



# Contributing Zone Plan

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## Northgate Ranch Phase 2 Section 8

Prepared for: Ashton Woods

Prepared by: BGE, Inc.

TBPE Registered Firm #: 1046

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

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

### Administrative Review

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

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

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

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

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

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.
3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or if not withdrawn the application will be denied and 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 to you:

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- 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 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 effected jurisdictions.

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

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

<b>1. Regulated Entity Name:</b> Northgate Ranch Phase 2 Section 8					<b>2. Regulated Entity No.:</b>				
<b>3. Customer Name:</b> DRP TX4, LLC					<b>4. Customer No.:</b>				
<b>5. Project Type:</b> (Please circle/check one)	<input checked="" type="radio"/> New	<input type="radio"/> Modification			<input type="radio"/> Extension		<input type="radio"/> Exception		
<b>6. Plan Type:</b> (Please circle/check one)	<input checked="" type="radio"/> WPAP	<input checked="" type="radio"/> CZP	<input type="radio"/> SCS	<input type="radio"/> UST	<input type="radio"/> AST	<input type="radio"/> EXP	<input type="radio"/> EXT	<input type="radio"/> Technical Clarification	<input type="radio"/> Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	<input checked="" type="radio"/> Residential			<input type="radio"/> Non-residential		<b>8. Site (acres):</b>		21.51	
<b>9. Application Fee:</b>	\$4,000		<b>10. Permanent BMP(s):</b>						
<b>11. SCS (Linear Ft.):</b>			<b>12. AST/UST (No. Tanks):</b>						
<b>13. County:</b>	Williamson		<b>14. Watershed:</b>			North Fork San Gabriel River			

# Application Distribution

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

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

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

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

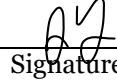
<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	—	—	—	—
Region (1 req.)	—	—	—	—	—
County(ies)	—	—	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/>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



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

Joseph Yaklin, P.E.

Print Name of Customer/Authorized Agent



05/02/2023

Signature of Customer/Authorized Agent

Date

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

# Contributing Zone Plan Application

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Joseph Yaklin, P.E.

Date:

Signature of Customer/Agent:



Regulated Entity Name: Northgate Ranch Phase 2 Section 8

## Project Information

1. County: Williamson
2. Stream Basin: North Fork San Gabriel
3. Groundwater Conservation District (if applicable): None
4. Customer (Applicant):

Contact Person: Houdin Honarvar

Entity: DRP TX4, LLC

Mailing Address: 590 Madison Avenue, 13<sup>th</sup> Floor

City, State: New York, New York

Zip: 10022

Telephone: (212) 751-6100

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

Email Address: dan.kimmel@domainrealestatepartners.com

5. Agent/Representative (If any):

Contact Person: Joseph Yaklin, P.E.

Entity: BGE, Inc.

Mailing Address: 101 West Louis Henna Blvd. Suite 400

City, State: Austin, TX

Zip: 78728

Telephone: 832-592-2734

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

Email Address: jyaklin@bgeinc.com

6. Project Location:

- The project site is located inside the city limits of \_\_\_\_\_.
- The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of \_\_\_\_\_.
- 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.

Approximately 2.5 miles north on CR 214 from Hwy 29 Intersection in Liberty Hill

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: 122
- Residential: # of Living Unit Equivalents: \_\_\_\_\_
- Commercial
- Industrial
- Other: \_\_\_\_\_

13. Total project area (size of site): 21.51 Acres

Total disturbed area: 21.51 Acres

14. Estimated projected population: 438

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

**Table 1 - Impervious Cover**

<i>Impervious Cover of Proposed Project</i>	<i>Sq. Ft.</i>	<i>Sq. Ft./Acre</i>	<i>Acres</i>
Structures/Rooftops	437342	÷ 43,560 =	10.04
Parking	0	÷ 43,560 =	0
Other paved surfaces	198198	÷ 43,560 =	4.55
Total Impervious Cover	635540	÷ 43,560 =	14.59

**Total Impervious Cover  $\frac{14.59}{21.51} \times 100 = 67.8\%$  Impervious Cover**

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

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

***For Road Projects Only***

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

N/A

18. Type of project:

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

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

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

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

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

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

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

21. Pavement Area:

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

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

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

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

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

A rest stop will not be included in this project.

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

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

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

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

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

N/A

26. Wastewater will be disposed of by:

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

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

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

Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Northgate Ranch Phase 1 WWTP (name) Treatment Plant. The treatment facility is:

Existing.

Proposed.

N/A

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

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

N/A

27. Tanks and substance stored:

**Table 2 - Tanks and Substance Storage**

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

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

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

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

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

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

**Table 3 - Secondary Containment**

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

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

30. Piping:

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

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

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

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

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

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

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

## **Site Plan Requirements**

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

34.  The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 60'.
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): 48491C0235F, Revised December 20, 2019.
36.  The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37.  A drainage plan showing all paths of drainage from the site to surface streams.
38.  The drainage patterns and approximate slopes anticipated after major grading activities.
39.  Areas of soil disturbance and areas which will not be disturbed.
40.  Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
41.  Locations where soil stabilization practices are expected to occur.
42.  Surface waters (including wetlands).  
 N/A
43.  Locations where stormwater discharges to surface water.  
 There will be no discharges to surface water.
44.  Temporary aboveground storage tank facilities.  
 Temporary aboveground storage tank facilities will not be located on this site.



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

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

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

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

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

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

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

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

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

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

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

N/A

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

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

N/A

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

- Prepared and certified by the engineer designing the permanent BMPs and measures
- Signed by the owner or responsible party
- Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
- Contains a discussion of record keeping procedures

N/A

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

N/A

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

N/A

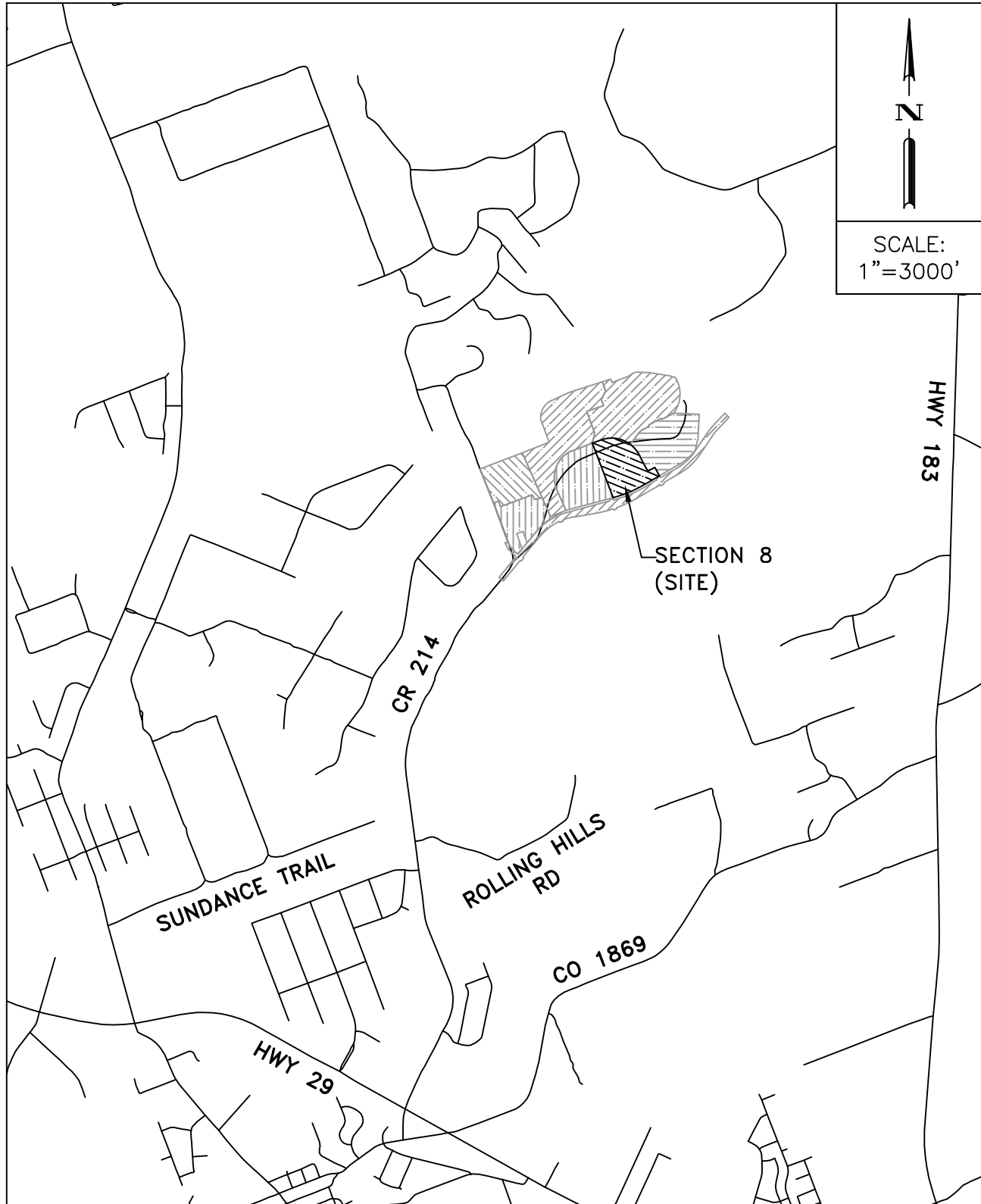
***Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.***

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

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

### ***Administrative Information***

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



NORTHGATE RANCH PHASE 2 SECTION 8

LOCATION MAP

**BROWN & GAY ENGINEERS, INC.**  
101 W LOUIS HENNA BLVD, SUITE 400  
AUSTIN, TX 78728 TBPE Registration No.  
F-1046  
TEL: 512-879-0400 www.browngay.com



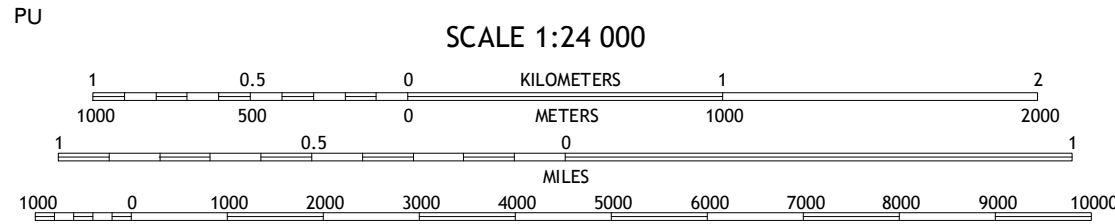
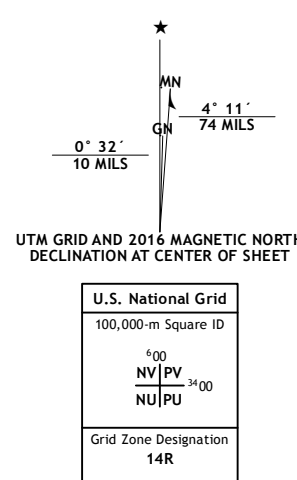




Produced by the United States Geological Survey

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 (central zone)

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: NADIP, July 2014 Roads: U.S. Census Bureau, 2014 Names: GNIS, 2015 Hydrography: National Hydrography Dataset, 2014 Contours: National Elevation Dataset, 2004 Boundaries: Multiple sources; see metadata file 1972 - 2015 Wetlands: FWS National Wetlands Inventory 1977 - 2014



CONTOUR INTERVAL 10 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

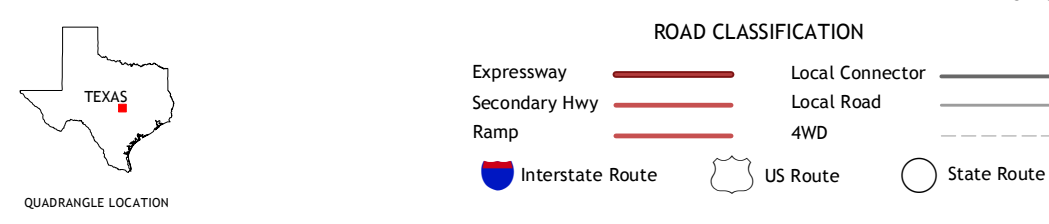


Table with 3 columns and 8 rows showing adjoining quadrangles: 1 Joppa, 2 Mahomet, 3 Florence, 4 Bertram, 5 Leander NE, 6 Travis Peak, 7 Nameless, 8 Leander

LIBERTY HILL, TX 2016





## Attachment C – Project Narrative

Northgate Ranch Phase 2 Section 8 is a 21.51 acre tract located east of San Gabriel Ranch Road and north of County Road 214 in Williamson County. The proposed development will convert the previously undeveloped site into a single-family residential subdivision.

There is currently a very small amount of impervious cover on the site. County Road 214 runs through Section 8, and will be demolished with the construction of Section 8. This existing impervious cover makes up a negligible percentage of the total project area, so existing impervious cover has been assumed to be zero for the purpose of TSS removal calculations.

Proposed street improvements will create approximately 4.55 acres of impervious cover. The 122 individual residential lots on the project will create approximately 10.04 acres of impervious cover. This creates a total of 14.59 acres of impervious cover, which is approximately 68% of the total site acreage.

No permanent BMPs are proposed for the project: batch detention pond I (EAP ID: 11003138) constructed in section 9 will receive the runoff from section 8. Batch detention pond I receives runoff from Sections 6,7,8,9,10, and C.R 214. The total area draining to Pond D from all sections totals 58.91 acres, with 33.00 acres of impervious cover.

Northgate Ranch Phase 2 Section 8 is located within the Edward's Aquifer Contributing Zone. It is not located within the FEMA 100-yr Floodplain in accordance with Flood Insurance Rate Map (FIRM) Panel No. 48491C0235F, effective date December 20, 2019.

## Attachment D – Factors Affecting Surface Water Quality

Multiple factors have the potential of affecting surface water quality during construction. These include: oil, grease, gas, transmission fluids, and/or other vehicular fluids, as well as shifts in sediment that will occur during excavation and fill operations. Upon completion of construction, normal traffic on the site could be responsible for many of these same pollutants, as well as everyday activities, such as car washing and lawn watering.



## Attachment E – Volume and Character of Stormwater

The total drainage area accounted for is 21.51 acres. A total of 14.59 acres of impervious cover are accounted for. All 21.51 acres of the total drainage area will drain offsite without any treatment. This phase will flow into batch detention Pond I, constructed in Northgate Ranch Section 9.

The overall proposed water quality drainage area map and water quality calculations are included in the construction plans included with this submittal (SHEET 27 – PROPOSED HYDROLOGY AND WATER QUALITY DRAINAGE AREA MAP).

A sub-area drainage map showing inlet drainage areas and inlet calculations can be found in the included construction plans as well (SHEET 29– OVERALL STORM PLAN AND INLET DRAINAGE AREA MAP, SHEET 30 – STORM INLET FLOW CAPACITY CALCULATIONS (1 OF 2), SHEET 31 – STORM INLET FLOW CAPACITY CALCULATIONS (2 OF 2)).

## Attachment F – Suitability Letter from Authorized Agent

Not applicable to this project.

## Attachment G – Alternative Secondary Containment Methods

Not applicable to this project.

## Attachment H – AST Containment Structure Drawings

Not applicable to this project.

## Attachment I – 20% or Less Impervious Cover Declaration

Not applicable to this project.

## Attachment J – BMPs for Upgradient Stormwater

Portions of Section 6,7, and 10 will drain through section 8 to Batch Detention Pond I and were accounted for in TSS calculations. Once these sections are constructed, stormwater will be captured and conveyed to Pond I via storm sewer between Section 8 and Section 9.

Section 6,7, and 10 are anticipated to be constructed before Section 8, so interim upgradient stormwater management has been addressed through overtreatment in sections 6, 7, and 10 respective contributing zone plans.

## Attachment K – BMPs for On-Site Stormwater

In Section 8, on-site stormwater will be treated by 1 permanent BMP. The TSS removal will occur by way of the Batch Detention Pond I. The drainage area locations and calculations for this BMP can be seen in the attached construction plans (SHEET 27 – PROPOSED HYDROLOGY AND WATER QUALITY DRAINAGE AREA MAP, SHEET 28 – TCEQ TSS REMOVAL CALCULATIONS), with a letter-size drainage area map and calculations also attached on the following sheets for reference.

## Attachment L – BMPs for Surface Streams

No BMPs are proposed specifically for surface streams. Proposed on-site BMPs and drainage systems are designed to maintain existing flow patterns.



## Attachment M – Construction Plans

No permanent BMPs are proposed on-site. Not applicable to this project.

## Attachment N – Inspection, Maintenance, Repair, and Retrofit Plan

No permanent BMP's are proposed on-site. The permanent BMP utilized by this site will be constructed and maintained off-site in section 9.

## Attachment O – Pilot-Scale Field Testing Plan

Not applicable to this project.

## Attachment P – Measures for Minimizing Surface Stream Contamination

The site will be stabilized using silt fence. All of the stabilization will be installed prior to construction and will be removed after construction has been completed. These methods will minimize any increases in erosion caused by construction. Additionally, the proposed permanent BMPs will treat any stormwater passing through the site prior to that stormwater's returning to existing drainage patterns and eventual flowing to surface streams. The batch detention ponds serve as detention basins, so there will be no increase to flow off-site.

# Temporary Stormwater Section

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); 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 **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Joseph Yaklin, P.E.

Date: 05/02/2023

Signature of Customer/Agent:

  
\_\_\_\_\_

Regulated Entity Name: Northgate Ranch Phase 2 Section 8

## Project Information

### Potential Sources of Contamination

*Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.*

1. Fuels for construction equipment and hazardous substances which will be used during construction:

The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

These fuels and/or hazardous substances will be stored in:

- Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

- Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
- Fuels and hazardous substances will not be stored on the site.
- 2.  **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
- 3.  Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- 4.  **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

### ***Sequence of Construction***

- 5.  **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
  - For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
  - For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
- 6.  Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Three unnamed tributaries of the North Fork San Gabriel River

### ***Temporary Best Management Practices (TBMPs)***

*Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.*

- 7.  **Attachment D – Temporary Best Management Practices and Measures.** TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
  - A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
  - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
  - A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8.  The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
  - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9.  **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10.  **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
  - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
  - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
  - There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11.  **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- N/A
12.  **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13.  All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14.  If sediment escapes the construction site, off-site accumulations of 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).
15.  Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16.  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).

### ***Soil Stabilization Practices***

*Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.*

17.  **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached.



18.  Records must be kept at the site of 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.
19.  Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

### ***Administrative Information***

20.  All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21.  If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
22.  Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

## Attachment A – Spill Response Action

No spills of hydrocarbons or hazardous substances are expected. However, in the event that such an incidence does occur, the contractor should carefully follow the following TCEQ guidelines:

### Cleanup:

1. Clean up leaks and spill immediately.
2. Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
3. Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly.

### Minor Spills:

1. Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
2. Use absorbent materials on small spills rather than hosing down or burying the spill.
3. Absorbent materials should be promptly removed and disposed of properly.
4. Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - Clean the contaminated area and properly dispose of contaminated materials.

### Semi-Significant Spills:

Semi-significant spills can still be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately, using the following practices:

1. Contain spread of the spill.
2. Notify the project foreman immediately.
3. If the spill occurs on paved or impermeable surfaces, clean up using “dry” methods (absorbent materials, cat litter, and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
4. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
5. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

**Significant/Hazardous Spills:**

For highly toxic materials, the Reportable Quantity (RQ) > 25 gallons. For petroleum/hydrocarbon liquids, RQ > 25 gallons (on land) or any amount which creates a “sheen” on water. Only certified Haz-Mat teams will be responsible for handling the material at the site.

For significant or hazardous spills that are in reportable quantities:

1. Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor’s responsibility to have all emergency phone numbers at the construction site. Additionally, in the event of a hazardous material spill, local Williamson County and/or city of Liberty Hill police, fire, and potentially EMS should be contacted in order to initiate the hazardous material response team.
2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 191, and 302, the contractor should notify the National Response Center at (800) 424-8802.
3. Notification should first be made by telephone and followed up with a written report of which one copy is to be kept on-site in the report binder and one copy is to be provided to the TCEQ.
4. The services of a spill contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sherriff’s Office, Fire Department, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: <http://www.tceq.state.tx.us/response/spills.html>

## Attachment B – Potential Sources of Contamination

No particular activity or process during construction of the project is anticipated to present a significant risk of being a potential source of contamination. However, during regular construction operations, several common and minor risks of contamination are anticipated. Should any unforeseen mishaps occur during construction, the contractor shall follow the guidelines set forth in “Attachment A – Spill Response Plan”.

### **Potential sources of sediment to stormwater runoff:**

- Clearing and grubbing
- Grading and excavation
- Vehicle tracking
- Topsoil stripping and stockpiling
- Landscaping

### **Potential pollutants and sources, other than sediment, to stormwater runoff:**

- Combined Staging Area – small fueling, minor equipment maintenance, sanitary facility.
- Materials Storage Area – solvents, adhesives, paving materials, aggregates, trash, etc.
- Construction Activities – paving, concrete pouring
- Concrete washout areas

### **Potential on-site pollutants:**

- Fertilizer
- Concrete
- Glue, adhesives
- Gasoline, diesel fuel, hydraulic fluids, antifreeze
- Sanitary toilets

## Attachment C – Sequence of Major Activities

1. Temporary erosion and sedimentation controls are to be installed as indicated on the approved subdivision construction plans and in accordance with the stormwater pollution prevention plan (SWPPP) that is required to be posted on the site. Install tree protection and initiate tree mitigation measures.
2. The environmental project manager, and/or site supervisor, and/or designated responsible party, and the general contractor will follow the storm water pollution prevention plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with city inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion and sedimentation plan.
3. Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the storm water pollution prevention plan (SWPPP) posted on the site.
4. A sequence of major construction activities, as well as an estimated area of disturbance for each, is listed below:
  - I. Clearing and grubbing – 20 acres
  - II. Grading and excavation for roadway and lots – 20 acres
  - III. Excavation for utilities and storm sewer system – 1 acres
  - IV. Construction of utilities and storm sewer system – 1 acres
  - V. Paving, striping, etc. – 3 acre
  - VI. Re-vegetation – 1 acre
  - VII. Landscaping – 1 acre
5. Upon completion of construction and re-vegetation, the design engineer shall submit an engineer's letter of concurrence to the City of Liberty Hill indicating that construction, including re-vegetation, is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate city inspector.
6. After construction is complete and all disturbed areas have been re-vegetated per plan to at least 90 percent established, remove the temporary erosion and sedimentation controls and complete any necessary final re-vegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the permanent BMPs.

## Attachment D – Temporary Best Management Practices and Measures

Prior to the commencement of any construction activity, the contractor shall install silt fence, construction entrances, and inlet protection, per the Erosion and Sedimentation Control Plan. All temporary BMPs are to be installed per TCEQ and local requirements.

As surface water flows from and through disturbed areas, the proposed temporary BMPs will prevent pollution by filtering the increased sediment loads and other pollutant sources (listed in “Attachment B – Potential Sources of Contamination”) prior to any runoff leaving the site. As shown in the attached site plan, silt fence will be utilized downstream of any grading and construction activities to remove debris and sediment from run-off in the area (activities here will primarily involve road grading and storm sewer excavation). Inlet protection will prevent sediment laden runoff from entering the storm sewer system during construction. Concrete washout basins will contain pollutants discharged when concrete trucks are washed out, and stabilized construction entrances will prevent the transport of sediment off-site.

In using the aforementioned treatment methods and maintaining natural drainage patterns downgradient of the proposed site, any flow to naturally occurring sensitive features, both known and unknown, will be maintained.

## Attachment E – Request to Temporarily Seal a Feature

Not applicable to this project.

## Attachment F – Structural Practices

The following temporary BMP structural practices will be employed on the site:

- A. Silt Fence – Used for sediment filtration along the downslope perimeter of portions of the project, as well as to prevent runoff from storage of excavated materials during utility construction. The fence retains sediment primarily by retarding flow and promoting deposition of sediment on the uphill side of the slope. Runoff is filtered as it passes through the geotextile.
- B. Inlet Protection – To be provided around all proposed storm sewer inlets during construction. Locations are indicated on attached site plan. The measures will trap and settle out sediment and debris prior to runoff entering the proposed storm sewer system.
- C. Construction Entrance – Stone pads will be constructed at entrances and exits to the project to prevent off-site transport of sediment by construction vehicles. The pads are a minimum of 50' long and 8" deep. They will be graded to prevent runoff from leaving the site.



## Attachment G – Drainage Area Map

Existing and proposed drainage area maps are shown in Contributing Zone Plan Attachment E “Volume and Character of Stormwater”. Existing Batch Detention Pond I (EAPP ID: 11003138) will serve as the sediment basin for Section 8.

## Attachment H – Temporary Sediment Pond(s) Plans and Calculations

Not applicable to this project.

## Attachment I – Inspection and Maintenance for BMPs

The inspection and maintenance of temporary BMPs will be made according to TCEQ RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.

### **Inspection Personnel:**

Inspections shall be conducted by qualified representatives of the contractor acting on behalf of the owner or a designated party, if hired separately by the owner. Each operator must delegate authority to the specifically described position or person performing inspections, as provided by 30 TAC 305.128, as an authorized person for signing reports and performing certain activities requested by the director or required by the TPDES general permit. This delegation of authority must be provided to the director of TCEQ in writing and a copy shall be kept along with the signed effective copy of the SWPPP.

### **Inspection Schedule and Procedures:**

An inspection shall occur weekly and after any rain event.

The authorized party shall inspect all disturbed areas of the site, areas used for storage of materials that exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.

Disturbed areas and areas used for storage of materials that are exposed to precipitation or within limits of the 1% annual chance (100 year) floodplain must be inspected for evidence of, or the potential for, pollutants entering the runoff from the site. Erosion and sediment control measures identified in the plan must be observed to ensure that they are operating correctly. Observations can be made during wet or dry weather conditions. Where discharge locations or points are accessible, they must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. This can be done by inspecting receiving waters to see where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

Based on the results of the inspection, the site description and the pollution prevention measures identified in the plan must be revised as soon as possible after an inspection that reveals inadequacies. The inspection and plan review process must provide for timely implementation of any changes to the plan within 7 calendar days of the inspection.

An inspection report shall be completed, which summarizes the scope of the inspection, name(s) and qualifications of personnel conducting the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP. Major observations shall include, as a minimum, location of discharges of sediment or other pollutants from the site, location of BMPs that need to be maintained, location of BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where BMPs are needed.

Actions taken as a result of the inspections must be described within, and retained as a part of, the SWPPP. 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 SWPPP and the TPDES general permit. The report must be signed by the authorized representative delegated by the operators in accordance with TAC 305.128.

**Maintenance and Corrective Actions** – Maintenance of erosion control facilities shall consist of the minimum requirements as follows:

- A. In ongoing construction areas inspect erosion control improvements to confirm facilities are in place and operable. Where facilities have been temporarily set aside or damaged due to construction activity, place facilities in service before leaving job site.
- B. If weather forecast predicts possibility of rain, check entire facilities throughout site to ensure that they are in place and operable. If job site weather conditions indicate high probability of rain, make special inspection of erosion control facilities.
- C. After rainfall events, review erosion control facilities as soon as site is accessible. Clean rock berms, construction entrances, and other structural facilities. Determine where additional facilities or alternative techniques are needed to control sediment leaving site.
- D. After portions of site have been seeded, review these areas on regular basis in accordance with project specifications to assure proper watering until grass is established. Re-seed areas where grass is not well-established.
- E. Spills are to be handled as specified by the manufacturer of the product in a timely and safe manner by qualified personnel. The site superintendent will be responsible for coordinating spill prevention and cleanup operations.
- F. Concrete trucks will discharge extra concrete or wash out drum only at an approved location on site. Residual product shall be properly disposed of.
- G. Inspect vehicle entrance and exits for evidence of off-site tracking and correct as needed.
- H. Remove sediment from traps/ponds no later than when the design capacity has been reduced by 50%.
- I. If sediment escapes the site, the contractor, where feasible and where access is available, shall collect and remove sedimentation material by appropriate non-damaging methods. Additionally, the contractor shall correct the condition causing discharges.
- J. If inspections or other information sources reveal a control has been used incorrectly, or that control is performing inadequately, the contractor must replace, correct, or modify the control as soon as practical after discovery of the deficiency.

## Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

Silt fence will be used during the period of construction near the perimeter of the disturbed area to intercept sediment while allowing water to percolate through. Silt fencing will be installed prior to any site clearing. This silt fence will remain in place until the disturbed area is permanently stabilized. Tree protection fencing will be installed around all protected trees. A stabilized pad of crushed stone will be placed at the point where traffic will be entering and leaving the construction site to eliminate the tracking or flowing of sediment onto public rights-of-way. Once all site grading activities and landscaping plantings have been completed, all disturbed areas and exposed soil will be revegetated as needed. All controls will remain in place until the revegetated areas are permanently stabilized.

Should construction activities be interrupted for a period of at least 4 weeks of non-activity, Contractor shall revegetate all disturbed areas as required for permanent revegetation. Contractor shall keep all temporary BMPs in place until the disturbed areas become permanently stabilized.

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

I \_\_\_\_\_ Houdin Honarvar \_\_\_\_\_  
Print Name

\_\_\_\_\_ Authorized Signatory \_\_\_\_\_  
Title - Owner/President/Other

of \_\_\_\_\_ DRP TX4, LLC \_\_\_\_\_  
Corporation/Partnership/Entity Name

have authorized \_\_\_\_\_ Joseph Yaklin, P.E. \_\_\_\_\_  
Print Name of Agent/Engineer

of \_\_\_\_\_ BGE, Inc. \_\_\_\_\_  
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:

Houdin Homanar  
Applicant's Signature

04/20/2023  
Date

THE STATE OF New York §

County of New York §

BEFORE ME, the undersigned authority, on this day personally appeared Houdin Homanar 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 20 day of APRIL, 2023.



[Signature]  
NOTARY PUBLIC

DANIEL JESSE KIMMEL  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 04-25-2026

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Northgate Ranch Phase 2 Section 8

Regulated Entity Location: Approx. 2.5 mi north on CR 214 from Hwy 29 Intersection

Name of Customer: DRP TX4, LLC

Contact Person: Houdin Honarvar

Phone: (212) 751-6100

Customer Reference Number (if issued): CN \_\_\_\_\_

Regulated Entity Reference Number (if issued): RN \_\_\_\_\_

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

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

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	21.51 Acres	\$ 4,000
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: 05/02/2023

## Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

### **Water Pollution Abatement Plans and Modifications**

#### **Contributing Zone Plans and Modifications**

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

#### **Organized Sewage Collection Systems and Modifications**

<b>Project</b>	<b>Cost per Linear Foot</b>	<b>Minimum Fee- Maximum Fee</b>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

#### **Underground and Aboveground Storage Tank System Facility Plans and Modifications**

<b>Project</b>	<b>Cost per Tank or Piping System</b>	<b>Minimum Fee- Maximum Fee</b>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

#### **Exception Requests**

<b>Project</b>	<b>Fee</b>
Exception Request	\$500

***Extension of Time Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Extension of Time Request	\$150



TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN		RN

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)	
<input checked="" type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
<b>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</b>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
DRP TX4, LLC			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
0804464725	32083558331	83-2364942	N/A
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other: Disregarded Entity	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
<b>15. Mailing Address:</b>	590 Madison Avenue, 13 <sup>th</sup> floor		
	City	New York	State NY ZIP 10022 ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
		dan.kimmel@domainrealestatepartners.com	
<b>18. Telephone Number</b>	<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)	
( 212 ) 751-6100		( ) -	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<b>The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).</b>	
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)	
Northgate Ranch Phase 2 Section 8	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>							
	City		State		ZIP		ZIP + 4
24. County							

**Enter Physical Location Description if no street address is provided.**

25. Description to Physical Location:	Approx. 2.5 miles north on CR 214 from Hwy 29 intersection							
26. Nearest City	Liberty Hill				State	TX	Nearest ZIP Code	78642
27. Latitude (N) In Decimal:	30.704444			28. Longitude (W) In Decimal:	-97.898728			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
30	42	16	-97	53	55			
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)			
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>								
Single Family Residential								
34. Mailing Address:	590 Madison Avenue, 13 <sup>th</sup> floor							
	City	New York	State	NY	ZIP	10022	ZIP + 4	
35. E-Mail Address:	dan.kimmel@domainrealestatepartners.com							
36. Telephone Number	37. Extension or Code			38. Fax Number <i>(if applicable)</i>				
( 212 ) 751-6100				( ) -				

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.


<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

**SECTION IV: Preparer Information**

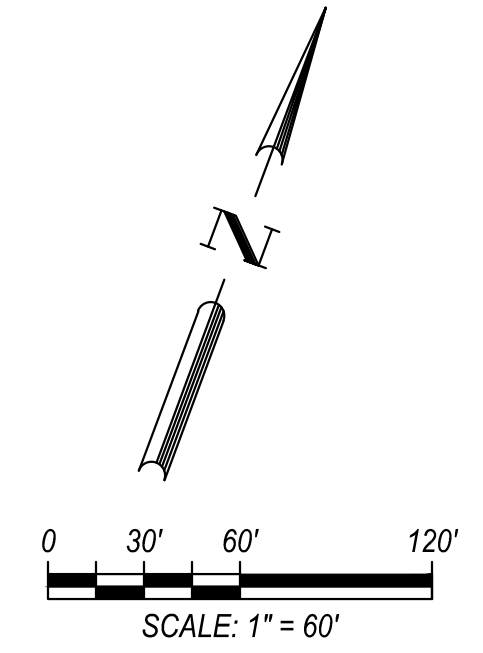
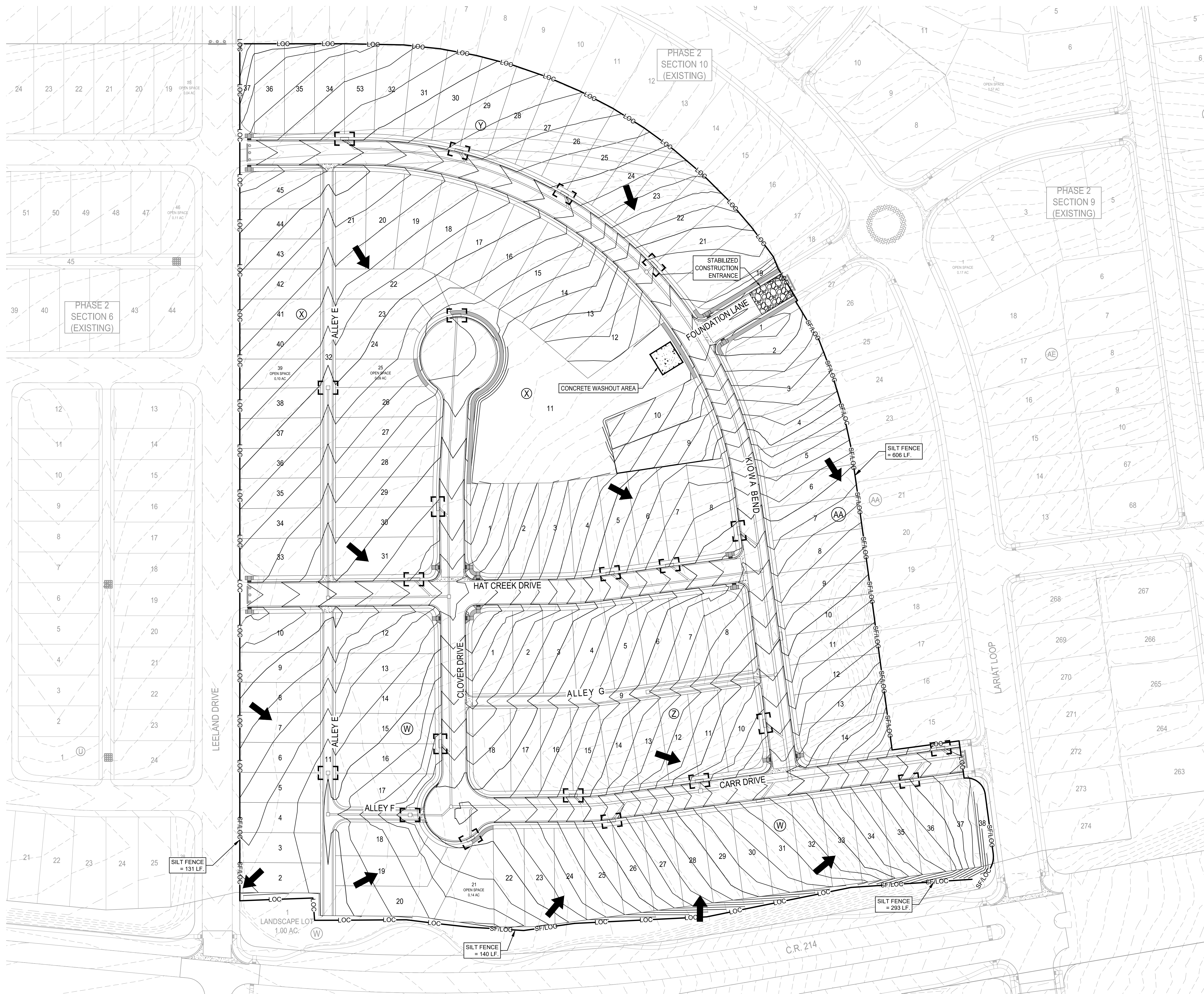
40. Name:	Joseph Yaklin, P.E.	41. Title:	Sr. Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
( 832 ) 592-2734		( ) -	jyaklin@bgeinc.com

**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:	BGE, Inc.	Job Title:	Sr. Project Manager
Name <i>(In Print)</i> :	Joseph Yaklin	Phone:	( 832 ) 592- 2734
Signature:		Date:	05/02/2023


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- LEGEND**
- PROPERTY BOUNDARY
  - - - EXISTING MINOR CONTOUR
  - - - EXISTING MAJOR CONTOUR
  - - - PROPOSED MINOR CONTOUR
  - - - PROPOSED MAJOR CONTOUR
  - LOC — LIMITS OF CONSTRUCTION
  - LOC/SF — LIMITS OF CONSTRUCTION/ SILT FENCE
  - SF — SILT FENCE
  - [ ] INLET PROTECTION
  - ➔ DIRECTION OF FLOW
  - [ ] CONSTRUCTION ENTRANCE
  - [ ] CONCRETE WASHOUT

REV	DESCRIPTION	DATE	APR

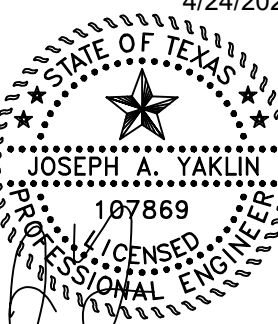
DESIGNED BY: KMH  
 REVIEWED BY: JAY  
 DRAWN BY: KMH



**BGE, INC.**  
 101 W. Louis-Hanna Blvd., Suite 400  
 AUSTIN, TX 78728  
 TPEE Registration No. F-1046  
 TEL: 512.979.9460 www.bgeinc.com

**NORTHGATE RANCH PHASE 2 SECTION 8**  
**WILLIAMSON COUNTY, TEXAS**  
**EROSION AND SEDIMENTATION CONTROL PLAN**

4/24/2023



SHEET  
7 OF 50



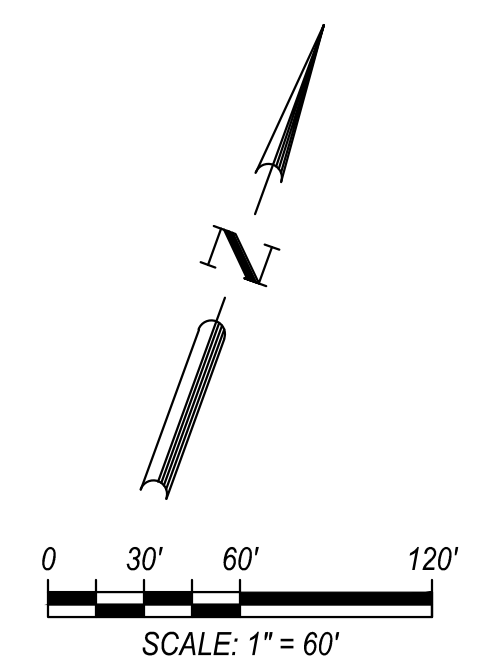
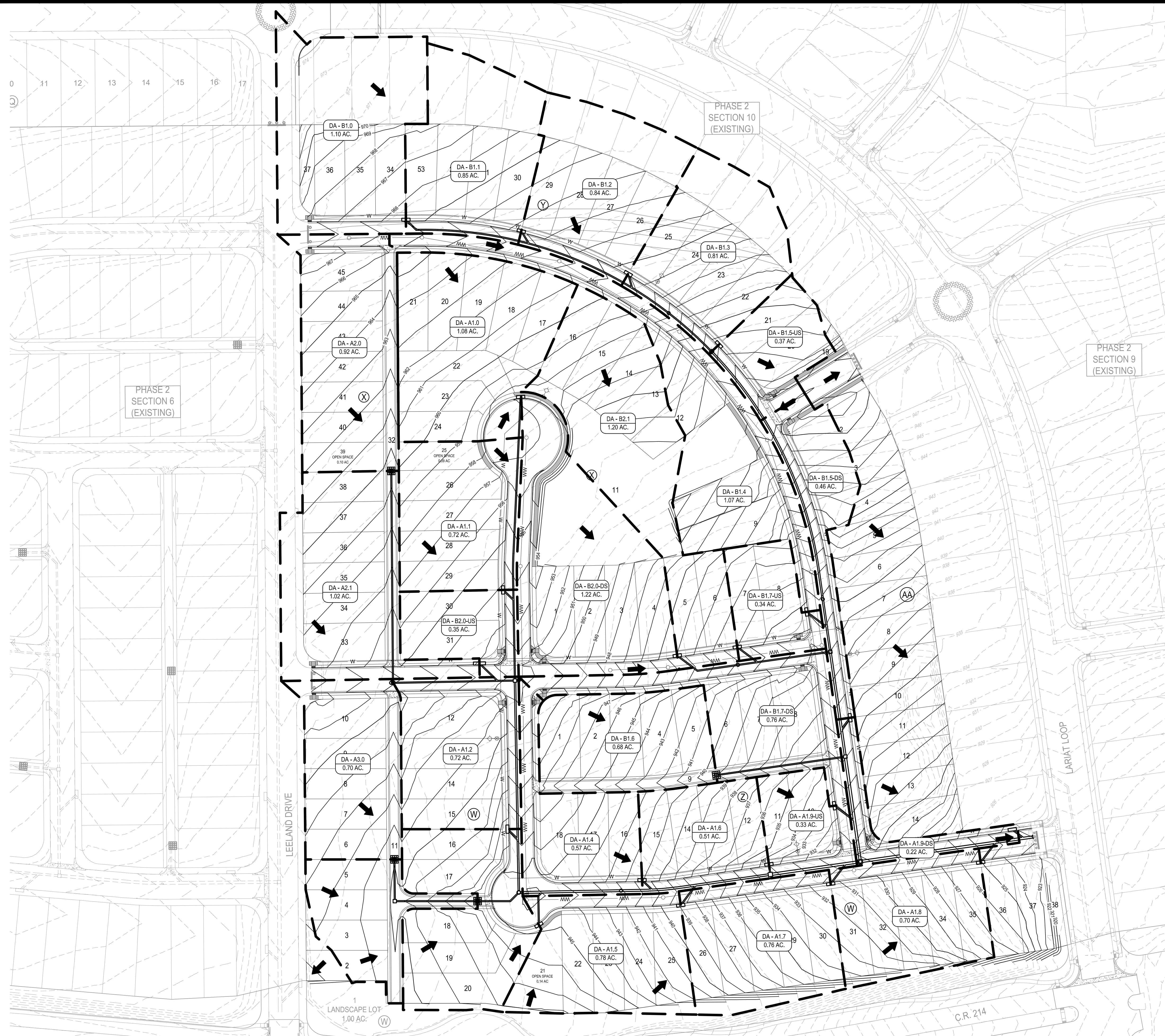








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- LEGEND**
- EXISTING MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - PROPOSED MAJOR CONTOUR
  - STORM SEWER FLOW DIRECTION
  - PROPOSED MANHOLE
  - PROPOSED BOX MANHOLE
  - 10' CURB INLET
  - DRAINAGE AREA BOUNDARY
  - VALLEY GUTTER FLOW LINE OF ANALYSIS
  - INLET FLOW PATH
  - XXX INLET ID
  - X.XX AC DRAINAGE AREA

- NOTES:**
1. ALL INLET WYE CONNECTIONS TO BE 45 DEGREES UNLESS OTHERWISE NOTED.
  2. ALL CURB INLETS TO BE 10' UNLESS OTHERWISE NOTED.
  3. ALL STORM LATERALS TO BE 18" CLUI RCP UNLESS OTHERWISE NOTED.

REV	DATE	REV	DESCRIPTION

DESIGNED BY: KMH  
 REVIEWED BY: JAY  
 DRAWN BY: KMH

**BGE, INC.**  
 101 W. Louis Henna Blvd, Suite 400  
 AUSTIN, TX 78728  
 TEPPE Registration No. F-1046  
 TEL: 512.979.9060 www.bge.com

**NORTHGATE RANCH PHASE 2 SECTION 8**  
**WILLIAMSON COUNTY, TEXAS**  
**OVERALL STORM AND INLET**  
**DRAINAGE AREA MAP**

4/24/2023

SHEET  
29 OF 50



C VALUE CALCULATIONS

D.A.	AREA (SF)	AREA (AC)	LOTS < 10K	TOTAL LOTS	% STREET	34' STREET	14' STREET	Impervious Cover (Acres)	Pervious Cover (Acres)	% IC	10 year			25 year			100 year								
											perv C	imp C	weighted C	perv C	imp C	weighted C	perv C	imp C	weighted C						
A1.0	40,702	0.934	7.00	7.00	50.0%	129		0.628	0.307	67.17%	0.25	0.08	0.81	0.51	0.63	0.29	0.09	0.860	0.54	0.67	0.36	0.110	0.95	0.60	0.76
A1.1	31,354	0.720	4.00	4.00	50.0%	267		0.456	0.264	63.38%	0.25	0.07	0.81	0.37	0.60	0.29	0.08	0.860	0.39	0.65	0.36	0.095	0.95	0.43	0.73
A1.2	31,642	0.724	4.00	4.00	50.0%	366		0.506	0.218	69.91%	0.25	0.05	0.81	0.41	0.64	0.29	0.06	0.860	0.44	0.69	0.36	0.078	0.95	0.48	0.77
A1.3	36,051	0.828	5.00	5.00	50.0%	238.00	18	0.528	0.300	63.77%	0.25	0.07	0.81	0.43	0.61	0.29	0.09	0.860	0.45	0.65	0.36	0.108	0.95	0.50	0.74
A1.4	24,780	0.569	3.00	3.00	50.0%	442.00		0.464	0.105	81.61%	0.25	0.03	0.81	0.38	0.71	0.29	0.03	0.860	0.40	0.76	0.36	0.038	0.95	0.44	0.84
A1.5	33,935	0.779	4.00	4.00	50.0%	224.00		0.435	0.345	55.78%	0.25	0.09	0.81	0.35	0.56	0.29	0.10	0.860	0.37	0.61	0.36	0.124	0.95	0.41	0.69
A1.6	22,190	0.509	4.00	4.00	50.0%	229.00		0.437	0.072	85.80%	0.25	0.02	0.81	0.35	0.73	0.29	0.02	0.860	0.38	0.78	0.36	0.026	0.95	0.42	0.87
A1.7	33,170	0.761	5.00	5.00	50.0%	200.00		0.503	0.259	66.02%	0.25	0.06	0.81	0.41	0.62	0.29	0.08	0.860	0.43	0.67	0.36	0.093	0.95	0.48	0.75
A1.8	30,363	0.697	5.00	5.00	50.0%	200.00		0.503	0.194	72.13%	0.25	0.05	0.81	0.41	0.65	0.29	0.06	0.860	0.43	0.70	0.36	0.070	0.95	0.48	0.79
A1.9-DS	9,797	0.225	0.00	0.00	50.0%	394.50		0.199	0.026	88.59%	0.25	0.01	0.81	0.16	0.75	0.29	0.01	0.860	0.17	0.79	0.36	0.009	0.95	0.19	0.88
A1.9-US	14,223	0.327	2.00	2.00	50.0%	180.92		0.252	0.074	77.20%	0.25	0.02	0.81	0.20	0.68	0.29	0.02	0.860	0.22	0.73	0.36	0.027	0.95	0.24	0.82
A1.9	24,020	0.551	2.00	2.00	50.0%	575.42		0.451	0.100	81.85%	0.25	0.03	0.81	0.37	0.71	0.29	0.03	0.860	0.39	0.76	0.36	0.036	0.95	0.43	0.84
A2.0	40,216	0.923	6.00	6.00	50.0%	139.00	298	0.648	0.275	70.20%	0.25	0.07	0.81	0.52	0.64	0.29	0.08	0.860	0.56	0.69	0.36	0.099	0.95	0.62	0.77
A2.1	44,324	1.018	6.00	6.00	50.0%	463.00	258	0.799	0.219	78.51%	0.25	0.05	0.81	0.65	0.69	0.29	0.06	0.860	0.69	0.74	0.36	0.079	0.95	0.76	0.82
A3.0	30,531	0.701	5.00	5.00	50.0%	145.00	221	0.546	0.155	77.90%	0.25	0.04	0.81	0.44	0.69	0.29	0.04	0.860	0.47	0.73	0.36	0.056	0.95	0.52	0.82
A3.1	20,595	0.473	3.50	3.50	100.0%		302	0.378	0.095	80.01%	0.25	0.02	0.81	0.31	0.70	0.29	0.03	0.860	0.33	0.75	0.36	0.034	0.95	0.36	0.83
B1.0	48,005	1.102	6.00	6.00	50.0%	495.00		0.732	0.370	66.43%	0.25	0.09	0.81	0.59	0.62	0.29	0.11	0.860	0.63	0.67	0.36	0.133	0.95	0.70	0.75
B1.1	37,128	0.852	6.00	6.00	50.0%	149.00		0.557	0.295	65.39%	0.25	0.07	0.81	0.45	0.62	0.29	0.09	0.860	0.48	0.66	0.36	0.106	0.95	0.53	0.75
B1.2	36,803	0.845	6.00	6.00	50.0%	148.00		0.557	0.288	65.91%	0.25	0.07	0.81	0.45	0.62	0.29	0.08	0.860	0.48	0.67	0.36	0.104	0.95	0.53	0.75
B1.3	35,360	0.812	6.00	6.00	50.0%	148.00		0.557	0.255	68.60%	0.25	0.06	0.81	0.45	0.63	0.29	0.07	0.860	0.48	0.68	0.36	0.092	0.95	0.53	0.76
B1.4	46,710	1.072	3.00	3.00	50.0%	841.45		0.666	0.406	62.11%	0.25	0.10	0.81	0.54	0.60	0.29	0.12	0.860	0.57	0.64	0.36	0.146	0.95	0.63	0.73
B1.5-US	16,296	0.374	2.00	2.00	50.0%	163.55		0.243	0.131	65.04%	0.25	0.03	0.81	0.20	0.61	0.29	0.04	0.860	0.21	0.66	0.36	0.047	0.95	0.23	0.74
B1.5-DS	20,112	0.462	1.50	1.50	50.0%	462.46		0.354	0.108	76.69%	0.25	0.03	0.81	0.29	0.68	0.29	0.03	0.860	0.30	0.73	0.36	0.039	0.95	0.34	0.81
B1.5	36,408	0.836	3.50	3.50	50.0%	626.01		0.597	0.238	71.47%	0.25	0.06	0.81	0.48	0.65	0.29	0.07	0.860	0.51	0.70	0.36	0.086	0.95	0.57	0.78
B1.6	29,417	0.675	5.00	5.00	50.0%		234	0.477	0.198	70.63%	0.25	0.05	0.81	0.39	0.65	0.29	0.06	0.860	0.41	0.69	0.36	0.071	0.95	0.45	0.78
B1.7-DS	33,010	0.758	3.00	3.00	50.0%	590.00	150	0.587	0.171	77.49%	0.25	0.04	0.81	0.48	0.68	0.29	0.05	0.860	0.51	0.73	0.36	0.061	0.95	0.56	0.82
B1.7-US	14,816	0.340	2.00	2.00	50.0%	150.00		0.236	0.104	69.52%	0.25	0.03	0.81	0.19	0.64	0.29	0.03	0.860	0.20	0.69	0.36	0.037	0.95	0.22	0.77
B1.7	47,825	1.098	5.00	5.00	50.0%	740.00	150	0.824	0.274	75.02%	0.25	0.07	0.81	0.67	0.67	0.29	0.08	0.860	0.71	0.72	0.36	0.099	0.95	0.78	0.80
B2.0-DS	52,663	1.209	4.00	4.00	50.0%	720.00		0.685	0.524	56.66%	0.25	0.13	0.81	0.55	0.57	0.29	0.15	0.860	0.59	0.61	0.36	0.189	0.95	0.65	0.69
B2.0-US	15,264	0.350	2.00	2.00	50.0%	160.00		0.236	0.114	67.48%	0.25	0.03	0.81	0.19	0.63	0.29	0.03	0.860	0.20	0.67	0.36	0.041	0.95	0.22	0.76
B2.0	67,927	1.559	6.00	6.00	50.0%	870.00		0.921	0.638	59.09%	0.25	0.16	0.81	0.75	0.58	0.29	0.18	0.860	0.79	0.63	0.36	0.230	0.95	0.88	0.71
B2.1	58,120	1.334	7.00	7.00	50.0%	80.00		0.603	0.731	45.18%	0.25	0.18	0.81	0.49	0.50	0.29	0.21	0.860	0.52	0.55	0.36	0.263	0.95	0.67	0.63

TIME OF CONCENTRATION CALCULATIONS

TOC (HR)	LABEL	AREA (AC)	C			A-C10	A-C25	A-C100	TOTAL NON GUTTER FLOW (FT)	SHEET FLOW				S.C. FLOW (UNPAVED)			S.C. FLOW (PAVED - GUTTER)			Cumulative TC (MIN)	INTENSITY			DISCHARGE		
			C10	C25	C100					Length (FT)	Manning's N	Slope (FT/FT)	Tc (MIN)	Length (FT)	Slope (FT/FT)	Tc (MIN)	Length (FT)	Slope (FT/FT)	Tc (MIN)		I 10yr (in/hr)	I 25yr (in/hr)	I 100yr (in/hr)	Q 10 (cfs)	Q 25 (cfs)	Q 100 (cfs)
			0.234	A1.0	0.934					0.626	0.673	0.756	0.585	0.629	0.707	288	100.0	0.24	0.020		12.67	188.0	0.020	1.37	0	0.013
0.233	A1.1	0.720	0.605	0.651	0.734	0.435	0.469	0.528	158	100.0	0.24	0.020	12.67	58.0	0.020	0.42	148.0	0.020	0.86	13.95	6.38	7.76	10.02	2.78	3.64	5.29
0.229	A1.2	0.724	0.642	0.689	0.772	0.465	0.499	0.559	150	100.0	0.24	0.020	12.67	50.0	0.020	0.37	147.0	0.027	0.73	13.77	6.42	7.80	10.07	2.98	3.89	5.63
0.230	A1.3	0.828	0.607	0.653	0.736	0.502	0.541	0.609	257	100.0	0.24	0.020	12.67	157.0	0.020	1.15	0	0.020	0.00	13.82	6.41	7.79	10.06	3.22	4.21	6.13
0.223	A1.4	0.569	0.707	0.755	0.842	0.402	0.430	0.479	110	100.0	0.24	0.020	12.67	10.0	0.020	0.07	135.0	0.029	0.65	13.39	6.49	7.89	10.18	2.61	3.39	4.87
0.229	A1.5	0.779	0.562	0.608	0.689	0.438	0.474	0.537	125	100.0	0.24	0.020	12.67	25.0	0.020	0.18	185.0	0.030	0.88	13.73	6.42	7.81	10.08	2.81	3.70	5.41
0.225	A1.6	0.509	0.730	0.779	0.866	0.372	0.397	0.441	130	100.0	0.24	0.020	12.67	30.0	0.020	0.22	151.0	0.044	0.59	13.48	6.47	7.87	10.15	2.41	3.12	4.48
0.235	A1.7	0.761	0.620	0.666	0.750	0.472	0.507	0.571	228	100.0	0.24	0.020	12.67	128.0	0.020	0.93	103.0	0.032	0.47	14.08	6.36	7.73	9.99	3.00	3.92	5.70
0.232	A1.8	0.697	0.654	0.701	0.786	0.456	0.489	0.548	179	100.0	0.24	0.020	12.67	79.0	0.020	0.58	149.0	0.035	0.65	13.90	6.39	7.77	10.04	2.91	3.80	5.50
0.083	A1.9-DS	0.225	0.746	0.795	0.883	0.168	0.179	0.199	14	100.0	0.24	0.020	12.67	2.68	0.0	0.020	0.00	0.040	5.00	8.85	10.61	13.34	1.49	1.90	2.65	
0.223	A1.9-US	0.327	0.682	0.730	0.815	0.223	0.238	0.266	125	100.0	0.24	0.020	12.67	24.8	0.020	0.18	103.0	0.025	0.53	13.38	6.49	7.89	10.18	1.45	1.88	2.71
0.239	A1.9	0.551	0.708	0.757	0.843	0.391	0.417	0.465	125	100.0	0.24	0.020	12.67	24.8	0.020	0.18	312.5	0.030	1.48	14.33	6.31	7.68	9.92	2.46	3.20	4.61
0.239	A2.0	0.923	0.643	0.690	0.774	0.594	0.637	0.715	136	100.0	0.24	0.020	12.67	36.0	0.020	0.26	236.0	0.019	1.40	14.34	6.31	7.68	9.92	3.75	4.89	7.09
0.249	A2.1	1.018	0.690	0.737	0.823	0.702	0.750	0.838	110	100.0	0.24	0.020	12.67	10.0	0.020	0.07	373.0	0.019	2.22	14.96	6.19	7.54	9.76	4.35	5.66	8.17
0.236</																										

