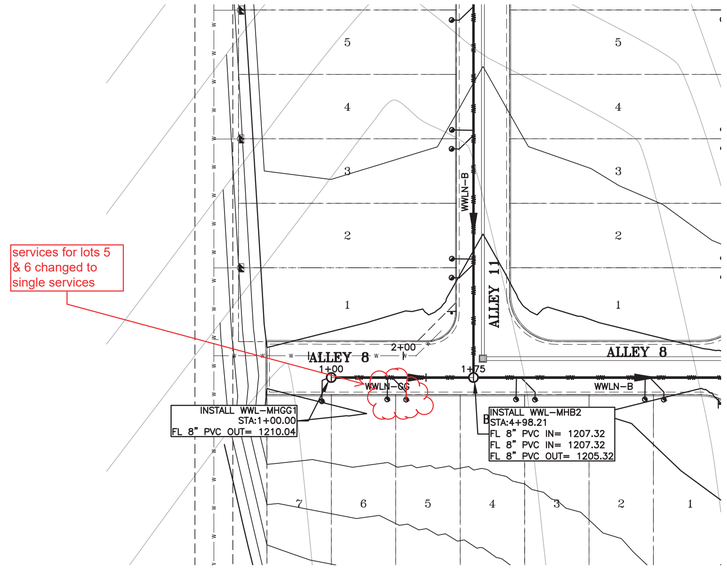
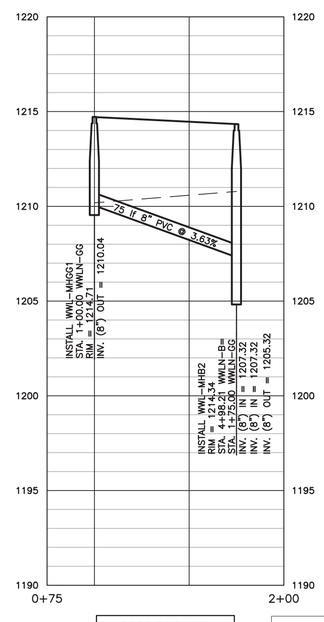


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
MHGG1	1+00.00	3	0.45	1.61	3.00	1.46	3.06	3.63%	8	0.28	8.57

WWLN-GG

SCALE: 1"=40'



WWLN-GG
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

LEGEND

- IRON ROD FOUND
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- SIGN
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- DOWN GUY
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- LOT LINES
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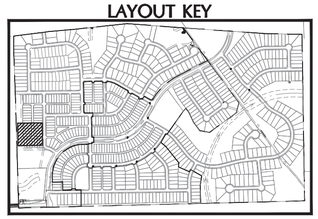
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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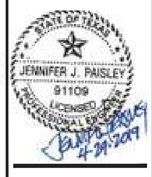
WASTEWATER PLAN
& PROFILE
WWLN-GG

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
136
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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Last Modified: Apr. 29, 19 - 12:34
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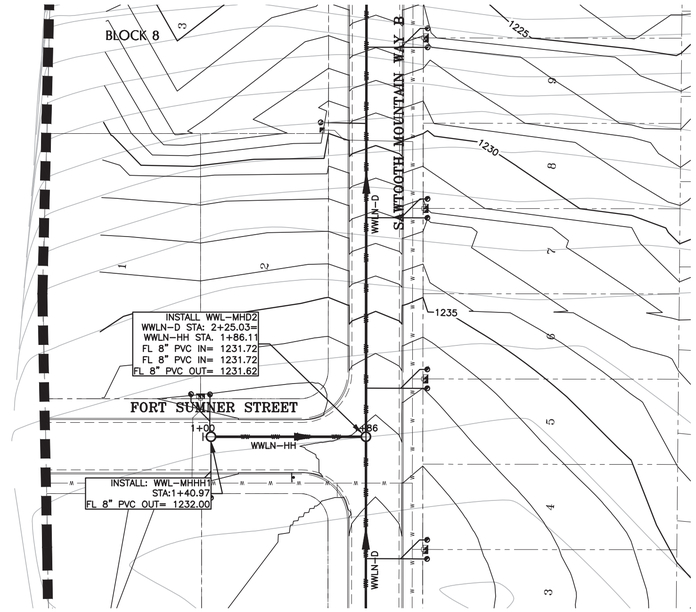
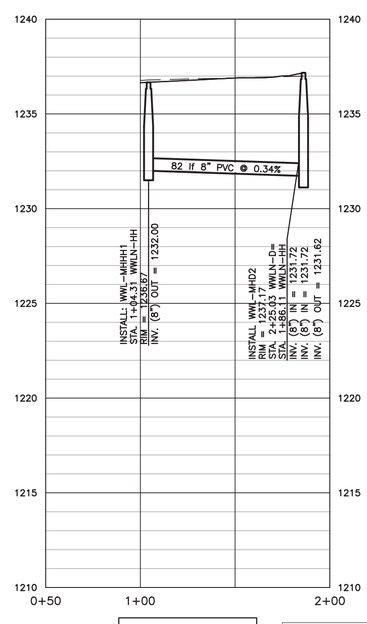


Waste Water Pipe Capacity Calculations											
Downstream of Man Hole	Station	LUEs (215 gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
HH1	1+00.00	5	0.747	2.676	1.500	0.729	3.405	3.08%	8	0.31	7.9

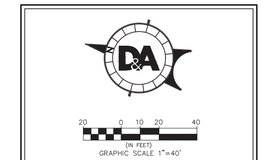
WWLN-HH

SCALE: 1"=40'



WWLN-HH
H SCALE: 1"=40'
V SCALE: 1"=4'

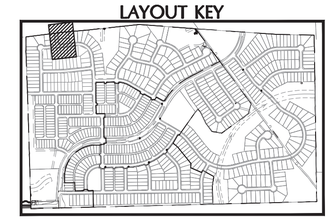
PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE



LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WASTEWATER PLAN
& PROFILE
WWLN-HH

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
137
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_WASTEWATER.dwg
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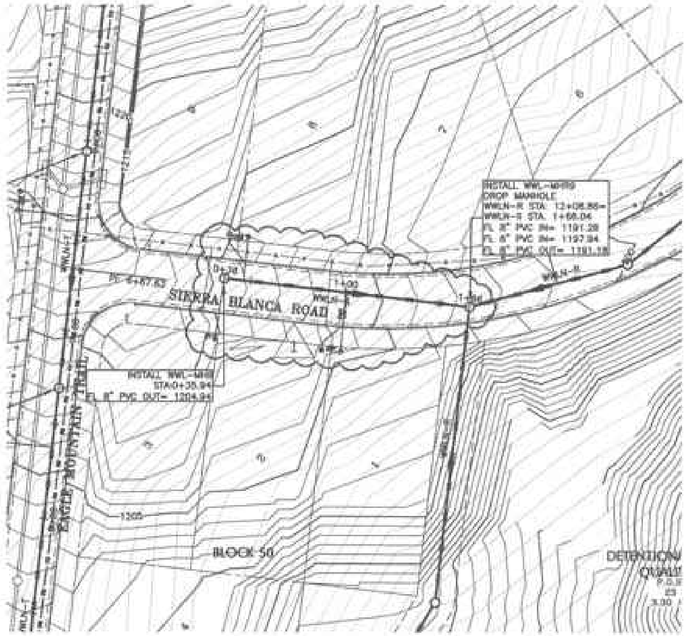
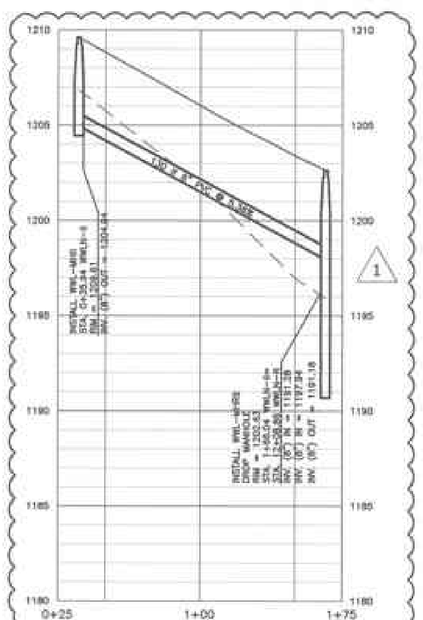


Wastle Water Pipe Capacity Calculations												
Downstream of Man-Hole	Station	LUE's (LE's gpd)	ADF (gpm)	PDWF (gpm)	Infiltration Area (acre)	ADWF (gpm)	PWWF (gpm)	Slope	Pipe Dia. (in.)	Normal Depth (in.)	Full Flow Velocity (fps)
0	1+68.38	9	0.79	2.69	3.50	0.73	3.41	0.326	8	0.28	10.19

WWLN-II

SCALE: 1"=40'



WWLN-II
H SCALE: 1"=40'
V SCALE: 1"=4'

PROPOSED GRADE
EXISTING GRADE
PROPOSED WWLN
FUTURE WWLN
PIPE CROSSING
WW STRUCTURE

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY

REVISIONS:

NO.	DESCRIPTION	APPROVED (Y/N)
1	UPDATED WWLN-II & WWLN-R, UPDATED WWTP AND WATER WATER SERVICE DETAILS	5/24/2019

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Firm Registration Number: 3937

WASTEWATER
PLAN & PROFILE
WWLN-II

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

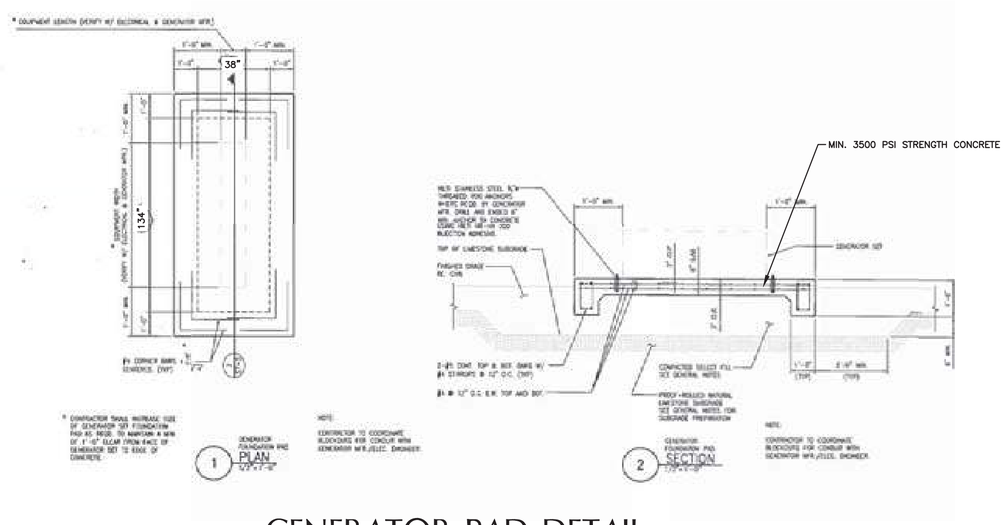
STATE OF TEXAS
JENNIFER J. PAISLEY
91100
5-24-19

Designed: JP
Drawn: AD & JBB
Reviewed: JP
Date: 2/8/2019

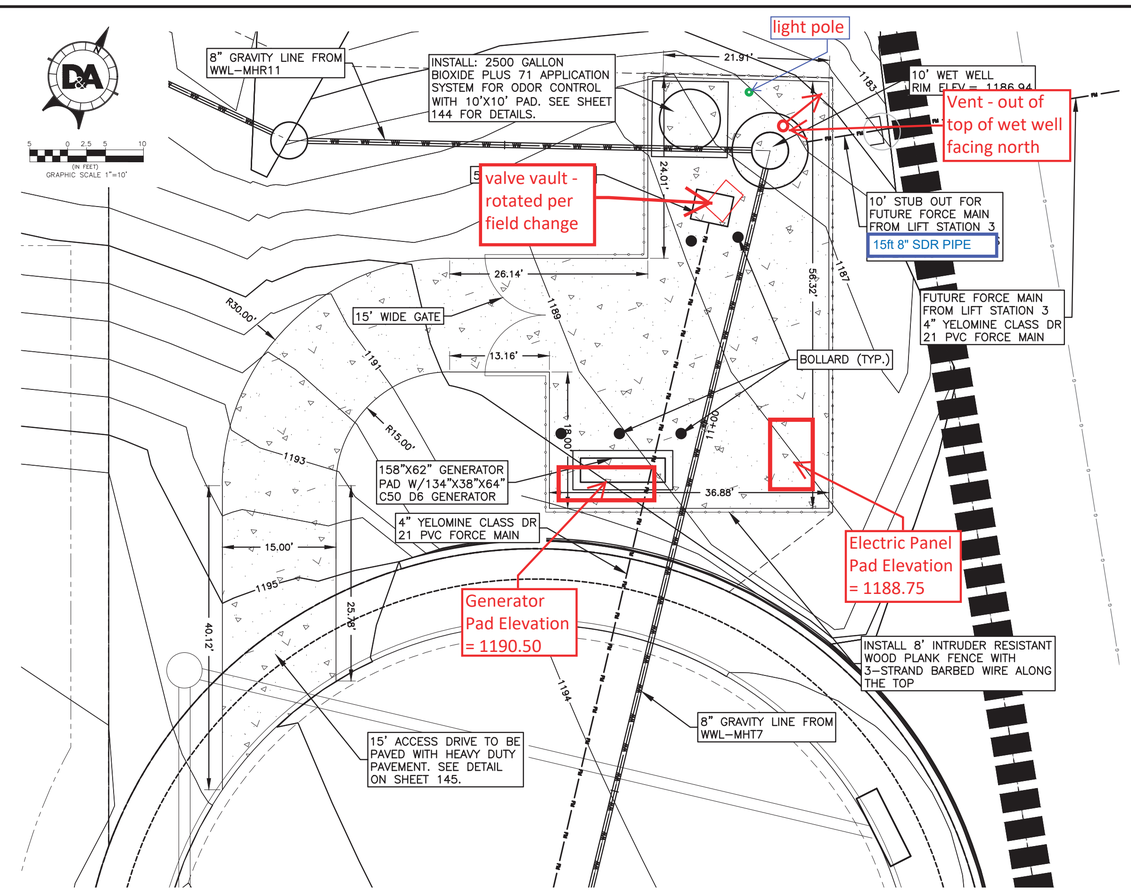
SHEET
138
OF 175

Project No.:
1691-002

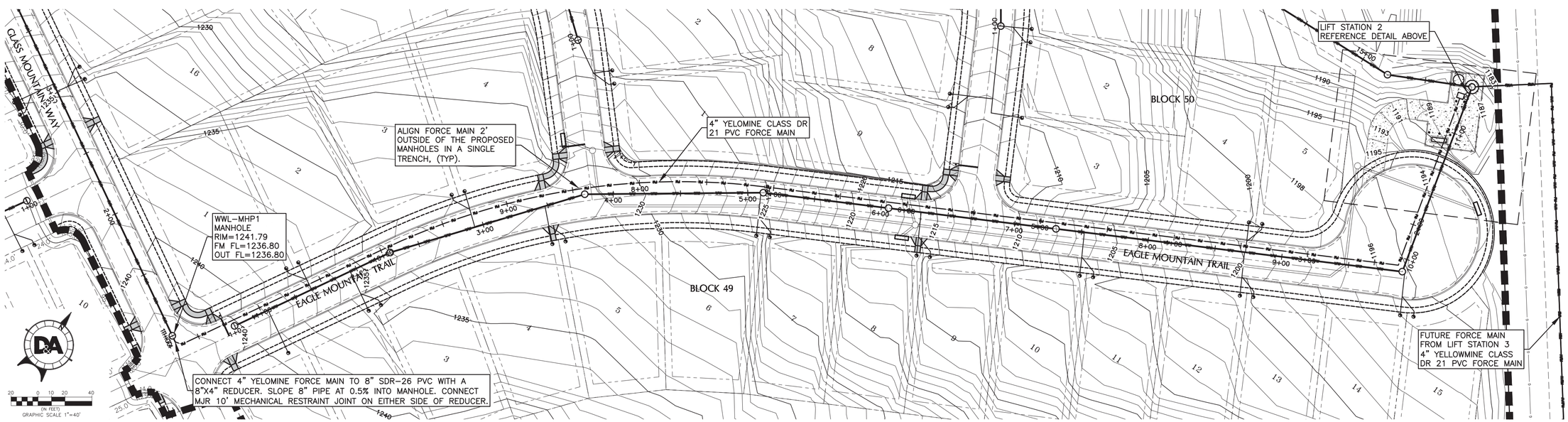
NOTE:
1. ALL FORCE MAIN PIPE SHALL BE RESTRAINED WITH CERTILOCK RESTRAINT JOINTS PER THE LENGTH REPRESENTED ON THE PLANS.
2. ALL FORCE MAIN PIPE SHALL BE MARKED WITH TRACER TAPE PER TCEQ 217.66.



GENERATOR PAD DETAIL



LIFT STATION 2 - PLAN



LIFT STATION 2 - FORCE MAIN PLAN

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LIFT STATION PLAN

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-11-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_UT_LS.dwg
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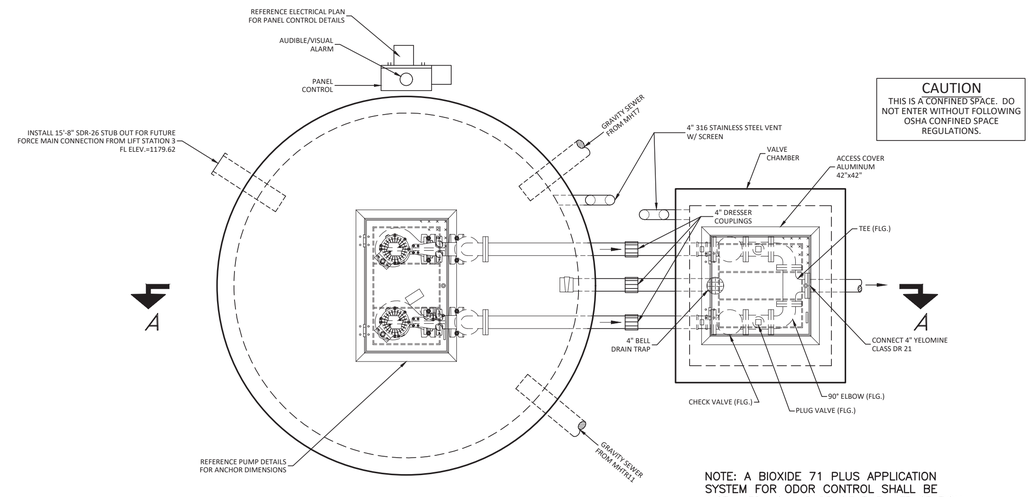


CAUTION
THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE REGULATIONS.

NOTE: A BIOXIDE 71 PLUS APPLICATION SYSTEM FOR ODOR CONTROL SHALL BE INSTALLED AS A PART OF THE LIFT STATION DESIGN. SEE DETAILS ON SHEET 141.

PLAN VIEW
NTS

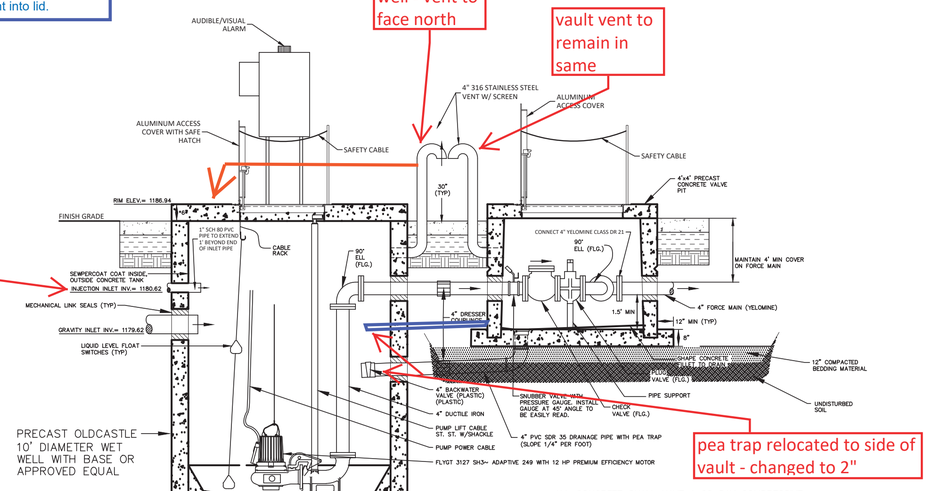
vents may be modified as needed for installation, including, but not limited to, over-coring hole for vent at least 4" and bolting vent into lid.

relocate vent to top of wet well - vent to face north

vault vent to remain in same

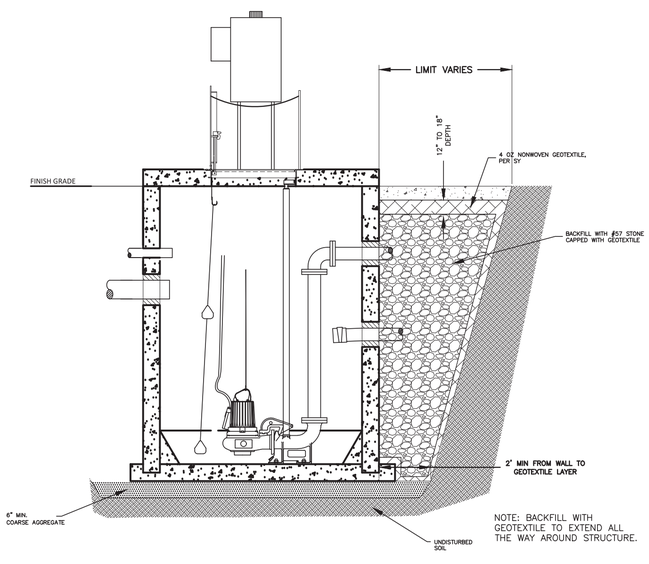
elevation change to 1181.62

pea trap relocated to side of vault - changed to 2"



ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTMA615 GRADE 60, A706 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. WATER TABLE IS AT 3'-0" BELOW GRADE FOR STANDARD STRUCTURAL DESIGN. THE STANDARD DESIGN IS BASED ON THE BASE AT ANY ELEVATION UP TO 40.0 FEET BELOW FINISHED GRADE. THE STRUCTURE SHALL BE PLACED ON A COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES.

SECTION VIEW A-A
NTS



NOTE: BACKFILL WITH GEOTEXTILE TO EXTEND ALL THE WAY AROUND STRUCTURE.

ALTERNATE WET WELL DESIGN (EXCESS GROUNDWATER) - SECTION VIEW

NOTES:

WET WELL SHALL BE COATED IN SEWPERCOAT CEMENTITIOUS LINING, OR APPROVED EQUAL.

ALL DUCTILE IRON PIPE INSIDE OF THE WET WELL AND VALVE VAULT, AND THE BURIED PIPE BETWEEN THE TWO SHALL BE COATED WITH COAL TAR.

WET WELL AND VALVE VAULT SHALL BE 6 INCHES ABOVE FINISHED GRADE.

PEA TRAPS SHALL BE INSTALLED IN THE VALVE VAULT DRAIN BETWEEN THE VAULT AND WET WELL.

ALL PIPING IN THE WET WELL AND VALVE VAULT IS CLASS 53, DUCTILE IRON CEMENT LINED, DUCTILE IRON PIPE, UNLESS OTHERWISE SHOWN OR SPECIFIED.

LOCATE ANCHOR BOLTS USING CLEAR INSIDE EDGE OF ACCESS AND CENTER LINE OF PUMP AS REF. POINT. BOLT LOCATIONS MUST BE HELD TO MAINTAIN EXACT POSITION OF PUMP RELATIVE TO ACCESS FRAME.

PRE APPROVED PUMP: FLYGT NP 3127 HT 3~ ADAPTIVE 249 PUMP WITH 12 HP PREMIUM EFFICIENCY MOTOR
PUMP DESIGN FLOW = 215 GPM
MAX TOTAL DYNAMIC HEAD = 97.3 FEET
MAX STATIC HEAD = 60.8 FEET

LEVEL SWITCH ELEVATIONS

LS-5	HIGH LEVEL ALARM	1178.42
LS-4	LAG PUMP START	1177.92
LS-3	LEAD PUMP START	1176.92
LS-2	ALL PUMPS STOP	1176.00
LS-1	LOW LEVEL ALARM	1175.50

LIFT STATION 2(MECHANICAL DETAILS)
SCALE: NONE

D&A DOUCET & ASSOCIATES
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7401 B. Highway 71 W, Suite 160
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Firm Registration Number: 3937

LIFT STATION
MECHANICAL DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

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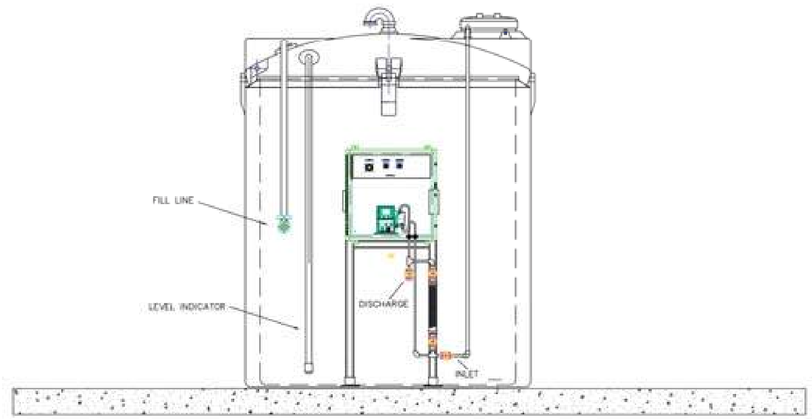


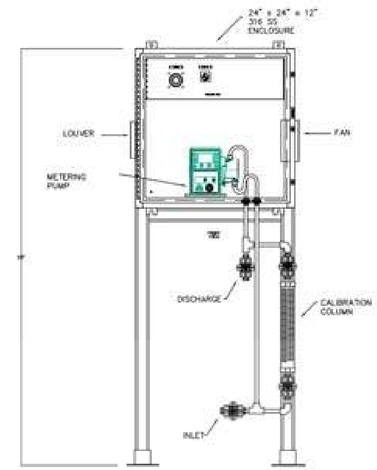
ENVIRONMENTAL IMPROVEMENTS
EI²

REVISIONS

DRAWING INFORMATION

ODOR CONTROL SYSTEM

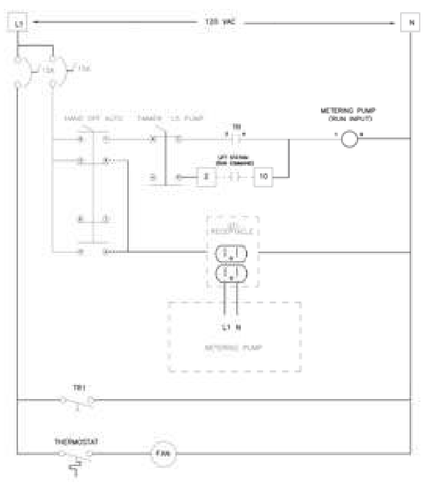
2500 GAL DW TANK

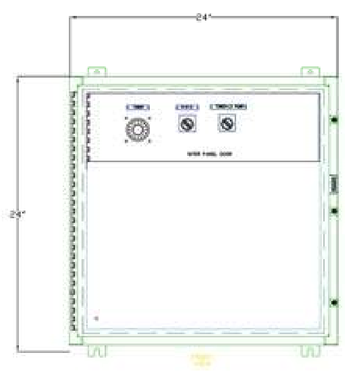


ENVIRONMENTAL IMPROVEMENTS
EI²

ODOR CONTROL SYSTEM

NOTE: METERING PUMPS SHALL BE AS MANUFACTURED BY WATSON MARLOW, SIEMENS, EMEC, MILTON ROY, PULSAFEEDER, OR APPROVED EQUAL.



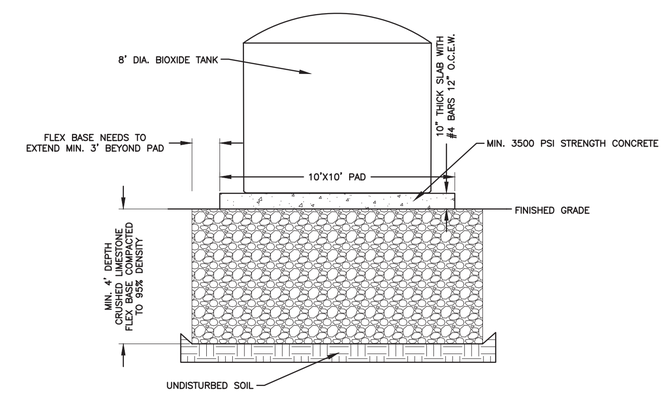


ENVIRONMENTAL IMPROVEMENTS
EI²

REVISIONS

DRAWING INFORMATION

ELECTRICAL DRAWING



BIOXIDE TANK PAD DETAIL

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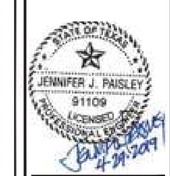
LIFT STATION ODOR CONTROL DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

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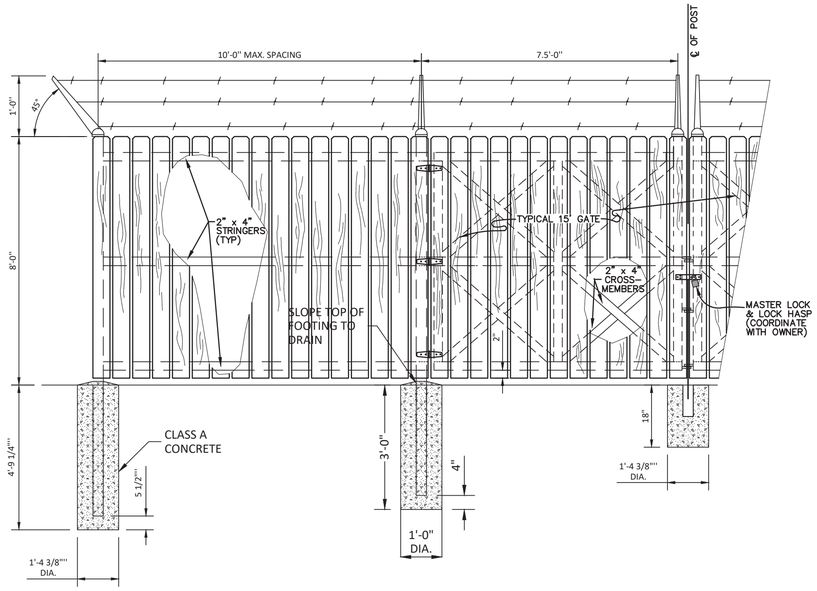
User: JHELMBURG
Last Modified: Apr. 29, 19 - 13:37
Plot Date/Time: Apr. 29, 19 - 13:47:10

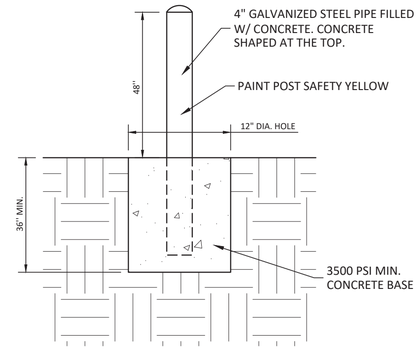
FENCE NOTES:

1. ALL POSTS AND TUBES SHALL BE 2" I.D. (2 3/8" O.D.) GALVANIZED SCH. 40 PIPE.
2. STRINGER SHALL BE OSMOSIS TREATED OR PENTA TREATED PINE, TO BE APPROVED BY ENGINEER.
3. ALL METAL FASTENERS SUCH AS BOLTS, NAILS, HINGES, HASPS, ETC. SHALL BE HOT DIPPED GALVANIZED.
4. FENCE DIRECTION AS NOTED ON PLANS OR AS DIRECTED BY OWNER.
5. SPLICE STRINGERS AT POSTS ONLY.
6. BARB WIRE TO BE 4-POINT 3-STRAND.
7. TENSION WIRE TO BE TOP & BOTTOM, 7 GA. COILED SPRING.
8. TRUSS TO BE 3/8".



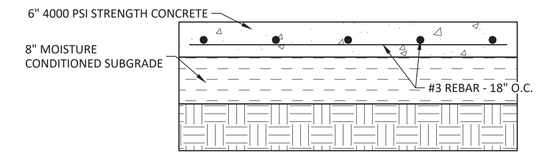
8' WOOD SECURITY FENCE

SCALE: NONE



4" BOLLARD DETAIL

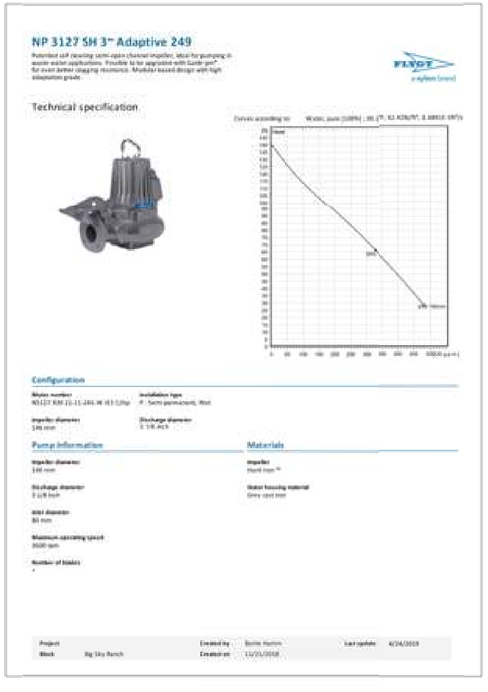
SCALE: NONE

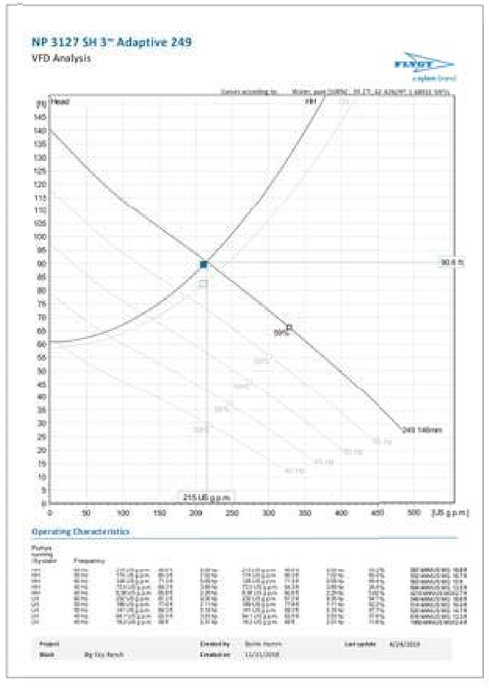


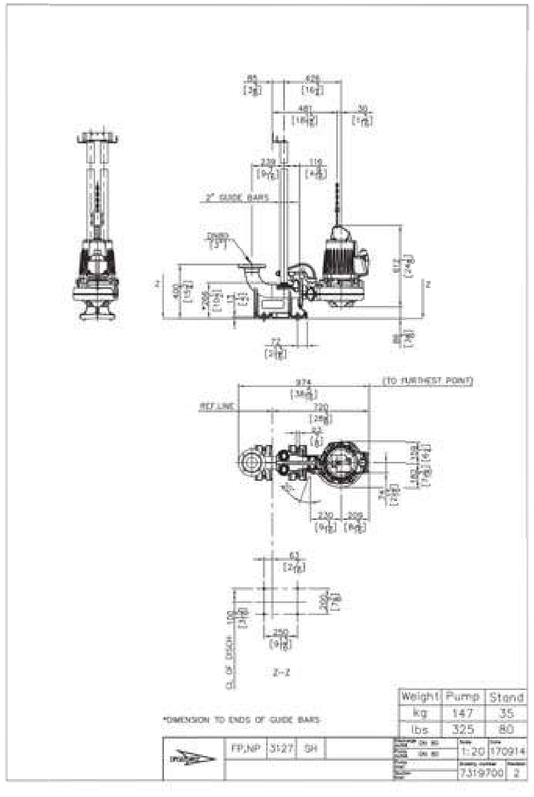
HEAVY DUTY PAVEMENT SECTION

SCALE: NONE

NOTE: HEAVY DUTY PAVEMENT FOR LIFT STATION DRIVES AND YARDS ONLY







LIFT STATION 2 PUMP

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Firm Registration Number: 3937

LIFT STATION DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-29-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
142
OF 175

Project No: 1691-002

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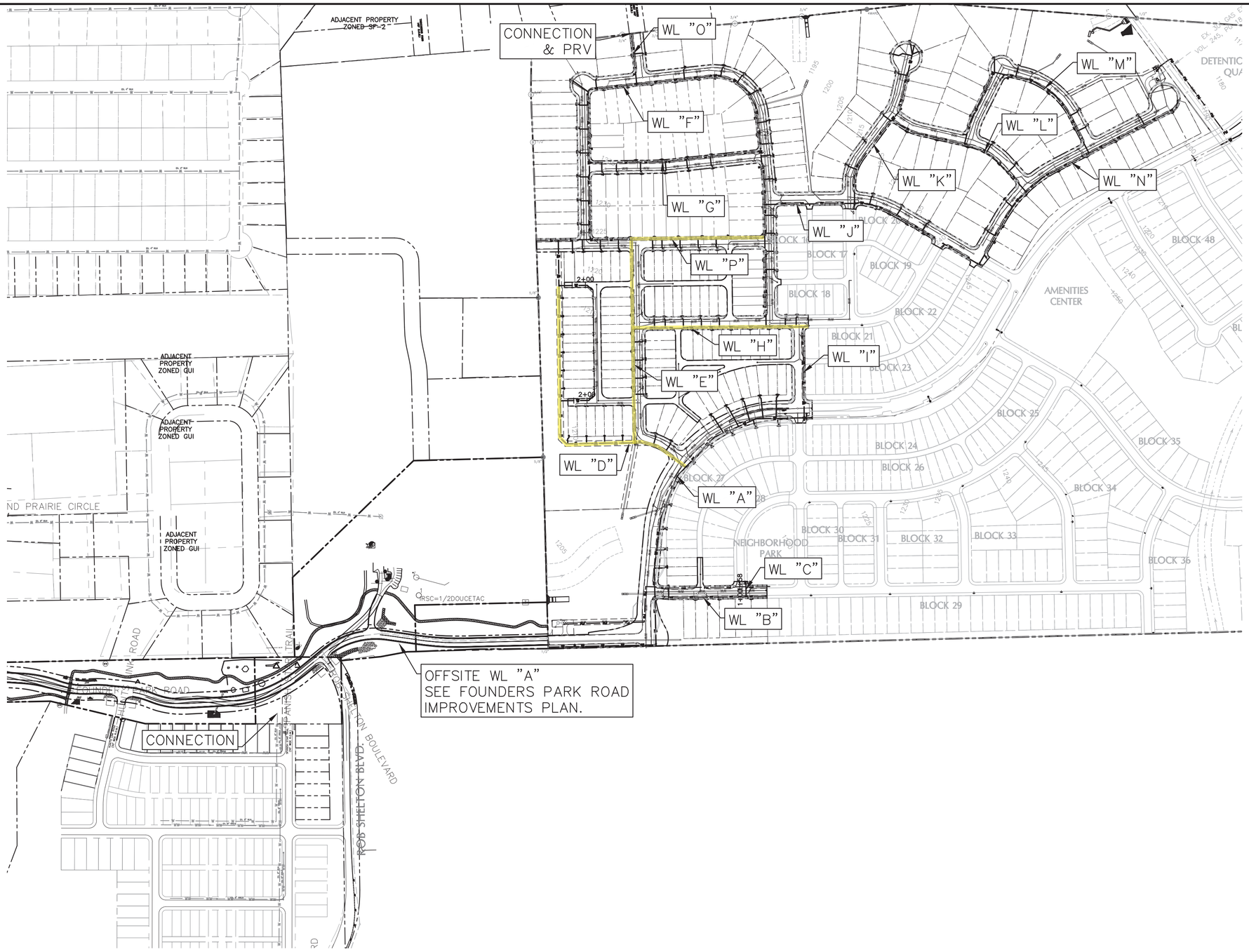

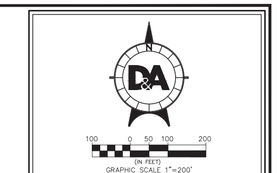

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE

WATER LINE LENGTH TABLE

LINE	LF	SIZE	TYPE
A	1638.39	12""	AWA C900 DR14
B	419.00	8"	AWA C900 DR14
C	57.52	8"	AWA C900 DR14
D	1251.54	8"	AWA C900 DR14
E	767.00	8"	AWA C900 DR14
F	2074.45	8"	AWA C900 DR14
G	645.99	8"	AWA C900 DR14
H	658.26	8"	AWA C900 DR14
I	351.68	8"	AWA C900 DR14
J	878.90	8"	AWA C900 DR14
K	380.04	8"	AWA C900 DR14
K	269.03	6"	AWA C900 DR14
L	592.05	8"	AWA C900 DR14
M	800.75	8"	AWA C900 DR14
N	701.00	8"	AWA C900 DR14
N	308.56	6"	AWA C900 DR14
O	193.83	8"	AWA C900 DR14
P	859.80	8"	AWA C900 DR14

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OVERALL WATER LAYOUT PLAN

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 143 OF 175

Project No.: 1691-002

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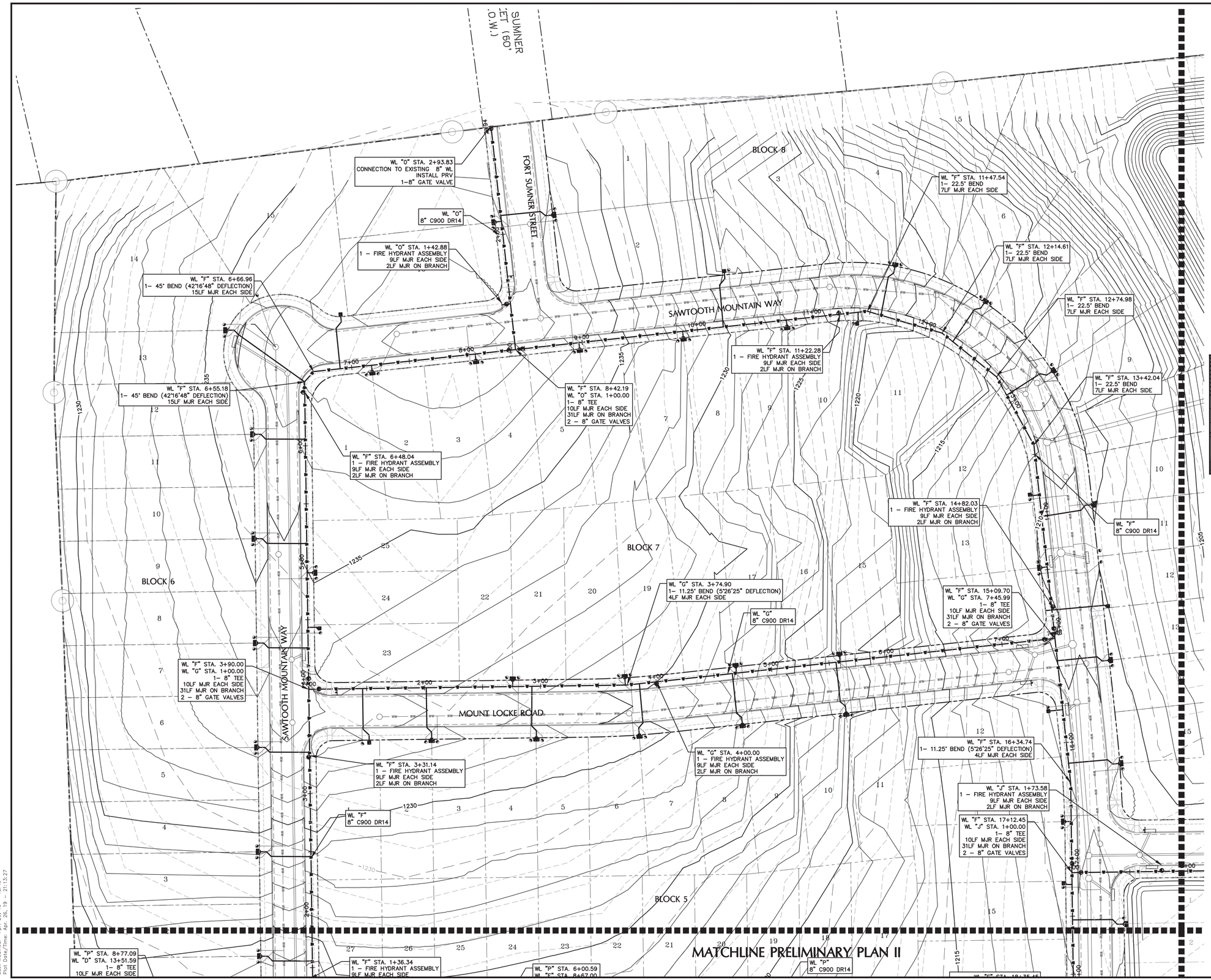
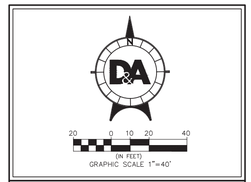
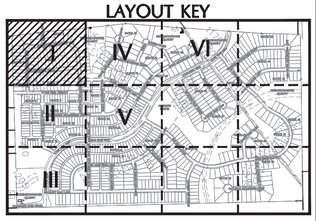




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



NOTE: ALL STUB–OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

ABBREVIATIONS:
WL = WATERLINE
PRV= PRESSURE RELEASE VALVE
ARV= AIR RELEASE VALVE

MATCHLINE PRELIMINARY PLAN IV

WATER LINE LENGTH TABLE

LINE	LF	SIZE	TYPE
A	1638.39	12""	AWA C900 DR14
B	419.00	8"	AWA C900 DR14
C	57.52	8"	AWA C900 DR14
D	1251.54	8"	AWA C900 DR14
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J	878.90	8"	AWA C900 DR14
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N	701.00	8"	AWA C900 DR14
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WATER LAYOUT I

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
144
OF 175

Project No:
1691-002

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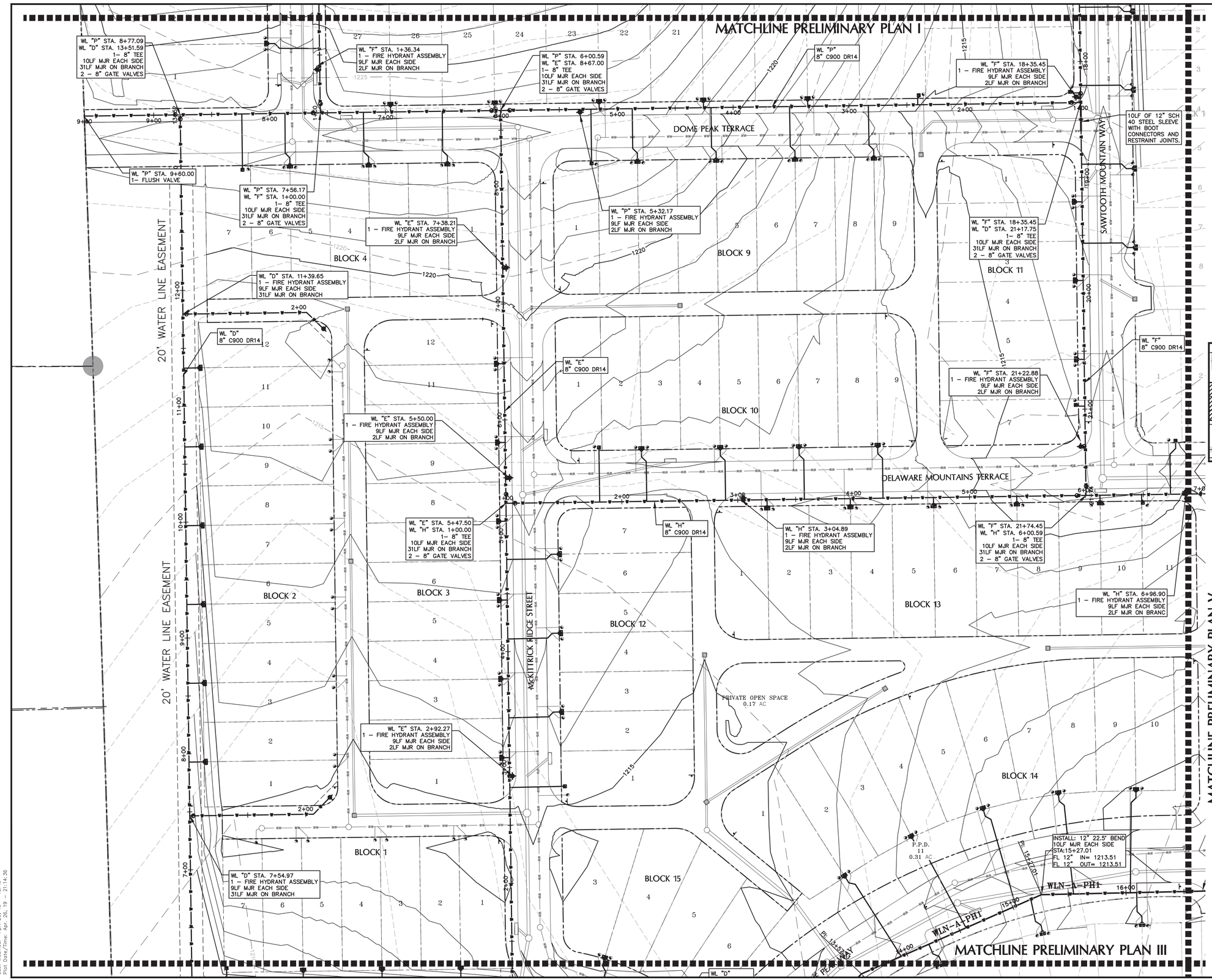
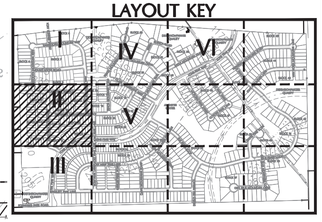


LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

GRAPHIC SCALE 1"=40'

LAYOUT KEY



ABBREVIATIONS:
WL = WATERLINE

NOTE: ALL STUB-OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

WATER LINE LENGTH TABLE

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F	2074.45	8"	AWA C900 DR14
g	645.99	8"	AWA C900 DR14
H	658.26	8"	AWA C900 DR14
I	351.68	8"	AWA C900 DR14
J	878.90	8"	AWA C900 DR14
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K	269.03	6"	AWA C900 DR14
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N	308.56	6"	AWA C900 DR14
O	193.83	8"	AWA C900 DR14
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WATER LAYOUT II

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
61109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
145
OF 175

Project No:
1691-002

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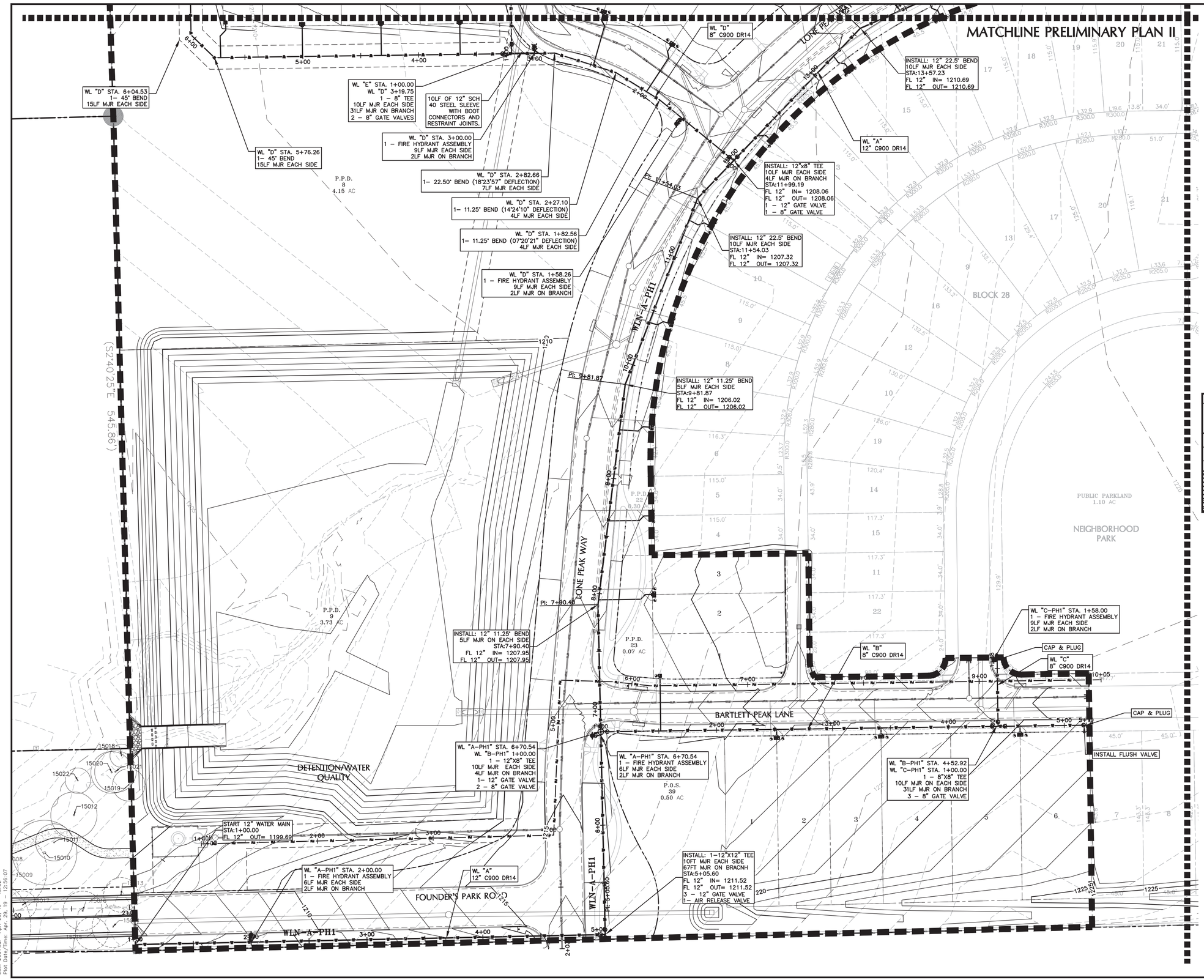

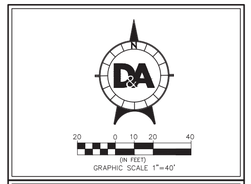

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
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- EASEMENTS
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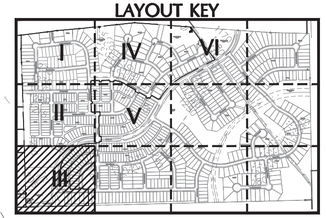
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



NOTE: ALL STUB–OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

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I	351.68	8"	AWA C900 DR14
J	878.90	8"	AWA C900 DR14
K	380.04	8"	AWA C900 DR14
K	269.03	6"	AWA C900 DR14
L	592.05	8"	AWA C900 DR14
M	800.75	8"	AWA C900 DR14
N	701.00	8"	AWA C900 DR14
N	308.56	6"	AWA C900 DR14
O	193.83	8"	AWA C900 DR14
P	859.80	8"	AWA C900 DR14

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WATER LAYOUT III

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4-24-2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET 146 OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-WTR_40SCALE.dwg
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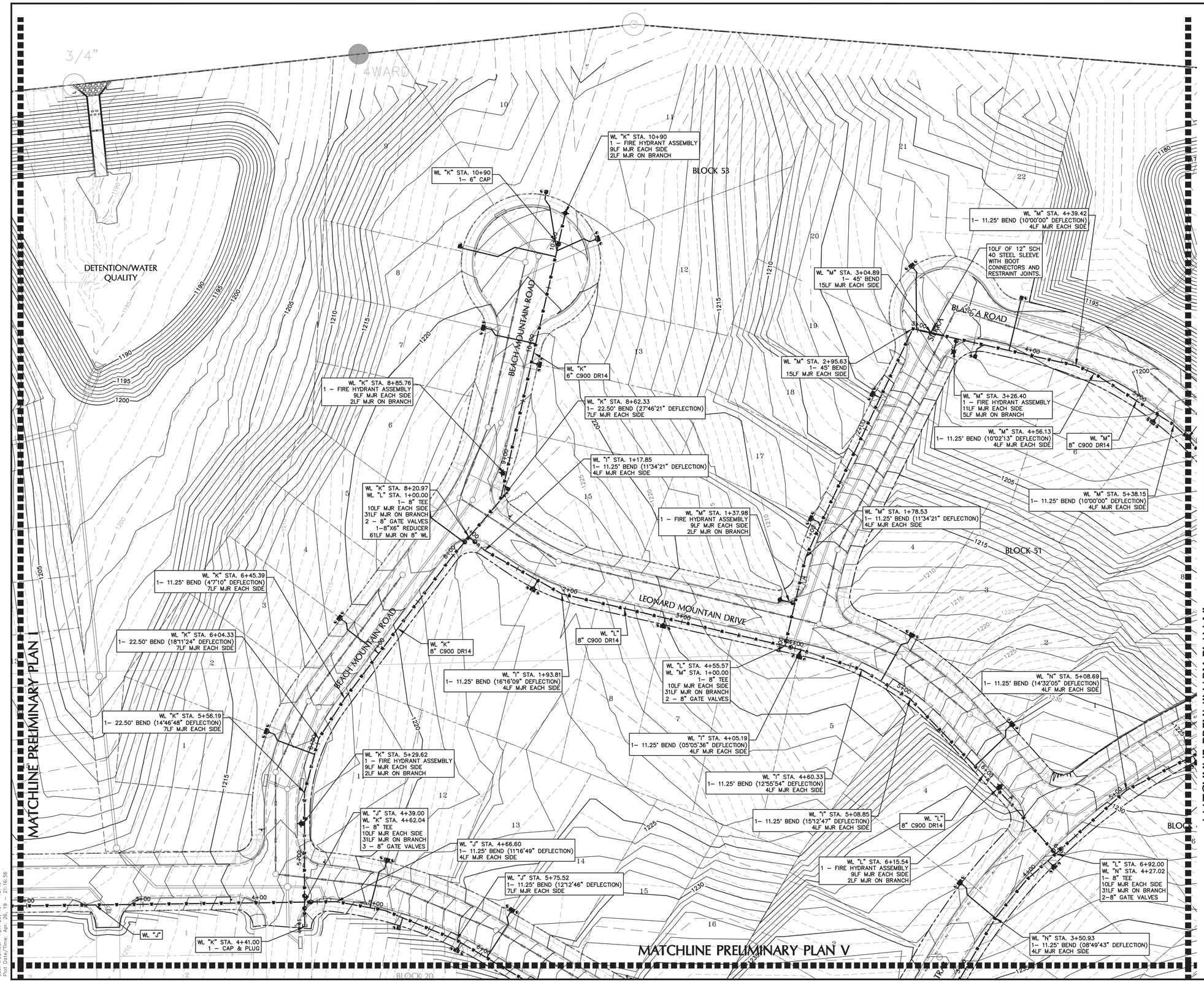
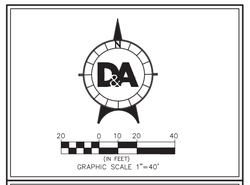
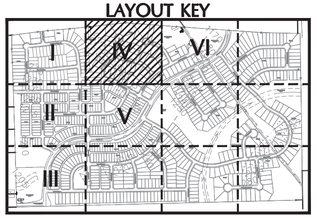




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



NOTE: ALL STUB-OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

ABBREVIATIONS:
WL = WATERLINE

WATER LINE LENGTH TABLE

LINE	LF	SIZE	TYPE
A	1638.39	12""	AWA C900 DR14
B	419.00	8"	AWA C900 DR14
C	57.52	8"	AWA C900 DR14
D	1251.54	8"	AWA C900 DR14
E	767.00	8"	AWA C900 DR14
F	2074.45	8"	AWA C900 DR14
g	645.99	8"	AWA C900 DR14
H	658.26	8"	AWA C900 DR14
I	351.68	8"	AWA C900 DR14
J	878.90	8"	AWA C900 DR14
K	380.04	8"	AWA C900 DR14
K	269.03	6"	AWA C900 DR14
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www.doucetengineers.com
Firm Registration Number: 3937

WATER LAYOUT IV

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
147
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-WTR_40SCALE.dwg
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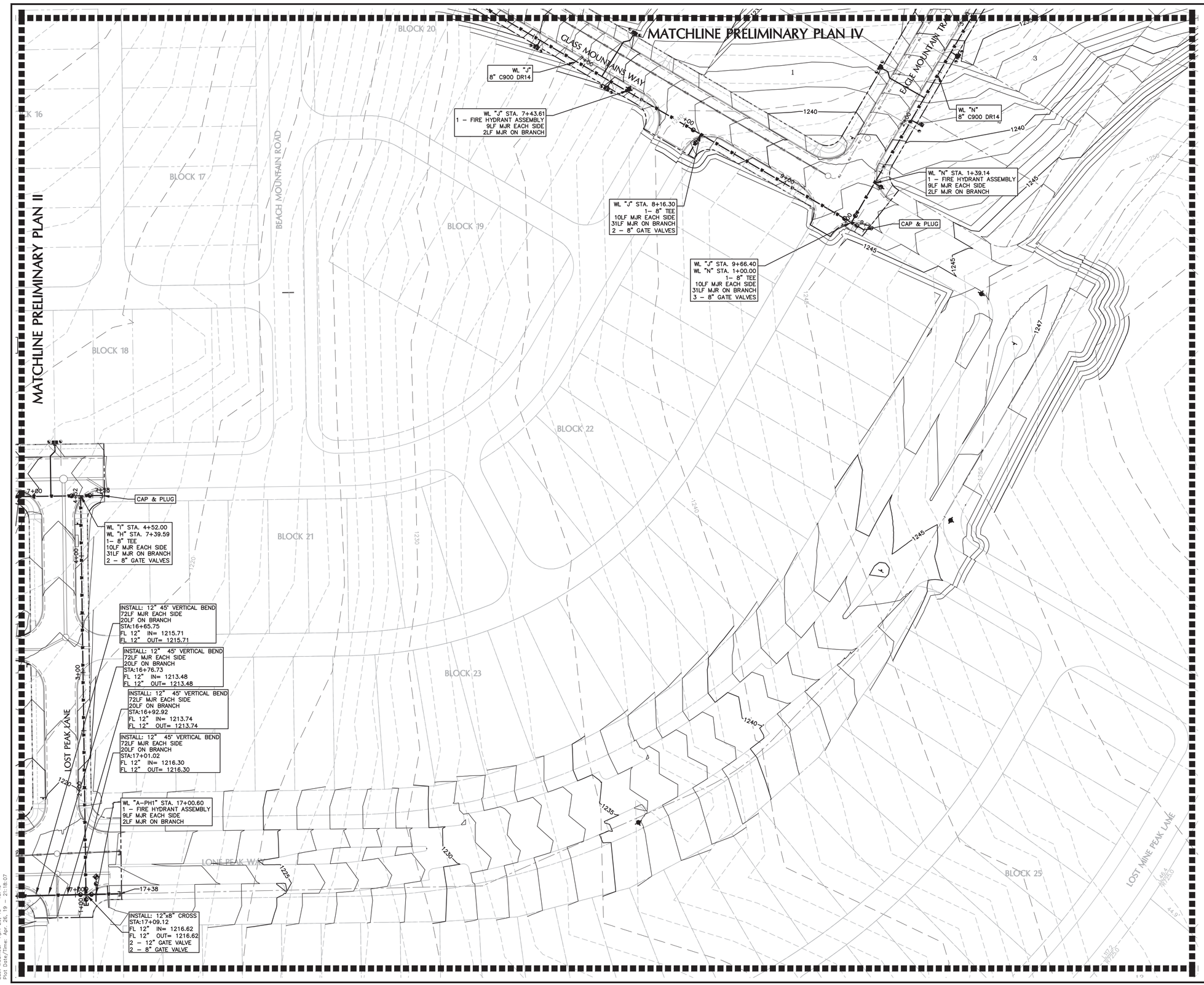
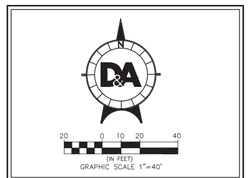
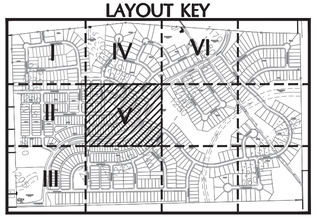




LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
- PROPOSED SIDEWALK
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



NOTE: ALL STUB–OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

ABBREVIATIONS:
WL = WATERLINE

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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WATER LAYOUT V

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
148
OF 175

Project No:
1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-WTR_40SCALE.dwg
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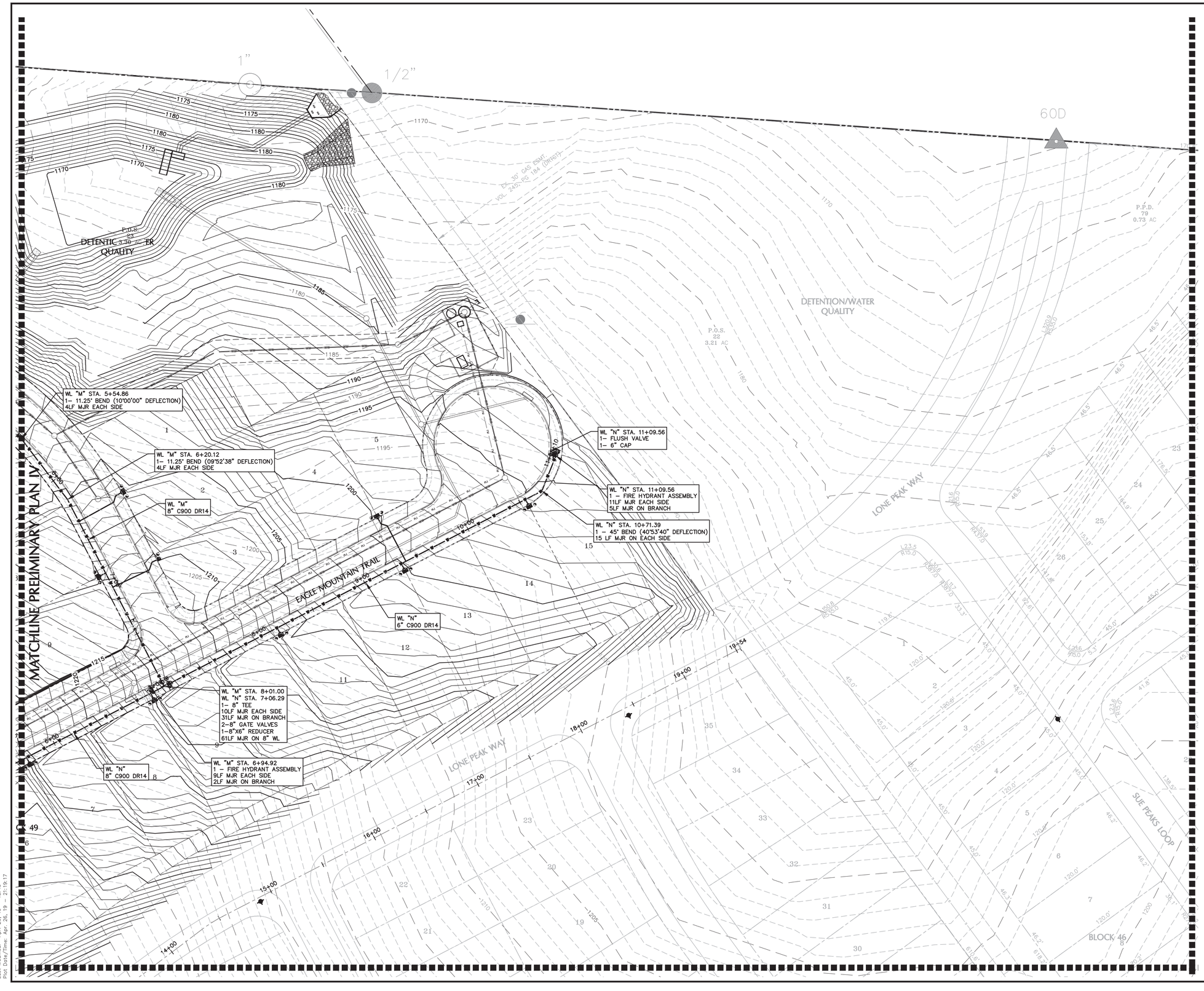

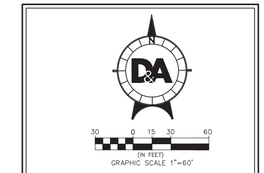

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
- EASEMENTS
- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
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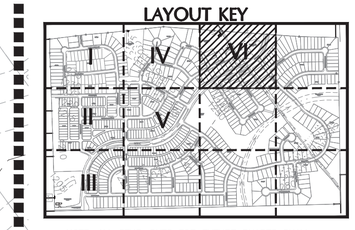
- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

LAYOUT KEY



NOTE: ALL STUB–OUTS FOR FUTURE PHASES SHALL BE EXTENDED 5' BEYOND PAVEMENT.

ABBREVIATIONS:
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N	308.56	6"	AWA C900 DR14
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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WATER LAYOUT VI

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
149
OF 175

Project No.:
1691-002

Drawing: P:\1691-002\CADD\eng\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1-WTR_40SCALE.dwg
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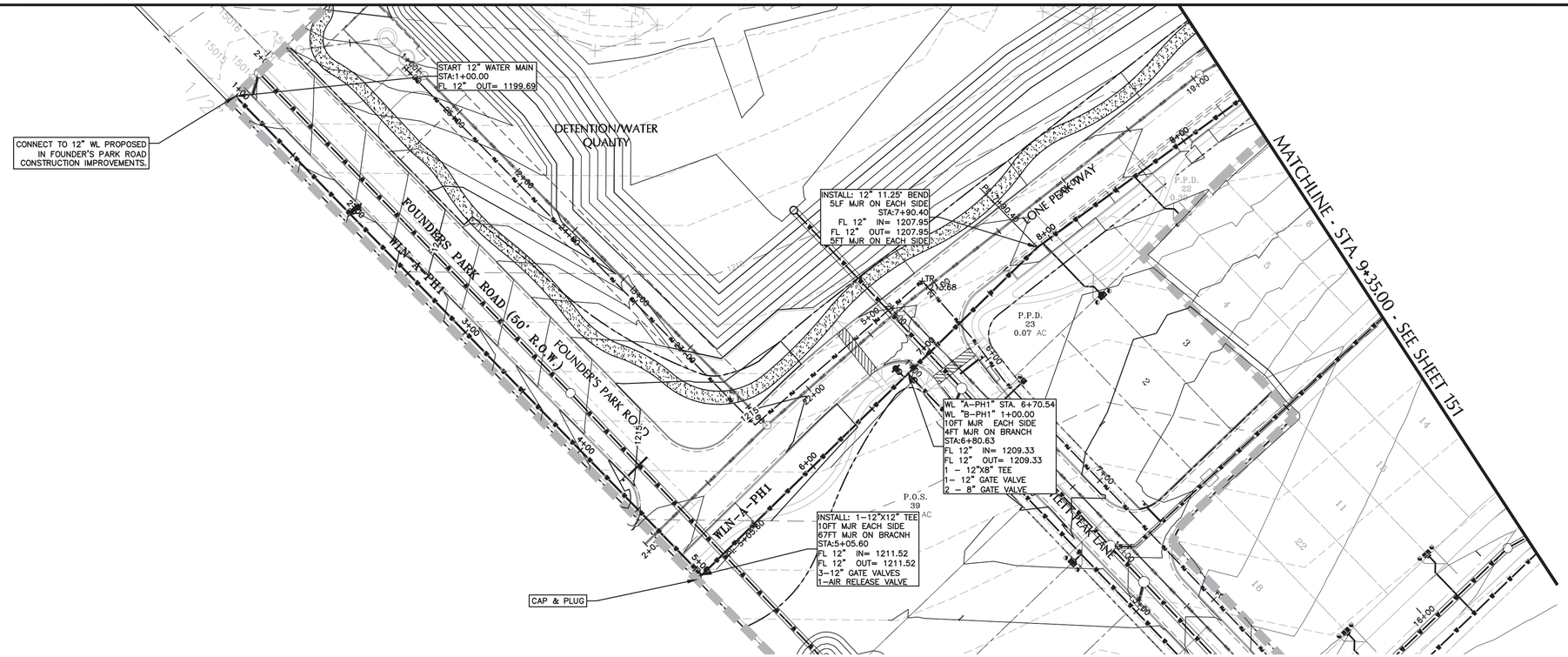
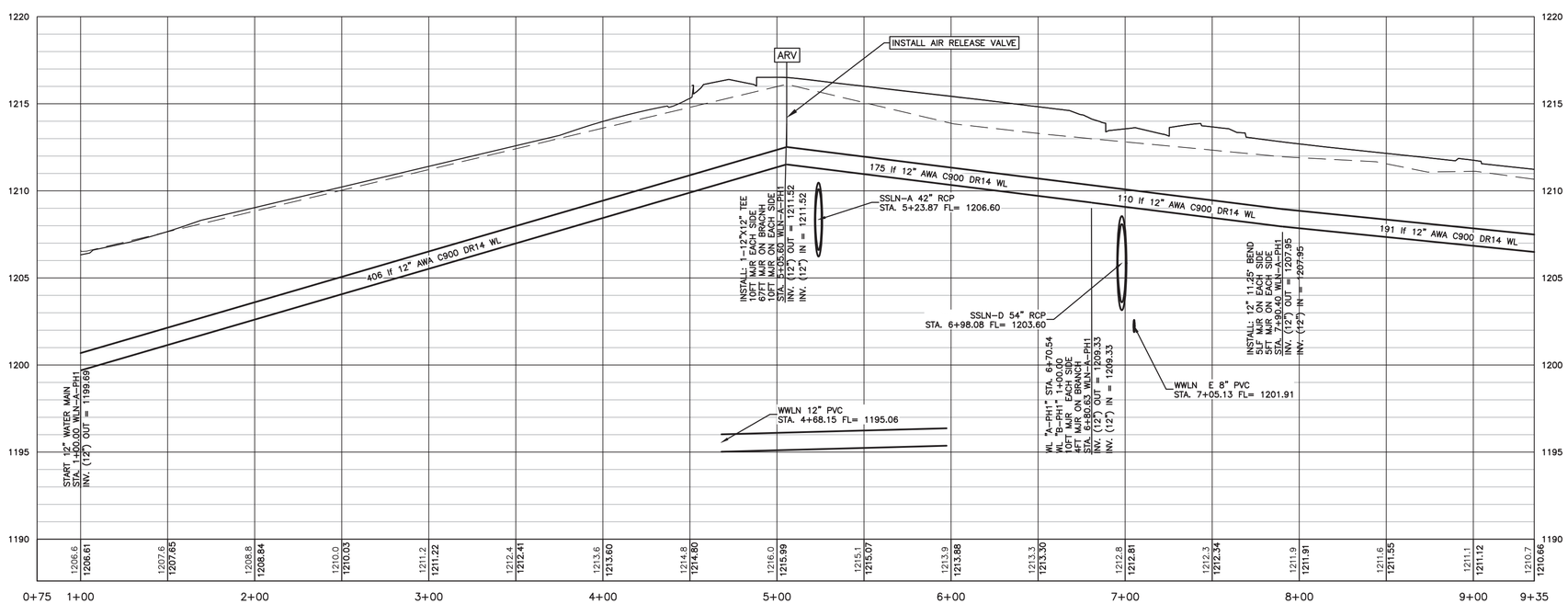


WATER LINE A-PH1

SCALE: 1"=40'



WLN-A-PH1

LEGEND

- IRON ROD FOUND
- FIRE HYDRANT
- SIGN
- POWER POLE
- DOWN GUY
- SUBDIVISION BOUNDARY
- LOT LINES
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- PROPOSED RIGHT OF WAY
- PROPOSED FACE OF CURB
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- EXISTING CONTOURS
- WATER SERVICE
- WASTEWATER SERVICE
- WATER LINE
- WASTEWATER LINE
- STORM SEWER LINE

20 0 10 20 40
(IN FEET)
GRAPHIC SCALE 1"=40'

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Civil Engineering - Entitlements - Surveying/Mapping
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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

WATER LINE WLN-A
PLAN & PROFILE A

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/29/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
150
OF 175

Project No.:
1691-002

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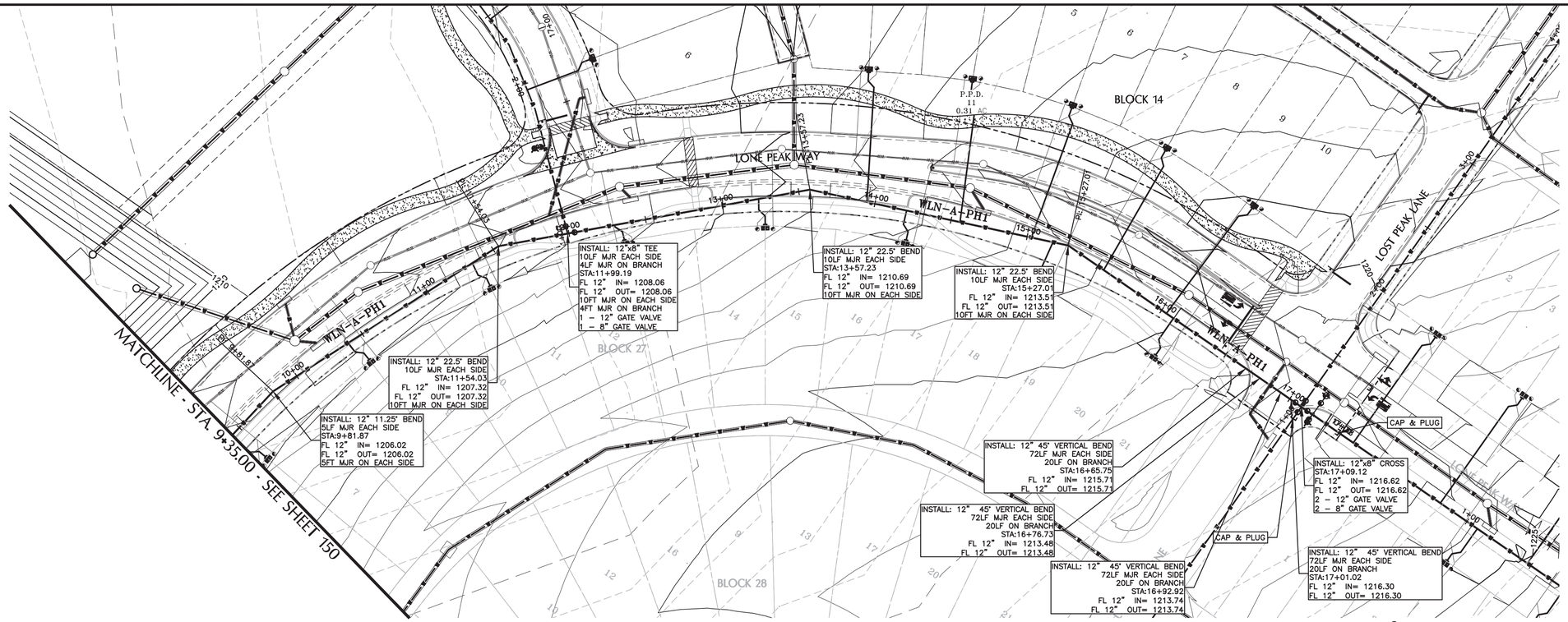
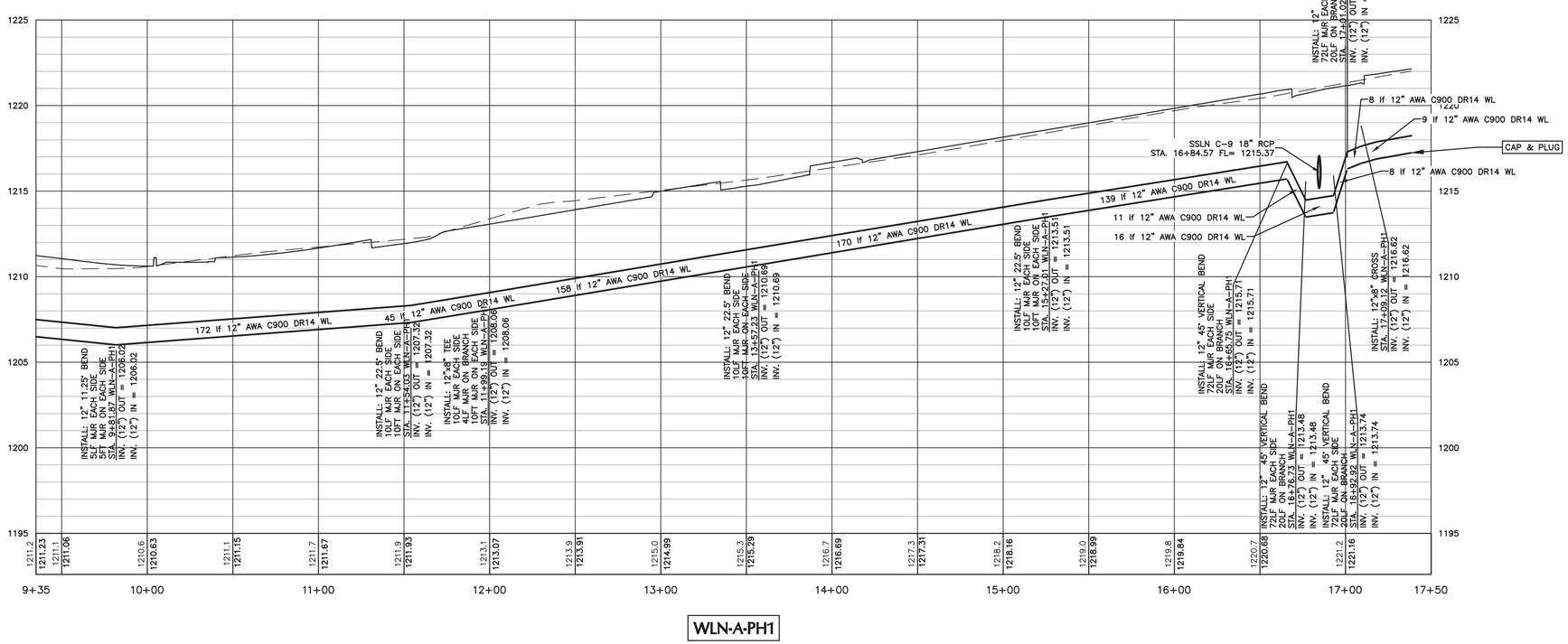


WATER LINE A-PH1

SCALE: 1"=40'



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www.doucetengineers.com
Firm Registration Number: 3937

WATER LINE WLN-A PLAN & PROFILE B

BIG SKY RANCH PHASE ONE PLAN

DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
4/26/19

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

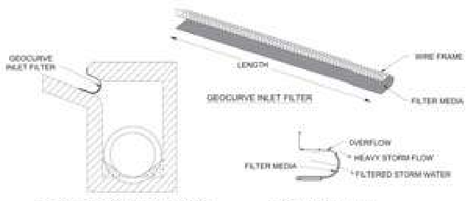
SHEET 151 OF 175

Project No: 1691-002

GeoSolutions, Inc. — Product Data Sheet

GeoCurve Inlet Filter

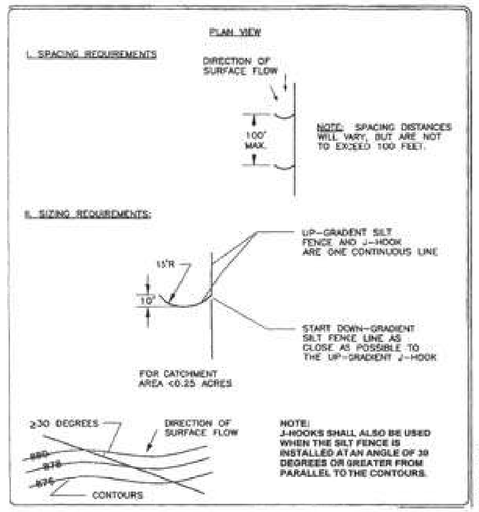
The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 12 gauge welded wire frame (2" x 4" openings) with an upper retention flange. The device effectively filters stormwater, can easily be removed for maintenance and cleaning and incorporates an overflow window for heavy storm events.

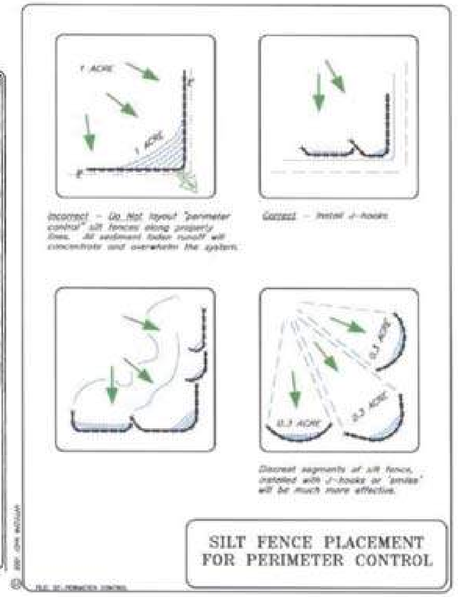


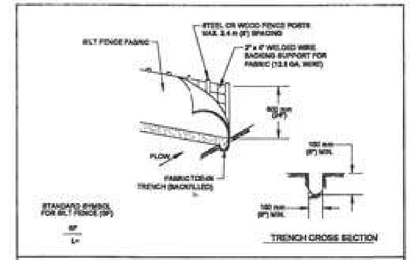
FILTER MEDIA PROPERTIES: Mono-filament Woven Filter Fabric

PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	—
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
U/V Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf

GeoSolutions, Inc. 4417 Burleson Road Austin, Texas 78744 512-330-0796

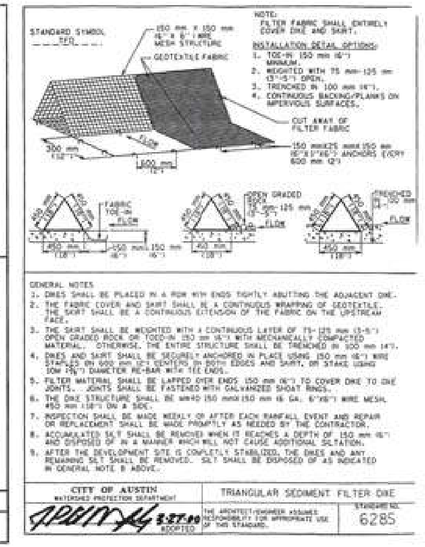






1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ARGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 600 mm (12 inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATENESS OF THIS STANDARD.	STANDARD NO. 642S-1

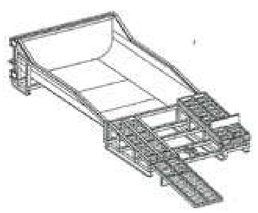


GENERAL NOTES

1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75-125 mm (3"-5") OPEN GRADED ROCK OR TOED-IN 150 mm (6") WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4").
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6") WIRE STAPLES ON 600 mm (2') CENTERS IN BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8") DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6") TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE WIRE 150 mm X 150 mm (6 GA. 6"X6") WIRE MESH. 450 mm (18") ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6") AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TRIANGULAR SEDIMENT FILTER DIKE	
3-27-10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 628S

PORTABLE CONCRETE WASHOUT CONTAINER



CONCRETE WASHOUT SYSTEMS
OR APPROVED EQUAL
PO Box 2604
Carmichael, CA. 95609
Phone: 1.877.282.7468
Fax: 1.916.244.0403
info@concretewashout.com
www.concretewashout.com
Patent Pending

DESCRIPTION
A portable, self-contained and watertight container affixed with ramps that controls, captures and contains caustic concrete wastewater and washout material.

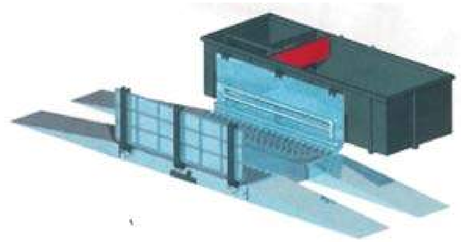
PURPOSE & OBJECTIVE
Allows trade personnel to easily washout concrete trucks, pumps and other equipment associated with cement on site and allows easy off site recycling of the same concrete materials and wastewater.

APPLICATION
Construction projects where concrete, stucco, mortar, grout and cement are used as a construction material or where cementitious wastewater is created.

MAINTENANCE
Inspect and clean out when ¾ full, not allowing the container to overflow.
Inspect wastewater level and request a vacuum if needed.
Inspect subcontractors to ensure that proper housekeeping measures are employed when washing out equipment.

SPECIFICATIONS
The container must be portable and temporary, watertight, equipped with ramps and have a holding capacity to accept washout from approximately 360 yards of poured concrete. A vacuum service must accompany washout container and be used by site superintendent as needed. A rampless container may be used in conjunction with a ramped container or by itself if a concrete pump is not needed. The wastewater must be disposed of or treated and recycled in an environmentally safe manner and in accordance with federal, state or local regulatory guidelines.

TARGETED POLLUTANTS
Caustic wastewater (high pH level near 12 units)
Suspended solids
Assorted Metals; Chromium VI, Nickel, Sulfate, Potassium, Magnesium and Calcium Compounds



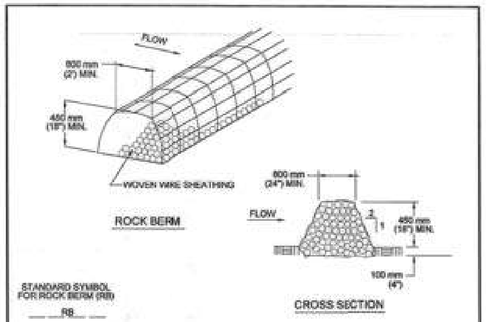
Minimizes track-out problems with the modular Wheel Wash system. MobyDick, wheel wash technology has joined forces with Rain for Rent for temporary use Wheel Wash systems on remediation, construction and any jobsite that needs the benefit of an efficient and cost effective wheel wash system.

Features:

- Automatic on-off operation via optical sensor, Easy-to-clean, spray nozzles.
- Hot dipped galvanized heavy-gauge wash platform handles 33,069 lbs per axle.
- Reduce Costs by eliminating pressure washers and labor.
- Decrease truck throughput time from 6-9 minutes to 45 seconds.
- Reduce or eliminate street sweeper hours.
- Small footprints and multiple layout configurations available to fit any jobsite.
- High flow, low pressure for superior cleaning without impact to truck seals and brakes.
- Advanced spray pattern technology cleans tires thoroughly without distorting driver visibility.

Footprint	37' x 20'
Dry weight	12,500 lbs.
Power Requirement	15.4 HP
Connected Load	35A, 480 Volts

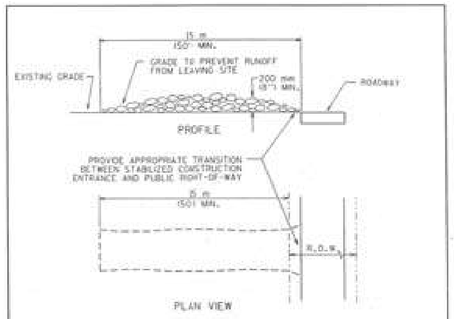
Wheel Wash Station



NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC COVER/WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:

1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
5/23/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1

D&A DOUCET & ASSOCIATES
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Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

EROSION CONTROL DETAILS

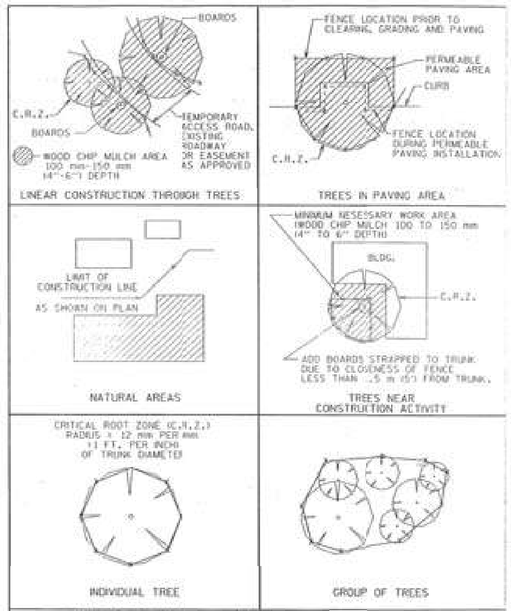
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS — JENNIFER J. PAISLEY — 91109 — LICENSED

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_D1-ES.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 – 18:48
Plot Date/Time: Apr. 26, 19 – 21:26:39



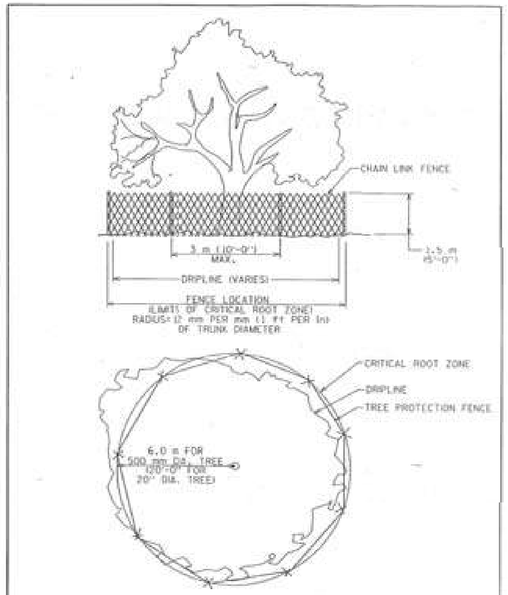
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

TREE PROTECTION FENCE LOCATIONS

11/19/99 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 610S-1



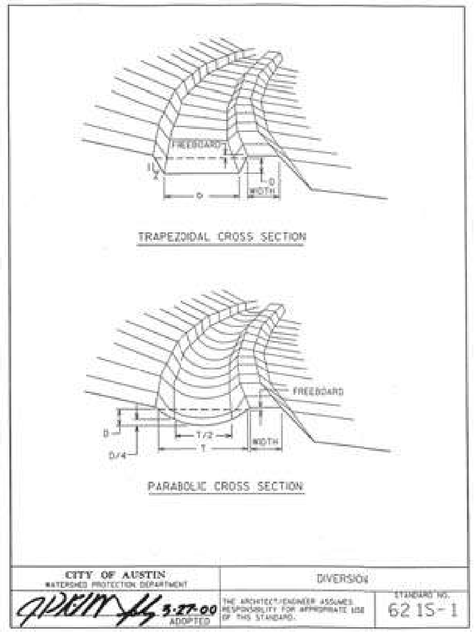
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

TREE PROPTECTION FENCE TYPE A - CHAIN LINK

11/19/99 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 610S-2



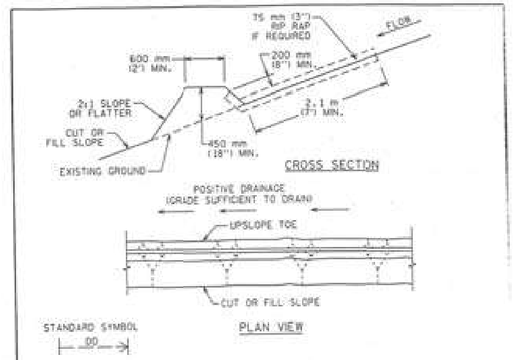
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

DIVERSION

3-27-00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 621S-1



GENERAL NOTES:

1. ALL DIKES SHALL BE MACHINE COMPACTED.
2. ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. a. DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO AN UNDISTURBED STABILIZED AREA OR INTO A LEVEL SPREADER OR GRADE STABILIZATION STRUCTURE.
   b. DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE, SUCH AS A ROCK BERM, BRUSH BERM, STONE OUTLET STRUCTURE, SEDIMENT TRAP OR SEDIMENT BASIN OR TO AN AREA PROTECTED BY ANY OF THESE PRACTICES.
4. UNLESS OTHERWISE SPECIFIED, EROSION STABILIZATION SHALL BE OPEN GRADED ROCK 75 TO 125 mm (3 TO 5 inches) IN DIAMETER EMBEDDED IN SOIL SURFACE.
5. INSPECTION SHALL BE CONDUCTED WEEKLY OR AFTER EACH RAINFALL EVENT.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

DIVERSION DIKE

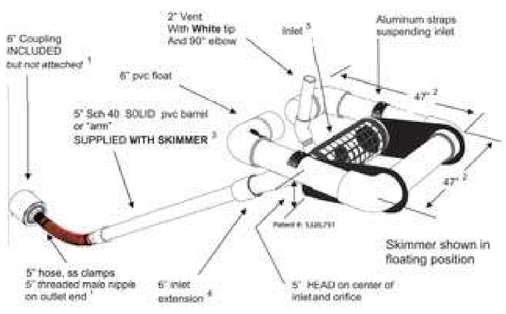
3-27-00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 622S-1

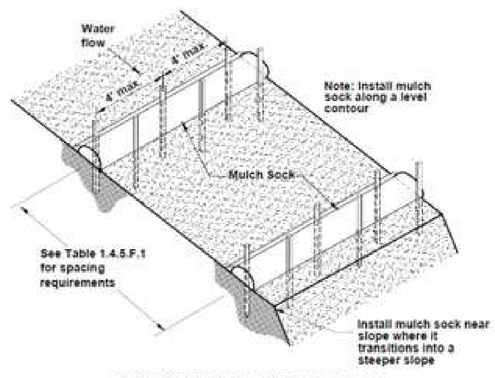
6" *Faircloth Skimmer®* Cut Sheet

J. W. Faircloth & Son, Inc.
www.FairclothSkimmer.com

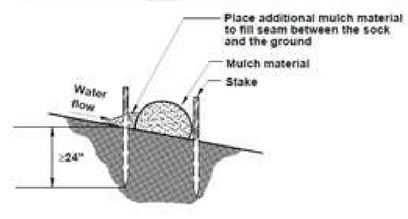


1. Hose can be attached to outlet using the threaded 5" nipple. Typical methods used: on a metal structure a steel stubout welded on the side at the bottom with a 5" threaded coupling or reducers; on a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant.
2. Dimensions are approximate, not intended as plans for construction.
3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 8' so the inlet can be pulled to the side for maintenance. If more than 12' long weight may have to be added to inlet to counter the increased buoyancy.
4. Inlet tapers down from 6" maximum inlet to a 5" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The inlet orifice can be reduced using the plug and cutter provided to control the outflow rate.
5. Inlet is 10" pipe between the straps with slots cut in the inlet and aluminum screen cover (smaller than shown in illustration) for access to the 6" inlet and orifice inside.
6. **Capacity** 51,840 cubic feet per day maximum with 6" inlet and 5" head. Inlet can be reduced by installing a smaller orifice using the plug and cutter provided to adjust flow rate for the particular basin volume and drawdown time required.
7. Shipped assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plug and attaches to outlet pipe or structure. Includes flexible hose, rope, orifice cutter, etc.

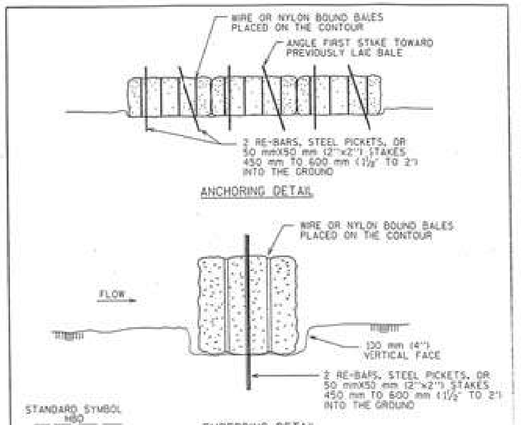
6inchCut TM 11-07 November 14, 2007



TYPICAL MULCH SOCK INSTALLATION
N.T.S.



MULCH SOCK
N.T.S.



GENERAL NOTES:

1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 100 mm (4").
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 10M (1/2") REBAR STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
4. WHEN SILT REACHES A DEPTH OF 150 mm (6"), IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AS TO NOT CREATE A SILTATION PROBLEM.
5. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE BALE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SPOIL DISPOSAL SITE.

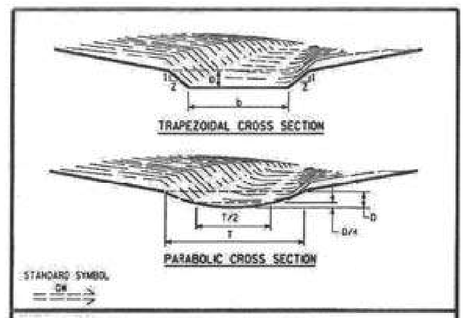
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

HAY BALE DIKE

3-27-00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 628S-1



GENERAL NOTES:

1. EXCEPT AS INDICATED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE, ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.

2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, TYPICAL SECTIONS AND CROSS-SECTION INDICATED ON THE DRAWINGS AND SHALL BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES, WHICH COULD IMPEDE NORMAL FLOW.

3. FILL SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 132S, "EMBANKMENT".

4. EARTHEN CHANNELS SHALL ALWAYS BE STABILIZED WITH THE APPROPRIATE SOIL RETENTION BLANKET WHICH SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 608S, "SOIL RETENTION BLANKET".

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

GRASS LINED SWALE

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 627S-1

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

EROSION CONTROL DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\1691002-CD-PH1_DT-ES.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
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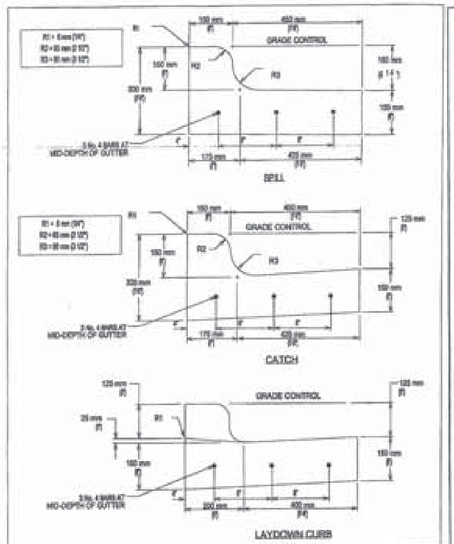
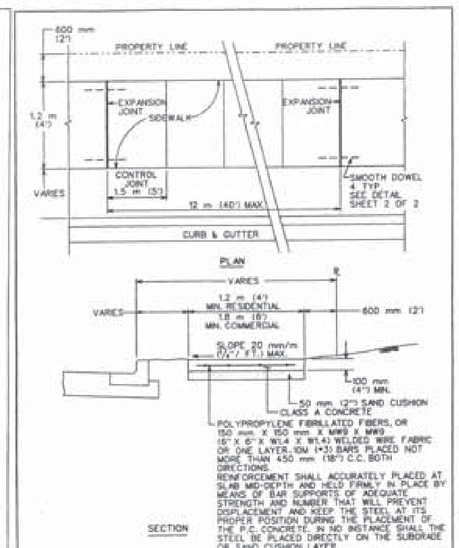


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

REINFORCED CURB AND GUTTER SECTION

ADOPTED 1/4/10 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 430S-2

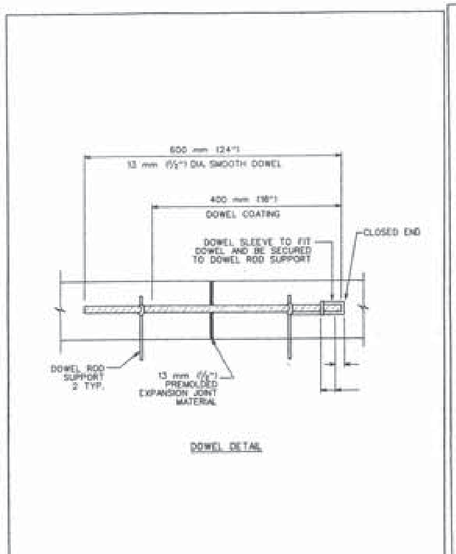


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

ADOPTED 3/26/08 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-1 1 OF 3

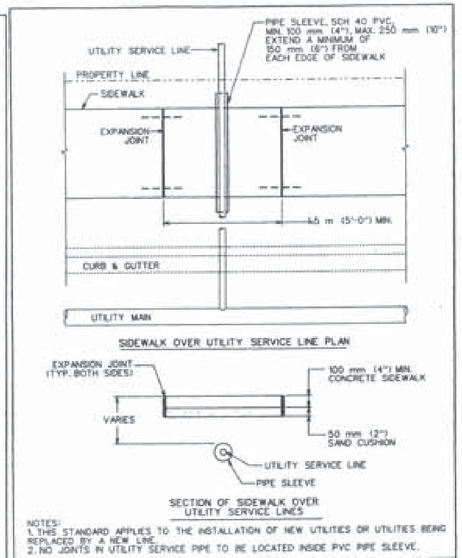


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

ADOPTED 3/26/08 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-1 2 OF 3



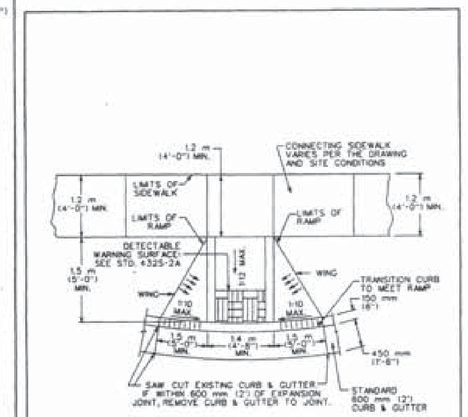
NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

ADOPTED 3/26/08 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-1 3 OF 3

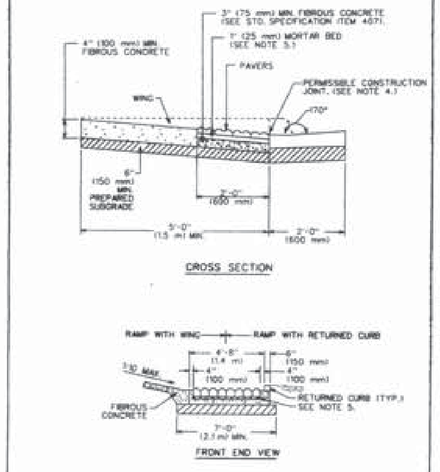


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPE 1 SIDEWALK CURB RAMP

ADOPTED 9/14/09 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-5



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

DETECTABLE WARNING-PAVER (CITY PROPERTY/EASEMENTS)

ADOPTED 6/21/07 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-2A 1 OF 2

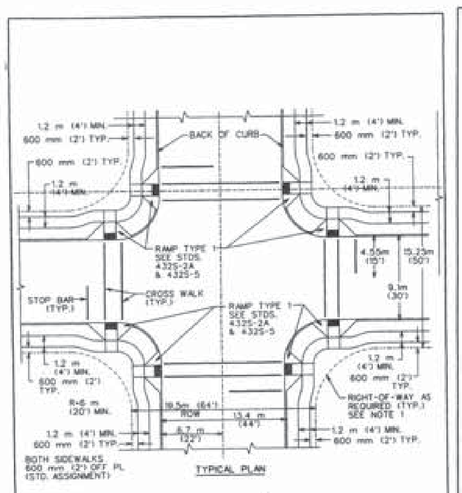
GENERAL NOTES:
1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION ON CITY PROPERTY AND EASEMENT AREAS ONLY.
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9" (23 mm), A NOMINAL HEIGHT OF 0.2" (5 mm) AND A NOMINAL CENTER TO CENTER SPACING OF 2.35" (60 mm) AND SHALL CONSTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (REF. ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVER PATTERN SHALL BE BASKET WEAVE UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
4. TYPICAL SIDEWALK WIDTHS AND CURB RADIARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO 1/4" (6 mm) JOINT SIZE. GAPS LARGER THAN 1/4" (6 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 SECTION 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.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

DETECTABLE WARNING-PAVER (CITY PROPERTY/EASEMENTS)

ADOPTED 6/21/07 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-2A 2 OF 2

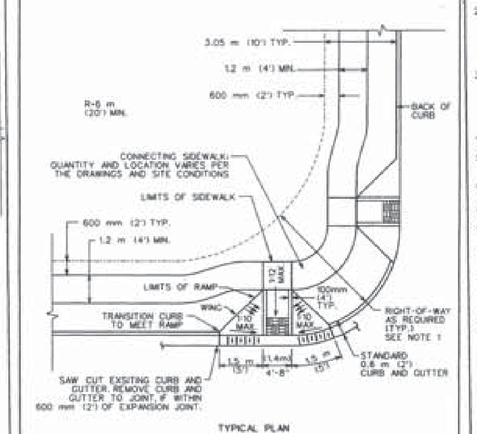


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPE 1 CURB RAMPS-FULL INTERSECTION

ADOPTED 3/13/06 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-3 1 OF 3



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPE 1 CURB RAMPS-FULL INTERSECTION

ADOPTED 3/13/06 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-3 2 OF 3

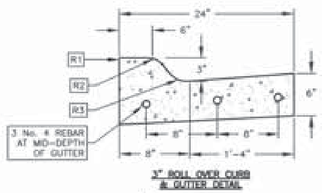
GENERAL NOTES:
1. THIS STANDARD IS APPICABLE FOR RAMP CONSTRUCTION WITHIN RIGHT-OF-WAY OR EASEMENT ONLY.
2. THIS STANDARD REPRESENTS A TYPICAL CURB RAMP DESIGN FOR A NEWLY CONSTRUCTED INTERSECTION WITH A 6 m (20') RADIUS. LARGER RADII, STREET GRADES, LIMITED SIGHT DISTANCES, STREET CLASSIFICATION, SIGNALIZATION AND OTHER FACTORS MAY REQUIRE THE ENGINEER OR DESIGNATED REPRESENTATIVE TO MODIFY THIS STANDARD. SUFFICIENT RIGHT-OF-WAY SHALL BE DEDICATED SUCH THAT THE ENTIRE CURB RAMP, INCLUDING LANDING, AND THE INTER-CONNECTING SIDEWALK ARE CONTAINED WITHIN THE RIGHT-OF-WAY.
3. THE CURB, GUTTER AND RAMP SYSTEM SHALL BE CONFIGURED TO MAINTAIN ALL RUNOFF FROM A 25 YEAR FREQUENCY STORM WITHIN THE RIGHT-OF-WAY. DRAINAGE CRITERIA MANUAL SECTION 1.2.2.B). WHEN THERE IS AN ELEVATION DIFFERENCE BETWEEN THE BOTTOM OF RAMPS (IE. ELEVATION AT THE GUTTER) WITHIN A QUADRANT OF AN INTERSECTION, THE LOWER ELEVATION RAMP SHALL BE CONSTRUCTED WITH A POSITIVE RAMP SLOPE OF 1/12 IN ACCORDANCE WITH STANDARDS 432S-5, 432S-5A AND 432S-5B.
4. STANDARD ASSIGNMENT OF SIDEWALKS IS 600 mm (2') OFF PROPERTY LINE, EXCEPT AS INDICATED ON THE DRAWINGS.
5. ALTHOUGH CURB RAMPS MAY BE PLACED WITHIN THE RADIUS, PLACING THE RAMP OUTSIDE OF THE RADIUS WILL ALLOW FOR THE GREATEST DIFFERENCE IN ELEVATION BETWEEN THE RAMPS.
6. WINGS ARE REQUIRED ONLY IF PEDESTRIANS WOULD NORMALLY CROSS THE RAMP.
7. LANDINGS SHALL BE FLAT AND MATCH PT, PC OR TOP OF CURB ELEVATION.
8. CURB RAMPS WILL BE PERPENDICULAR TO ROADWAY CENTERLINES AND SHALL ALIGN WITH EACH OTHER.
9. GRADES ON SIDEWALKS LEADING TO OR FROM THE RAMPS SHALL FOLLOW CURB GRADES.
10. THE SLOPE OF THE SIDEWALK WHICH IS LOCATED WITHIN THE RADIUS AND CONNECTS TWO CURB RAMPS SHALL NOT EXCEED ±20. THE DEVELOPER, AS PART OF THE CURB RAMP INSTALLATION, SHALL CONSTRUCT THIS CONNECTING SIDEWALK.
11. STRIPING AND SIGNAGE NOT REQUIRED IN ALL INSTANCES. STOP BARS, IF REQUIRED, SHALL BE LOCATED 1.2 m (4') FROM CROSSWALK.
12. IF A MEDIAN EXTENDS INTO THE CROSSWALK AREA, AN OPENING SHALL BE PROVIDED IN THE MEDIAN THE SAME WIDTH AS THE CURB RAMP.
13. CURB INLETS SHALL NOT BE LOCATED WITHIN 3.0 m (10') OF A CURB RAMP.
14. GUTTER SHALL PROVIDE SMOOTH TRANSITION TO RAMPS.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPE 1 CURB RAMPS-FULL INTERSECTION

ADOPTED 3/13/06 — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 432S-3 3 OF 3



3" ROLL OVER CURB & GUTTER DETAIL

R1 = 6mm (1/4")
R2 = 65mm (2 1/2")
R3 = 90mm (3 1/2")

D&A DOUCET & ASSOCIATES
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7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

PAVEMENT DETAILS

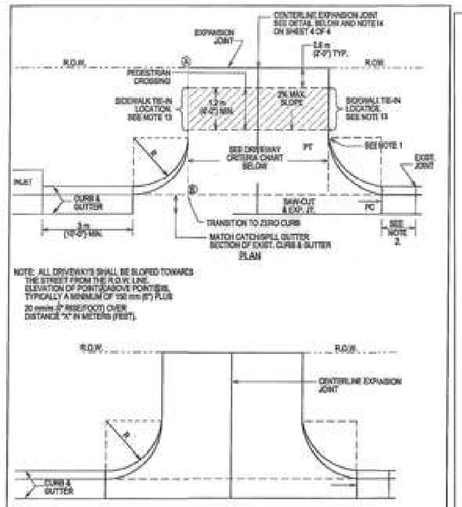
BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2 May 2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
154
OF 175

Project No: 1691-002

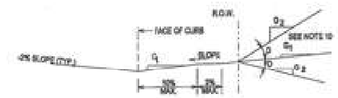


DRIVEWAY CRITERIA USE	WIDTH METERS (FEET) MIN.	*OPT.	MAX.
SIN. FAMILY	3.66 (12)	6.00 (19)	11.00 (36)
DUPLEX	4.88 (16)	6.00 (19)	11.00 (36)
TOWN HOME	4.88 (16)	6.00 (19)	11.00 (36)

*OPTIMUM

RADIUS DIMENSION METERS (FEET) USE	MIN.	*OPT.	MAX.
SINGLE FAMILY	4.6 (15)	7.6 (25)	9.0 (30)
DUPLEX	6.1 (20)	7.6 (25)	9.0 (30)
TOWN HOME	6.1 (20)	7.6 (25)	9.0 (30)

*OPTIMUM



ALLOWABLE GRADES

* 125 mm (5") MIN. CLASS A CONCRETE WITH 10M @ 450 mm (#3 @ 18") C.C. OR 158 mm X 152 mm X MW10 X MW10 (6" X 6" X W1.4 X W1.4) MINIMUM.

REINFORCEMENT SHALL ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF BAR SUPPORTS OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE P.C. CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.

CROSS SECTION

NOTES:

1. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK BEGINNING AT THE RADIUS PC LINE.
2. IF DIMENSION IS LESS THAN 1.8 METERS (6 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH THE DRIVEWAY.
3. IF THE BASE IS OVER EXCAVATED WHERE THE CURB AND GUTTER WAS REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
4. ALL DRIVEWAYS MUST BE CONSTRUCTED WITHIN THE STREET FRONTAGE OF THE SUBJECT PROPERTY AS DETERMINED BY EXTENDING THE SIDE PROPERTY LINES TO THE CURB.
5. DRIVEWAYS SHALL NOT EXCEED 70% OF A LOTS' STREET FRONTAGE.
6. TYPE I DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHTS-OF-WAY THAN 60% OF PARCEL FRONTAGE OR 15 METERS (50 FEET), WHICHEVER IS LESS.
7. DRIVEWAYS SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
8. SINGLE FAMILY LOTS LIMITED TO ONE DRIVEWAY EXCEPT FOR APPROVED SEMICIRCULAR DRIVES.
9. WHEN TWO DRIVEWAYS ARE USED: ONE PER UNIT, TWO MAXIMUM FOR DUPLEXES AND TOWN HOMES. SINGLE FAMILY STANDARDS SHALL APPLY.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHOULD BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "Q2" IS GREATER THAN 15%. "Q1" PLUS "Q" SHOULD NOT EXCEED 15%.
11. SEE TRANSPORTATION MANUAL SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
12. USE 12 mm (½") ASPHALT BOARD, OR OTHER APPROVED MATERIAL, FOR CURB AND GUTTER EXPANSION JOINTS.
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. PLACE AN EXPANSION JOINT DOWN THE CENTER OF ALL DRIVEWAYS.
15. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

TABLE - D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	6"	1/2"	0.08"
30"	9"	1/2"	3/4"	6"	1/2"	0.08"
36"	9"	1/2"	3/4"	6"	1/2"	0.08"
42"	9"	1/2"	3/4"	6"	1/2"	0.08"
48"	9"	1/2"	3/4"	6"	1/2"	0.08"
54"	9"	1/2"	3/4"	6"	1/2"	0.08"

SIGN TO POLE INSTALLATION

HEIGHT	9"
LENGTH	24" MIN. 54 MAX. 6" INCREMENTS OF LENGTH
THICKNESS	0.08"
SUBSTRATE	ALUMINUM ALLOY, 6061-T-6, OR TYPE IV 5052-H38 (ASTM B-209)
SIGN FACE MATERIALS	GREEN FILM OVER HIGH INTENSITY PRISMATIC SHEETING
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B (FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON GREEN BACKGROUND WITH ½" WHITE BORDER

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	STANDARD NO.
10-19-09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	433S-1 1 OF 4

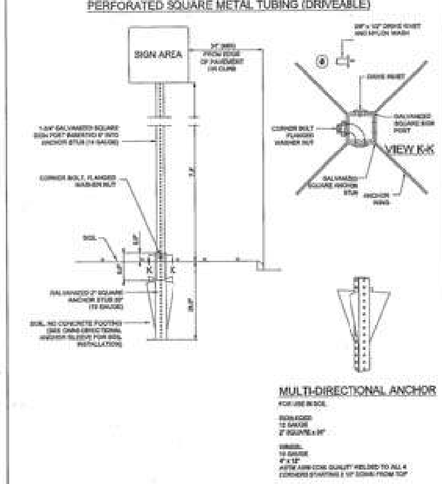
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	STANDARD NO.
10-19-09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	433S-1 3 OF 4

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	STANDARD NO.
10-19-09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	433S-1 2 OF 4

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE I DRIVEWAY (1 & 2 FAMILY RESIDENTIAL USE ONLY)	STANDARD NO.
10-19-09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	433S-1 4 OF 4

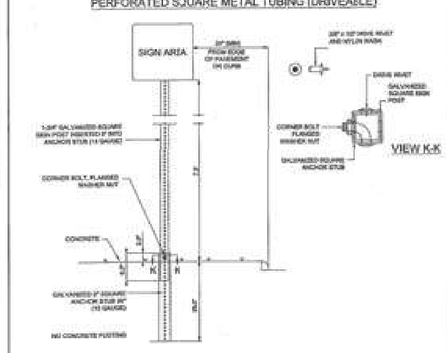
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS	STANDARD NO.
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	824-2 1 OF 3

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS - SOIL	STANDARD NO.
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	824-2 2 OF 3

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS - CONCRETE	STANDARD NO.
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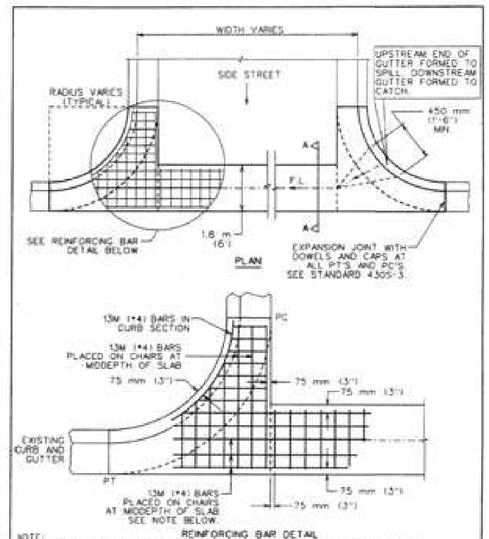
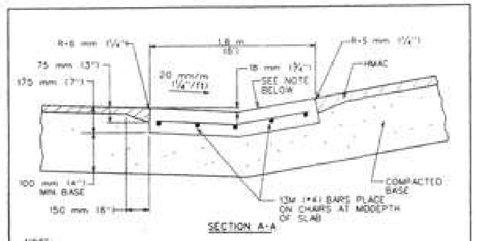


NOTE:
ALTERNATE 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB TO BE CONTINUOUS ACROSS EXPANSION JOINT. BREAK BOND 150 mm (6") ON EACH SIDE OF EXPANSION JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CONCRETE VALLEY GUTTER	STANDARD NO.
6/12/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	436S-2 1 OF 3



NOTE:
ADJUST SLOPE FROM 20 mm/m (1/4"/ft) MINIMUM TO THE SLOPE OF THE SIDE STREET.

NOTES:

1. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
2. CONCRETE FOR THE VALLEY GUTTER SHALL BE CLASS A, ITEM 403S, "CONCRETE FOR STRUCTURES".
3. MONOLITHIC CURB AND GUTTER SHALL BE MEASURED BY PLAN QUANTITY PER SQUARE FEET AND PAID AS VALLEY GUTTER.
4. THE UPSTREAM CURB MID POINT MUST BE AT OR LOWER THAN THE BEGINNING P.C. AND 0.5' MINIMUM HIGHER THAN THE OPPOSING MID POINT.
5. ALLOWABLE CONSTRUCTION JOINT AT THE CENTER LINE WHEN TRAFFIC FLOW MUST BE MAINTAINED, CONSTRUCTED AS A CONTROL JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CONCRETE VALLEY GUTTER	STANDARD NO.
6/12/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	436S-2 2 OF 3

DOUCET & ASSOCIATES
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Firm Registration Number: 3937

PAVEMENT DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

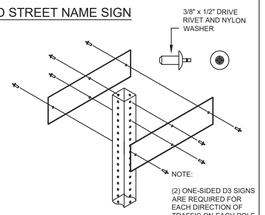
Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
155
OF 175

Project No: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\C01Phase 1\1691002-CD-PH1_D1-PV.dwg
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:48
Plot Date/Time: Apr. 26, 19 - 21:27:14

GROUND MOUNTED STREET NAME SIGN



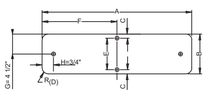


TABLE - D3 SIGNS

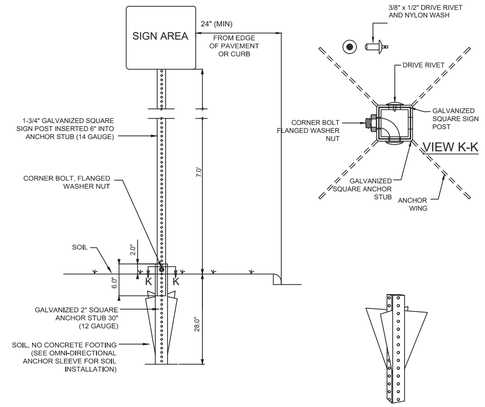
A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.08"
30"	9"	1/2"	3/4"	8"	15"	0.08"
36"	9"	1/2"	3/4"	8"	18"	0.08"
42"	9"	1/2"	3/4"	8"	21"	0.08"
48"	9"	1/2"	3/4"	8"	24"	0.08"
54"	9"	1/2"	3/4"	8"	27"	0.08"

SIGN TO POLE INSTALLATION

HEIGHT	9"
LENGTH	24" MIN. 54 MAX. 6" INCREMENTS OF LENGTH
THICKNESS	0.08"
SUBSTRATE	ALUMINUM ALLOY, 6061-T-6, OR TYPE IV 5052-H38 (ASTM B-209)
SIGN FACE MATERIALS	GREEN FILM OVER HIGH INTENSITY PRISMATIC SHEETING
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON GREEN BACKGROUND WITH ½" WHITE BORDER

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS	
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 824-2 1 OF 3

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



MULTI-DIRECTIONAL ANCHOR

FOR USE IN SOIL

SIGN POST:
12 GAUGE
2" SQUARE x 30"

WINGS:
10 GAUGE
4" x 12"
ASTM A569 COM. QUALITY WELDED TO ALL 4 CORNERS STARTING 2 1/2" DOWN FROM TOP

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS - SOIL	
RECORD COPY SIGNED BY KERI JUAREZ	01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 824-2 2 OF 3

TYPE "U" MOUNT
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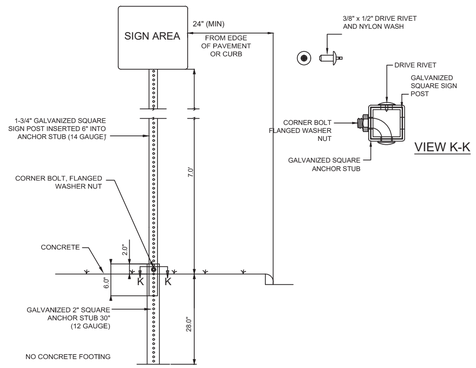

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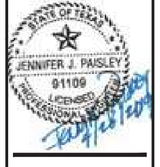

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
156
OF 175

Project No:
1691-002

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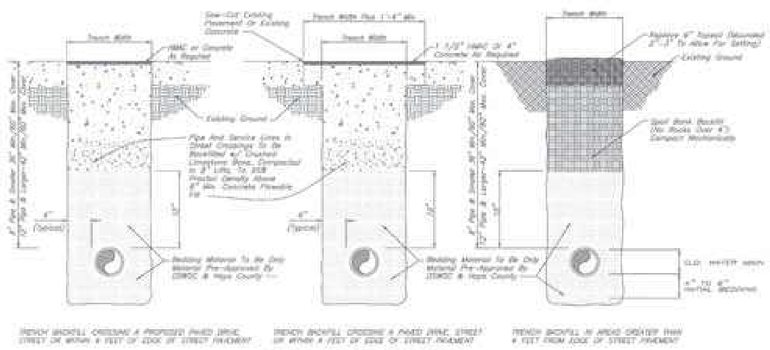
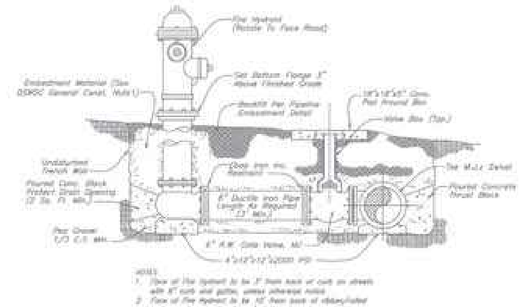
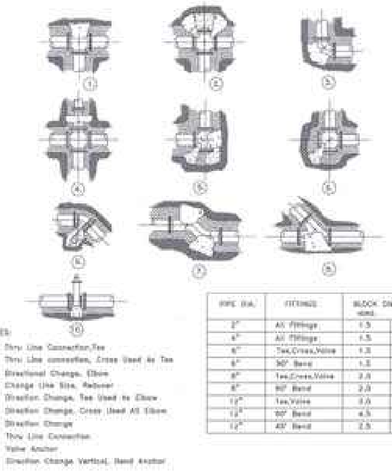


PIPELINE EMBEDMENT



FIRE HYDRANT ASSEMBLY

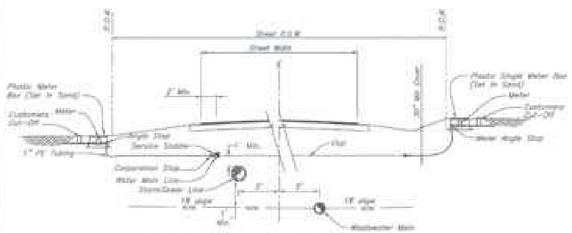


PIPE DIA.	FITTINGS	BLOCK DIMENSION (FT)	
2"	All Fittings	1.5	2.0
4"	All Fittings	1.5	2.0
6"	Tee,Cross,Valve	1.5	1.5
6"	90° Bend	1.5	2.0
8"	Tee,Cross,Valve	2.0	2.0
8"	90° Bend	2.0	2.5
12"	Tee,Valve	3.0	3.0
12"	90° Bend	4.5	2.5
12"	45° Bend	2.5	2.5

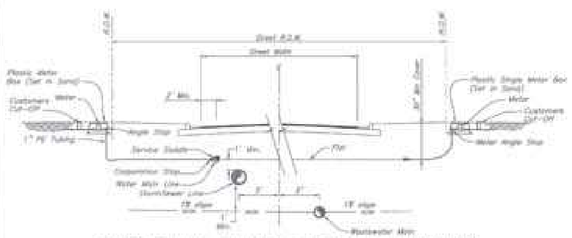
NOTES:
1. Thru Line Connection,Tee
2. Thru Line connection, Cross Used as Tee
3. Directional Change, Elbow
4. Change Line Size, Reducer
5. Direction Change, Tee Used as Elbow
6. Direction Change, Cross Used AS Elbow
7. Direction Change
8. Thru Line Connection
9. Valve Anchor
10. Direction Change Vertical, Bend Anchor

NOTE: Each Mechanical Joint Fitting And Gate Valves Shall Have Ebco Iron Inc. Restraint.

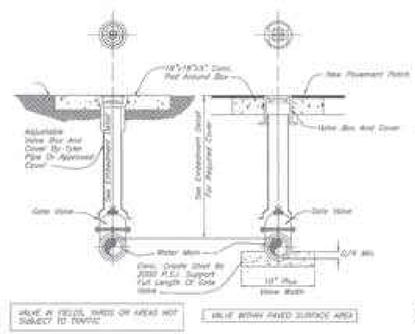
TYPICAL THRUST BLOCKING



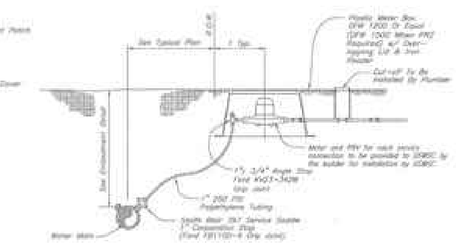
STREET W/ RIBBON CURB



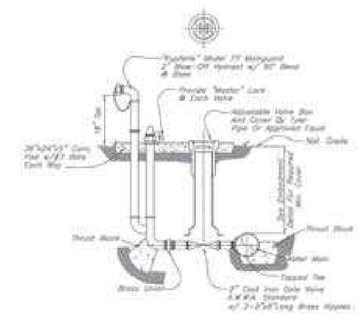
STREET W/ STAND-UP CURB & GUTTER



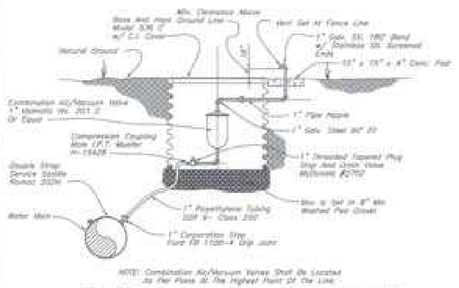
GATE VALVE & BOX



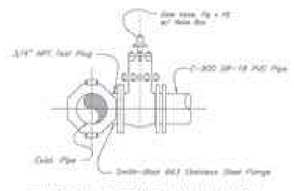
RESIDENTIAL WATER SERVICE CONNECTION



FLUSH VALVE



COMBINATION AIR/VACUUM VALVE



TAPPING SLEEVE AND VALVE

REVISIONS:

NO.	DESCRIPTION	APPROVED DATE
1	UPDATED WALK A & WALK C UPDATED NOTES AND MADE WATER SERVICE DETAILS.	5/28/2019

1

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W. Suite 160
Austin, Texas 78735. Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

UTILITY DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

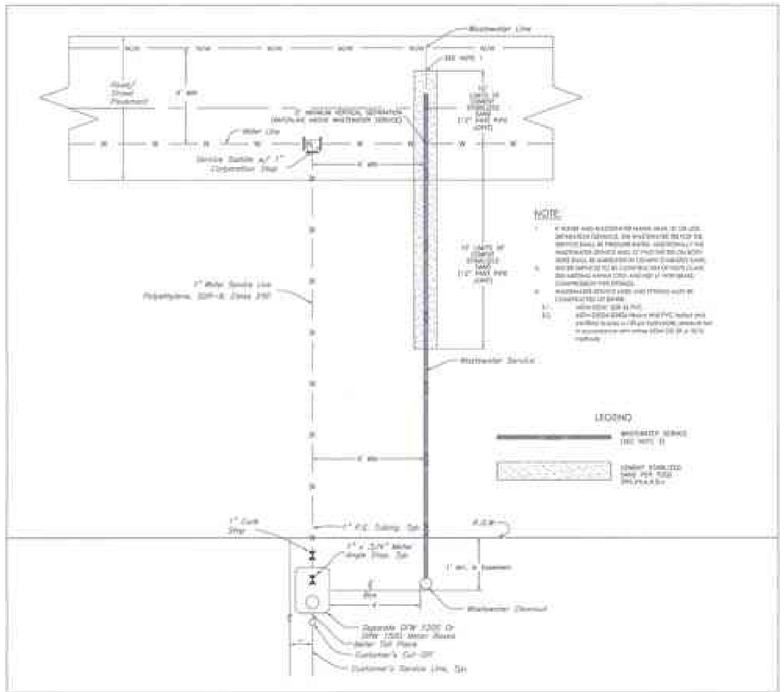
STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

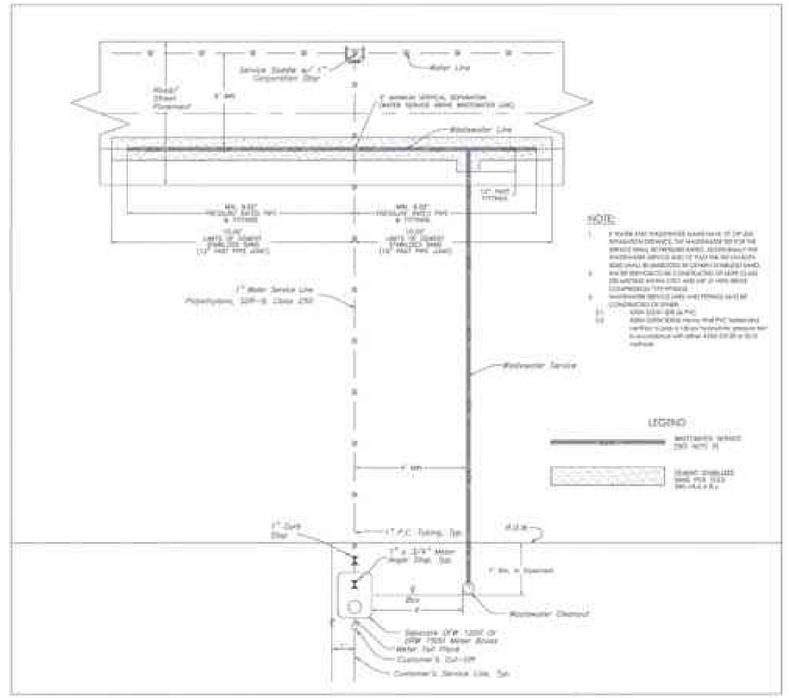
5.28.19

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

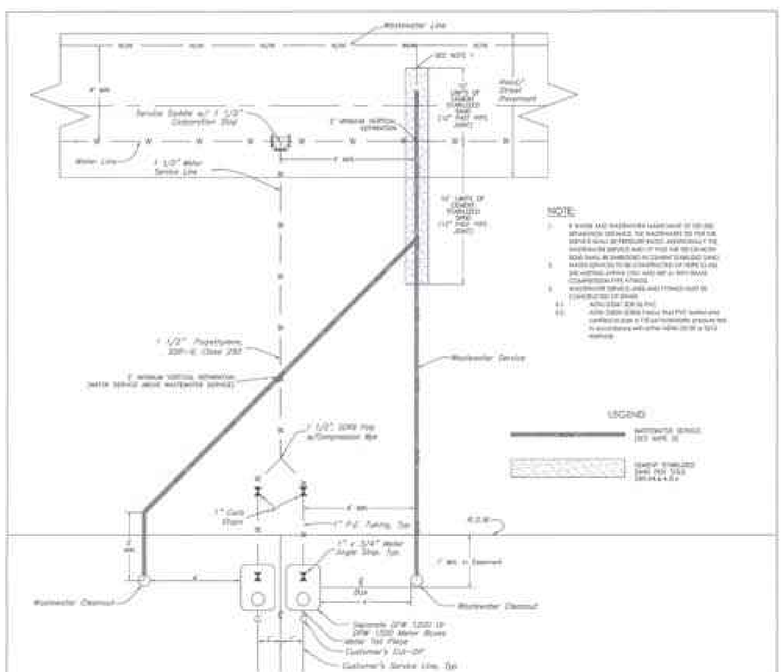
SHEET
157
OF 175

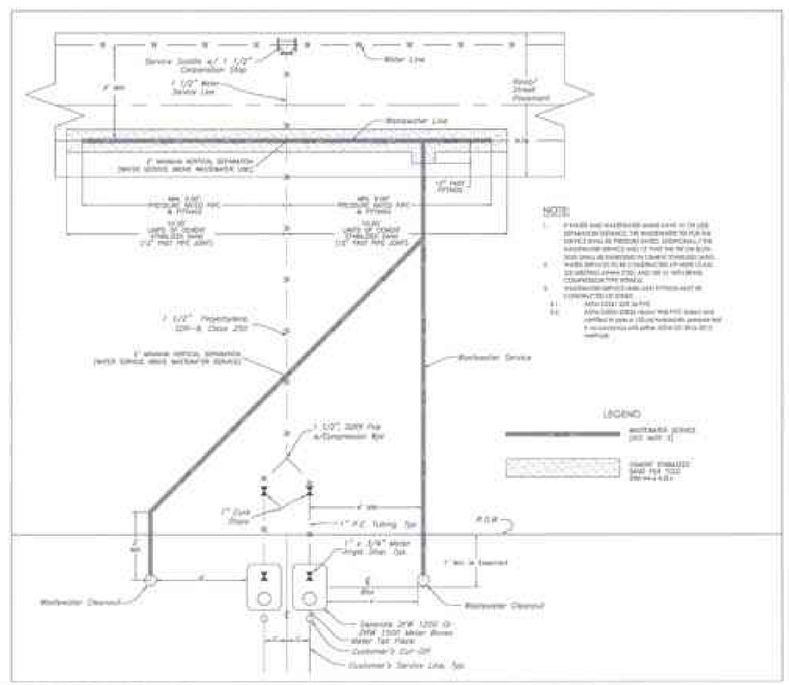
Project No: 1691-002





TYPICAL SINGLE WATER/WASTEWATER SERVICE – PLAN





TYPICAL DOUBLE WATER/WASTEWATER SERVICE – PLAN

1

TYPICAL SERVICE CONNECTION

SINGLE SERVICE

1" SMITH BLAIR 317 SERVICE SADDLE
1" CORPORATION STOP (CPS)
1" POLYETHYLENE TUBING (CL 250)
4" DIA 26 PVC CASING (LONG SIDE SERVICE ONLY)
1" X 3/4" ANGLE STOP VALVE (LOCK WING TYPE)
ALL BRASS FITTINGS

SINGLE METER BOX (DFW 1200 OR DFW 1300 IF PRV Required) SET IN SAND OR PEA GRAVEL

DOUBLE SERVICE

1 1/2" SMITH BLAIR 317 SERVICE SADDLE
1 1/2" CORPORATION STOP (CPS)
1 1/2" CL. 250 POLYETHYLENE TUBING
4" DIA 26 PVC CASING (LONG SIDE SERVICE ONLY)
2-1" CURB STOPS, 1- 1/2" BRASS (SEE 4)
2- 1" X 3/4" BRASS NUTWINGS
2- 1"X 3/4" METER ANGLE STOP VALVES (LOCK WING TYPE)
ALL BRASS FITTINGS

2-SINGLE METER BOX (DFW 1200 OR 1300 IF PRV REQUIRED) SET IN SAND OR PEA GRAVEL

REVISIONS:

NO.	DESCRIPTION	APPROVED DATE
1	UPDATED SINGLE & DOUBLE SERVICE WATER AND WASTE WATER SERVICE DETAILS	6/28/2019

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UTILITY DETAILS

BIG SKY RANCH PHASE ONE PLAN

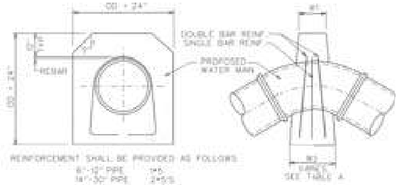
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENIFER J. RAISLEY
91109
LICENSED
6/28/19

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
158
OF 175

Project No: 1691-002



VERTICAL DOWN BEND

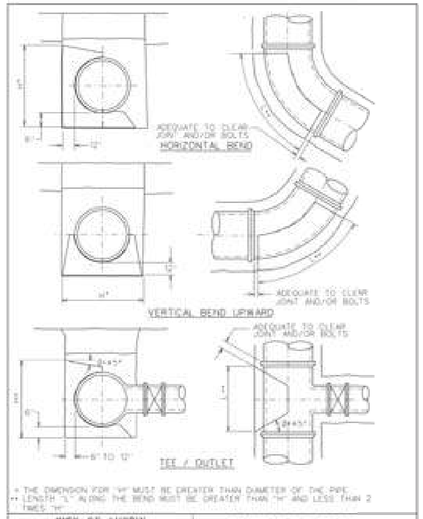
TABLE A UPWARD THRUST GRAVITY BLOCKS			
PIPE DIA.	MIN. FOR WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH W2 (m)
6"	6"	0-5	NOTE 2
		5-15	24
		15-30	48
		> 25	NOTE 1
8"	6"	0-5	NOTE 2
		5-9	30
		9-15	36
		>15	NOTE 1
12"	6"	0-5	NOTE 2
		5-15	48
		>15	NOTE 1
16"	12"	0-5	NOTE 2
		5-10	60
		10-15	96
		> 15	NOTE 1
24" THRU 30" DIA.		10.0	NOTE 1
42" THRU 48" DIA.		13.0	NOTE 1

NOTES:
1. FOR ANGLES GREATER THAN THOSE INDICATED RESTRAINED JOINTS SHALL BE INSTALLED.
2. FOR JOINT DEFLECTIONS LESS THAN 5 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42" IN DIAMETER.

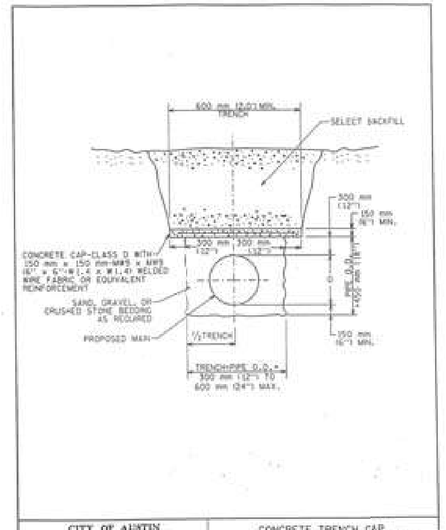
THRUST BLOCK DESIGN AS FOLLOWS
A. PRESSURE OF 150 P.S.I. (ACTUAL P HIGHER) + 50 # SURGE ALLOWANCE
B. MAXIMUM SOIL BEARING SEE TABLE BELOW

SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1000 LB/SQ.FT.
UNDISTURBED SOIL, CALICHE	2000 LB/SQ.FT.
LIMESTONE ROCK	4000 LB/SQ.FT.

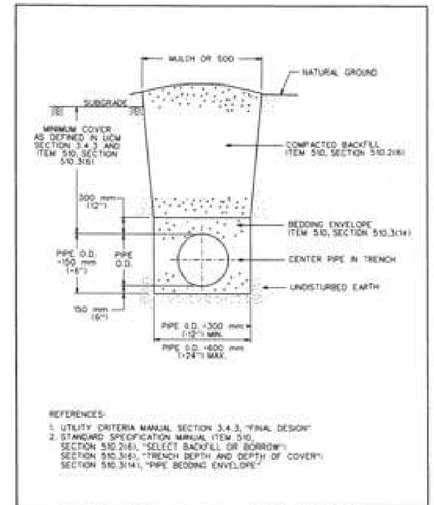
CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/9/96 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510-6 1 OF 2



CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/9/96 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510-6 2 OF 2

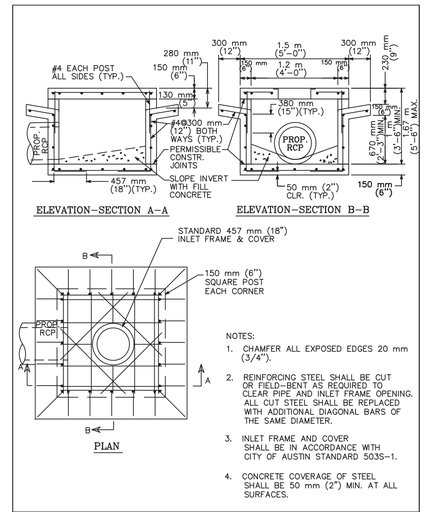


CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE TRENCH CAP	
Kathleen Payne 2/7/96 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-1



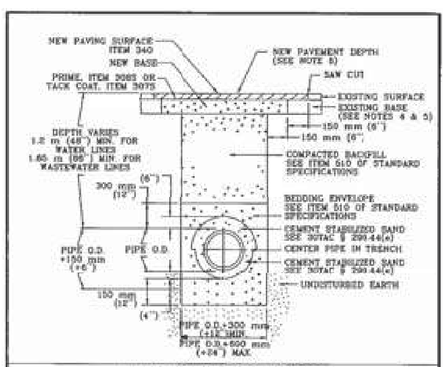
REFERENCES:
1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL (ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
3/13/96 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5



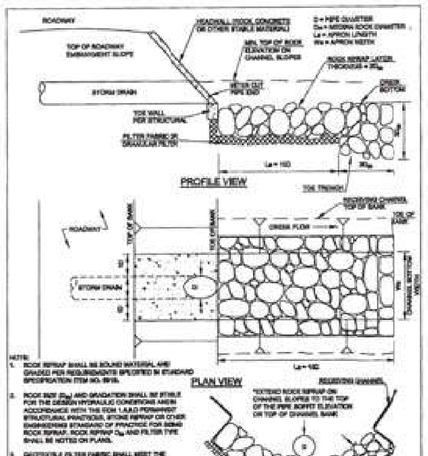
NOTES:
1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD-BENT AS REQUIRED TO CLEAR PIPE AND INLET FRAME OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	4-SIDED AREA INLET	
RECORD COPY SIGNED BY ARTHUR C. ROMERO 08/18/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-9

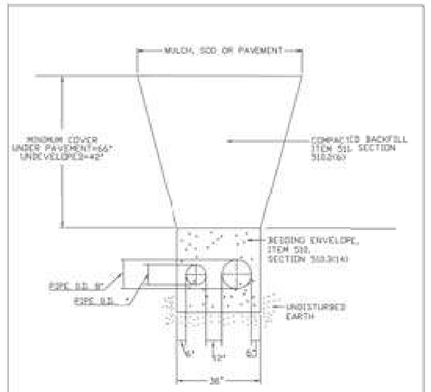


WATER AND WASTEWATER CROSSING OVER EXCAVATION TRENCH DETAIL

NOTES:
1. WHEN CEMENT STABILIZED SAND IS USED, THE TRENCH SHALL BE OVER EXCAVATED BY 12 INCHES TO PROVIDE A MINIMUM OF 12 INCHES OF GRAVEL BELOW THE CEMENT STABILIZED SAND TO ALLOW FOR GROUND WATER FLOW THROUGH TRENCHES.
2. OVER EXCAVATION SHALL EXTEND 5 FEET BEYOND THE CEMENT STABILIZED SAND ON BOTH SIDES OF THE PIPE.
3. THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30TAC § 290.44(e).

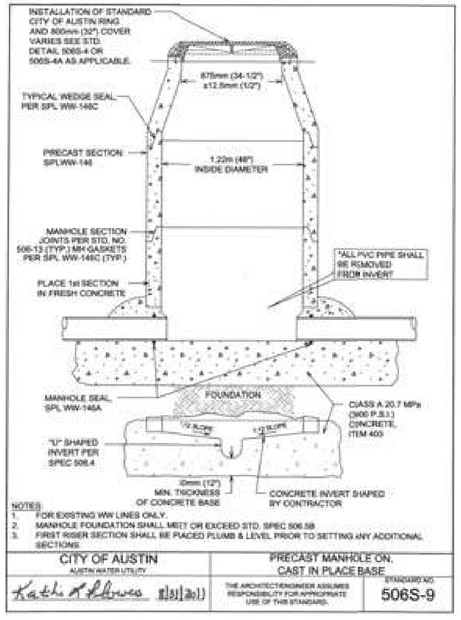


CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STORMDRAIN OUTFALL PROTECTION CULVERT UNDER ROADWAY/INLINE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-20



TYPICAL TRENCH DETAIL FOR DUAL PIPE

CITY OF AUSTIN REFERENCES:
1. UTILITY CRITERIA MANUAL SECTION 2.9.4 DESIGN REQUIREMENT FOR WATER SYSTEM 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"



NOTES:
1. FOR EXISTING WW LINES ONLY.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED STD. SPEC 506.5B
3. FIRST RISER SECTION SHALL BE PLACED PLUMB & LEVEL PRIOR TO SETTING ANY ADDITIONAL SECTIONS.

CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE ON CAST IN PLACE BASE	
Kathleen Payne 1/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-9

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Firm Registration Number: 3937

UTILITY DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

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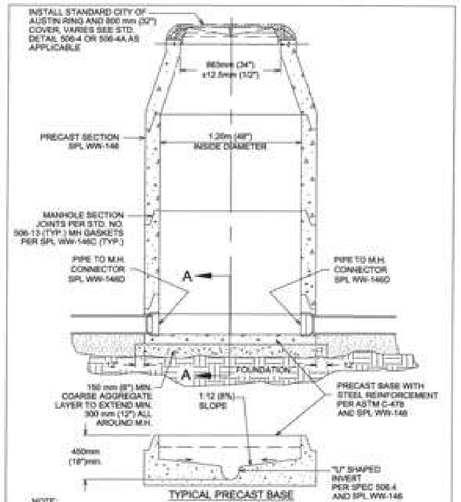
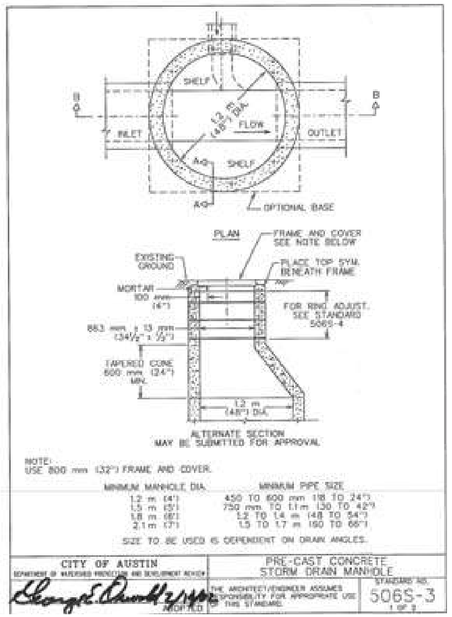
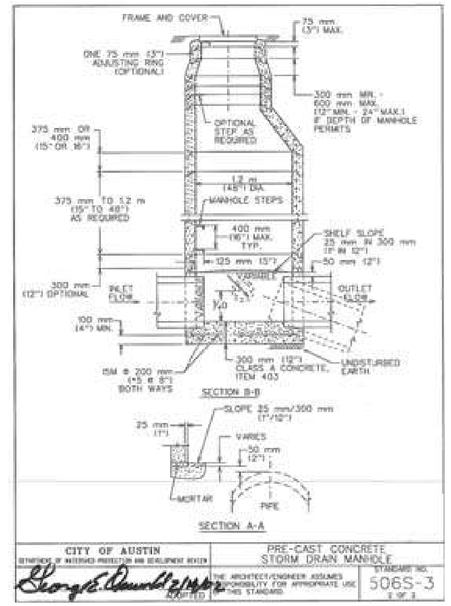
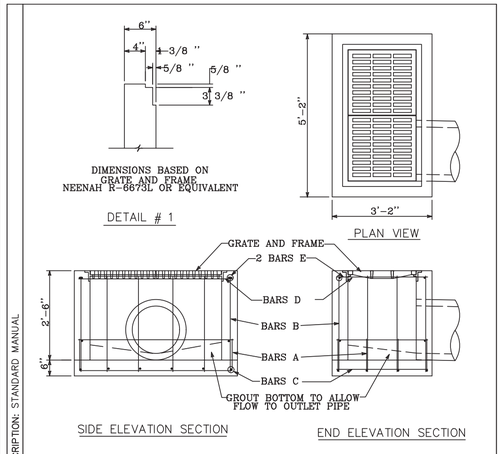
User: JBANISTER
Last Modified: Apr. 26, 19 - 18:47
Plot Date/Time: Apr. 26, 19 - 21:27:44



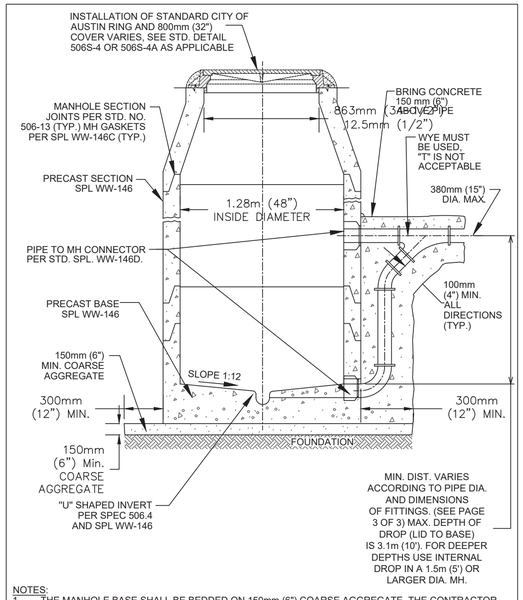






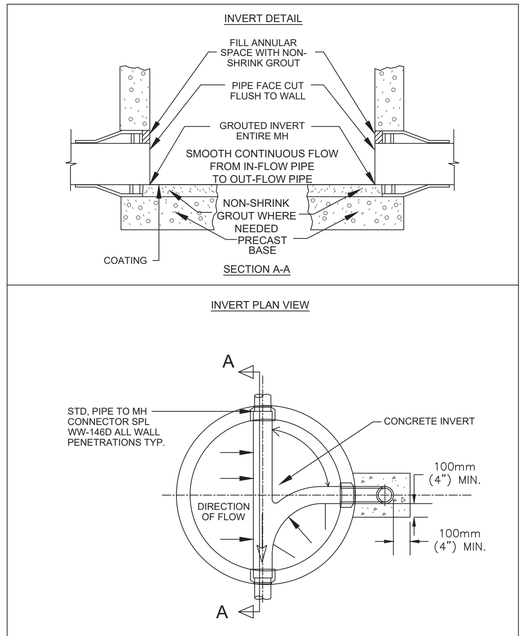
REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	6'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
TOTAL WEIGHT---91 LB.					

CITY OF AUSTIN
DRAINAGE UTILITY
STANDARD DROP INLET
RECORD COPY SIGNED BY ALLEN BRECHER 5/24/88
APPROVED DATE
ADOPTED 04-01-88
SCALE: N.T.S.
INITIAL: B.H.
STANDARD NO. 508-11

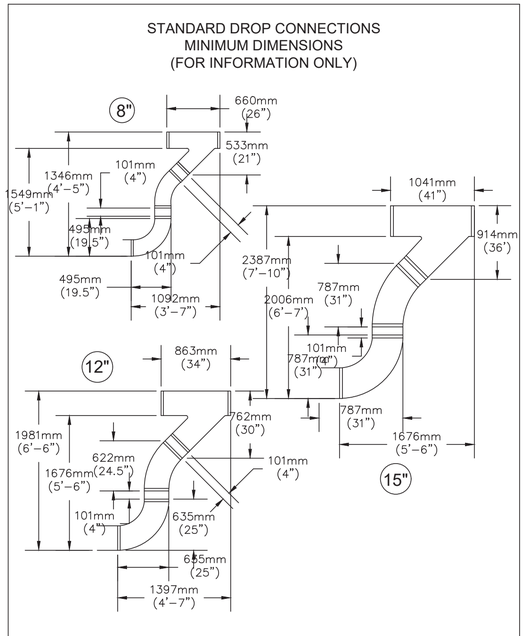


NOTES:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED STD. SPEC 506.5B.

CITY OF AUSTIN
AUSTIN WATER UTILITY
PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-8
1 OF 3



CITY OF AUSTIN
AUSTIN WATER UTILITY
PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-8
2 OF 3



CITY OF AUSTIN
AUSTIN WATER UTILITY
PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-8
3 OF 3

REV. DATE:11-27-96 | DESCRIPTION: STANDARD MANUAL

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User: JBANISTER
Last Modified: Apr. 26, 19 - 18:47
Plot Date/Time: Apr. 26, 19 - 21:27:55

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UTILITY DETAILS

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DRIPPINGS SPRINGS, TX

STATE OF TEXAS
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Designed: JJP
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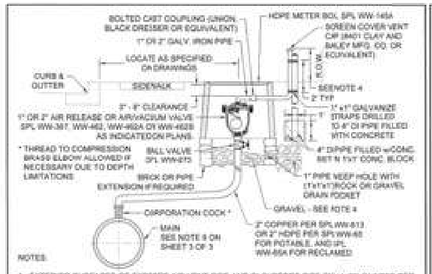
Date: 2/8/2019

SHEET
160
OF 175

Project No.: 1691-002



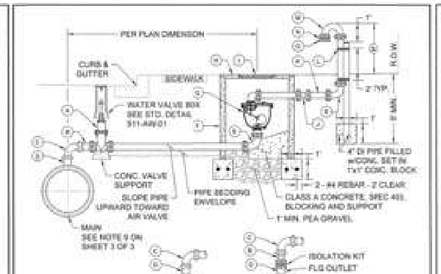
NOTES:

1. EXTERIOR SURFACES OF EXPOSED AIR VENT PIPE AND DI SUPPORT PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE PAINTED SAFETY BLUE.
2. AIR VENT PIPE INSTALLATION SHALL BE AS NEAR AS PRACTICAL TO RIGHT-OF-WAY LINE WITH MINIMUM CLEARANCE OF 18" FROM ANY OBSTACLE.
3. HDPE METER BOX PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE FILLED WITH UNKSEAL LS 300 OR APPROVED EQUAL.
4. COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH SAND SLOPED TO DRAIN.
5. IN UNDEVELOPED AREAS, THE NR VENT PIPE SHALL BE 4' MIN. IN HEIGHT SUPPORTED BY A 4" DIA. DI PIPE WHICH HAS BEEN FILLED WITH CONCRETE (SUPPORT PIPE SHALL BE 6' LONG, BURIED IN CLASS A CONCRETE OR CLSM 3' BELOW FINAL GRADE AND EXTENDING 3' ABOVE FINAL GRADE). INSTALL ONE DELINEATOR STAKE WITHIN 3' OF THE VAULT ON THE VEHICULAR ACCESS SIDE OF VAULT OR AS DIRECTED BY AUSTIN WATER. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES. IN DEVELOPED AREAS, THE AIR VENT PIPE SHALL BE 9' - 12' IN HEIGHT AND LOCATED NOT TO CONFLICT WITH SIDEWALK, DRIVEWAY, OR OTHER PEDESTRIAN TRAFFIC.
6. THE AIR VALVE AND ASSOCIATED PIPING SHALL BE INSTALLED ABOVE THE HIGHEST ELEVATION OF THE WATER MAIN. AIR VALVE PIPING, FROM THE WATER MAIN TO THE AIR VALVE, SHALL MAINTAIN A CONSTANT RISE, WITH NO DIPS, TO THE TOP OF THE GROUND.

1" - 2" AIR RELEASE OR AIR/VACUUM VALVE INSTALLATION - TYPE I

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND D PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-270. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	AIR RELEASE AND AIR/VACUUM VALVE	
Kathi L Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-04 1 OF 3



A. GATE VALVE (FLG x FLG) (GATE VALVE SHALL NOT BE INSTALLED DIRECTLY ABOVE WATER MAIN.
B. PIPE FLG x FACTORY RESTRAINED JOINT SPIGOT END.
C. 90° BEND w/FACTORY RESTRAINED JOINT BELL ENDS, SPL WW-27F.
D. FOR DI MAIN: WELDED-ON OUTLET w/FACTORY RESTRAINED JOINT SPIGOT END.
FOR STEEL/CSC MAIN: WELDED-ON FLANGED OUTLET w/ISOLATION KIT AND FLG x FACTORY RESTRAINED SPIGOT END.
E. 90° BEND (FLG x FLG).
F. CLASS III RCP VAULT 60" MIN. I.D.
G. AIR RELEASE VALVE w/GOOSENECK PER AIR RELEASE VALVES FOR WATER SPL WW-367 OR AIR RELEASE/VACUUM RELIEF VALVES FOR POTABLE WATER SPL WW-462A OR AIR RELEASE/VACUUM RELIEF VALVES FOR RECLAIMED WATER SPL WW-462B OR AIR RELEASE/AIR VACUUM VALVE FOR WASTEWATER SPL WW-462B.
H. REINFORCED PRECAST CONCRETE LID(AASHTO H-20 LOADING).
I. CDA FRAME AND 32" COVER WITH LETTERING MODIFIED FOR WATER.
J. BOLTED CAST COUPLING (SMITH-BLAIR #441 OMNI CAST COUPLING OR APPROVED EQUAL).
K. AIR VENT PIPE, 3" PIPE - GALVANIZED IRON, 4" AND LARGER PIPE - DI ONLY.
L. ¼" x1" GALVANIZE STRAPS DRILLED TO 4" DI PIPE FILLED w/CONCRETE (SEE NOTE 7).
M. RETURN BEND (FLG x FLG).
N. No. 10 MESH BRASS CLOTH
O. COMPANION FLANGE (SEE NOTE 5).
P. 4' MIN. - UNDEVELOPED AREAS.

3" OR LARGER AIR/VACUUM VALVE INSTALLATION - TYPE II

CITY OF AUSTIN AUSTIN WATER	AIR RELEASE AND AIR/VACUUM VALVE	
Kathi L Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-04 2 OF 3

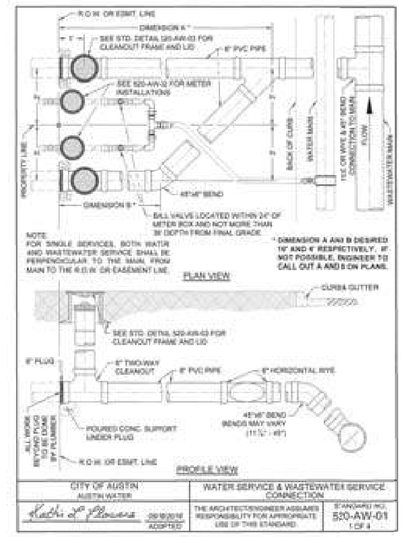
NOTES:

1. ON 10" AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED WITHIN THE VAULT INTO THE LARGER VENT PIPE.
2. AIR VENT PIPE 6" AND LARGER SHALL BE DI (CLASS 350 MIN.). PIPE FLANGE FITTINGS AND EXTERIOR SURFACES OF ALL EXPOSED PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE PAINTED SAFETY BLUE. SURFACE PREPARATION SHALL BE PER PAINT MANUFACTURER'S REQUIREMENTS.
3. ENTIRE AIR VENT ASSEMBLY SHALL BE LOCATED WITHIN EASEMENT OR R.O.W.
4. CONCRETE PIPE PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE SEALED w/UNKSEAL LS 300 OR APPROVED EQUAL.
5. CROSS SECTIONAL AREA OF OPENING TO BE EQUAL TO OR GREATER THAN CROSS-SECTIONAL AREA OF AIR VENT PIPE.
6. AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF PRECAST CONCRETE LID.
7. IN UNDEVELOPED AREAS, THE AIR VENT PIPE SHALL BE 4' MIN. IN HEIGHT SUPPORTED BY A 4" DIA. DI PIPE WHICH HAS BEEN FILLED WITH CONCRETE (SUPPORT PIPE SHALL BE 6' LONG, BURIED IN CLASS A CONCRETE OR CLSM 3' BELOW FINAL GRADE AND EXTENDING 3' ABOVE FINAL GRADE). INSTALL ONE DELINEATOR STAKE WITHIN 3' OF THE VAULT ON THE VEHICULAR ACCESS SIDE OF VAULT OR AS DIRECTED BY AUSTIN WATER. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES. IN DEVELOPED AREAS, THE AIR VENT PIPE SHALL BE LOCATED NOT TO CONFLICT WITH SIDEWALK, DRIVEWAY, OR OTHER PEDESTRIAN TRAFFIC.
8. GATE VALVE, PIPE, AND FITTINGS FROM MAIN TO ARV SHALL BE OF EQUAL DIAMETER AS THE AIR VALVE EXCEPT 3" ARV SHALL HAVE 4" FITTINGS AND A 4"x3" REDUCER AT THE ARV. ABO ALL PIPE AND FITTINGS ON THE OUTLET SIDE OF THE ARV SHALL BE EQUAL TO THE SIZE OF THE OUTLET OF THE ARV. VAULTS SHALL BE 5' DIAMETER FOR 3" VALVE, 6' DIAMETER FOR 4" & 6", AND 8' VALVES, AND 7' DIAMETER FOR 10" AND 12" VALVES.
9. FOR 24" AND LARGER MAINS, AN 18' OUTLET WITH BLIND FLANGE SHALL BE INSTALLED AT CONNECTION OF ARV.

3" OR LARGER AIR/VAGUUM VALVE INSTALLATION - TYPE II

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND D PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-270. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	AIR RELEASE AND AIR/VACUUM VALVE	
Kathi L Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-04 3 OF 3

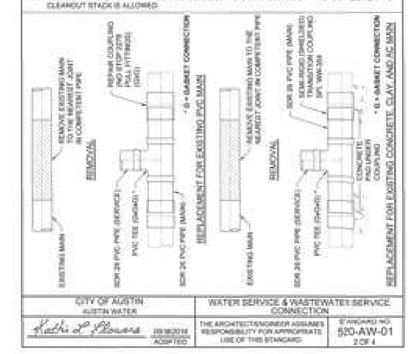


* DIMENSION A AND B DESIRED 18' AND 4' RESPECTIVELY. IF NOT POSSIBLE, ENGINEER TO CALL OUT A AND B ON PLANS.

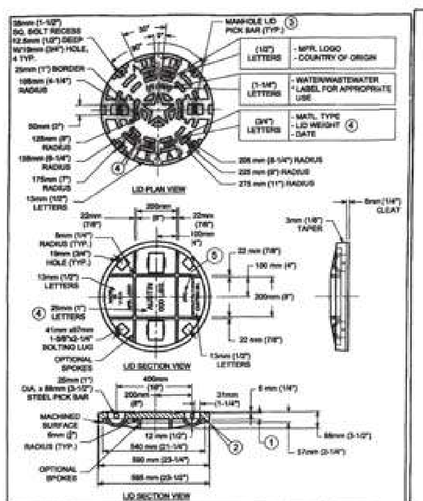
CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	
Kathi L Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01 1 OF 4

NOTES:

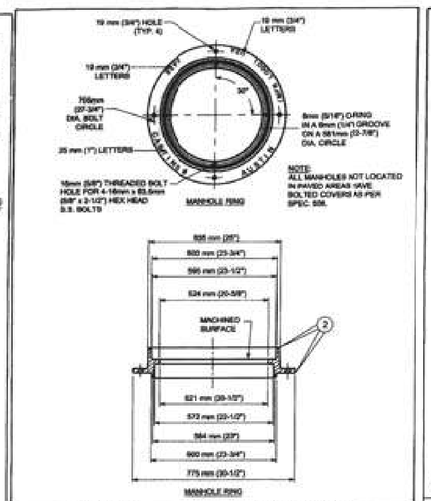
1. DURING SUBDIVISION CONSTRUCTION UTILITY CONTRACTOR INSTALLS WASTEWATER CONNECTION TO MAIN, 6" STUB, HORIZONTAL WYE FOR DOUBLE SERVICES, 4" SERVICE BRANCH WITH 2-WAY-CLEANOUT(S) AND RISER, FRAME, AND COVER. CLEANOUT(S) PLUGGED AT PROPERTY LINE OR EASEMENT LINE END. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SLOPE DOWNWARD TO MAIN 1% MIN. TO 45° MAX. DEPTH OF SERVICE AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER IF GREATER THAN 4' OTHERWISE THE INSTALLED DEPTH WILL BE 4' MIN. AND 6' MAX. AT PROPERTY LINE. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, SEE SHEET 3 OF 4. UTILITY CONTRACTOR ALSO INSTALLS WATER CONNECTION TO MAIN WATER PIPE, FITTINGS AND VALVES INCLUDING STOP VALVE. REFER TO DETAIL 520-AW-02.
2. PIPING AND TUBING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION 510-3 (14). MATERIALS SHALL BE AS SPECIFIED IN 510-2 (2)(A) AND (1)(B). BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510-3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MIN. COVER BELOW FINAL STREET GRADE OF 42".
3. NO METER BOX, BALL VALVE OR CLEAN-OUT SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA, AND SHALL BE A MINIMUM OF 6' FROM ALL FIXED AREAS.
4. PLUMBER SHALL REMOVE PLUG AND CONNECT TO 2-WAY CLEANOUT. NO CONNECTION TO CLEANOUT STACK IS ALLOWED.



CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	
Kathi L Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01 2 OF 4

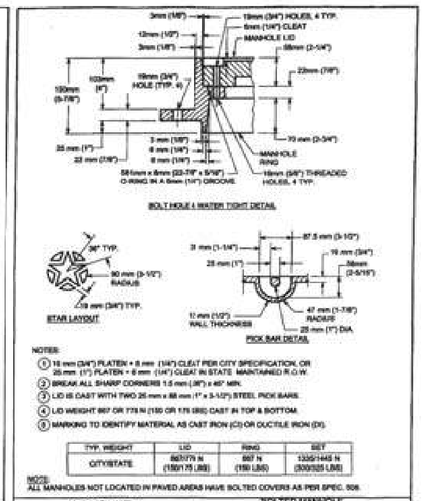


CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 610 mm (24") COVER	
Kathi L Flowers 9/23/14 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-3W 1 OF 3



NOTE:
ALL MANHOLES NOT LOCATED IN PAVED AREAS HAVE BOLTED COVERS AS PER SPEC. 506.

CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 610 mm (24") COVER	
Kathi L Flowers 9/23/14 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-3W 2 OF 3



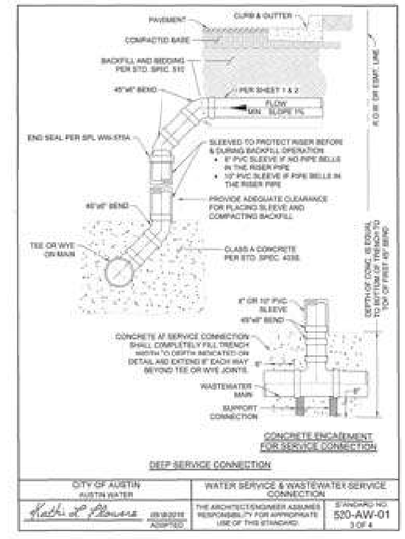
NOTES:

1. 16 mm (3/4") PLATEN + 6 mm (1/4") CLEAT PER CITY SPECIFICATION, OR 25 mm (1") PLATEN + 6 mm (1/4") CLEAT IN STATE MAINTAINED R.O.W.
2. BREAK ALL SHARP CORNERS 1.5 mm (.06") x 45° MIN.
3. LID IS CAST WITH TWO 26 mm x 88 mm (1" x 3-1/2") STEEL PICK BARS.
4. LID WEIGHT 667 OR 778 N (150 OR 175 LBS) CAST IN TOP & BOTTOM.
5. MARKING TO IDENTIFY MATERIAL AS CAST IRON (CI) OR DUCTILE IRON (DI).

TYP. WEIGHT	LID	RING	SET
CITY/STATE	667/778 N (150/175 LBS)	667 N (150 LBS)	1335/1445 N (300/325 LBS)

NOTE:
ALL MANHOLES NOT LOCATED IN PAVED AREAS HAVE BOLTED COVERS AS PER SPEC. 506.

CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 610 mm (24") COVER	
Kathi L Flowers 9/23/14 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-3W 3 OF 3



CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	
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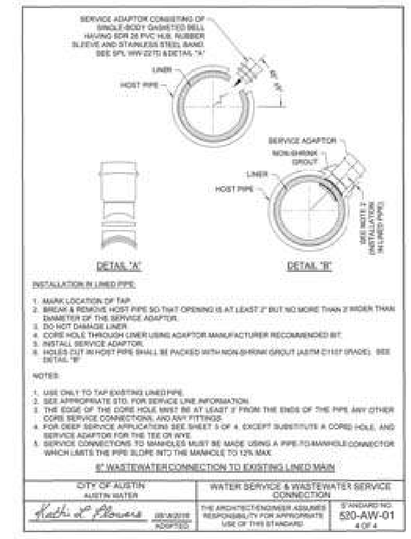

CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & WASTEWATER SERVICE CONNECTION	
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DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

UTILITY DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER
2/8/2019

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No.: 1691-002

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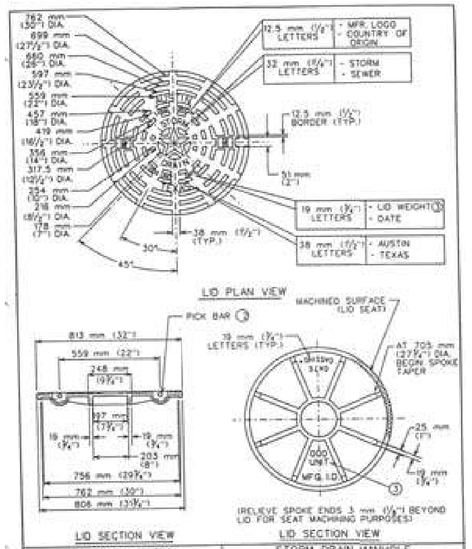

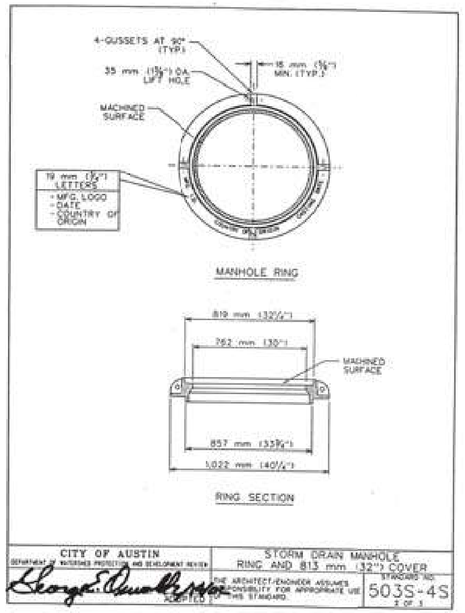

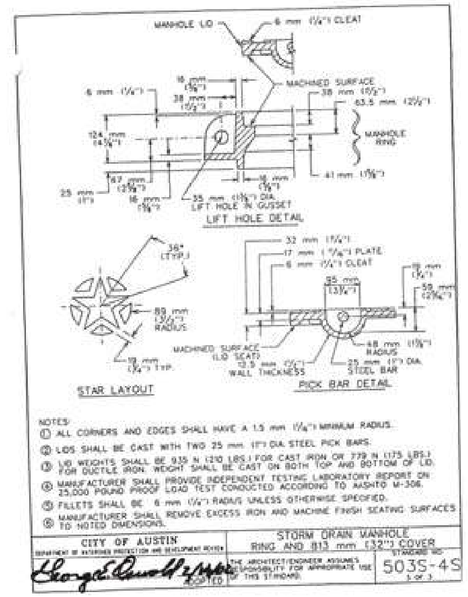

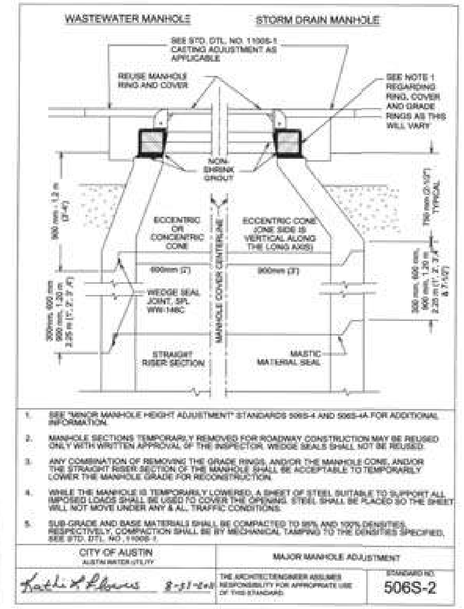

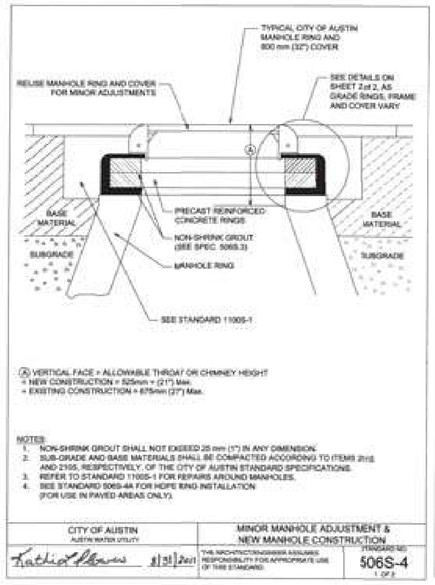

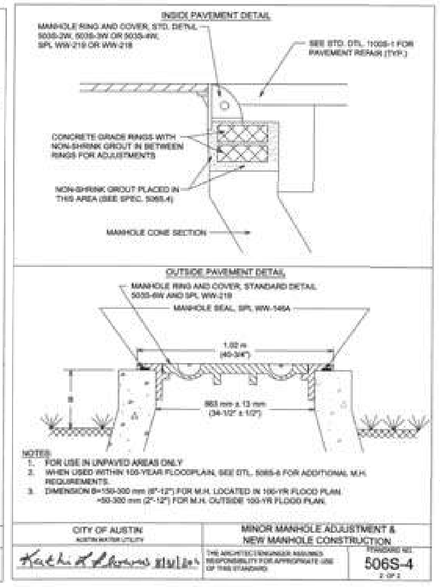

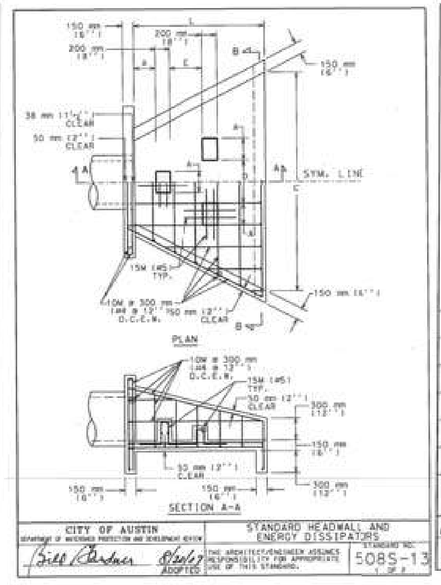

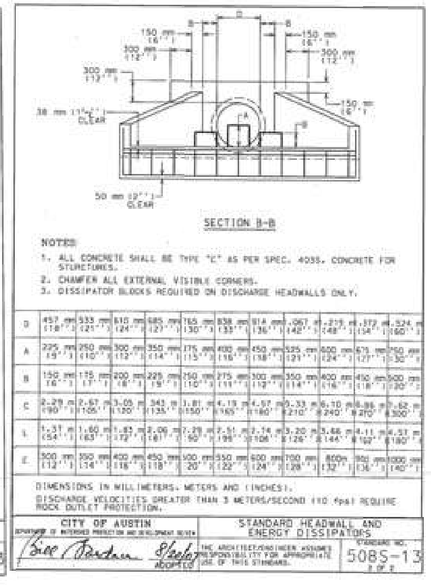

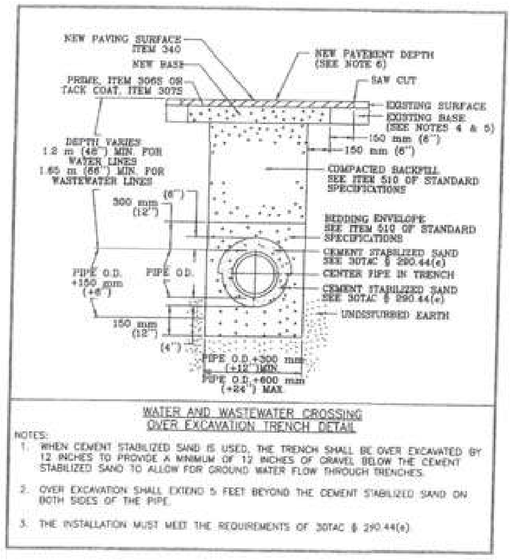

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SHEET
162
OF 175

Project No.: 1691-002

Drawing: P:\1691-002\CADD\dwg\working_drawings\submitted\CD\Phase 1\169102-CD-PH1_DT-UT.dwg
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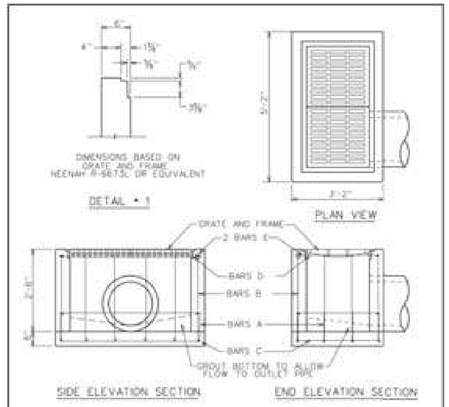
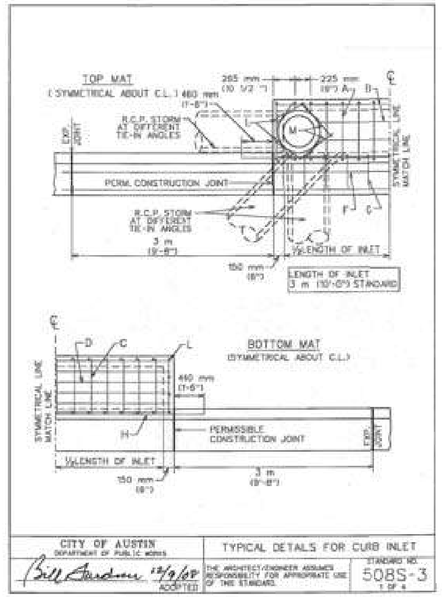
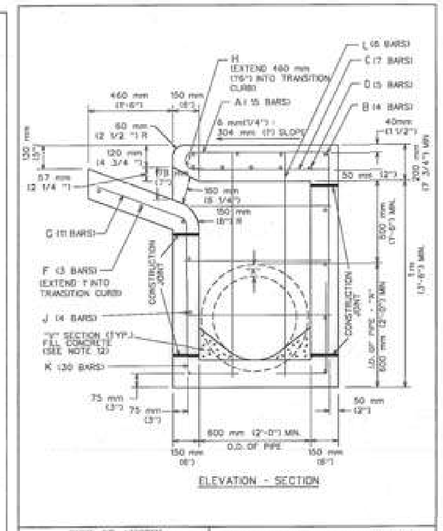


REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	8'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
TOTAL WEIGHT---91 LB.					

CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
RECORD COPY SIGNED BY ALLEN BRECHER 5/24/98 ADOPTED
STANDARD DROP INLET
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508-11



CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
Bill Gardner 12/9/08 ADOPTED
TYPICAL DETAILS FOR CURB INLET
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3 1 OF 4



CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
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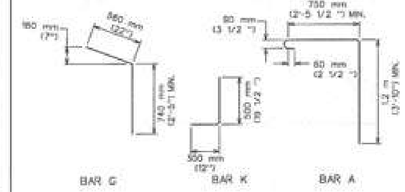
TYPICAL DETAILS FOR CURB INLET
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3 2 OF 4

TABLE OF QUANTITIES
FOR 18" OUTLET PIPE
REINFORCING STEEL QUANTITIES

BARS	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	230mm (9")*	15	2 m (7'-0")	73
B	4	250 mm (10")	4	3.25 m (10'-8")	29
C	4	460 mm (18")	7	760 mm (2'-6")	12
D	6	150 mm (6")	5	3.25 m (10'-8")	80
E	4	300 mm (12")	6	760 mm (2'-6")	15
F	4	250 mm (10")	3	4 m (13'-0")	35
G	4	300 mm (12")	11	1.25 m (4'-1")	31
H	6	-	1	4.25 m (14'-0")	30
J	4	300 mm (12")	7	3.25 m (10'-8")	50
K	4	230 mm (9")*	30	800 mm (2'-7 1/2")	52
L	4	300 mm (12")*	6	1.3 m (4'-4")	17
M	4	-	4	500 mm (1'-8") AVG	4
TOTAL STEEL, LB.					413
TOTAL CONCRETE, C.Y.					4.08

* EXCEPT AS SHOWN ON PLAN



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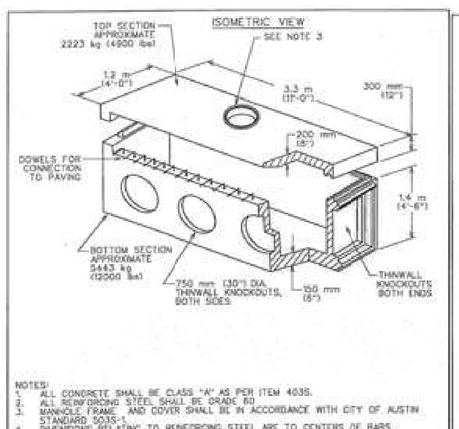
Bill Gardner 12/9/08 ADOPTED
TYPICAL DETAILS FOR CURB INLET
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3 3 OF 4

NOTES:
1. ALL CONCRETE SHALL BE CLASS "A"
2. ALL REINFORCING STEEL SHALL BE GRADE 60
3. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
4. VERTICAL STEEL MAY BE SPLICED (380 mm or 15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS.S. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
5. QUANTITIES SHOWN HEREON ARE FOR THE CONTRACTOR'S INFORMATION ONLY. PAYMENT WILL BE MADE FOR EACH INLET OF THE TYPE SPECIFIED, COMPLETE IN PLACE INCLUDING MANHOLE FRAME AND COVER.
7. CHAMFER ALL EXPOSED EDGES 20 mm (3/4 ").
8. MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 5035-1.
9. THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS, INCLUDING PRECAST UNITS. PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION.
10. ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAT EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES.
11. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB.
12. INVERT OF INLET SHALL BE SLOPED 1:20 WITH FILL CONCRETE, SHAPED AS "V" SECTION
13. NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED UNLESS OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.

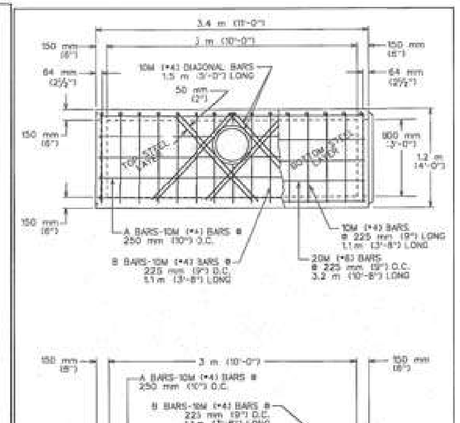
REFERENCES:
FOR EXPANSION JOINT DOWEL AND DOWEL LOCATION DETAILS SEE STD. 4305-3, "CURB EXPANSION JOINT DOWEL DETAIL".
FOR 18" MANHOLE FRAME AND COVER DETAILS SEE STD. 5035-1, "18" COVER AND FRAME".

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
Bill Gardner 12/9/08 ADOPTED
TYPICAL DETAILS FOR CURB INLET
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3 4 OF 4



NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" AS PER ITEM 403S.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 5035-1.
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
5. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
6. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB, IN ACCORDANCE WITH CITY OF AUSTIN STANDARD INLET DESIGN.
7. INVERT OF INLET SHALL BE SLOPED 1:20 WITH FILL CONCRETE BY CONTRACTOR, SHAPED AS "V" SECTION
8. THE INLET AS DESIGNED EXCEEDS THE REQUIREMENTS OF ASTM C478.
9. THIS STANDARD COMPLIES WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 504S.
10. FOR INLET CONNECTION VARIATIONS FOR MAKING A 6 m (20'-0") CURB INLET FROM STANDARD 3 m (10'-0") INLETS, SEE DALWORTH CURB INLET CONNECTION DETAIL SHEET 90-86-103.

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
Bill Gardner 12/9/08 ADOPTED
CURB INLET 3 m (10') PRECAST TYPE 1 OR TYPE 1-R
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-4 1 OF 5



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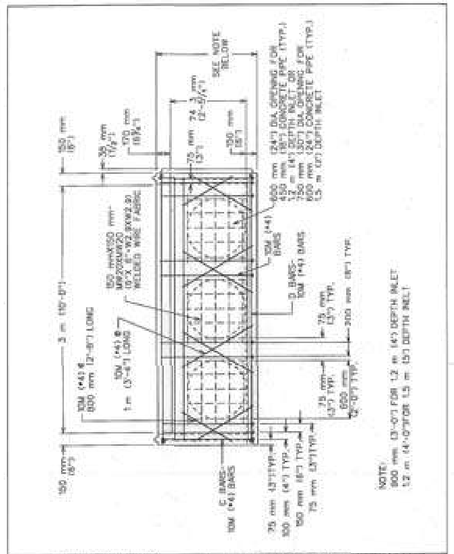
STANDARD NO. 508S-4 2 OF 5



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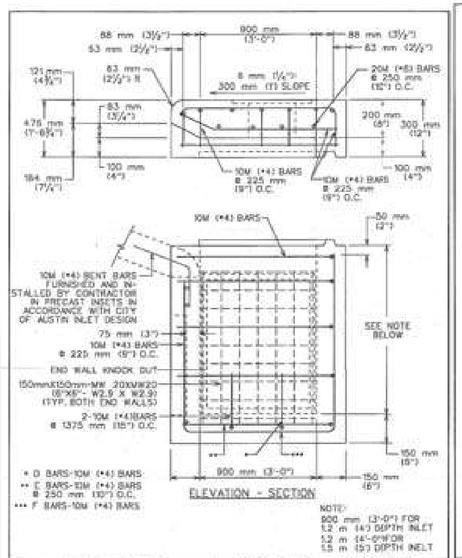

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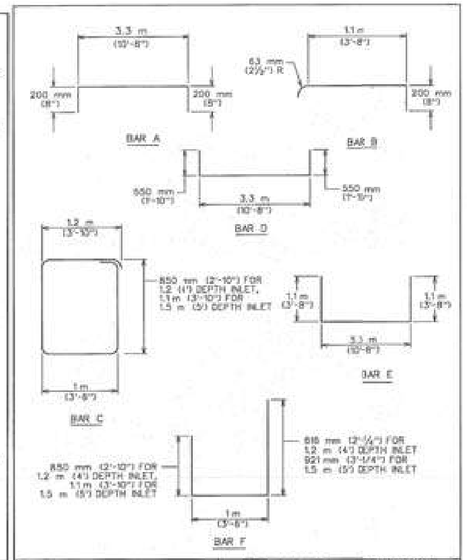
STANDARD NO. 508S-4 4 OF 5



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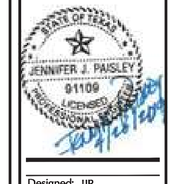
STANDARD NO. 508S-4 5 OF 5

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

UTILITY DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX



Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

Project No: 1691-002

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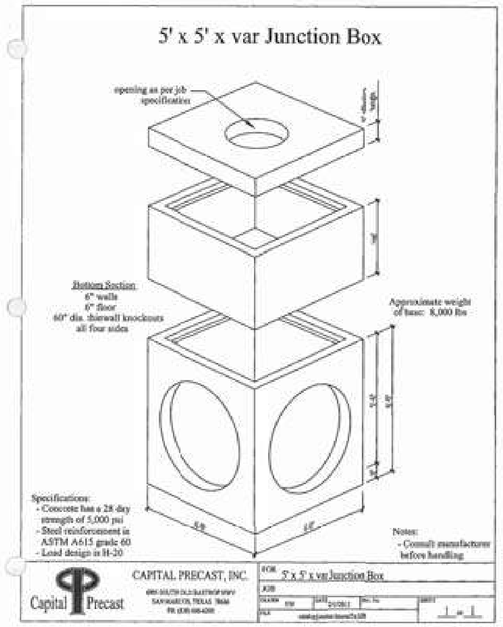

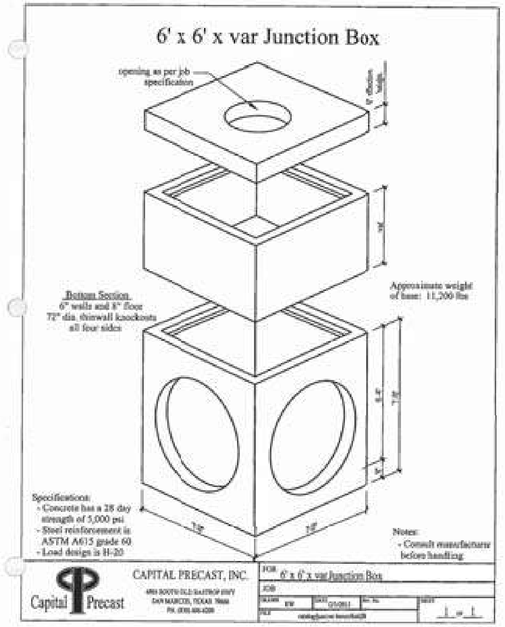

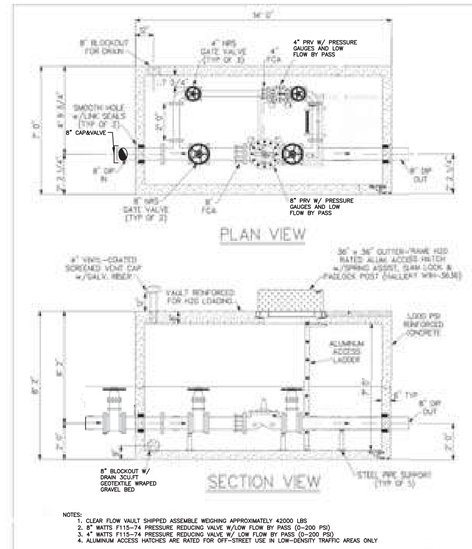

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UTILITY DETAILS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
JENNIFER J. PAISLEY
91109
LICENSED
PROFESSIONAL ENGINEER

Designed: JJP
Drawn: AD & JBB
Reviewed: JJP
Date: 2/8/2019

SHEET
164
OF 175

Project No.:
1691-002

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ELECTRICAL SYMBOL LEGEND

NOT ALL SYMBOLS SHOWN MAY BE USED

PLAN LEGEND

SYMBOL	DESCRIPTION
J	JUNCTION BOX
J	DISCONNECT SWITCH
	MOTOR STARTER OR LIGHTING CONTACTOR, SURFACE MOUNTED
J	COMBINATION MOTOR STARTER, AND DISCONNECT SWITCH, SURFACE MOUNTED
1 M	MANHOLE, NUMBER OF MANHOLE SHOWN NEXT TO SYMBOL
1 C	COMMUNICATIONS MANHOLE, NUMBER OF MANHOLE SHOWN NEXT TO SYMBOL
MH 23A T	TELECOMMUNICATIONS MANHOLE, NUMBER OF MANHOLE SHOWN NEXT TO SYMBOL
W	KEYED NOTE, NUMBER IN POSITION "W" MATCHES NOTE NUMBER
$	SWITCH, TOGGLE, WALL MOUNTED, (SINGLE POLE THROW) MOUNT 48" AFF, UON
$ 3	SWITCH, TOGGLE, WALL MOUNTED, THREE WAY, (SINGLE POLE DOUBLE THROW) MOUNT 48" AFF, UON
$ EP	EXPLOSION PROOF SWITCH, TOGGLE, WALL MOUNTED, (SINGLE POLE THROW) MOUNT 48" AFF, UON
$ M	SWITCH, MOTOR RATED, WITH THERMAL OVERLOADS
	TERMINAL BOARD
	TELEPHONE OUTLET, PRIVATE, MOUNTED 12" AFF, UON
WH	WATTHOUR METER
	POLE
	TRANSFORMER, PAD MOUNTED, KVA RATING MAY BE DISPLAYED NEXT TO SYMBOL
T	TRANSFORMER, DRY TYPE, KVA RATING MAY BE DISPLAYED INSIDE OF SYMBOL
	ANTENNA
W–X, Y, Z	CONDUIT AND/OR WIRING HOMERUN TO PANEL. TERMINAL BOARD, OR CONTROLLER, USED WITH THE FOUR PRECEDING SYMBOLS. DESTINATION EQUIPMENT IDENTIFIER SHOWN IN POSITION "W" CIRCUIT NUMBER SHOWN IN POSITIONS "X", "Y", OR "Z". THESE CIRCUITS MAY ONLY SHOW ONE CIRCUIT NUMBER
	WIRING CONTINUATION
	FLEXIBLE CONDUIT
	HOMERUN
	CONDUIT CAPPED FOR FUTURE USE
	CONDUIT GOING DOWN
	CONDUIT GOING UP
	CONDUIT RUN UNDERGROUND OR CONCEALED
	CONDUIT RUN EXPOSED
	120V RECEPTACLE FLUSH MOUNTED
	250V RECEPTACLE FLUSH MOUNTED
A	WELDING OUTLET
T	THERMOSTAT
	PANELBOARD SURFACE MOUNTED

GROUNDING LEGEND

SYMBOL	DESCRIPTION
A OR B	GROUNDING RECEPTACLE = A, GROUND TEST WELL = B
B	CONDUCTOR BARE UON
	GROUNDING CONNECTION
G	GROUND BUS BAR LENGTH AS SHOWN BY SYMBOL LENGTH UON
	COPPERCLAD GROUND ROD

SYMBOL	MODIFIERS		
(E)	EXISTING	PT	PAINTTIGHT
WP	WEATHERPROOF	P	PRIMARY
EP	EXPLOSION PROOF	O	OVERHEAD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT	U	UNDERGROUND
		S	SECONDARY
T	TELEPHONE	FT	FIXED TEMPERATURE
P	POWER	R	RECESSED
F	FIRE ALARM	G	GROUNDED
VT	VAPORTIGHT	UNG	UNGROUNDED
WT	WATERTIGHT		

ONE LINE AND CONTROL SCHEMATIC LEGEND

SYMBOL	DESCRIPTION
	GROUNDING CONNECTION, WHEN USED WITH TRANSFORMER SYMBOL IT DENOTES A NEUTRAL GROUNDING CONNECTION
	GROUNDED WYE WINDING CONNECTION
	DELTA WINDING CONNECTION
	RELAY OR CONTACTOR CONTACTS
	SEPARABLE CONNECTOR OR CONNECTION FOR DRAWOUT ASSEMBLIES
	CONDUCTOR CONNECTION
	CIRCUIT BREAKER, MOLDED CASE, TRIP CURRENT AND QUANTITY OF POLES (P) SHOWN NEXT TO SYMBOL
	SWITCH, DISCONNECT, NON–FUSED, LOAD BREAK, CONTINUOUS CURRENT RATING AND QUANTITY OF POLES SHOWN NEXT TO SYMBOL
	SWITCH, DISCONNECT, FUSED, LOAD BREAK, FUSED AMPERE RATING AND FUSE TYPE SHOWN NEXT TO SYMBOL
	FUSE, AMPERE RATING AND FUSE TYPE SHOWN NEXT TO SYMBOL
	MOTOR THERMAL OVERLOAD PROTECTOR
M	MOTOR STARTER MAIN CONTACTOR
CR	CONTACTOR OR RELAY COIL, LETTER(S) INSIDE OF SYMBOL MATCH CONTACTS CONTROLLED
PT	PRESSURE TRANSMITTER
	EQUIPMENT ENCLOSURE
VS	VOLTMETER SWITCH
AS	AMMETER SWITCH
A	AMMETER
V	VOLTMETER
	CURRENT TRANSFORMER WITH RATIO SHOWN
10	MOTOR, 10 HORSEPOWER SHOWN
	LIMIT SWITCH NORMALLY CLOSED
	LIMIT SWITCH NORMALLY OPEN
	MOTOR OPERATED VALVE GEARED LIMIT SWITCH
	PRESSURE SWITCH NORMALLY CLOSED OPENS ON INCREASING PRESSURE
	PRESSURE SWITCH NORMALLY OPEN CLOSES ON INCREASING PRESSURE
	LEVEL SWITCH NORMALLY CLOSED OPENS ON INCREASING LEVEL
	LEVEL SWITCH NORMALLY OPEN CLOSES ON INCREASING LEVEL
	FLOW SWITCH NORMALLY CLOSED OPENS WITH FLOW
	FLOW SWITCH NORMALLY OPEN CLOSES ON LOSS OF FLOW
	SPACE HEATER
ØF	PHASE FAILURE RELAY
	DRAW–OUT CIRCUIT BREAKER
50 51	INSTANTANEOUS/TIME OVERCURRENT RELAY
51N	NEUTRAL TIME OVERCURRENT RELAY
	CABLE TERMINATOR
27 47	UNDERVOLTAGE/PHASE–SEQUENCE RELAY
86	LOCKOUT RELAY
DO	DESOLVED OXYGEN SENSOR
FS	FLOW SWITCH
AI	ANALYTIC INDICATOR
LT	LEVEL TRANSDUCER
FM	FLOW METER

ONE LINE AND CONTROL SCHEMATIC LEGEND (CONT'D)

SYMBOL	DESCRIPTION
	INSTRUMENT TRANSFORMER PT–POTENTIAL TRANSFORMER
480V 120V	CONTROL POWER TRANSFORMER. VOLTAGE AS SHOWN
	LIGHTNING ARRESTOR
	SWITCH
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	MOMENTARY PUSHBUTTON
HAND OFF AUTO	THREE POSITION MAINTAINED CONTACT SWITCH
MOV	MOTOR OPERATED VALVE
	SOLENOID VALVE
ETM	ELAPSED TIME METER
TD 0–10 MIN. TOE	TIME DELAY RELAY. TIMES OUT AFTER ENERGIZATION
TD 0–10 MIN. TOD	TIME DELAY RELAY. TIMES OUT AFTER DENERGIZATION
R	PILOT LIGHT R=RED B=BLUE G=GREEN A=AMBER Y=YELLOW
LSHH	HIGH LEVEL FLOAT SWITCH
LSLL	LOW LEVEL CUTOFF FLOAT SWITCH
MCP SIZE 1 FVNR	MOTOR STARTER FVNR=FULL VOLTAGE NON–REVERSING VFD=VARIABLE FREQUENCY DRIVE WITH BYPASS SOFT START=ELECTRONIC SOFT START RVNR=REDUCED VOLTAGE NON–REVERSING FVR=FULL VOLTAGE REVERSING MCP=MOTOR CIRCUIT PROTECTOR SIZE=NEMA STARTER SIZE
STE	LEVEL SENSOR TERMINATION ENCLOSURE
TS	TEMPERATURE SWITCH
MP	MOISTURE PROBE
SOV	SOLENOID VALVE
LS	LIMIT SWITCH
AS	AMMETER SWITCH
VS	VOLTMETER SWITCH
PS	PRESSURE SWITCH
LC	LIGHTING CONTACTOR

CONDUIT AND WIRING LEGEND

	NEW
	EXISTING TO BE REMOVED
	EXISTING TO REMAIN
UE	UNDERGROUND ELECTRICAL
UF	UNDERGROUND FIBER OPTIC
UT	UNDERGROUND TELEPHONE
UG	UNDERGROUND GROUNDING
OE	OVERHEAD ELECTRICAL

ABBREVIATIONS

A	AMPERES OR TRIP AMPERES
AC	ALTERNATING CURRENT
ACT	ABOVE COUNTER TOP
A/C	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	SYMMETRICAL AMPS INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAGE
BD	BOARD
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CURRENT LIMITING
CONN	CONNECT OR CONNECTION
CONT'D	CONTINUED
CONTR	CONTRACTOR
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DBL	DOUBLE
DIM	DIMENSION
DISC SW	DISCONNECT SWITCH
DC	DIRECT CURRENT
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE CONDUIT
FIX	FIXTURE
GC	GENERAL CONTRACTOR
GALV	GALVANIZED
GEN	GENERATOR

ABBREVIATIONS (CONT'D)

GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND–OFF–AUTO
HP	HORSEPOWER
HT	HEIGHT
HTR	HEATER
HZ	HERTZ
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOURS
LA	LIGHTNING ARRESTOR
L–L	LINE TO LINE
L–N	LINE TO NEUTRAL
LTG	LIGHT OR LIGHTING
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCH BOARD
MTD	MOUNTED
MTG	MOUNTING
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NIC	NOT IN THIS CONTRACT
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
OL	OVERLOAD
Ø	PHASE
P	POLE
PC	PHOTOELECTRIC

ABBREVIATIONS (CONT'D)

PEN	PENDANT
PNL	PANELBOARD
PRV	PRESSURE REDUCING VALVE
PVC	POLYVINYL CHLORIDE
R	RELOCATED
RECP	RECEPTACLE
REQ'D	REQUIRED
REQ'MTS	REQUIREMENTS
RM	ROOM
SCH	SCHEDULE
SE	SERVICE ENTRANCE
SM	SURFACE MOUNT
SN	SOLID NEUTRAL
SOV	SOLENOID OPERATED VALVE
SPACE	SPACES(S) ONLY (NO BREAKER OR DEVIC
SPARE	SPARE BREAKER OR DEVICE
SPD	SURGE PROTECTIVE DEVICE
SPECS	CONTRACT SPECIFICATIONS
SS	STAINLESS STEEL HARDWARE
SWBD	SWITCHBOARD
SW	SWITCH
SWGR	SWITCH GEAR
TB	TELEPHONE BACKBOARD
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UT	UNDERGROUND TELEPHONE
VA	VOLT AMPERES
W	WATTS
W/	WITH
WH	WATER HEATER
WP	WEATHER PROOF
XFMR	TRANSFORMER
XMTR	TRANSMITTER
1/C	SINGLE CONDUCTOR CABLE
3/C	THREE CONDUCTOR CABLE

GENERAL NOTES: (APPLICABLE TO ALL ELECTRICAL SHEETS)

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ALL CITY, COUNTY, AND STATE REGULATIONS, NFPA, ANSI, UL, IEEE, AND THE LOCAL CODE AUTHORITY HAVING JURISDICTION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND INSPECTIONS.
2. ALL ELECTRICIANS SHALL BE LICENSED BY THE APPROPRIATE CITY, STATE, OR LOCAL CODE AUTHORITY HAVING JURISDICTION.
3. THE ELECTRICAL CONTRACTOR SHALL FOLLOW ALL OSHA AND OWNER SAFETY RULES AS REQUIRED TO WORK ON THIS SITE.
4. ALL INSTALLATIONS SHALL BE DONE IN A NEAT AND WORKMAN LIKE MANNER.
5. ALL POWER OUTAGES SHALL BE PERFORMED DURING NON–BUSINESS HOURS. COORDINATE ALL POWER OUTAGES WITH THE OWNER. NOTIFY THE OWNER IN WRITING 10 DAYS PRIOR TO SCHEDULING ANY POWER OUTAGES.
6. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL TEMPORARY ELECTRICAL POWER AND LIGHTING REQUIRED FOR THIS PROJECT.
7. THE DEMOLITION DRAWINGS (IF APPLICABLE) ARE DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH THE PROJECT SCOPE OF WORK PRIOR TO SUBMITTING THEIR BID.
8. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE ELECTRICAL REQUIREMENTS OF ALL OWNER PROVIDED EQUIPMENT AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
9. ALL WORK SHOWN ON DRAWINGS IS NEW UNLESS OTHERWISE NOTED.
10. ALL GROUNDING SHALL BE PER NEC AND LOCAL CODES.
11. ALL ELECTRICAL CONSTRUCTION ON THE PROJECT SHALL CONFORM TO THE NEC AND ALL OTHER AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL FEES.
12. ALL WIRING SHALL BE FREE OF SHORTS AND GROUNDS. NO CIRCUIT WIRING SHALL BE LOADED BEYOND THE PERMITTED AMPACITIES ALLOWED BY THE NEC. ALL WIRE SIZES ARE FOR COPPER.
13. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING BID.
14. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND MATERIALS NECESSARY TO MAKE A COMPLETE AND WORKABLE JOB INCLUDING FINAL HOOK–UP OF ALL EQUIPMENT.
15. FIRE STOP SHALL BE PROVIDED AT ALL LOCATIONS WHERE ELECTRICAL EQUIPMENT OR SYSTEMS PENETRATE FIRE RATED WALLS. SEE ARCHITECTURAL PLANS FOR RATED WALL LOCATIONS. CONTROL WIRING TO MECHANICAL EQUIPMENT IS NOT SHOWN ON THESE SHEETS.
16. RISER AND ONE–LINE DIAGRAMS ARE MEANT TO SHOW ONLY VERTICAL AND ELECTRICAL RELATIONSHIPS AND THEREFORE MAY NOT INCLUDE ALL REQUIRED EQUIPMENT, DEVICES AND ACCESSORIES.
17. EQUIPMENT INTERRUPTING CAPACITIES SPECIFIED IN THE CONTRACT DOCUMENTS ARE BASED UPON EQUIPMENT CHARACTERISTICS AND IMPEDANCES SHOWN ON THE DRAWINGS. IF ACTUAL INSTALLED EQUIPMENT DEVIATES FROM THESE CHARACTERISTICS OR HAS LOWER IMPEDANCES THE CONTRACTOR SHALL INCREASE THE INTERRUPTING CAPACITIES OF ALL ITEMS ON THE LOAD SIDE OF THE DEVIANT EQUIPMENT IN DIRECT PROPORTION TO THE CHANGED CHARACTERISTICS. INTERRUPTING CAPACITIES SHALL NOT BE REDUCED TO VALUES LESS THAN THOSE REQUIRED BY THE CONTRACT DOCUMENTS.
18. EQUIPMENT SIZES ARE AS DESIGNED. CIRCUIT BREAKERS, CONDUIT, MOTOR STARTERS, DISCONNECT SWITCHES, PLUG–IN'S, ETC., SHALL BE ADJUSTED TO THE EQUIPMENT SUBMITTED AND APPROVED FOR INSTALLATION ON THIS PROJECT.
19. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS FOR SITE INFORMATION.
20. LIGHT FIXTURE MOUNTING HEIGHTS ARE MEASURED BETWEEN THE FLOOR AND THE BOTTOM OF THE FIXTURE.

ELECTRICAL DRAWING INDEX

E1.0	ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS
E1.1	ELECTRICAL SPECIFICATIONS
E1.2	ELECTRICAL GENERATOR–2 SPECIFICATIONS
E1.3	ELECTRICAL GENERATOR–2 AND ATS–2 SPECIFICATIONS
E2.0	ELECTRICAL OVERALL SITE PLAN
E2.1	ELECTRICAL SITE PLAN AND DETAILS – LIFT STATION 2
E3.0	ELECTRICAL ONE–LINE DIAGRAM, SCHEDULES AND DETAILS LIFT STATION 2
E4.0	ELECTRICAL DETAILS LIFT STATIONS 1 AND 2
E4.1	ELECTRICAL DETAILS LIFT STATION 2
E5.0	ELECTRICAL CONTROLS LIFT STATION 2
E5.1	ELECTRICAL CONTROLS LIFT STATION 2

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E1.0

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ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS STEVE L. KANETZKY 84696 LICENSED PROFESSIONAL ENGINEER 12/5/18

Designed:	DM
Drawn:	AH
Reviewed:	DM/SK
Date:	11/20/2018

SHEET 165 OF 175

Project No: 1691-002

Drawing: K:\Projects\2018\3340118-Doucet-Big Sky Lift Stations 1 and 2\01 Design Phase_CAD\3340118-E10.dwg
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ELECTRICAL SPECIFICATIONS: DIVISION 26 ELECTRICAL

PART 1 - GENERAL

1.01 WORK INCLUDED

A. ELECTRICAL SYSTEMS

1.02 RELATED WORK

A. THE WORK COVERED BY THIS SPECIFICATION CONSISTS OF FURNISHING ALL LABOR, SUPPLIES AND MATERIALS, SHOP DRAWINGS AND A LIST OF MAKE AND CATALOG NUMBERS OF ALL EQUIPMENT AND MATERIALS TO BE INSTALLED AND PERFORMING ALL OPERATIONS, INCLUDING INSTALLATION OF LIGHTING FIXTURES, ELECTRICAL EQUIPMENT, CUTTING AND PATCHING, COORDINATION WITH OTHER TRADES ON THE JOB, ETC., NECESSARY FOR THE INSTALLATION OF COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREINAFTER SPECIFIED. THESE SPECIFICATIONS SUPPLEMENT THE GENERAL CONDITIONS AND SPECIFICATIONS.

B. EXAMINATION OF SITE: THE CONTRACTOR SHALL THOROUGHLY EXAMINE SITE AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY AT THE SITE ALL MEASUREMENTS AFFECTING HIS WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF THE SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS NEGLECT TO EXAMINE OR FAILURE TO DISCOVER CONDITIONS WHICH AFFECT HIS WORK. NO EXTRA COMPENSATION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE INDICATED ON THE DRAWINGS.

C. THE AGREEMENT FORMS, GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS OF THE SPECIFICATIONS SHALL APPLY TO THE WORK SPECIFIED IN DIVISION 26.

1.03 DEFINITION

A. "WIRING": WIRE OR CABLE, INSTALLED IN RACEWAY WITH ALL REQUIRED BOXES, FITTINGS, CONNECTORS AND ACCESSORIES, COMPLETELY INSTALLED.

B. "FEEDER": WIRING TO ANY DEVICE OR EQUIPMENT IN WHICH NUMBER SIX AWG COPPER (#6 CU) OR LARGER CONDUCTORS ARE USED.

C. "POWER WIRING": WIRING TO ANY DEVICE OR EQUIPMENT SERVED BY A MULTI–POLE BREAKER.

1.04 QUALITY ASSURANCE

A. CODES: COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ANY OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.

B. PERMITS AND INSPECTIONS: PROVIDE ALL PERMITS REQUIRED AND OBTAIN FINAL INSPECTION AND APPROVAL FROM THE INSPECTION DEPARTMENT HAVING JURISDICTION.

C. WHERE DIFFERENT SECTIONS OF ANY APPLICABLE CODES SPECIFY DIFFERENT MATERIALS, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN.

D. STANDARDS FOR MATERIAL AND WORKMANSHIP: USE MATERIALS THAT ARE NEW AND LISTED AND LABELED BY UNDERWRITERS LABORATORIES (UL) AS CONFORMING TO ITS STANDARDS, WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION. EXECUTE WORK IN A WORKMAN LIKE MANNER, TO PRESENT A NEAT AND MECHANICAL APPEARANCE WHEN COMPLETED.

1.05 SUBSTITUTION OF MATERIALS

A. NO SUBSTITUTION OF MATERIAL IS ALLOWED WITHOUT WRITTEN PRIOR AUTHORIZATION FROM THE ENGINEER AND OWNER. DETERMINATION OF WHAT IS CONSIDERED EQUAL IS AT THE SOLE DISCRETION OF THE ENGINEER AND OWNER.

B. INCLUDE SUFFICIENT DESCRIPTIVE INFORMATION, INCLUDING MANUFACTURER'S PUBLISHED DATA TO ESTABLISH CONTRACT COMPLIANCE. SUBMIT SAMPLES IF REQUESTED BY ARCHITECT/ENGINEER.

1.06 DRAWINGS AND SPECIFICATIONS

A. THE WIRING LAYOUTS ARE SCHEMATIC AND DO NOT NECESSARILY SHOW THE EXACT LOCATION OF RACEWAYS, OUTLETS, ETC. REFER TO THE ARCHITECTURAL DRAWINGS FOR ACTUAL DIMENSIONS. FIT WORK TO CONFORM TO THE DETAILS OF BUILDING CONSTRUCTION. COORDINATE ALL WORK TO ASSURE PROPER CLEARANCE.

1.07 AS-BUILT DRAWINGS

A. AS WORK PROGRESSES, RECORD ON ONE (1) SET OF ELECTRICAL PRINTS ALL CHANGES AND DEVIATIONS FROM THE CONTRACT DOCUMENTS IN SIZE, LOCATIONS AND TYPES OF ALL MATERIALS AND EQUIPMENT. RECORD FINAL LOCATION OF OUTLETS, SWITCHES, STARTERS, UNDERGROUND AND EXPOSED CONDUITS, ETC. TO INDICATE THE FINAL INSTALLATION. MAKE SUFFICIENT MEASUREMENTS TO LOCATE ALL EQUIPMENT AND CONDUITS. PROVIDE AS–BUILT DRAWINGS.

B. THE CONTRACTOR SHALL PREPARE A TYPED PANEL DIRECTORY FOR EACH PANEL UTILIZED FOR THIS PROJECT. THIS DIRECTORY SHALL IDENTIFY THE CIRCUIT NUMBER, DEVICES SERVED, AND LOCATION OF DEVICES BY ROOM NUMBER. HE SHALL FILE THEM WITH THE BUILDING MANAGER WHEN THE WORK IS COMPLETE.

1.08 MAINTENANCE DATA

A. FURNISH AND DELIVER TO THE ARCHITECT/ENGINEER TWO (2) COMPLETE COPIES OF ALL DATA PREPARED BY MANUFACTURERS, DETAILING OPERATION AND MAINTENANCE INSTRUCTION FOR ALL EQUIPMENT.

1.09 PENETRATIONS, CUTTING, AND PATCHING

A. PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THE CONTRACT.

B. PROVIDE ALL SLEEVES REQUIRED FOR PROPER INSTALLATION OF WORK INCLUDED IN THIS SECTION.

C. MAKE ALL PENETRATIONS THROUGH WALLS AT 90 DEGREE ANGLES. SEAL ALL PENETRATIONS AT FIRE AND SMOKE PARTITIONS WITH FIRE SAFING MATERIAL. SEAL ALL PENETRATIONS AT SOUND WALLS WITH SOUNDPROOFING MATERIAL.

1.10 SUBMITTALS

A. SHOP DRAWINGS AND MATERIAL BROCHURES: FURNISH AN ELECTRONIC SET OF SHOP DRAWINGS AND PRODUCT DATA IN PDF FORMAT TO THE ARCHITECT/ENGINEER ON THE FOLLOWING MATERIALS:

1. LIGHTING FIXTURES
2. DISCONNECT SWITCHES
3. TRANSFORMERS
4. RACEWAYS
5. CONDUCTORS
6. MOTOR CONTROLLERS
7. PANELBOARDS
8. CONTROL PANELS
9. INSTRUMENTATION
10. GENERATOR

1.11 COOPERATION

A. THE CONTRACTOR SHALL SCHEDULE HIS WORK, AND IN EVERY WAY POSSIBLE, COOPERATE WITH ALL OTHER TRADES IN THE JOB TO AVOID DELAYS, INTERFERENCES AND UNNECESSARY WORK. HE SHALL COOPERATE WITH THEM IN PROVIDING FOR THE INSTALLATION OF THIS WORK AND COORDINATE WITH WORK OF OTHER TRADES TO ASSURE PROPER CLEARANCE OF PIPING, DUCTWORK, CONDUIT, ETC. WHEN SUCH IS REQUIRED.

1.12 WIRING WORKMANSHIP

A. RUN WIRING IN ALL BRANCH CIRCUIT PANELBOARDS AND TERMINAL CABINETS PARALLEL OR AT RIGHT ANGLES TO THE SIDES OR TOP OF THE EQUIPMENT HOUSING.

B. GROUP AND HARNESS CONDUCTORS TOGETHER USING LOCKING TYPE CABLE TIES. CABLE TIES: AS MANUFACTURED BY THE PANDUIT CORPORATION OR THOMAS AND BETTS.

1.13 STORAGE MATERIALS

A. KEEP THE BUILDING AND PREMISES CLEAN AND CLEAR OF SCRAP MATERIALS AT ALL TIMES. STORE MATERIALS AND EQUIPMENT IN DESIGNATED STORAGE AREAS.

1.14 ORDERING OF MATERIALS

A. ORDER MATERIALS AND EQUIPMENT SO AS NOT TO JEOPARDIZE PROGRESS OF CONSTRUCTION OR COMPLETION DATE.

1.15 SAFETY PRECAUTIONS AND PROGRAMS

A. IT SHALL BE THE DUTY AND RESPONSIBILITY OF THE CONTRACTOR AND ALL OF ITS SUBCONTRACTORS TO BE FAMILIAR AND COMPLY WITH ALL REQUIREMENTS OF PUBLIC LAW 91–96, 29 U.S.C. SECS. 651 ET. SEQ., THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA), AND ALL AMENDMENTS THERETO AND TO ENFORCE AND COMPLY WITH ALL OF THE PROVISIONS OF THIS ACT. IN ADDITION, ON PROJECTS IN WHICH TRENCH EXCAVATION WILL EXCEED A DEPTH OF FIVE FEET (5'), THE CONTRACTOR AND ALL OF ITS SUBCONTRACTORS SHALL COMPLY WITH ALL REQUIREMENTS OF 29 C.F.R., SECS. 1926.652 AND 1926.653, OSHA SAFETY AND HEALTH STANDARDS.

1.16 WARRANTY

A. GUARANTEE ALL WORK UNDER THIS SECTION FOR WORKMANSHIP, LABOR AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE.

PART 2 - PRODUCTS AND EXECUTION

2.01 CONDUIT

A. EXCEPT AS OTHERWISE NOTED, SPECIFIED OR REQUIRED, INSTALL ALL WIRES USED IN THIS PROJECT IN CONDUIT AS HEREINAFTER SPECIFIED:

BELOW GRADE: SCHEDULE 40 PVC
ABOVE GRADE (OUTSIDE): ALUMINUM RIGID
ABOVE GRADE (INSIDE): ALUMINUM RIGID
ELBOWS: PVC COATED RIGID STEEL

B. INSTALL CONDUITS CONTINUOUS FROM OUTLET TO OUTLET, FROM OUTLET TO CABINET, JUNCTION BOX AND PULL BOX. SECURE CONDUITS TO ALL BOXES, ETC., IN SUCH A MANNER THAT EACH SYSTEM WILL BE ELECTRICALLY CONTINUOUS FROM SERVICE TO ALL OUTLETS. TERMINATE ALL CONDUIT RUNS FROM CABINETS AND JUNCTION BOXES IN APPROVED OUTLET BOXES. INSTALL CONDUITS AS HIGH AS POSSIBLE UP AGAINST STRUCTURE ABOVE. AVOID ROUTING CONFLICTS WITH HVAC EQUIPMENT/DUCTWORK, SANITARY WASTE, VENT PIPING, AND DOMESTIC WATER PIPING.

C. INSTALL A NYLON PULL WIRE (200 LB. TEST) AND TIE ENDS IN ALL CONDUIT LINES LEFT EMPTY FOR FUTURE USE.

D. TRAPPED OR INACCESSIBLE JUNCTION BOXES, OUTLETS, ETC. ARE NOT ALLOWED.

E. GENERALLY, CONCEAL ALL CONDUITS UNLESS OTHERWISE DIRECTED OR INDICATED ON THE DRAWINGS.

F. NO BENDS PERMITTED WITH A RADIUS LESS THAN SIX (6) TIMES THE DIAMETER OF THE CONDUIT OR MORE THAN 900.

G. PROVIDE JUNCTION BOXES OR PULL BOXES TO AVOID EXCESSIVE RUNS OR TOO MANY BENDS BETWEEN OUTLETS.

H. INCREASE CONDUIT SIZES SHOWN ON THE PLANS AS REQUIRED FACILITATING PULLING OF CONDUCTORS.

I. RUN ALL CONDUITS PARALLEL TO OR AT RIGHT ANGLES TO THE BUILDING WALLS AND SUPPORT FROM WALLS OR CEILINGS AT INTERVALS REQUIRED BY CODE WITH APPROVED CLAMPS OR HANGERS.

J. INSTALL APPROVED APPLETON, CROUSE HINDS, OR O.Z. MANUFACTURING CO. EXPANSION FITTINGS IN ALL EMT RUNS WHICH PASS THROUGH EXPANSION JOINTS IN THE BUILDING. OTHER METHODS TO PROVIDE FOR THIS EXPANSION MUST BE APPROVED BY THE ARCHITECT/ENGINEER.

2.02 WIRING

A. INSTALL WIRING AS FOLLOWS:

1. FEEDERS AND POWER WIRING: CONDUCTORS IN RIGID ALUMINUM RIGID CONDUIT WHEN INSTALLED IN DRY LOCATION ABOVE GRADE. SCHEDULE 40 PVC WHEN INSTALLED BELOW GRADE. USE PVC COATED RIGID ELBOWS.
2. BRANCH CIRCUITS: INSTALL CONDUCTORS IN ALUMINUM RIGID CONDUIT.
3. INSTALL ALL WIRING IN CONDUIT. USE ONLY UL LISTED LUBRICANTS IN PULLING THE CONDUCTORS.
4. INSTALL CONDUCTORS CONTINUOUS FROM OUTLET TO OUTLET AND FROM OUTLET TO JUNCTION BOX OR PULL BOX. INSTALL SPLICES AND JOINTS CAREFULLY AND SECURELY TO BE MECHANICALLY AND ELECTRICALLY SOLID WITH PRESSURE TYPE CONNECTORS. USE 3M "SCOTCHLOCK" OR IDEAL "WING NUT" OR EQUAL TWIST–ON CONNECTORS FOR #10 AND SMALLER CONDUCTORS.
5. CONNECT CONDUCTORS FOR LIGHTING AND RECEPTACLE CIRCUITS TO THE PANEL AS DETAILED WITH COLOR CODED JACKET. COLOR CODE ALL WIRES WITH THE TYPE, SIZE, MAKE AND VOLTAGE MARKED ON IT. COLOR CODE WIRING WITH THE SAME COLOR BEING USED WITH ITS RESPECTIVE PHASE AS FOLLOWS, UNLESS OTHERWISE REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

	120/240 VOLT DELTA	120/208 VOLT WYE	480/277 VOLT WYE
PHASE A	RED	RED	BROWN
PHASE B	ORANGE	BLACK	YELLOW
PHASE C	BLACK	BLUE	PURPLE
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN

6. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN NO. 12 AWG. INCREASE THE WIRE SIZES UP ONE (1) SIZE WHEREVER THE RUN DISTANCE EXCEEDS 200 FEET.
7. ALL WIRING AND CABLE INCLUDING FIBER OPTIC, ELECTRICAL, DATA, TELECOMMUNICATIONS, TEMPERATURE CONTROLS, SECURITY, FIRE PROTECTION, ETC. SHALL BE RUN IN CONDUIT.
8. ELECTRICAL CONTRACTOR MAY GROUP WIRES WITH SAME VOLTAGE FOR FIELD DEVICES IN CONDUIT AS HE DEEMS BEST APPROPRIATE.
9. ANALOG AND LOW VOLTAGE SIGNALS SHALL NOT RUN IN SAME CONDUIT AS 120VAC AND 480VAC CIRCUITS.

2.03 CONDUCTORS

A. COPPER OF 98% CONDUCTIVITY.

B. NO. 10 AND SMALLER: SOLID TYPE THWN/THHN, EXCEPT AS OTHERWISE NOTED.

C. NO. 8 AND LARGER: STRANDED, TYPE THWN/THHN, EXCEPT AS OTHERWISE NOTED.

D. MINIMUM SIZE CONDUCTORS USED SHALL BE NO. 12 AWG FOR ALL APPLICATIONS EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE (A.C. CONTROLS, ETC.).

E. USE WIRE AND CABLE FROM ONE (1) MANUFACTURER. DELIVER IN THE ORIGINAL WRAPPING BEARING THE UNDERWRITERS LABORATORIES (UL) LABEL.

2.04 OUTLETS

A. USE GALVANIZED STEEL OR CAST TYPE BOXES AT ALL OUTLETS FOR LIGHTING FIXTURES, WALL SWITCHES, WALL RECEPTACLES, ETC.

B. SECURELY ATTACH OUTLET BOXES FOR FIXTURES AND DEVICES TO THE BUILDING CONSTRUCTION WITH EXPANSION BOLTS.

C. FLUSH MOUNT ALL OUTLET BOXES, REGARDLESS OF WALL OR CEILING CONSTRUCTION, UNLESS THEY ARE SPECIFICALLY SHOWN AS BEING USED WITH EXPOSED CONDUIT. IF SURFACE MOUNTED, USE CAST TYPE AS SPECIFIED ABOVE. UTILITY BOXES ARE NOT ALLOWED.

2.05 INSTALLATION

A. INSTALL RACEWAYS EXPOSED. SUPPORT EXPOSED RACEWAYS AT INTERVALS NOT EXCEEDING TEN FEET (10') WITH MACHINE SCREWS FOR METAL CONSTRUCTION AND EXPANSION BOLTS FOR CONCRETE CONSTRUCTION.

B. INSTALL THE EDGES OF ALL OUTLET BOXES FLUSH WITH THE SURFACE IN WHICH THEY ARE RECESSED. SCREW ATTACH INTERNAL DEVICES BEFORE ATTACHING COVERPLATE. DO NOT USE COVERPLATES AS A MEANS OF TIGHTENING THE DEVICES IN PLACE.

2.06 DISCONNECT AND FEEDER SWITCHES

A. FEEDER SWITCHES AND DISCONNECT SWITCHES: HEAVY DUTY, EXCEPT AS OTHERWISE NOTED. IN DAMP LOCATIONS OR EXPOSED TO THE WEATHER, USE NEMA 3R, RAINTIGHT.

B. DISCONNECT SWITCHES: FACTORY INSTALLED PROVISION FOR PADLOCKING IN EITHER THE "ON" OR "OFF" POSITION.

2.07 FUSES

A. FUSES: BUSSMANN OR APPROVED EQUAL.

2.08 LABELING

A. LABEL ALL PANELS, CONTROL POINTS, SWITCHES, AND MOTORS, AS DIRECTED. IDENTIFY PANELS BY PANEL NUMBER. LABEL SWITCHES, INDICATING THE EQUIPMENT WHICH THEY CONTROL. ALL LABELS SHALL BE ENGRAVED. PANEL DIRECTORIES TO BE TYPED. COORDINATE ALL EQUIPMENT NUMBERING WITH MECHANICAL CONTRACTOR.

B. INSTALL ARC FLASH HAZARD LABELS ON ALL NEW SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES AND MOTOR CONTROL CENTERS PER NEC 110.16. PANDUIT #PPS0305W2100 OR EQUAL.

2.09 GROUNDING

A. PROVIDE GROUNDING FOR ELECTRICAL SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC)

2.10 COVERPLATES

A. WHERE WIRING DEVICES ARE FLUSH MOUNTED, INSTALL STAINLESS STEEL COVERPLATES.

B. WHERE WIRING DEVICES ARE SURFACE MOUNTED, INSTALL FORMED STEEL COVERPLATES WITH CADMIUM PLATING.

C. WHERE WEATHERPROOF COVERPLATES ARE REQUIRED, MEET UL "WET LOCATION COVER CLOSED" REQUIREMENTS. USE COVERPLATES THAT ARE HINGED AND GASKETED WITH SPRING LOADED CLOSER.

D. INSTALL FINISHED COVERPLATES ON ALL JUNCTION BOXES, OUTLET BOXES, SECTIONAL SWITCH BOXES, UTILITY BOXES, ETC.

E. WHERE MORE THAN ONE (1) DEVICE IS INDICATED AT A LOCATION, MOUNT DEVICES IN COMBINED SECTION GANG BOXES, COVERED BY A COMMON PLATE.

2.11 RECEPTACLES

A. DUPLEX RECEPTACLES: 20 AMPERE, 125 VOLT, SELF OR AUTOMATIC GROUNDING, GFCI.

B. SPECIAL MOUNTING HEIGHTS ARE NOTED ON THE ARCHITECTURAL DRAWINGS. UNLESS OTHERWISE INDICATED ON THE ELECTRICAL DRAWINGS, MOUNT DEVICES AT THE FOLLOWING HEIGHTS ABOVE FINISHED FLOOR:

1. DUPLEX RECEPTACLE	18"
2. WALL SWITCHES	48"
3. VOICE & VOICE/DATA OUTLETS	18"
4. WALL & PAY TELEPHONE OUTLETS	48"

2.12 SWITCHES

A. PROVIDE HEAVY–DUTY, AC, QUIET SWITCHES. THE SWITCHES SHALL BE HUBBELL 1221 OR EQUAL, 120–277 VOLT, 20 AMPERES, SPECIFICATION GRADE. SWITCHES SHALL BE SINGLE POLE, DOUBLE POLE, THREE WAY, FOUR WAY, OR KEY OPERATED AS SCHEDULED ON THE DRAWINGS AND SHALL BE THE SELF GROUNDING TYPE. COLOR SHALL BE IVORY.

2.13 LIGHTING FIXTURES

A. PROVIDE ALL LIGHTING FIXTURES, AS SCHEDULED ON DRAWINGS, COMPLETE WITH LAMPS AND HARDWARE. INSTALL COMPLETELY WIRED, CONNECTED AND IN OPERATING ORDER.

B. CONFIRM ALL CEILING CONDITIONS, CLEARANCES AND OPERATING VOLTAGES BEFORE ORDERING LIGHTING FIXTURES.

C. SUBMIT SHOP DRAWINGS.

2.13.1 LAMPS

A. INSTALL SCHEDULED LAMPS MANUFACTURED BY GENERAL ELECTRIC, PHILLIPS, OR APPROVED EQUAL.

2.13.2 FIXTURES

A. PROVIDE LIGHTING FIXTURES WHICH HAVE BEEN TESTED AND CERTIFIED FOR PROPER OPERATION BY THE FIXTURE'S MANUFACTURER.

B. PROVIDE LIGHTING FIXTURES WITH TRIM COMPATIBLE WITH CEILING OR SURFACE ON OR IN WHICH INSTALLED.

C. EACH LUMINAIRE SHALL HAVE TWO SUPPORT WIRES INSTALLED, ONE ON EACH END, AT DIAGONAL CORNERS. LUMINAIRES IN FIRE RATED CEILINGS SHALL BE SUPPORTED ON ALL FOUR CORNERS.

D. SUPPORT AND SECURELY ATTACH WITH GALVANIZED FASTENERS IN A LEVEL POSITION.

E. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

F. FIRE RATED ASSEMBLIES, COMPLY WITH DETAILS OF LISTED ASSEMBLY.

2.14 TEMPORARY POWER

A. PROVIDE TEMPORARY POWER (SMALL TOOL) AND LIGHTING PER OSHA REQUIREMENTS.

S. Kanetzky Engineering, LLC.
5920 W. William Cannon
Bldg. 7, Suite 200
Austin, Texas 78749
(512) 329-5774.
www.skaneng.com
TBPE Firm No. F-2356
SKE PROJECT # 3340118

E1.1

D&A DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.ducetengineers.com
Firm Registration Number: 3937

ELECTRICAL SPECIFICATIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
2/5/18

Designed:	DM
Drawn:	AH
Reviewed:	DM/SK
Date:	11/20/2018

SHEET 166 OF 175

Project No: 1691-002

Drawing: K:\Projects\2018\3340118-Doucet-Big Sky Lift Stations 1 and 2\01 Design Phase_CAD\3340118-E11.dwg
User: AHALL
Last Modified: Apr. 01, 19 – 15:44
Plot Date/Time: Apr. 01, 19 – 15:48:48

PACKAGE DIESEL GENERATOR 50 KW - LIFT STATION #2

1 GENERAL

1.1 REFERENCES AND STANDARDS

THE GENERATOR SET COVERED BY THESE SPECIFICATIONS SHALL BE DESIGNED, TESTED, RATED, ASSEMBLED AND INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE STANDARDS BELOW:

- CSA C22.2 NO14
- CSA 282
- CSA 100
- EN61000-6
- EN55011
- FCC PART 15 SUBPART B
- ISO8528
- IEC61000
- UL508
- UL2200
- UL142
- DESIGNED TO ALLOW FOR INSTALLED COMPLIANCE TO NFPA 70, NFPA99 AND NFPA 110

1.2 RELATED SECTIONS

1.2.1 DIVISION 3 - STRUCTURAL CONCRETE

1.2.2 DIVISION 15 - MECHANICAL

1.3 WORK INCLUDED

1.3.1 INSTALLATION

THE WORK INCLUDES SUPPLYING AND INSTALLING A COMPLETE INTEGRATED GENERATOR SYSTEM. THE SYSTEM CONSISTS OF A DIESEL GENERATOR SET WITH RELATED COMPONENT ACCESSORIES AND AUTOMATIC TRANSFER SWITCH(ES) SPECIFIED UNDER A SEPARATE SECTION.

1.3.2 FUEL SYSTEM

THE CONTRACTOR SHALL PROVIDE A FULL TANK OF DIESEL FUEL AFTER THE COMPLETION OF ALL TESTING.

1.3.3 SYSTEM TEST

A COMPLETE SYSTEM LOAD TEST SHALL BE PERFORMED AFTER ALL EQUIPMENT IS INSTALLED. GUIDELINES IN THE START-UP SECTION.

1.3.4 REQUIREMENTS, CODES AND REGULATIONS

THE EQUIPMENT SUPPLIED AND INSTALLED SHALL MEET THE REQUIREMENTS OF THE NEC AND ALL APPLICABLE LOCAL CODES AND REGULATIONS. ALL EQUIPMENT SHALL BE OF NEW AND CURRENT PRODUCTION BY A MANUFACTURER WHO HAS 25 YEARS OF EXPERIENCE BUILDING THIS TYPE OF EQUIPMENT. MANUFACTURER SHALL BE ISO9001 CERTIFIED.

1.3.5 APPROVED MANUFACTURES

THE STANDBY DIESEL GENERATOR SHALL BE SUPPLIED BY:

- SOUTHERN PLAINS – CUMMINS®
- HOLT – CAT®
- LOFTIN – KOHLER POWER SYSTEMS®

OR BY ALTERNATE MANUFACTURES WHO SHALL SUBMIT A REQUEST TWO WEEKS PRIOR TO BID AND INCLUDE A WRITTEN LIST OF DEVIATIONS FROM THIS SPECIFICATION TO BE CONSIDERED FOR APPROVAL.

1.4 SUBSTITUTION

PROPOSED DEVIATIONS FROM THE SPECIFICATIONS SHALL BE TREATED AS FOLLOWS:

1.4.1 SUBSTITUTION TIME REQUIREMENT

REQUESTS FOR SUBSTITUTIONS SHALL BE MADE A MINIMUM OF TWO WEEKS PRIOR TO BID DATE. MANUFACTURERS CATALOG DATA SHALL ACCOMPANY EACH REQUEST AND AUTHORIZED ACCEPTANCE SHALL BE ADDENDA ONLY.

1.4.2 SUBSTITUTION RESPONSIBILITY

THE POWER SYSTEM HAS BEEN DESIGNED TO SOUTHERN PLAINS/CUMMINS ELECTRICAL AND PHYSICAL CHARACTERISTICS. THE EQUIPMENT SIZING, SPACING, AMOUNTS, ELECTRICAL WIRING, VENTILATION EQUIPMENT, FUEL AND EXHAUST COMPONENTS HAVE ALL BEEN SIZED AND DESIGNED AROUND SOUTHERN PLAINS/CUMMINS SUPPLIED EQUIPMENT. SHOULD ANY OF THE OTHER APPROVED MANUFACTURER SUBSTITUTIONS BE MADE, THE CONTRACTOR SHALL BEAR RESPONSIBILITY FOR THE INSTALLATION, COORDINATION AND OPERATION OF THE SYSTEM AS WELL AS ANY ENGINEERING AND REDESIGN COSTS, WHICH MAY RESULT FROM SUCH SUBSTITUTIONS.

1.5 SUBMITTALS

ENGINE-GENERATOR SUBMITTALS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. FACTORY PUBLISHED SPECIFICATION SHEET.
2. MANUFACTURER'S CATALOG CUT SHEETS OF ALL AUXILIARY COMPONENTS SUCH AS BATTERY CHARGER, CONTROL PANEL, ENCLOSURE, ETC.
3. DIMENSIONAL ELEVATION AND LAYOUT DRAWINGS OF THE GENERATOR SET, ENCLOSURE AND TRANSFER SWITCHGEAR AND RELATED ACCESSORIES.
4. WEIGHTS OF ALL EQUIPMENT.
5. CONCRETE PAD RECOMMENDATION, LAYOUT AND STUB-UP LOCATIONS OF ELECTRICAL AND FUEL SYSTEMS.
6. INTERCONNECT WIRING DIAGRAM OF COMPLETE EMERGENCY SYSTEM, INCLUDING GENERATOR, SWITCHGEAR, DAY TANK, REMOTE PUMPS, BATTERY CHARGER, CONTROL PANEL, AND REMOTE ALARM INDICATIONS.
7. ENGINE MECHANICAL DATA, INCLUDING HEAT REJECTION, EXHAUST GAS FLOWS, COMBUSTION AIR AND VENTILATION AIR FLOWS, FUEL CONSUMPTION, ETC.
8. GENERATOR ELECTRICAL DATA INCLUDING TEMPERATURE AND INSULATION DATA, COOLING REQUIREMENTS, EXCITATION RATINGS, VOLTAGE REGULATION, VOLTAGE REGULATOR, EFFICIENCIES, WAVEFORM DISTORTION AND TELEPHONE INFLUENCE FACTOR.
9. GENERATOR RESISTANCES, REACTANCES AND TIME CONSTANTS.
10. GENERATOR LOCKED ROTOR MOTOR STARTING CURVES.
11. MANUFACTURER'S DOCUMENTATION SHOWING MAXIMUM EXPECTED TRANSIENT VOLTAGE AND FREQUENCY DIPS, AND RECOVERY TIME DURING OPERATION OF THE GENERATOR SET AT THE SPECIFIED SITE CONDITIONS WITH THE SPECIFIED LOADS.
12. MANUFACTURER'S AND DEALER'S WRITTEN WARRANTY.

1.7 SYSTEM RESPONSIBILITY

1.7.1 GENERATOR SET DISTRIBUTOR

THE COMPLETED ENGINE GENERATOR SET SHALL BE SUPPLIED BY THE MANUFACTURER'S AUTHORIZED DISTRIBUTOR ONLY.

- SOUTHERN PLAINS – CUMMINS®
- HOLT – CAT®
- LOFTIN – KOHLER POWER SYSTEMS®

1.7.2 REQUIREMENTS, CODES AND REGULATIONS

THE EQUIPMENT SUPPLIED AND INSTALLED SHALL MEET THE REQUIREMENTS OF NEC AND ALL-APPLICABLE LOCAL CODES AND REGULATIONS. ALL EQUIPMENT SHALL BE NEW, OF CURRENT PRODUCTION. THERE SHALL BE ONE SOURCE RESPONSIBILITY FOR WARRANTY; PARTS AND SERVICE THROUGH A LOCAL REPRESENTATIVE WITH FACTORY TRAINED SERVICE PERSONNEL.

1.7.3 AUTOMATIC TRANSFER SWITCH(ES)

THE AUTOMATIC TRANSFER SWITCH(ES) SPECIFIED IN ANOTHER SECTION SHALL BE SUPPLIED BY THE GENERATOR SET MANUFACTURER IN ORDER TO ESTABLISH AND MAINTAIN A SINGLE SOURCE OF SYSTEM RESPONSIBILITY AND COORDINATION.

1.8 WARRANTY

1.8.1 TWO YEAR STANDBY (ISO 8528-1: ESP) GENERATOR SET WARRANTY

THE MANUFACTURER'S STANDARD WARRANTY SHALL IN NO EVENT BE FOR A PERIOD OF LESS THAN TWO (2) YEARS FROM DATE OF INITIAL START-UP OF THE SYSTEM AND SHALL INCLUDE REPAIR PARTS, LABOR, REASONABLE TRAVEL EXPENSE NECESSARY FOR REPAIRS AT THE JOB SITE, AND EXPENDABLES (LUBRICATING OIL, FILTERS, ANTIFREEZE, AND OTHER SERVICE ITEMS MADE UNUSABLE BY THE DEFECT) USED DURING THE COURSE OF REPAIR. RUNNING HOURS SHALL BE LIMITED TO 500 HOURS ANNUALLY FOR THE SYSTEM WARRANTY BY BOTH THE MANUFACTURER AND SERVICING DISTRIBUTOR. SUBMITTALS RECEIVED WITHOUT WRITTEN WARRANTIES AS SPECIFIED WILL BE REJECTED IN THEIR ENTIRETY.

1.9 PARTS AND SERVICE QUALIFICATIONS

1.9.1 SERVICE FACILITY

THE ENGINE-GENERATOR SUPPLIER SHALL MAINTAIN 24 HOUR PARTS AND SERVICE CAPABILITY WITHIN 100 MILES OF THE PROJECT SITE. THE DISTRIBUTOR SHALL STOCK PARTS AS NEEDED TO SUPPORT THE GENERATOR SET PACKAGE FOR THIS SPECIFIC PROJECT. THE SUPPLIER MUST CARRY SUFFICIENT INVENTORY TO COVER NO LESS THAN 80% PARTS SERVICE WITHIN 24 HOURS AND 95% WITHIN 48 HOURS.

1.9.2 SERVICE PERSONNEL

THE DEALER SHALL MAINTAIN QUALIFIED FACTORY TRAINED SERVICE PERSONNEL.

2 PRODUCT SPECIFICATIONS

2.1 GENERAL REQUIREMENTS

2.1.1 GENSET REQUIREMENTS

THE GENERATOR SET SHALL BE STANDBY DUTY RATED AT 50 EKW, 62.5 KVA, 1800 RPM, 0.8 POWER FACTOR, 480/277 V, 3-PHASE, 60 HERTZ, INCLUDING RADIATOR FAN AND ALL PARASITIC LOADS. GENERATOR SET SHALL BE SIZED TO OPERATE AT THE SPECIFIED LOAD AT A MAXIMUM AMBIENT OF 115F (46.1C) AND ALTITUDE OF 1,000.0 FEET (304.8 M).

STANDBY RATING AS DEFINED BY THE FOLLOWING:
TYPICAL LOAD FACTOR = 70% OR LESS WITH VARIABLE LOAD
TYPICAL HOURS PER YEAR = 200 HOURS
MAXIMUM EXPECTED USAGE = 500 HOURS/YEAR
TYPICAL APPLICATION – STANDBY
TYPICAL PEAK DEMAND = 80% OF ESP RATED KW WITH 100% OF RATING AVAILABLE FOR THE DURATION OF AN EMERGENCY OUTAGE

2.1.2 MATERIAL AND PARTS

ALL MATERIALS AND PARTS COMPRISING THE UNIT SHALL BE NEW AND UNUSED.

2.1.3 ENGINE

THE ENGINE SHALL BE DIESEL FUELED, FOUR (4) CYCLE, WATER-COOLED, WHILE OPERATING WITH NOMINAL SPEED NOT EXCEEDING 1800 RPM. THE ENGINE WILL UTILIZE IN-CYLINDER COMBUSTION TECHNOLOGY, AS REQUIRED, TO MEET APPLICABLE EPA NON-ROAD MOBILE REGULATIONS AND/OR THE EPA NSPS RULE FOR STATIONARY RECIPROCATING COMPRESSION IGNITION ENGINES. ADDITIONALLY, THE ENGINE SHALL COMPLY WITH THE STATE EMISSION REGULATIONS AT THE TIME OF INSTALLATION/COMMISSIONING. ACTUAL ENGINE EMISSIONS VALUES MUST BE IN COMPLIANCE WITH APPLICABLE EPA EMISSIONS STANDARDS PER ISO 8178 – D2 EMISSIONS CYCLE AT SPECIFIED EKW / BHP RATING. UTILIZATION OF THE 'TRANSITION PROGRAM FOR EQUIPMENT MANUFACTURERS' (ALSO KNOWN AS 'FLEX CREDITS') TO ACHIEVE EPA CERTIFICATION IS NOT ACCEPTABLE. THE IN-CYLINDER ENGINE TECHNOLOGY MUST NOT PERMIT UNFILTERED EXHAUST GAS TO BE INTRODUCED INTO THE COMBUSTION CYLINDER. EMISSIONS REQUIREMENTS / CERTIFICATIONS OF THIS PACKAGE: EPA TIER 3

2.1.3.1 ENGINE GOVERNING

THE ENGINE WILL BE EQUIPPED WITH AN ISOCHRONOUS ELECTRONIC GOVERNOR TO MAINTAIN +/- 0.25% STEADY STATE FREQUENCY VARIATION FROM STEADY STATE NO LOAD TO STEADY STATE FULL LOAD.

2.2 GENERATOR

2.2.1 GENERATOR SPECIFICATIONS

THE SYNCHRONOUS THREE PHASE GENERATOR SHALL BE A SINGLE BEARING, SELF-VENTILATED, DRIP-PROOF DESIGN IN ACCORDANCE WITH NEMA MG 1 AND DIRECTLY CONNECTED TO THE ENGINE FLYWHEEL HOUSING WITH A FLEX COUPLING. THE GENERATOR SHALL MEET PERFORMANCE CLASS G2 OF ISO 8528. THE EXCITATION SYSTEM SHALL ENABLE THE ALTERNATOR TO SUSTAIN 300% (250% FOR 50HZ) OF RATED CURRENT BASED ON THE 125C (CLASS H) OR 105C (CLASS F) RISE RATING FOR TEN SECONDS DURING A FAULT CONDITION AND SHALL IMPROVE THE IMMUNITY OF THE VOLTAGE REGULATOR TO NON-LINEAR DISTORTING LOADS. THE EXCITATION SYSTEM SHALL BE OF BRUSHLESS CONSTRUCTION AND BE INDEPENDENT OF MAIN STATOR WINDINGS, PERMANENT MAGNET.

2.2.2 VOLTAGE REGULATOR

2.2.2.1 AUTOMATIC VOLTAGE REGULATOR

THE AUTOMATIC VOLTAGE REGULATOR (AVR) SHALL MAINTAIN GENERATOR OUTPUT VOLTAGE WITHIN +/- 0.5% FOR ANY CONSTANT LOAD BETWEEN NO LOAD AND FULL LOAD. THE REGULATOR SHALL BE A TOTALLY SOLID STATE DESIGN, WHICH INCLUDES ELECTRONIC VOLTAGE BUILDUP, VOLTS PER HERTZ REGULATION, OVER-EXCITATION PROTECTION, SHALL LIMIT VOLTAGE OVERSHOOT ON STARTUP, AND SHALL BE ENVIRONMENTALLY SEALED.

2.2.3 MOTOR STARTING

PROVIDE LOCKED ROTOR MOTOR STARTING CAPABILITY OF 118 SKVA AT 20% INSTANTANEOUS VOLTAGE DIP AS DEFINED PER NEMA MG 1. SUSTAINED VOLTAGE DIP DATA IS NOT ACCEPTABLE.

2.3 CIRCUIT BREAKER

2.3.1 CIRCUIT BREAKER SPECIFICATIONS

PROVIDE A GENERATOR MOUNTED 100% CIRCUIT BREAKER, MOLDED CASE, QTY. (1) 100 AMP TRIP, 3 POLE, NEMA 1/IP22. BREAKER SHALL UTILIZE A SOLID STATE TRIP UNIT. THE BREAKER SHALL BE UL/CSA LISTED OF IEC CONSTRUCTION AND CONNECTED TO ENGINE/GENERATOR SAFETY SHUTDOWNS. BREAKER SHALL BE HOUSED IN AN EXTENSION TERMINAL BOX WHICH IS ISOLATED FROM VIBRATIONS INDUCED BY THE GENERATOR SET. MECHANICAL TYPE LUGS, SIZED FOR THE CIRCUIT BREAKER FEEDERS SHOWN ON DRAWING, SHALL BE SUPPLIED ON THE LOAD SIDE OF BREAKER.

2.4 CONTROLS - GENERATOR SET MOUNTED

PROVIDE A FULLY SOLID-STATE, MICROPROCESSOR BASED, GENERATOR SET CONTROL. THE CONTROL PANEL SHALL BE DESIGNED AND BUILT BY THE ENGINE MANUFACTURER. THE CONTROL SHALL PROVIDE ALL OPERATING, MONITORING, AND CONTROL FUNCTIONS FOR THE GENERATOR SET. THE CONTROL PANEL SHALL PROVIDE REAL TIME DIGITAL COMMUNICATIONS TO ALL ENGINE AND REGULATOR CONTROLS.

2.4.1 ENVIRONMENTAL

THE GENERATOR SET CONTROL SHALL BE TESTED AND CERTIFIED TO THE FOLLOWING ENVIRONMENTAL CONDITIONS.

1. -40°C TO +70C OPERATING RANGE
2. 95% HUMIDITY NON-CONDENSING, 30C TO 60C
3. IP22 PROTECTION FOR REAR OF CONTROLLER; IP55 WHEN INSTALLED IN CONTROL PANEL
4. 5% SALT SPRAY, 48 HOURS, +38C, 36.8V SYSTEM VOLTAGE
5. SINUSOIDAL VIBRATION 4.3G'S RMS, 24-1000HZ
6. ELECTROMAGNETIC CAPABILITY (89/336/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC, BS EN 50081-2, 50082-2)
7. SHOCK: WITHSTAND 15G

2.4.2 FUNCTIONAL REQUIREMENTS

THE FOLLOWING FUNCTIONALITY SHALL BE INTEGRAL TO THE CONTROL PANEL.

1. THE CONTROL SHALL INCLUDE A 33 X 132 PIXEL, 24MM X 95MM, POSITIVE IMAGE, TRANSFLECTIVE LCD DISPLAY WITH TEXT BASED ALARM/EVENT DESCRIPTIONS.
2. AUDIBLE HORN FOR ALARM AND SHUTDOWN WITH HORN SILENCE SWITCH
3. STANDARD ISO LABELING
4. MULTIPLE LANGUAGE CAPABILITY
5. REMOTE START/STOP CONTROL
6. LOCAL RUN/OFF/AUTO CONTROL INTEGRAL TO SYSTEM MICROPROCESSOR
7. COOLDOWN TIMER
8. SPEED ADJUST
9. LAMP TEST
10. PUSH BUTTON EMERGENCY STOP BUTTON
11. PASSWORD PROTECTED SYSTEM PROGRAMMING

2.4.3 DIGITAL MONITORING CAPABILITY

THE CONTROLS SHALL PROVIDE THE FOLLOWING DIGITAL READOUTS FOR THE ENGINE AND GENERATOR.
ALL READINGS SHALL BE INDICATED IN EITHER METRIC OR ENGLISH UNITS

ENGINE

1. ENGINE OIL PRESSURE
2. ENGINE OIL TEMPERATURE
3. ENGINE COOLANT TEMPERATURE
4. ENGINE RPM
5. BATTERY VOLTS

GENERATOR

1. GENERATOR AC VOLTS (LINE TO LINE, LINE TO NEUTRAL AND AVERAGE)
2. GENERATOR AC CURRENT (AVG AND PER PHASE)
3. GENERATOR AC FREQUENCY
4. GENERATOR KW (TOTAL AND PER PHASE)
5. GENERATOR KVA (TOTAL AND PER PHASE)
6. GENERATOR KVAR (TOTAL AND PER PHASE)
7. POWER FACTOR (AVG AND PER PHASE)
8. TOTAL KW-HR
9. TOTAL KVAR-HR
10. % KW
11. % KVA
12. % KVAR

2.4.4 ALARMS AND SHUTDOWNS

THE CONTROL SHALL MONITOR AND PROVIDE ALARM INDICATION AND SUBSEQUENT SHUTDOWN FOR THE FOLLOWING CONDITIONS. ALL ALARMS AND SHUTDOWNS ARE ACCOMPANIED BY A TIME, DATE, AND ENGINE HOUR STAMP THAT ARE STORED BY THE CONTROL PANEL FOR FIRST AND LAST OCCURRENCE:

ENGINE ALARM/SHUTDOWN

1. LOW OIL PRESSURE ALARM/SHUTDOWN
2. HIGH COOLANT TEMPERATURE ALARM/SHUTDOWN
3. LOSS OF COOLANT SHUTDOWN
4. OVERSPEED SHUTDOWN
5. OVERCRANK SHUTDOWN
6. LOW COOLANT LEVEL ALARM
7. LOW FUEL LEVEL ALARM
8. EMERGENCY STOP DEPRESSED SHUTDOWN
9. LOW COOLANT TEMPERATURE ALARM
10. LOW BATTERY VOLTAGE ALARM
11. HIGH BATTERY VOLTAGE ALARM
12. CONTROL SWITCH NOT IN AUTO POSITION ALARM
13. BATTERY CHARGER FAILURE ALARM

GENERATOR ALARM/SHUTDOWN

1. GENERATOR OVER VOLTAGE
2. GENERATOR UNDER VOLTAGE
3. GENERATOR OVER FREQUENCY
4. GENERATOR UNDER FREQUENCY
5. GENERATOR REVERSE POWER
6. GENERATOR OVERCURRENT

2.4.5 INPUTS AND OUTPUTS

PROGRAMMABLE DIGITAL INPUTS
THE CONTROLLER SHALL INCLUDE THE ABILITY TO ACCEPT SIX (6) DIGITAL INPUT SIGNALS. THE SIGNALS MAY BE PROGRAMMED FOR EITHER HIGH OR LOW ACTIVATION USING PROGRAMMABLE NORMALLY OPEN OR NORMALLY CLOSED CONTACTS.

DIGITAL OUTPUTS
THE CONTROL SHALL INCLUDE THE ABILITY TO OPERATE SIX (6) PROGRAMMABLE RELAY OUTPUT SIGNALS, INTEGRAL TO THE CONTROLLER. THE OUTPUT RELAYS SHALL BE RATED FOR 2A @ 30VDC.

DISCRETE OUTPUTS
THE CONTROL SHALL INCLUDE THE ABILITY TO OPERATE ONE (1) DISCRETE OUTPUTS, INTEGRAL TO THE CONTROLLER, WHICH ARE CAPABLE OF SINKING UP TO 300MA.

2.4.6 MAINTENANCE

ALL ENGINE, VOLTAGE REGULATOR, CONTROL PANEL AND ACCESSORY UNITS SHALL BE ACCESSIBLE THROUGH A SINGLE ELECTRONIC SERVICE TOOL. THE FOLLOWING MAINTENANCE FUNCTIONALITY SHALL BE INTEGRAL TO THE GENERATOR SET CONTROL:

1. ENGINE RUNNING HOURS DISPLAY
2. SERVICE MAINTENANCE INTERVAL (RUNNING HOURS OR CALENDAR DAYS)
3. ENGINE CRANK ATTEMPT COUNTER
4. ENGINE SUCCESSFUL STARTS COUNTER
5. 20 EVENTS ARE STORED IN CONTROL PANEL MEMORY
6. PROGRAMMABLE CYCLE TIMER THAT STARTS AND RUNS THE GENERATOR FOR A PREDETERMINED TIME. THE TIMER SHALL USE 14 USER-PROGRAMMABLE SEQUENCES THAT ARE REPEATED IN A 7-DAY CYCLE. EACH SEQUENCE SHALL HAVE THE FOLLOWING PROGRAMMABLE SET POINTS:

A. DAY OF WEEK
B. TIME OF DAY TO START
C. DURATION OF CYCLE

2.4.7 REMOTE COMMUNICATIONS

REMOTE COMMUNICATIONS
THE CONTROL SHALL INCLUDE MODBUS RTU COMMUNICATIONS AS STANDARD VIA RS-485 HALF DUPLEX WITH CONFIGURABLE BAUD RATES FROM 2.4K TO 57.6K.

REMOTE ANNUNCIATOR (NFPA 99/110, CSA 282)
PROVIDE A REMOTE ANNUNCIATOR TO MEET THE REQUIREMENTS OF NFPA 110, LEVEL 1.

1. THE ANNUNCIATOR SHALL PROVIDE REMOTE ANNUNCIATION OF ALL POINTS STATED ABOVE AND SHALL INCORPORATE RING-BACK CAPABILITY SO THAT AFTER SILENCING THE INITIAL ALARM, ANY SUBSEQUENT ALARMS WILL SOUND THE HORN.
2. ABILITY TO BE LOCATED UP TO 800 FT FROM THE GENERATOR SET

REMOTE MONITORING SOFTWARE
THE CONTROL SHALL PROVIDE MONITORING SOFTWARE WITH THE FOLLOWING FUNCTIONALITY:

1. PROVIDE ACCESS TO ALL DATE AND EVENTS ON GENERATOR SET COMMUNICATIONS NETWORK
2. PROVIDE REMOTE CONTROL CAPABILITY FOR THE GENERATOR SET
3. ABILITY TO MONITOR UP TO 12 GENERATOR SETS
4. ABILITY TO COMMUNICATE VIA MODBUS RTU OR REMOTE MODEM

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E1.2

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ELECTRICAL
GENERATOR-2 SPECIFICATIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
2/5/18

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

Project No:
1691-002

Drawing: K:\Projects\2018\3340118-Doucet-Big Sky Lift Stations 1 and 2\01 Design Phase_CAD\3340118-E12.dwg
User: AHALL
Last Modified: Apr. 01, 19 - 15:44
Plot Date/Time: Apr. 01, 19 - 15:48:48

2.5 COOLING SYSTEM

THE GENERATOR SET SHALL BE EQUIPPED WITH A RAIL–MOUNTED, ENGINE–DRIVEN RADIATOR WITH BLOWER FAN AND ALL ACCESSORIES. THE COOLING SYSTEM SHALL BE SIZED TO OPERATE AT FULL LOAD CONDITIONS AND 110 F* AMBIENT AIR ENTERING THE ROOM OR ENCLOSURE (IF AN ENCLOSURE IS SPECIFIED). THE GENERATOR SET SUPPLIER IS RESPONSIBLE FOR PROVIDING A PROPERLY SIZED COOLING SYSTEM BASED ON THE ENCLOSURE STATIC PRESSURE RESTRICTION.

2.6 FUEL SYSTEM

2.6.1 FUEL SYSTEM

THE FUEL SYSTEM SHALL BE INTEGRAL WITH THE ENGINE. IN ADDITION TO THE STANDARD FUEL FILTERS PROVIDED BY THE ENGINE MANUFACTURER, THERE SHALL ALSO BE INSTALLED A PRIMARY FUEL FILTER/WATER SEPARATOR IN THE FUEL INLET LINE TO THE ENGINE. ALL FUEL PIPING SHALL BE BLACK IRON OR FLEXIBLE FUEL HOSE RATED FOR THIS SERVICE. NO GALVANIZED PIPING WILL BE PERMITTED. FLEXIBLE FUEL LINES SHALL BE MINIMALLY RATED FOR 300 DEGREES F AND 100 PSI.

2.6.2 FUEL SUB BASE TANK

PROVIDE A DOUBLE WALL SUB–BASE TANK CONSTRUCTED TO MEET ALL LOCAL CODES AND REQUIREMENTS. A FUEL TANK BASE OF 24 HOUR CAPACITY SHALL BE PROVIDED AS AN INTEGRAL PART OF THE ENCLOSURE. IT SHALL BE CONTAINED IN A RUPTURE BASIN WITH 110% CAPACITY. THE TANK SHALL MEET UL142 STANDARDS. A LOCKING FILL CAP, A MECHANICAL READING FUEL LEVEL GAUGE, LOW FUEL LEVEL ALARM CONTACT, AND FUEL TANK RUPTURE ALARM CONTACT SHALL BE PROVIDED.

2.7 EXHAUST SYSTEM

2.7.1 SILENCER

A CRITICAL GRADE SILENCER, COMPANION FLANGES, AND FLEXIBLE EXHAUST FITTING PROPERLY SIZED SHALL BE FURNISHED AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION. MOUNTING SHALL BE PROVIDED BY THE CONTRACTOR AS SHOWN ON THE DRAWINGS (INDOOR INSTALLATIONS ONLY). THE SILENCER SHALL BE MOUNTED SO THAT ITS WEIGHT IS NOT SUPPORTED BY THE ENGINE NOR WILL EXHAUST SYSTEM GROWTH DUE TO THERMAL EXPANSION BE IMPOSED ON THE ENGINE. EXHAUST PIPE SIZE SHALL BE SUFFICIENT TO ENSURE THAT EXHAUST BACKPRESSURE DOES NOT EXCEED THE MAXIMUM LIMITATIONS SPECIFIED BY THE ENGINE MANUFACTURER.

2.8 STARTING SYSTEM

2.8.1 STARTING MOTOR

A DC ELECTRIC STARTING SYSTEM WITH POSITIVE ENGAGEMENT SHALL BE FURNISHED. THE MOTOR VOLTAGE SHALL BE AS RECOMMENDED BY THE ENGINE MANUFACTURER.

2.8.2 JACKET WATER HEATER

JACKET WATER HEATER SHALL BE PROVIDED AND SHALL BE SIZED TO INSURE THAT GENSET WILL START WITHIN THE SPECIFIED TIME PERIOD AND AMBIENT CONDITIONS.

2.8.3 BATTERIES

BATTERIES – A LEAD–ACID STORAGE BATTERY SET OF THE HEAVY–DUTY STARTING TYPE SHALL BE PROVIDED. BATTERY VOLTAGE SHALL BE COMPATIBLE WITH THE STARTING SYSTEM. THE BATTERIES SUPPLIED SHALL MEET NFPA 110 CRANKING REQUIREMENTS OF 90 SECONDS MINIMUM OF TOTAL CRANKING TIME. BATTERY SPECIFICATIONS (TYPE, AMP–HOUR RATING, COLD CRANKING AMPS) TO BE PROVIDED IN THE SUBMITTAL.

2.8.4 BATTERY CHARGER

BATTERY CHARGER – A CURRENT LIMITING BATTERY CHARGER SHALL BE FURNISHED TO AUTOMATICALLY RECHARGE BATTERIES. THE CHARGER SHALL BE DUAL CHARGE RATE WITH AUTOMATIC SWITCHING TO THE BOOST RATE WHEN REQUIRED. THE BATTERY CHARGER SHALL BE MOUNTED ON THE GENSET PACKAGE OR INSIDE THE GENSET ENCLOSURE/ROOM.

2.9 ENCLOSURE

2.9.1 SOUND ATTENUATED ENCLOSURE

THE COMPLETE DIESEL ENGINE GENERATOR SET, INCLUDING GENERATOR CONTROL PANEL, ENGINE STARTING BATTERIES AND FUEL OIL TANK, SHALL BE ENCLOSED IN A FACTORY ASSEMBLED, SOUND ATTENUATED ENCLOSURE MOUNTED ON THE FUEL TANK BASE.

1. A WEATHER RESISTANT, SOUND ATTENUATED ENCLOSURE OF STEEL WITH ELECTROSTATICALLY APPLIED POWDER COATED BAKED POLYESTER PAINT. THE ENCLOSURE SHALL HAVE A RESULTING SOUND LEVEL OF 75 DBA @ 23 FT WITH THE GENSET RUNNING UNDER FULL LOAD. IT SHALL CONSIST OF A ROOF, SIDE WALLS, AND END WALLS. FASTENERS SHALL BE EITHER ZINC PLATED OR STAINLESS STEEL.
2. ENCLOSURE SOUND ATTENUATION: ACOUSTICAL FOAM SHALL BE PROVIDED BETWEEN ALL SUPPORTS AND INSIDE DOORS AND SOUND BAFFLES ON AIR INTAKE AND AIR DISCHARGE.

3 EXECUTION

3.1 INSTALLATION

INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, THE PROJECT DRAWINGS AND SPECIFICATIONS, AND ALL APPLICABLE CODES.

3.2 START-UP AND TESTING

COORDINATE ALL START–UP AND TESTING ACTIVITIES WITH THE ENGINEER AND OWNER. AFTER INSTALLATION IS COMPLETE AND NORMAL POWER IS AVAILABLE, THE MANUFACTURER'S LOCAL DEALER SHALL PERFORM THE FOLLOWING:

NFPA 110 LOAD TEST REQS

1. VERIFY THAT THE EQUIPMENT IS INSTALLED PROPERLY.
2. CHECK ALL AUXILIARY DEVICES FOR PROPER OPERATION, INCLUDING BATTERY CHARGER, JACKET WATER HEATER(S), GENERATOR SPACE HEATER, REMOTE ANNUNCIATOR, ETC.
3. TEST ALL ALARMS AND SAFETY SHUTDOWN DEVICES FOR PROPER OPERATION AND ANNUNCIATION.
4. CHECK ALL FLUID LEVELS.
5. START ENGINE AND CHECK FOR EXHAUST, OIL, FUEL LEAKS, VIBRATIONS, ETC.
6. VERIFY PROPER VOLTAGE AND PHASE ROTATION AT THE TRANSFER SWITCH BEFORE CONNECTING TO THE LOAD.
7. CONNECT THE GENERATOR TO BUILDING LOAD AND VERIFY THAT THE GENERATOR WILL START AND RUN ALL DESIGNATED LOADS.
8. THE SYSTEM SHALL BE TESTED UNDER FULL LOAD AND MONITOR THE FOLLOWING READINGS:

OIL PRESSURE
COOLANT TEMPERATURE
BATTERY CHARGE RATE
AC VOLTS
AC AMPERES– ALL PHASES
FREQUENCY
KILOWATTS
AMBIENT TEMPERATURE

3.3 OPERATION AND MAINTENANCE MANUALS

PROVIDE TWO (2) SETS OF OPERATION AND MAINTENANCE MANUALS COVERING THE GENERATOR, SWITCHGEAR, AND AUXILIARY COMPONENTS. INCLUDE FINAL AS–BUILT WIRING INTERCONNECT DIAGRAMS AND RECOMMENDED PREVENTATIVE MAINTENANCE SCHEDULES.

3.4 TRAINING

3.4.1 ON-SITE TRAINING

PROVIDE ON–SITE TRAINING TO INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE EQUIPMENT. REVIEW OPERATION AND MAINTENANCE MANUALS, PARTS MANUALS, AND EMERGENCY SERVICE PROCEDURES.

AUTOMATIC TRANSFER SWITCH 100 AMP, 4 POLE, NEMA 4X

1 GENERAL

1.1 SCOPE

A. IT IS THE INTENT OF THIS SPECIFICATION TO SECURE A TRANSFER SWITCH THAT HAS BEEN PROTOTYPE TESTED, FACTORY BUILT, PRODUCTION TESTED AND SITE TESTED. A TRANSFER SWITCH WITH THE NUMBER OF POLES, VOLTAGE AND CURRENT RATINGS SHOWN ON THE PLANS AND SPECIFIED HEREIN SHALL BE PROVIDED.

1.2 CODES AND STANDARDS

A. THE AUTOMATIC TRANSFER SWITCH SHALL CONFORM TO THE REQUIREMENTS OF:

1. UL 1008: UNDERWRITERS LABORATORIES STANDARD FOR AUTOMATIC TRANSFER SWITCHES
2. CSA: C22.2 NO. 178 CERTIFIED
3. IEC: 947–6–1 CERTIFIED AT 480 VAC
4. NFPA 70: NATIONAL ELECTRICAL CODE INCLUDING USE IN EMERGENCY AND STANDBY SYSTEMS IN ACCORDANCE WITH ARTICLES 517, 700, 701, 702
5. NFPA 99: ESSENTIAL ELECTRICAL SYSTEMS FOR HEALTH CARE FACILITIES
6. NFPA 101: LIFE SAFETY CODE
7. NFPA 110: STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS
8. IEEE 241: I.E.E.E. RECOMMENDED PRACTICE FOR ELECTRICAL POWER SYSTEMS IN COMMERCIAL BUILDINGS
9. IEEE 446: I.E.E.E. RECOMMENDED PRACTICE FOR EMERGENCY AND STANDBY POWER SYSTEMS
10. NEMA ICS10: AC AUTOMATIC TRANSFER SWITCH EQUIPMENT
11. UL 50/508: ENCLOSURES
12. ICS 6: ENCLOSURES
13. ANSI C33.76: ENCLOSURES
14. NEMA 250: ENCLOSURES
15. IEEE 472: (ANSI C37.90A): RINGING WAVE IMMUNITY
16. EN55022 (CISPR11): CONDUCTED AND RADIATED EMISSIONS (EXCEEDS EN55011 & MILSTD 461 CLASS 3)
17. EN61000–4–2: (LEVEL 4): ESD IMMUNITY TEST CLASS B:
18. EN61000–4–3: (ENV50140): RADIATED RF, ELECTROMAGNETIC FIELD IMMUNITY
19. EN61000–4–4: ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST
20. EN61000–4–5: IEEE C62.41: SURGE IMMUNITY TEST (1.2 X 50__S, 5 & 8 KV)
21. EN61000–4–6: (ENV50141): CONDUCTED IMMUNITY TEST
22. EN61000–4–11: VOLTAGE DIPS AND INTERRUPTION IMMUNITY
23. IEE–693–2005: SEISMIC CERTIFIED AT HIGH LEVEL WITH 2.5 AMPLIFICATION FACTOR
24. IBC–2003: AT IP=1.5 FOR Z/H LESS THAN OR EQUAL TO (IN ACCORDANCE WITH ICC–ES–AC156)

1.3 APPROVED MANUFACTURES

A. THE AUTOMATIC TRANSFER SWITCH SHALL BE SUPPLIED BY:

- ASCO®
- RUSSELECTRIC®

OR BY ALTERNATE MANUFACTURES WHO SHALL SUBMIT A REQUEST ONE WEEK PRIOR TO BID AND INCLUDE A WRITTEN LIST OF DEVIATIONS FROM THIS SPECIFICATION TO BE CONSIDERED FOR APPROVAL.

2 PRODUCTS

2.1 PERFORMANCE AND CONSTRUCTION

A. THE AUTOMATIC TRANSFER SWITCH SHALL BE OF DOUBLE THROW CONSTRUCTION OPERATED BY A RELIABLE SOLENOID DRIVEN MECHANISM. THERE SHALL BE A DIRECT MECHANICAL COUPLING TO FACILITATE TRANSFER IN 6 CYCLES OR LESS.

B. THE TRANSFER SWITCH SHALL INCORPORATE A TIMED, CENTER–OFF OR NEUTRAL POSITION FOR MOTOR AND INDUCTIVE LOAD DECAY. TRANSFER TIME SHALL BE ADJUSTABLE FROM 0–10 MINUTES TO EITHER SOURCE. A MECHANICAL INTERLOCK SHALL BE PROVIDED TO ENSURE THAT BOTH SETS OF CONTACTS CANNOT BE CLOSED AT THE SAME TIME.

C. FOR SWITCHES INSTALLED IN SYSTEMS HAVING GROUND FAULT PROTECTIVE DEVICES, AND/OR WIRED SO AS TO BE DESIGNATED A SEPARATELY DERIVED SYSTEM BY THE NEC, A 4TH POLE SHALL BE PROVIDED. THIS ADDITIONAL POLE SHALL ISOLATE THE NORMAL AND EMERGENCY NEUTRALS. THE NEUTRAL POLE SHALL HAVE THE SAME WITHSTAND AND OPERATIONAL RATINGS AS THE OTHER POLES AND SHALL BE ARRANGED TO BREAK LAST AND MAKE FIRST TO MINIMIZE NEUTRAL SWITCHING TRANSIENTS. ADD–ON OR ACCESSORY POLES THAT ARE NOT OF IDENTICAL CONSTRUCTION AND WITHSTAND CAPABILITY WILL NOT BE CONSIDERED.

D. THE CONTACT STRUCTURE SHALL CONSIST OF A MAIN CURRENT CARRYING CONTACT, WHICH IS A SILVER ALLOY WITH A MINIMUM OF 50% SILVER CONTENT. THE CURRENT CARRYING CONTACTS SHALL BE PROTECTED BY SILVER TUNGSTEN ARCING CONTACTS ON ALL SIZES ABOVE 400 AMPS.

E. THE TRANSFER SWITCH MANUFACTURER SHALL SUBMIT TEST DATA FOR EACH SIZE SWITCH, SHOWING IT CAN WITHSTAND FAULT CURRENTS OF THE MAGNITUDE AND THE DURATION NECESSARY TO MAINTAIN THE SYSTEM INTEGRITY. MINIMUM UL LISTED WITHSTAND AND CLOSE INTO FAULT RATINGS SHALL BE AS FOLLOWS:

SIZE (AMPS)	COORDINATED BREAKER	CURRENT LIMITING FUSE
40 – 600	50,000	200,000
800	65,000	200,000
1000 – 1200	85,000	200,000
1600 – 3000	100,000	200,000

F. A DIELECTRIC TEST AT THE CONCLUSION OF THE WITHSTAND AND CLOSING TESTS SHALL BE PERFORMED.

G. THE AUTOMATIC TRANSFER SWITCH MANUFACTURER SHALL CERTIFY SUFFICIENT ARC INTERRUPTING CAPABILITIES FOR 50 CYCLES OF OPERATION BETWEEN A NORMAL AND EMERGENCY SOURCE THAT ARE 120 DEGREES OUT OF PHASE AT 480 VOLTS, 600% OF RATED CURRENT AT .50 POWER FACTOR. THIS CERTIFICATION IS TO ENSURE THAT THERE WILL BE NO CURRENT FLOW BETWEEN THE TWO ISOLATED SOURCES DURING SWITCHING.

H. ALL RELAYS SHALL BE CONTINUOUS DUTY INDUSTRIAL TYPE WITH WIPING CONTACTS. COILS, RELAYS, TIMERS AND ACCESSORIES SHALL BE READILY FRONT ACCESSIBLE. THE CONTROL PANEL AND POWER SECTION SHALL BE INTERCONNECTED WITH A HARNESS AND KEYED DISCONNECT PLUGS FOR MAINTENANCE.

I. MAIN AND ARCING CONTACTS SHALL BE VISIBLE WITHOUT MAJOR DISASSEMBLY TO FACILITATE INSPECTION AND MAINTENANCE.

J. A MANUAL HANDLE SHALL BE PROVIDED FOR MAINTENANCE PURPOSES WITH THE SWITCH DE–ENERGIZED. AN OPERATOR DISCONNECT SWITCH SHALL BE PROVIDED TO DEFEAT AUTOMATIC OPERATION DURING MAINTENANCE, INSPECTION OR MANUAL OPERATION.

K. SWITCHES COMPOSED OF MOLDED CASE BREAKERS, LIGHTING CONTACTORS OR COMPONENTS THEREOF WILL NOT BE ACCEPTABLE.

L. THE CURRENT RATING SHALL BE A CONTINUOUS RATING WHEN THE SWITCH IS INSTALLED IN AN ENCLOSURE, AND SHALL CONFORM TO NEMA TEMPERATURE RISE STANDARDS.

M. THE UNIT SHALL BE RATED BASED ON ALL CLASSES OF LOADS, I.E., RESISTIVE, TUNGSTEN, BALLAST AND INDUCTIVE LOADS. SWITCHES RATED 400 AMPERES OR LESS SHALL BE UL LISTED FOR 100% TUNGSTEN LAMP LOAD.

N. TEMPERATURE RISE TESTS IN ACCORDANCE WITH UL 1008 SHALL HAVE BEEN CONDUCTED AFTER THE OVERLOAD AND ENDURANCE TESTS TO CONFIRM THE ABILITY OF THE UNITS TO CARRY THEIR RATED CURRENTS WITHIN THE ALLOWABLE TEMPERATURE LIMITS.

O. UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS, THE SWITCH SHALL BE MOUNTED IN A NEMA 1 ENCLOSURE.

2.2 CONTROL

A. THE CONTROL PANEL SHALL BE OPTO–ISOLATED FROM ELECTRICAL NOISE AND PROVIDED WITH THE FOLLOWING INHERENT CONTROL FUNCTIONS AND CAPABILITIES:

1. EASY–TO–VIEW 4X20 LCD DISPLAY WITH LONG LASTING LED INDICATORS.
2. CONTROL PANEL SHALL DISPLAY VOLTAGE AND FREQUENCY OF BOTH SOURCES.
3. THE USER SHALL BE ABLE TO VIEW THE LAST 16 RECORDED EVENTS.
4. CAPABILITY FOR EXTERNAL COMMUNICATION AND NETWORK INTERFACE.
5. ADJUSTMENTS TO ALL SETTINGS SHALL BE MADE FROM THE FRONT OF THE PANEL WITHOUT OPENING THE DOOR.

B. THE TRANSFER SWITCH SHALL BE EQUIPPED WITH A MICROPROCESSOR BASED CONTROL PANEL. THE CONTROL PANEL SHALL PERFORM THE OPERATIONAL AND DISPLAY FUNCTIONS OF THE TRANSFER SWITCH. THE DISPLAY FUNCTIONS OF THE CONTROL PANEL SHALL INCLUDE ATS POSITION, SOURCE AVAILABILITY, SEQUENCE INDICATION AND DIAGNOSTICS.

C. ALL PROGRAMMABLE AND CONTROL FUNCTIONS SHALL BE PASS CODE PROTECTED AND ACCESSIBLE THROUGH THE KEYPAD.

D. THE CONTROL PANEL SHALL BE PROVIDED WITH A SIMPLE USER INTERFACE FOR TRANSFER SWITCH MONITORING, CONTROL AND FIELD CHANGEABLE FUNCTIONS AND SETTINGS.

E. TOUCH PAD TEST SWITCH WITH FAST TEST/LOAD/NO LOAD SELECTION CAPABILITY TO SIMULATE A NORMAL SOURCE FAILURE.

F. THE CONTROLLER SHALL PROVIDE DIGITAL TIMER ADJUSTMENTS WITH 1–SECOND RESOLUTION. VOLTAGE AND FREQUENCY SHALL BE ADJUSTABLE TO 1% RESOLUTION TO FACILITATE ACCURATE TRANSFER.

G. TO ENSURE RELIABLE AND CONSISTENT USER OPERATION THE CONTROLS MUST BE EQUIPPED WITH NONVOLATILE MEMORY AND ALLOW AUTOMATIC DAYLIGHT SAVINGS TIME ADJUSTMENT.

3 OPERATION

3.1 SEQUENCE OF OPERATION

A. THE ATS SHALL INCORPORATE ADJUSTABLE THREE PHASE UNDER VOLTAGE SENSING ON THE NORMAL SOURCE.

B. WHEN THE VOLTAGE OF ANY PHASE OF THE NORMAL SOURCE IS REDUCED TO 80% OF NOMINAL VOLTAGE, FOR A PERIOD OF 0–10 SECONDS (PROGRAMMABLE) A PILOT CONTACT SHALL CLOSE TO INITIATE STARTING OF THE ENGINE GENERATOR.

C. THE ATS SHALL INCORPORATE ADJUSTABLE UNDER VOLTAGE AND UNDER FREQUENCY SENSING ON THE EMERGENCY SOURCE. IN ADDITION, THE SWITCH WILL BE PROVIDED WITH A CENTER–OFF OR NEUTRAL POSITION

D. WHEN THE EMERGENCY SOURCE HAS REACHED A VOLTAGE VALUE OF 90% NOMINAL, ACHIEVED FREQUENCY WITHIN 95% OF THE RATED VALUE AND HAS REACHED THE END OF THE ADJUSTABLE DELAY, THE LOAD SHALL BE TRANSFERRED TO THE NEUTRAL POSITION FOR AN ADJUSTABLE TIME PERIOD OF 0–10 MINUTES. UPON COMPLETION OF THIS NEUTRAL TIME DELAY THE SWITCH SHALL BE TRANSFERRED TO THE EMERGENCY SOURCE.

E. WHEN THE NORMAL SOURCE HAS BEEN RESTORED TO NOT LESS THAN 90% OF RATED VOLTAGE ON ALL PHASES AND THE TIME DELAY TRANSFER TO NORMAL HAS EXPIRED, THE LOAD SHALL BE RETRANSFERRED TO THE NEUTRAL POSITION FOR AN ADJUSTABLE TIME PERIOD OF 0–10 MINUTES. AFTER WHICH THE SWITCH SHALL BE CONNECTED TO THE NORMAL SOURCE. THE GENERATOR SHALL RUN UNLOADED FOR 5 MINUTES (PROGRAMMABLE) AND THEN AUTOMATICALLY SHUT DOWN. THE GENERATOR SHALL BE READY FOR AUTOMATIC OPERATION UPON THE NEXT FAILURE OF THE NORMAL SOURCE.

F. IF THE ENGINE GENERATOR SHOULD FAIL WHILE CARRYING THE LOAD, RETRANSFER TO THE NORMAL SOURCE SHALL BE MADE INSTANTANEOUSLY UPON RESTORATION OF PROPER VOLTAGE (90%) ON THE NORMAL SOURCE.

G. INSPECTION AND OPERATIONAL TESTING/DEMONSTATION OF THE ATS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE TO INDICATE THE ATS SATISFIES THESE SPECIFICATIONS.

3.2 STANDARD ACCESSORIES

A. ADJUSTABLE TIME DELAY TO OVERRIDE MOMENTARY NORMAL SOURCE FAILURE PRIOR TO ENGINE START. FIELD PROGRAMMABLE 0–10 SECONDS FACTORY SET AT 3 SECONDS.

B. ADJUSTABLE TIME DELAY ON RETRANSFER TO NORMAL SOURCE, PROGRAMMABLE 0–60 MINUTES FACTORY SET AT 30 MINUTES. IF THE EMERGENCY SOURCE FAILS DURING THE RETRANSFER TIME DELAY, THE TRANSFER SWITCH CONTROLS SHALL AUTOMATICALLY BYPASS THE TIME DELAY AND IMMEDIATELY RETRANSFER TO THE NORMAL POSITION.

C. A TIME DELAY ON TRANSFER TO EMERGENCY, PROGRAMMABLE 0–5 MINUTES, FACTORY SET AT 1 SECOND.

D. A TIME DELAY AND CONTROL PANEL DISPLAY ON TRANSFER TO EITHER SOURCE WITH A CENTER–OFF POSITION, PROGRAMMABLE 0–10 MINUTES, AND FACTORY SET AT 5 SECONDS.

E. AN IN–PHASE MONITOR SHALL BE PROVIDED. THE MONITOR SHALL COMPARE THE PHASE ANGLE DIFFERENCE BETWEEN THE NORMAL AND EMERGENCY SOURCES AND BE PROGRAMMED TO ANTICIPATE THE ZERO CROSSING POINT TO MINIMIZE SWITCHING TRANSIENTS.

F. AN EXERCISER TIMER WITH MOMENTARY TEST PUSHBUTTON SHALL BE INCORPORATED WITHIN THE MICROPROCESSOR AND SHALL BE CAPABLE OF STARTING THE ENGINE GENERATOR SET AND TRANSFERRING THE LOAD (WHEN SELECTED) FOR EXERCISE PURPOSES ON A DAILY, WEEKLY OR MONTHLY BASIS. THE EXERCISER SHALL CONTAIN A BATTERY FOR MEMORY RETENTION DURING AN OUTAGE.

G. PROVIDE A MOMENTARY PUSHBUTTON TO BYPASS THE TIME DELAYS ON TRANSFER AND RETRANSFER AND PROGRAMMABLE COMMIT/NO COMMIT CONTROL LOGIC.

H. THE CONTROLLER SHALL ACCEPT A REMOTE PEAK SHAVE OR TEST INPUT TO SIGNAL THE TRANSFER SWITCH TO THE EMERGENCY POSITION.

I. A SET OF CUSTOMER CONTACTS SHALL BE PROVIDED TO INDICATE BOTH EMERGENCY AND NORMAL SOURCE POSITION.

J. ADDITIONAL AUXILIARY CONTACTS (A3) – CLOSED WHEN THE TRANSFER SWITCH IS IN SOURCE 2 POSITION.

K. ADDITIONAL AUXILIARY CONTACTS (A4) – CLOSED WHEN THE TRANSFER SWITCH IS IN SOURCE 1 POSITION.

4 EXECUTION

4.1 GENERAL

A. THE TRANSFER SWITCH SHALL BE INSTALLED AS SHOWN ON THE PLANS, IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS AND ALL APPLICABLE CODES.

4.2 FACTORY TESTS

A. THE TRANSFER SWITCH MANUFACTURER SHALL PERFORM A COMPLETE FUNCTIONAL TEST ON THE SWITCH, CONTROLLER AND ACCESSORIES PRIOR TO SHIPPING FROM THE FACTORY. A CERTIFIED TEST REPORT SHALL BE AVAILABLE UPON REQUEST.

4.3 SERVICE

A. THE MANUFACTURER SHALL MAINTAIN A NATIONAL SERVICE ORGANIZATION THAT IS FACTORY TRAINED AND CERTIFIED FOR TRANSFER SWITCH EQUIPMENT. IN ADDITION, THE SERVICE ORGANIZATION SHALL BE AVAILABLE 24 HOURS PER DAY, 365 DAYS PER YEAR.

4.4 WARRANTY

A. THE AUTOMATIC TRANSFER SWITCH SHALL BE WARRANTED AGAINST DEFECTIVE WORKMANSHIP FOR A PERIOD OF TWO YEARS.

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E1.3

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Firm Registration Number: 3937

ELECTRICAL
GENERATOR-2 AND ATS-2
SPECIFICATIONS

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
12/5/18

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

Project No:
1691-002

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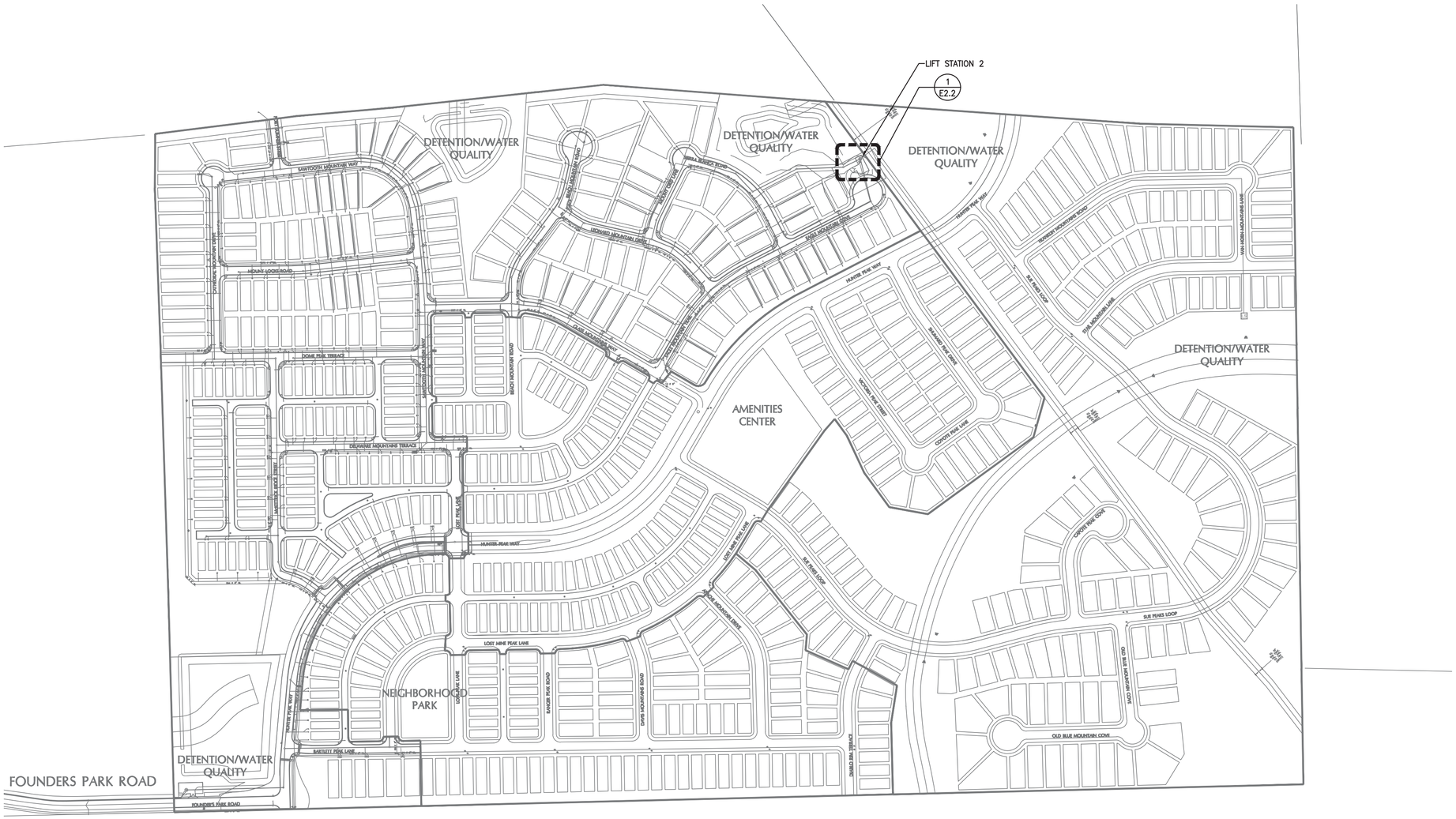

1 E2.0 **ELECTRICAL SITE PLAN**
SCALE: 1" = 200'

E2.0

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ELECTRICAL OVERALL SITE PLAN

BIG SKY RANCH PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
2/5/18

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

SHEET
169
OF 175

Project No:
1691-002

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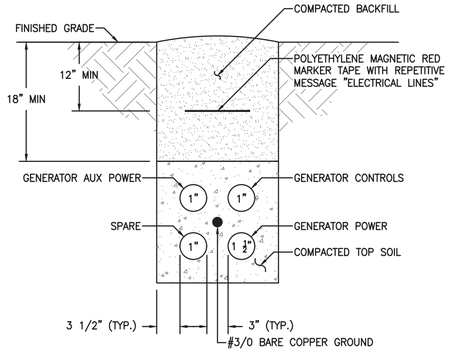
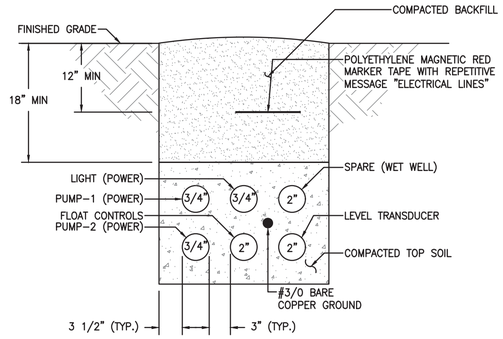


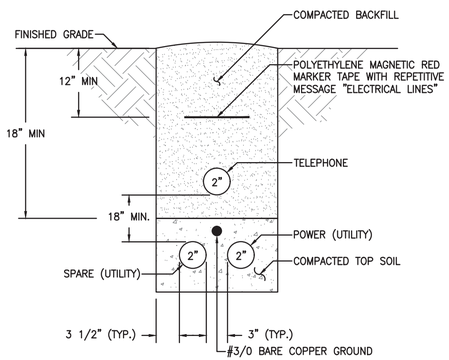
4 E2.1 **DETAIL - TRENCH SECTION C-C**
SCALE: NTS



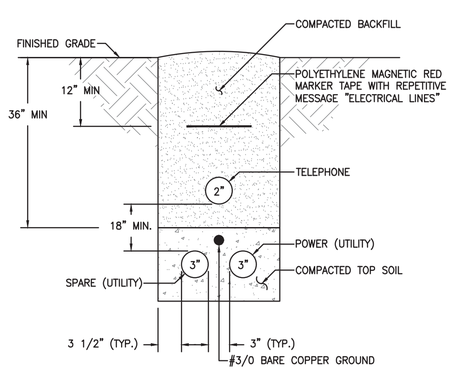
5 E2.1 **DETAIL - TRENCH SECTION D-D**
SCALE: NTS

REFERENCE NOTES

1. INSTALL NEW 100A, 277/480V, 3 PHASE 4 WIRE ELECTRIC SERVICE. CONTRACTOR TO COORDINATE WITH PEC [512-858-5611] PROVIDE PULL STRING IN EACH CONDUIT. VERIFY EXACT LOCATION OF TRANSFORMER PAD PRIOR TO INSTALLATION.
2. PROVIDE AND INSTALL #3/0 BARE COPPER GROUNDING RING. BOND, EQUIPMENT RACKS AND GENERATOR SKID TO GROUNDING ELECTRODE SYSTEM VIA EXOTHERMIC WELD.
3. PROVIDE AND INSTALL PUMP CONTROL PANEL. REFER TO SHEETS E5.0 AND E5.1.
4. PROVIDE AND INSTALL GROUND RODS. REFER TO DETAIL 5/E4.0.
5. PROVIDE AND INSTALL EQUIPMENT RACK PER DETAILS E4.1.
6. PROVIDE AND INSTALL WET WELL JUNCTION BOX. REFER TO DETAIL 2/E4.0.
7. PROVIDE AND INSTALL LIGHT POLE. REFER TO DETAIL 1/E4.0.
8. PROVIDE AND INSTALL ALL CONDUIT STUB-UPS 10' AWAY FROM TRANSFORMER PAD PER PEC DESIGN STANDARDS.
9. STUB OUT UNDERGROUND TELEPHONE 10' FROM PROPERTY LINE.



3 E2.1 **DETAIL - TRENCH SECTION B-B**
SCALE: NTS



2 E2.1 **DETAIL - TRENCH SECTION A-A**
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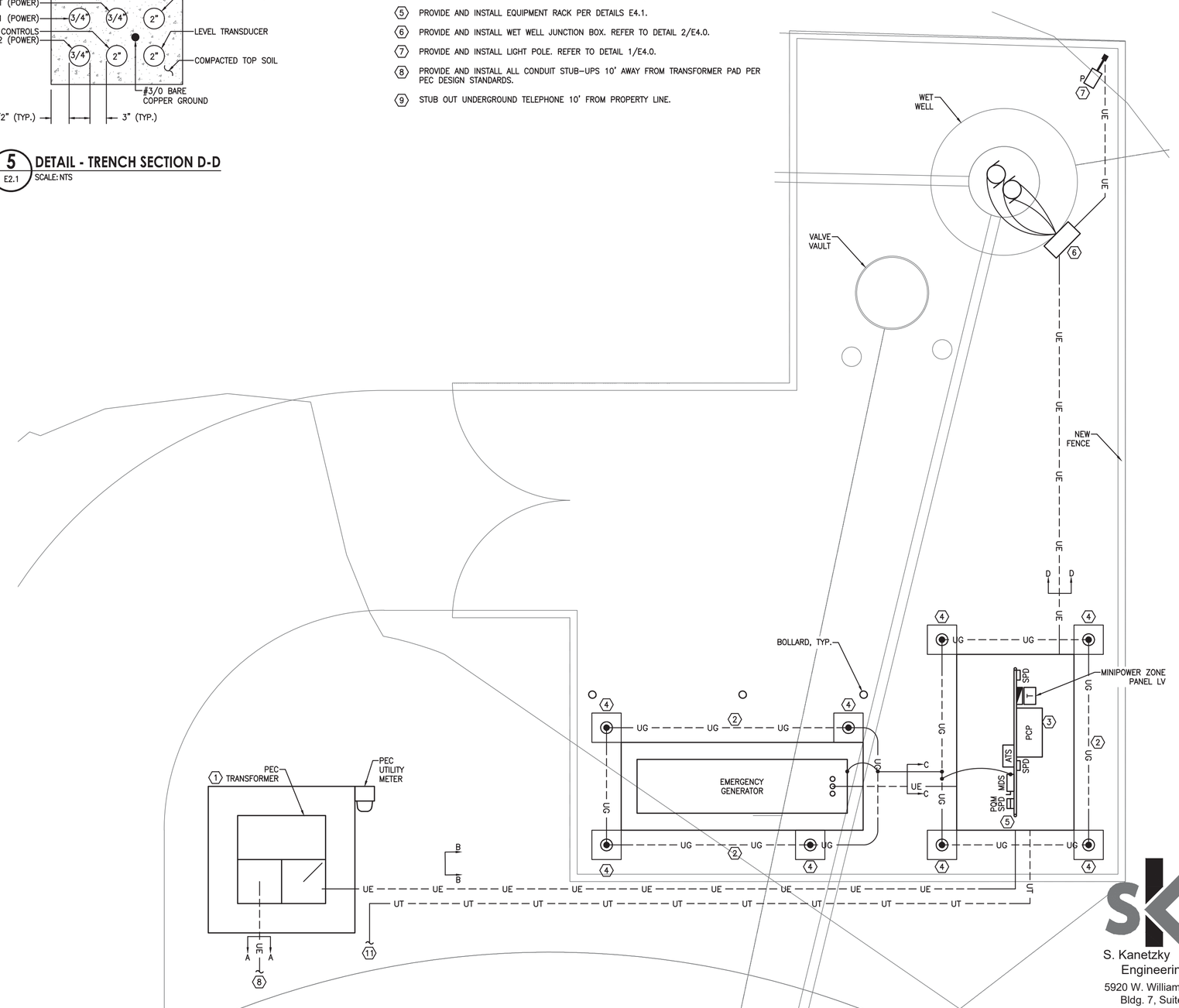

1 E2.1 **ELECTRICAL SITE PLAN - LIFT STATION 2**
SCALE: 1/4"=1'-0"

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E2.1

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ELECTRICAL SITE PLAN AND DETAILS LIFT STATION 2

BIG SKY RANCH PHASE ONE PLAN DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
2/5/18

Designed:	DM
Drawn:	AH
Reviewed:	DM/SK
Date:	11/20/2018

SHEET 170 OF 175

Project No: 1691-002

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Plot Date/Time: Apr. 01, 19 - 15:49:22

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	LAMP QTY	LAMP TYPE	LAMP WATTS	FIX. WATTS	VOLTS	MOUNTING	REMARKS
A	LITHONIA	FEM4 LED 4L/ IMAFD		LED		61	120	SURFACE	LOW PROFILE GASKETED INDUSTRIAL LED STRIP
P	LITHONIA	CSX1-LED-60C-700-40K-TFTM-MVOLT-RPA-PER-2ELED-DDBXD		LED		134	120	POLE	PHOTO CELL #DLL127F1.5JU #RSA-16-4-C-DM19AS-FBC-VD-DDB (16' ROUND ALUMINUM POLE)

LIFT STATION 2 LOAD CALCULATION

	UTILITY HP	UTILITY AMPS	UTILITY KVA
MISC.			
LIGHTS, CONTROLS, MISC. 120V		31	15.0
MOTORS			
LIFT STATION PUMP #1	12	14	12
LIFT STATION PUMP #2 (STANDBY)	12	14	12
25% OF LARGEST MOTOR		4	3
25% SPARE		16	10
DESIGN KVA TOTAL			51
DESIGN AMPS @ 277/480 VOLTS, 3 PHASE		78	

NOTE: THE ELECTRICAL SERVICE IS DESIGNED TO RUN TWO 12 HP PUMPS.

PANEL LV

AMPS: 40A PRIMARY MCB/80A SECONDARY MCB
VOLTAGE: 240/120V
LOCATION: LIFT STATION
FED FROM: 15 KVA XFMR

PHASE: 1
WIRE: 3

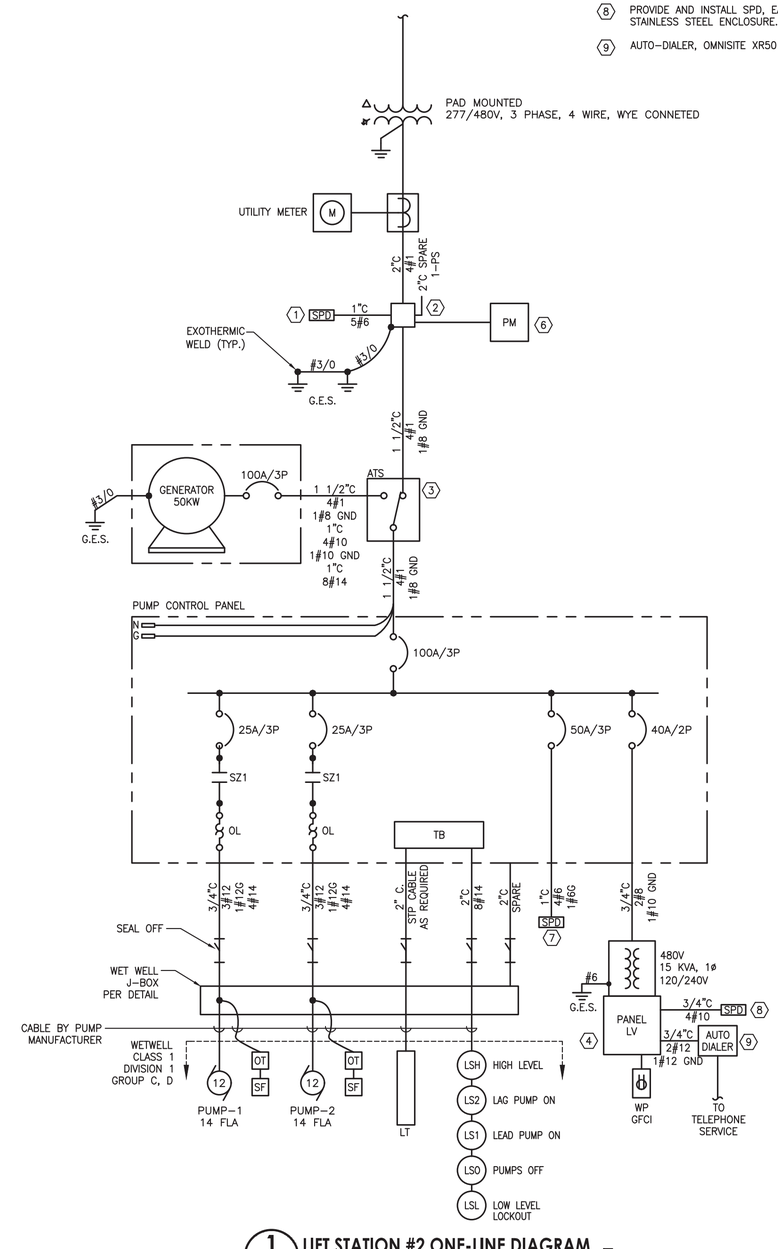
MOUNTING: SURFACE
MINIMUM AIC RATING: 10KAIC
BUSSING: COPPER
NEMA: 4XSS 316 STAINLESS STEEL

CKT. NO.	SERVICE DESCRIPTION	WIRE	BKR	POLES	KVA	A	B	KVA	POLES	BKR	WIRE	SERVICE DESCRIPTION	CKT. NO.
1	RECEPTACLE	12	20	1	0.5	1.0		0.5	1	20	12	POLE LIGHT	2
3	LIGHTS	12	20	1	1.0		2.0	1.0	2	30	10	SPD	4
5	POWER QUALITY METER	12	20	1	0.5	1.5		1.0					6
7	BATTERY CHARGER	12	20	1	1.0		1.5	0.5	1	20	12	AUTODAILER	8
9	BLOCK HEATER	12	20	1	1.0	1.0		0.0	1	20		SPARE	10
11	SPARE		20	1	0.0		0.0	0.0	1	20		SPARE	12
13	SPARE		20	1	0.0	0.0		0.0	1	20		SPARE	14
15	SPARE		20	1	0.0		0.0	0.0	1	20		SPARE	16
17	SPARE		20	1	0.0	0.0		0.0	1	20		SPARE	18
19	SPARE		20	1	0.0		0.0	0.0	1	20		SPARE	20
21	SPARE		20	1	0.0	0.0		0.0	1	20		SPARE	22
23	SPARE		20	1	0.0		0.0	0.0	1	20		SPARE	24
					PHASE LOAD IN KVA:	3.5	3.5						
					PHASE LOAD IN AMPS:	29	29						

NOTE: SQUARE D MINI POWER-ZONE 15 KVA/480-120/240V

REFERENCE NOTES

1. PROVIDE AND INSTALL SPD, EATON SPD-200-480Y-3-P OR EQUAL IN A NEMA 4XSS STAINLESS STEEL ENCLOSURE. CONNECT TO LOAD SIDE.
2. PROVIDE AND INSTALL MAIN DISCONNECT SWITCH, 100A/3P/100AF/N4XSS/600V/SN/SE SQUARE D OR EQUAL. USE BUSSMANN #FRS-R-100 OR EQUAL.
3. PROVIDE AND INSTALL AUTOMATIC TRANSFER SWITCH, 100AMP, 4 POLE, 480V, 25KAIC, NEMA 4XSS, ASCO OR EQUAL.
4. PROVIDE AND INSTALL MINI POWER ZONE, SQUARE D OR EQUAL.
5. ALL ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 4XSS 316 STAINLESS STEEL.
6. PROVIDE AND INSTALL POWER QUALITY METER EATON 2280 OR EQUAL IN NEMA 4XSS ENCLOSURE. REFER TO DETAIL 2/E3.0 FOR ADDITIONAL INFORMATION.
7. PROVIDE AND INSTALL SPD, EATON SPD-100-480Y-3-P OR EQUAL IN A NEMA 4XSS STAINLESS STEEL ENCLOSURE. CONNECT TO LOAD SIDE.
8. PROVIDE AND INSTALL SPD, EATON SPD-050-240S-3-P OR EQUAL IN A NEMA 4XSS STAINLESS STEEL ENCLOSURE. CONNECT TO LOAD SIDE.
9. AUTO-DIALER, OMNISITE XR50 IN NEMA 4X 316 STANLESS STEEL ENCLOSURE.



1 LIFT STATION #2 ONE-LINE DIAGRAM (5)
E3.0 SCALE: NTS

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E3.0

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ELECTRICAL ONE-LINE DIAGRAM / SCHED AND DETAILS
LIFT STATION 2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
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2/5/19

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

Project No: 1691-002

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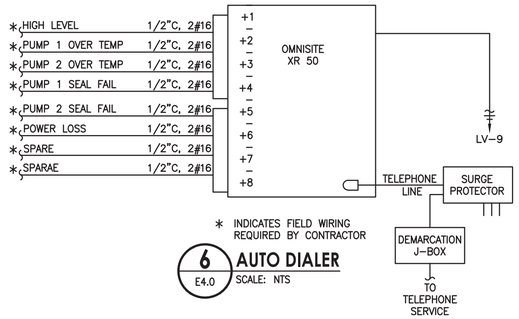
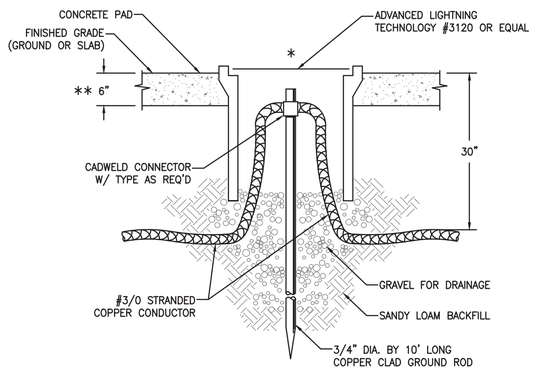


* INDICATES FIELD WIRING REQUIRED BY CONTRACTOR

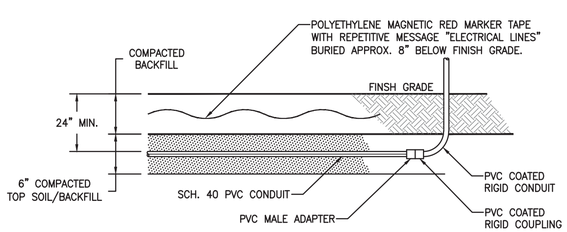
6 E4.0 AUTO DIALER
SCALE: NTS



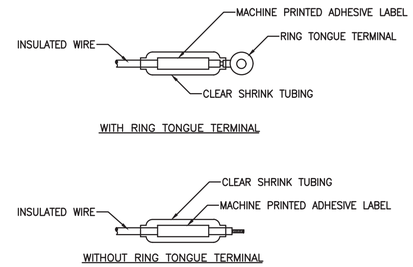
* INSTALL GROUND RODS AWAY FROM HEAVY TRAFFIC AREAS AND SIDEWALKS. COORDINATE EXACT LOCATION WITH CIVIL DRAWINGS.

** INSTALL 2'X2'X6" CONCRETE PAD.

5 E4.0 DETAIL - 3/4" X 10' GROUND ROD
SCALE: NTS

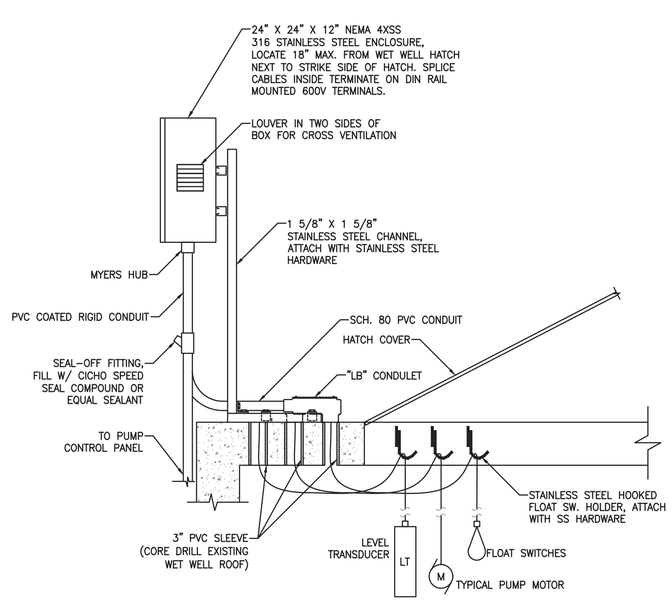


4 E4.0 DETAIL - TYPICAL UNDERGROUND CONDUIT RUN
SCALE: NTS



WHERE POSSIBLE RING TERMINALS SHALL BE USED. ONE OF THE ABOVE METHODS MUST BE USED ON ALL WIRE #8 AWG & SMALLER. THE SAME MUST ALSO BE USED ON LARGER WIRE UNLESS AN ALTERNATE METHOD IS SUBMITTED & APPROVED.

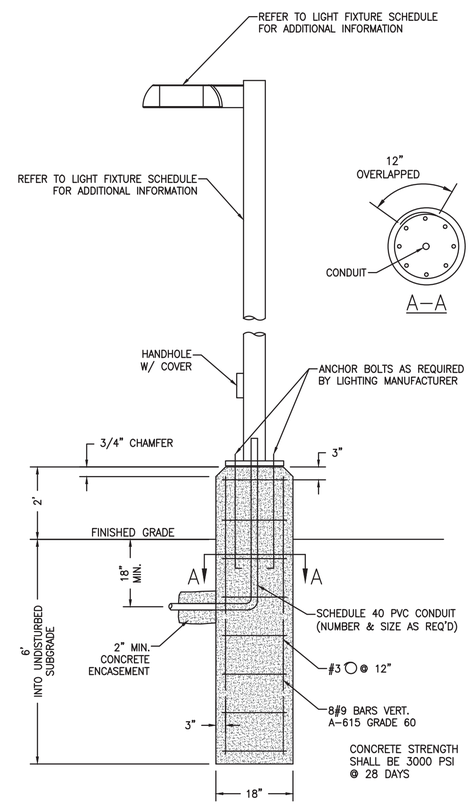
3 E4.0 DETAIL - WIRE TERMINATION AND MARKING
SCALE: NTS



2 E4.0 DETAIL - WET WELL JUNCTION BOX (1)
SCALE: NTS

REFERENCE NOTES

(1) COORDINATE INSTALLATION OF WET WELL JUNCTION BOX WITH SITE CONDITIONS AND SHEET E2.1



1 E4.0 DETAIL - LIGHTING FIXTURE
SCALE: NTS

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E4.0

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ELECTRICAL DETAILS
LIFT STATIONS 1 AND 2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

Project No: 1691-002

Drawing: K:\Projects\2018\3340118-Doucet-Big Sky Lift Stations 1 and 2\01 Design Phase_CAD\3340118-E40.dwg
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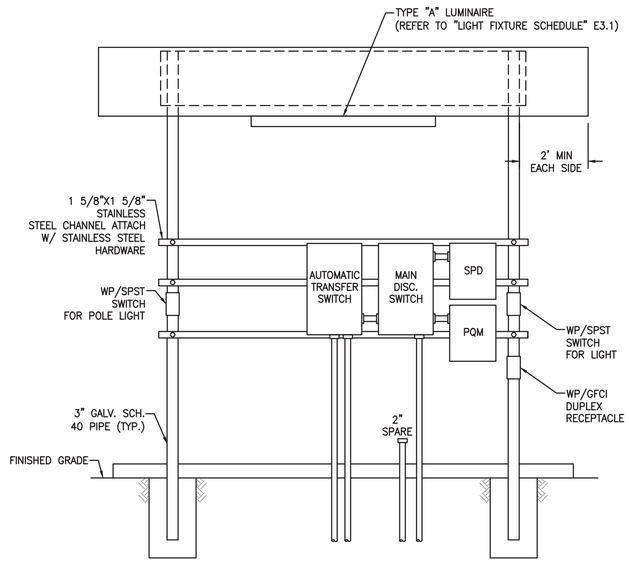

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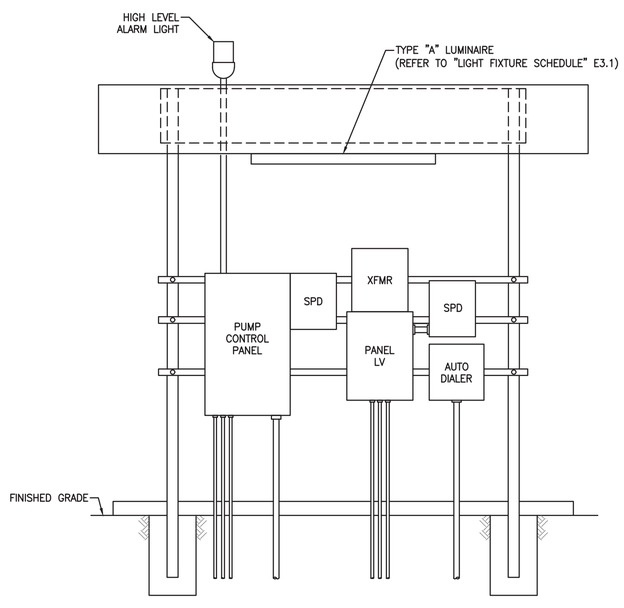
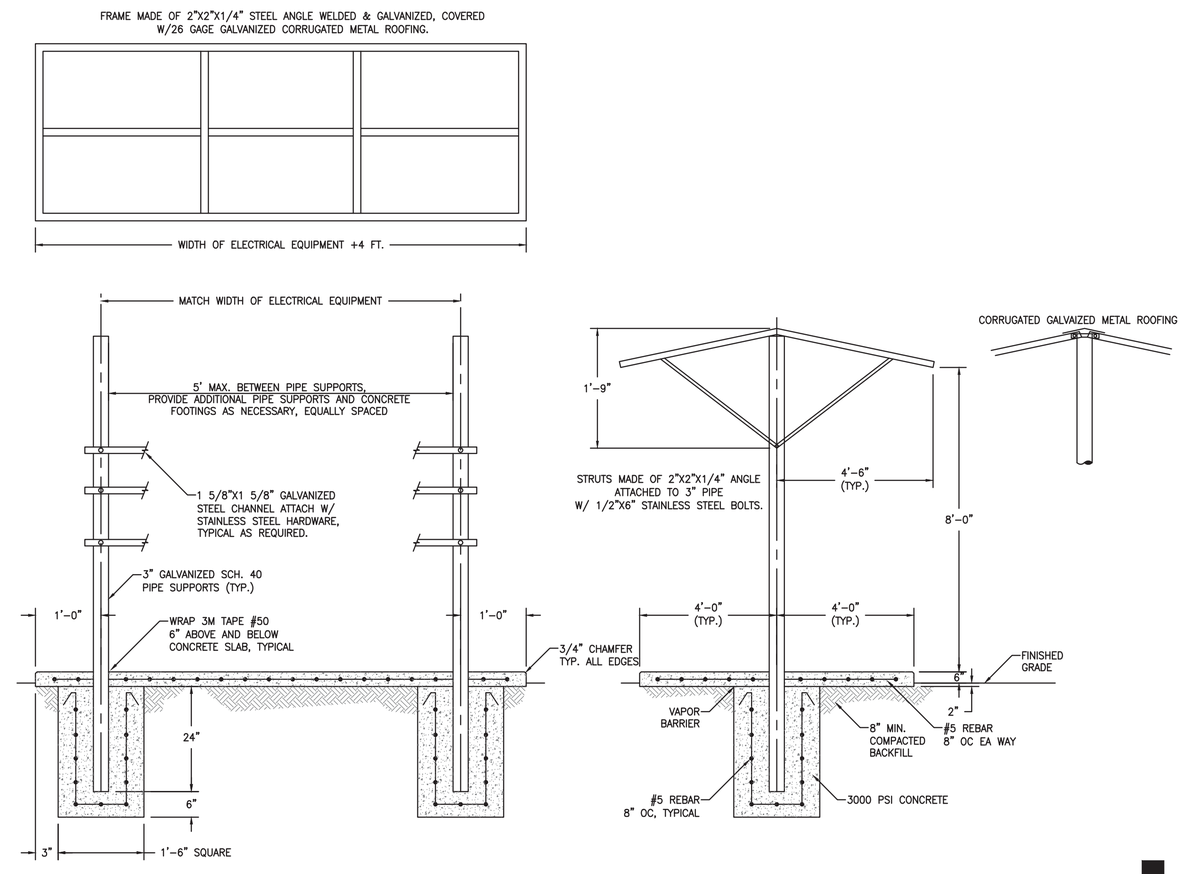


FRONT

2 DETAIL - ELECTRICAL EQUIPMENT INSTALLATION LIFT STATION #2

E4.1 SCALE: NTS



NOTE: ALL FABRICATED STEEL COMPONENTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. ALL FASTENERS SHALL BE STAINLESS STEEL.

1 DETAIL - RACK SUPPORT AND ROOFING LIFT STATION #2

E4.1 SCALE: NTS

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E4.1

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ELECTRICAL DETAILS
LIFT STATION 2

BIG SKY RANCH
PHASE ONE PLAN
DRIPPINGS SPRINGS, TX

STATE OF TEXAS
STEVE L. KANETZKY
84696
LICENSED
PROFESSIONAL ENGINEER
2/5/18

Designed: DM
Drawn: AH
Reviewed: DM/SK
Date: 11/20/2018

SHEET
173
OF 175

Project No:
1691-002

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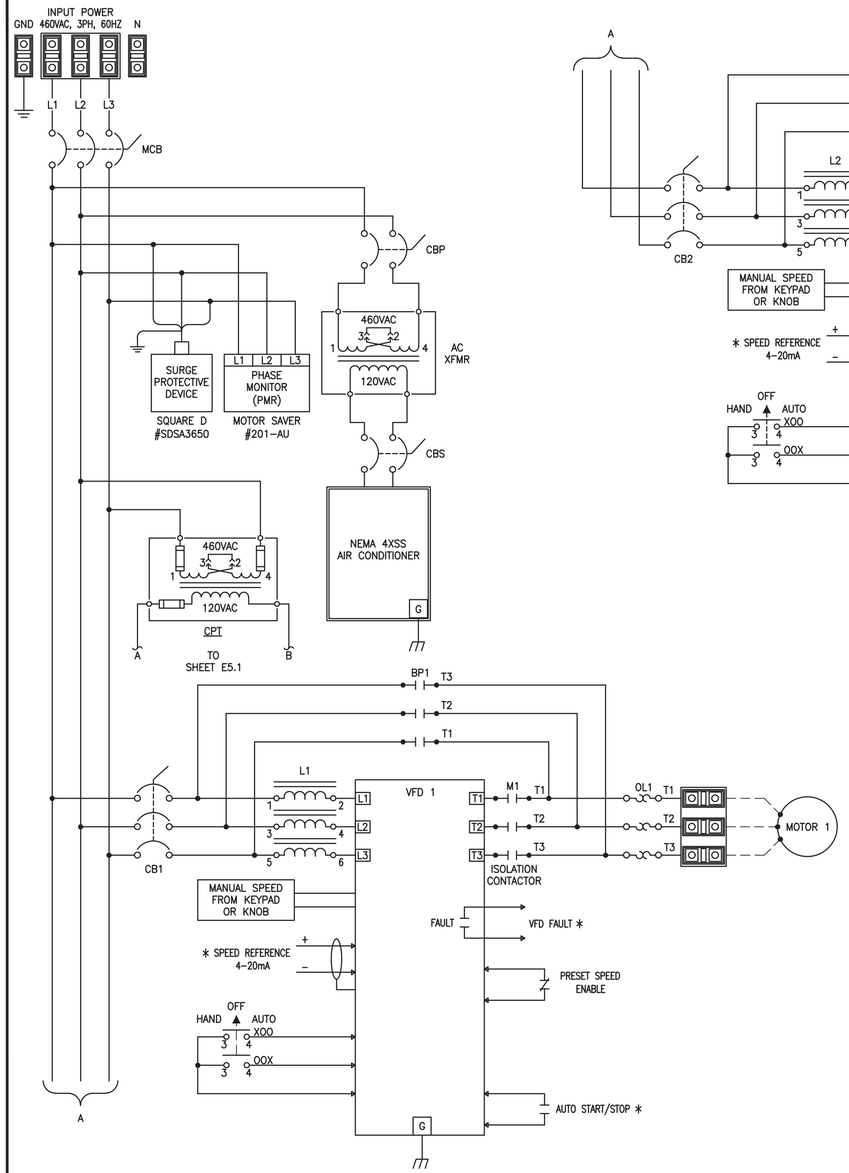
REFERENCE NOTES

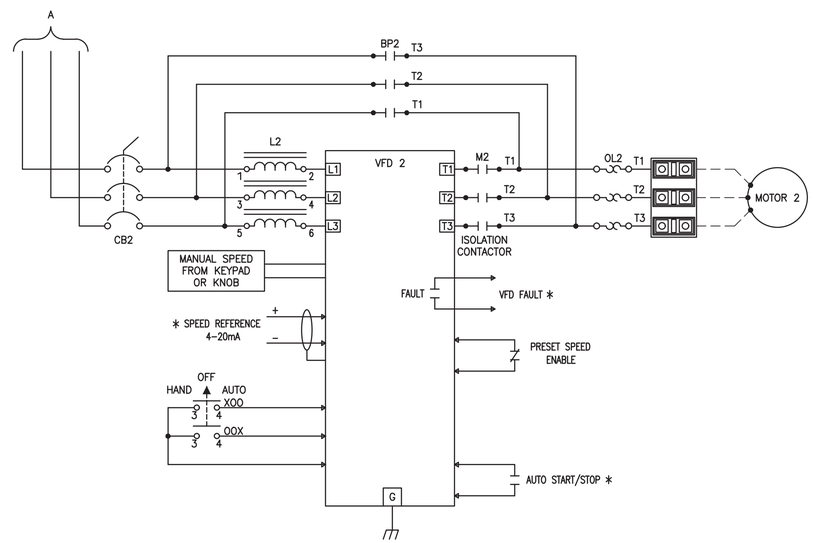
1. PUMP CONTROL PANEL WIRING IS TYPICAL. FINAL HARDWARE CONFIGURATION WILL VARY ACCORDING TO PUMP CONTROL PANEL SPECIFICATIONS.
2. DUPLEX PUMP CONTROL PANEL, 480V, 3 PHASE, UL805A LABELED. VERIFY EXACT PUMP SIZES SAND SIZE CIRCUIT BREAKERS AND OVERLOADS ACCORDINGLY. THE PUMP CONTROL PANEL SHALL BE MANUFACTURED BY 5 STAR ELECTRIC, SAN ANTONIO, TEXAS 1(800) 229-8965 OR APPROVED EQUAL.
3. PROVIDE AND INSTALL NEMA RATED CLASS 8536 STARTERS FOR BYPASS.
4. PUMP CONTROL PANEL SHALL BE PROVIDE WITH VFD'S TYPE YASKAWA IQ1000 OR EQUAL FOR 11HP PUMPS. TYPICAL.

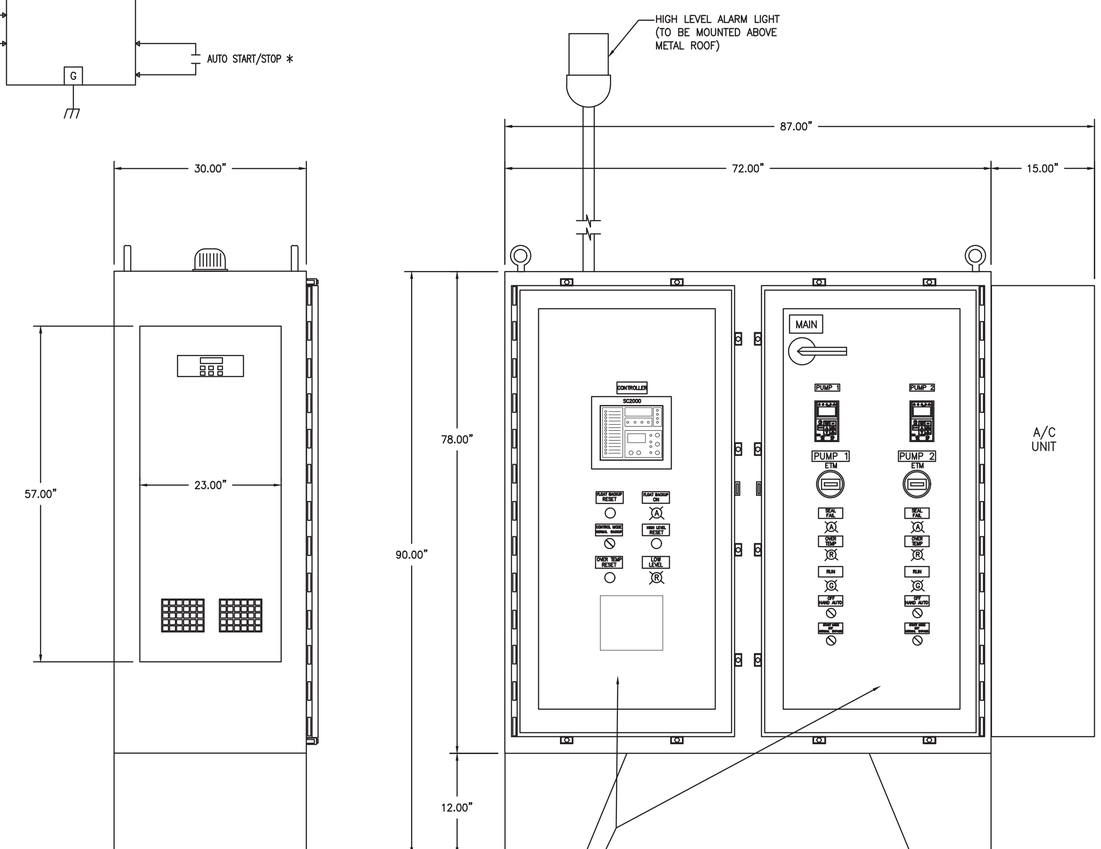


OPERATION MODE:
HAND MODE – VFD IS CONTROLLED VIA KEYPAD / KNOB
AUTO MODE – VFD IS CONTROLLED REMOTELY

* INDICATES FIELD WIRING REQUIRED BY CONTRACTOR

2 CONTROL PANEL WIRING DIAGRAM
E5.0 SCALE: NTS





SIDE VIEW

FRONT VIEW

NOTES:
1. ENCLOSURE SHALL BE NEMA TYPE 4X 316 STAINLESS STEEL DEAD FRONT WITH INNER DOORS AND AIR CONDITIONER

INNER DOOR NOMENCLATURE:
1. VFD 1 KEYPAD
2. VFD 2 KEYPAD

1 CONTROL PANEL ENCLOSURE
E5.0 SCALE: NTS

E5.0

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ELECTRICAL CONTROLS LIFT STATION 2

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SHEET 174 OF 175

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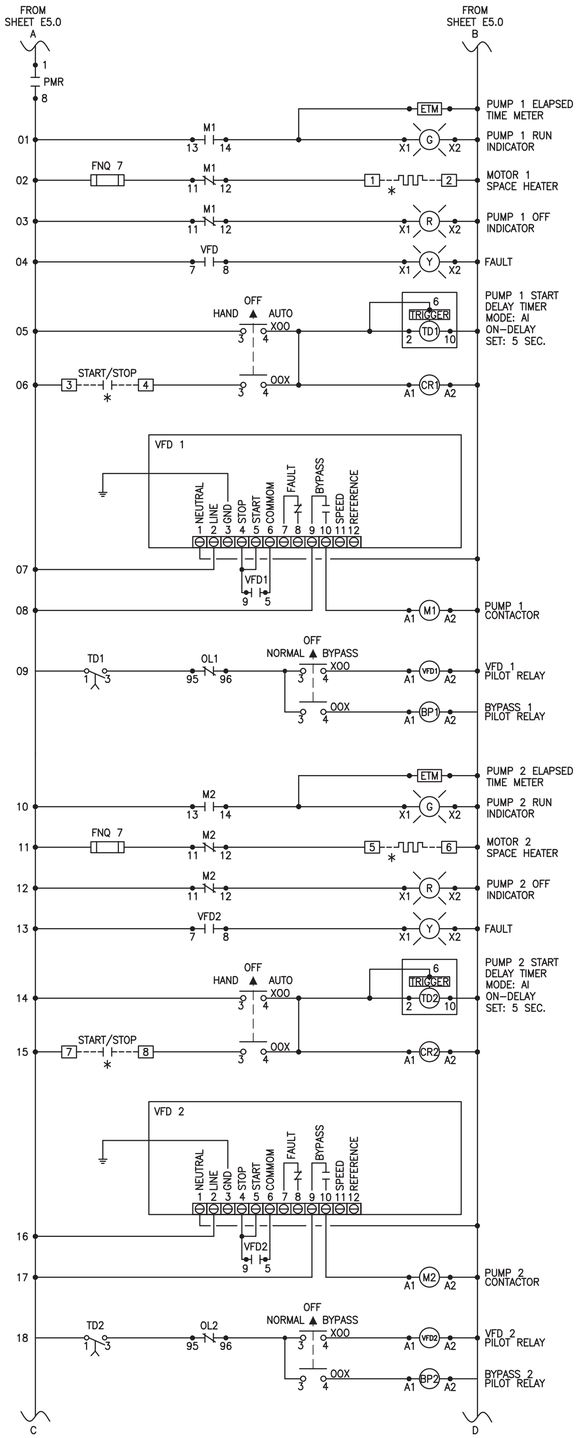
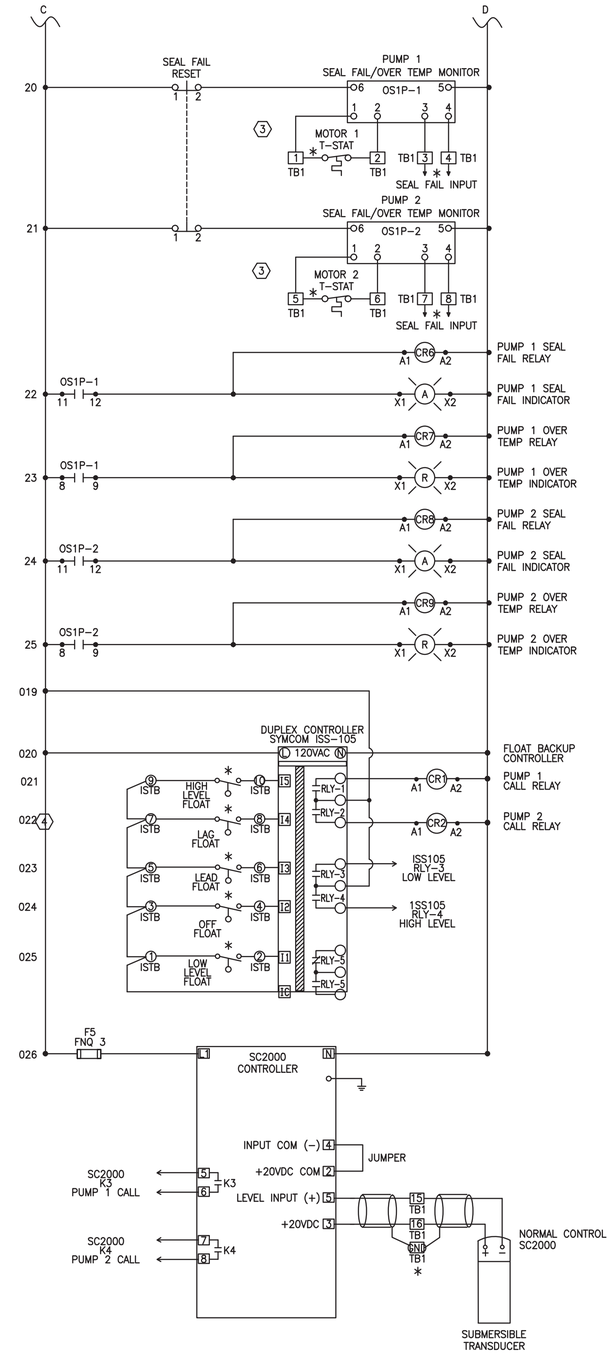


* INDICATES FIELD WIRING REQUIRED BY CONTRACTOR



* = FIELD WIRED BY CONTRACTOR.

1 / E5.1 **CONTROLS SCHEMATIC - LIFT STATION 2** (1)(2)

SCALE: NTS

REFERENCE NOTES

(1) CONTROL PANEL WIRING DIAGRAM IS TYPICAL. FINAL HARDWARE CONFIGURATION WILL VARY ACCORDING TO SPECIFICATIONS.

(2) PROVIDE STARTUP AND MINIMUM 4 HOURS TRAINING FOR OPERATOR PERSONNEL. SUBMIT STARTUP REPORT TO ENGINEER.

(3) MOISTURE/OVER TEMPERATURE MONITOR RELAY SHALL BE INTEGRATED TO THE CONTROL LOGIC TO PROVIDE FAIL SAFE OPERATION. THUS, WHEN THE MOISTURE/OVER TEMPERATURE MONITOR RELAY IS REMOVED FROM THE CONTROL CIRCUIT OR FAILS, THE CORRESPONDING PUMP WILL BE LOCKED OUT.

(4) ALL SEALED FLOAT SWITCHES SHALL BE CONNECTED TO THE CONTROL LOGIC VIA INTRINSICALLY SAFE RELAYS.

SEQUENCE OF OPERATION:

LEVEL CONTROL OPERATION:

THE PUMP CONTROL PANEL SHALL UTILIZE ONE (1) ULTRASONIC LEVEL TRANSMITTER TO CONTROL THE LEVEL IN THE WET WELL ON SUMP LEVEL RISE TO LEAD PUMP TURN-ON LEVEL SETTING, THE CONTROLLER SHALL START THE LEAD PUMP. WITH LEAD PUMP OPERATING, SUMP LEVEL SHALL LOWER TO LOW-LEVEL TURN-OFF SETTING AND PUMP SHALL STOP. ALTERNATING RELAY SHALL INDEX ON STOPPING OF PUMP SO THAT LAG PUMP WILL START ON NEXT OPERATION. BOTH LEAD AND LAG PUMP SHALL NEVER OPERATE TOGETHER AT THE SAME TIME. WHEN LOW-LEVEL TURN-OFF SETTING IS REACHED THE LEAD PUMP SHALL STOP. IF LEVEL CONTINUES TO RISE WHILE LEAD PUMPS IS OPERATING AND HIGH LEVEL SETTING IS REACHED, THE CONTROLLER SHALL TRIGGER THE HIGH-LEVEL ALARM. ALARM SHALL BE MANUALLY RESET. LEVELS SHALL BE SET AS INDICATED IN THE SPECIFICATIONS AND SHOWN ON THE CIVIL PLANS. AN AUTOMATIC BACKUP LEVEL FLOAT SYSTEM SHALL BE PROVIDED. IF ONE PUMP SHOULD FAIL FOR ANY REASON, THE SECOND PUMP SHALL OPERATE ON THE CONTROLLER OVERRIDE SIGNAL. ALL LEVEL SETTINGS SHALL BE ADJUSTABLE FROM THE CONTROLLER SELECTABLE MENU/SCREEN. WITH THE PUMP OPERATING, THE SUMP FLUID LEVEL SHALL LOWER. WHEN THE LOW LEVEL TURN-OFF SETTING IS REACHED THE PUMP OR PUMPS RUNNING WILL THEN CEASE TO OPERATE.

AUTOMATIC BACKUP LEVEL FLOATS OPERATION:

WHEN THE ULTRASONIC LEVEL TRANSMITTER FAILS THE PUMP CONTROL PANEL SHALL AUTOMATICALLY OPERATE BY THE LEVEL FLOATS ACCORDING TO THE FOLLOWING ORDER.

ON SUMP LEVEL RISE, LOWER (OFF) FLOAT SWITCH SHALL FIRST BE ENERGIZED. WHEN THE LEVEL RISES FURTHER, THE UPPER (LEAD PUMP) LEVEL SWITCH SHALL NEXT ENERGIZE AND START THE LEAD PUMP. WITH LEAD PUMP OPERATING, SUMP LEVEL SHALL LOWER TO LOW SWITCH TURN-OFF SETTING AND PUMP SHALL STOP. ALTERNATING RELAY SHALL INDEX ON STOPPING OF PUMP SO THAT LAG PUMP WILL START ON NEXT OPERATION. BOTH LEAD AND LAG PUMP SHALL NEVER OPERATE TOGETHER AT THE SAME TIME. IF LEVEL CONTINUES TO RISE WHEN THE LEAD PUMP IS OPERATING, ALARM SWITCH SHALL ENERGIZE AND SIGNAL THE ALARM. IF ONE PUMP SHOULD FAIL FOR ANY REASON, THE SECOND PUMP SHALL OPERATE ON THE OVERRIDE CONTROL AND IF LEVEL RISES ABOVE THE OVERRIDE CONTROL, ALARM SHALL SIGNAL. ALL LEVEL SWITCHES SHALL BE ADJUSTABLE FOR LEVEL SETTINGS FROM THE SURFACE. WITH THE PUMP OPERATING, THE SUMP FLUID LEVEL SHALL LOWER. WHEN THE LEVEL CAUSES THE LOWER (OFF) FLOAT SWITCH TO TILT BACK TOWARD HANGING VERTICAL, IT'S CONTACT SHALL OPEN CAUSING THE MOTOR CONTACTOR TO LOSE POWER TO THE COIL AND THUS OPEN THE CIRCUIT TO THE PUMP MOTOR. THE PUMP OR PUMPS RUNNING SHALL THEN CEASE TO OPERATE.

IN EITHER OPERATING CONDITION, THE PUMPS SHALL ALTERNATE TO MAINTAIN EQUAL RUN TIMES AND SHALL BE STAGGERED STARTED TO ASSIST THE GENERATOR SWITCHING. BOTH PUMPS SHALL NEVER BE ALLOWED TO RUN AT THE SAME TIME.

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E5.1

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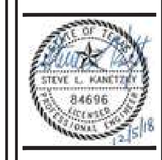

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