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TEXAS REGISTERED ENGINEERING FIRM F-181

SERVICES
>> ENGINEERS >> PLANNERS >> SURVEYORS

Water Pollution Abatement Plan

and

Organized Sewage Collection System Plan

For

Southwestern University New Residence Halls and Welcome Center

In the

City of Georgetown

Williamson County, Texas

Submitted: 10/6/2023

Job Number: 22925

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and
Organized Sewage Collection System Plan

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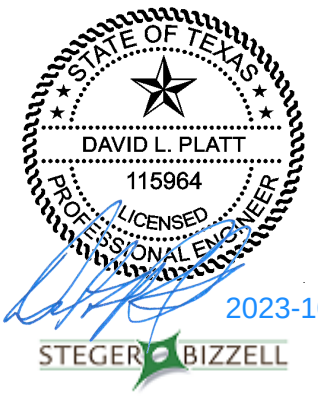
Prepared by:



Texas Registered Engineering Firm-181
1978 S. Austin Ave
Georgetown, TX 78626

Water Pollution Abatement Plan Checklist

(1) Edwards Aquifer Application Cover Page (TCEQ-20705)

(2) General Information Form (TCEQ-0587)

- Attachment A - Road Map
- Attachment B - USGS / Edwards Recharge Zone Map
- Attachment C - Project Description

(3) Geologic Assessment Form (TCEQ-0585)

- Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
- Comments to the Geologic Assessment Table
- Attachment B - Soil Profile and Narrative of Soil Units
- Attachment C - Stratigraphic Column
- Attachment D - Narrative of Site Specific Geology
- Site Geologic Map(s)
- Table or list for the position of features' latitude/longitude (if mapped using GPS)

(4) Water Pollution Abatement Plan Application Form (TCEQ-0584)

- Attachment A - Factors Affecting Water Quality
- Attachment B - Volume and Character of Stormwater
- Attachment C - Suitability Letter from Authorized Agent (if OSSF is proposed)
- Attachment D - Exception to the Required Geologic Assessment (if requesting an exception)
- Site Plan

(5) Temporary Stormwater Section (TCEQ-0602)

- Attachment A - Spill Response Actions
- Attachment B - Potential Sources of Contamination
- Attachment C - Sequence of Major Activities
- Attachment D - Temporary Best Management Practices and Measures
- Attachment E - Request to Temporarily Seal a Feature, if sealing a feature
- Attachment F - Structural Practices
- Attachment G - Drainage Area Map
- Attachment H - Temporary Sediment Pond(s) Plans and Calculations
- Attachment I - Inspection and Maintenance for BMPs
- Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

(6) Permanent Stormwater Section (TCEQ-0600)

- Attachment A - 20% or Less Impervious Cover Waiver, if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site
- Attachment B - BMPs for Upgradient Stormwater
- Attachment C - BMPs for On-site Stormwater
- Attachment D - BMPs for Surface Streams
- Attachment E - Request to Seal Features (if sealing a feature)
- Attachment F - Construction Plans
- Attachment G - Inspection, Maintenance, Repair and Retrofit Plan
- Attachment H - Pilot-Scale Field Testing Plan, if BMPs not based on Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs
- Attachment I -Measures for Minimizing Surface Stream Contamination

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

(8) Application Fee Form (TCEQ-0574)

(9) Check Payable to the "Texas Commission on Environmental Quality"

(10) Core Data Form (TCEQ-10400)

Organized Sewage Collection System Plan Checklist

- **Edwards Aquifer Application Cover Page (TCEQ-20705)**
- **General Information Form (TCEQ-0587)**

  Attachment A - Road Map
  Attachment B - USGS / Edwards Recharge Zone Map
  Attachment C - Project Description

- **Geologic Assessment Form (TCEQ-0585)**

  Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
  Comments to the Geologic Assessment Table
  Attachment B - Soil Profile and Narrative of Soil Units
  Attachment C - Stratigraphic Column
  Attachment D - Narrative of Site Specific Geology
  Site Geologic Map(s)
  Table or list for the position of features' latitude/longitude (if mapped using GPS)

- **Organized Sewage Collection System Plan (TCEQ-0582)**

  Attachment A - Engineering Design Report
  Attachment B - Justification and Calculations for Deviation in Straight Alignment Without Manholes
  Attachment C - Justification for Variance from Manhole Spacing
  Attachment D - Explanation of Slopes for Flows Greater Than 10.0 Feet Per Second
  Site Plan
  Final Plan and Profile Sheets

- **Lift Station / Force Main System Application (TCEQ-0624) if applicable**

  Attachment A - Engineering Design Report
  Site Plan
  Final Plan and Profile Sheets

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

  Attachment A - Spill Response Actions
  Attachment B - Potential Sources of Contamination
  Attachment C - Sequence of Major Activities
  Attachment D - Temporary Best Management Practices and Measures
  Attachment E - Request to Temporarily Seal a Feature, if sealing a feature
  Attachment F - Structural Practices
  Attachment G - Drainage Area Map
  Attachment H - Temporary Sediment Pond(s) Plans and Calculations
  Attachment I - Inspection and Maintenance for BMPs
  Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

- **Agent Authorization Form (TCEQ-0599), if application submitted by agent**
- **Application Fee Form (TCEQ-0574)**
- **Check Payable to the "Texas Commission on Environmental Quality"**
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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 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.

1. Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center						**2. Regulated Entity No.:** N/A			
3. Customer Name: SOUTHWESTERN UNIVERSITY						**4. Customer No.:** 600787329			
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
7. Land Use: (Please circle/check one)	Residential		Non-residential			**8. Site (acres):**			704.25 (Limits of Con. = 4.41 Ac.)
9. Application Fee:	$ 4,731.50		**10. Permanent BMP(s):**			20% Max. Impervious Cover			
11. SCS (Linear Ft.):	1,463		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Williamson		**14. Watershed:**			San Gabriel River – Smith Branch			

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.)	___	___	✖ ___
Region (1 req.)	___	___	✖ ___
County(ies)	___	___	✖ ___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___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. David Platt
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 2023-10-06

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):

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) 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.

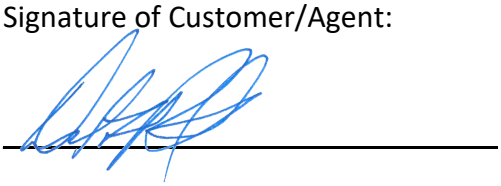
Signature

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 **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: David Platt

Date: 10/6/2023

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center
2. County: Williamson
3. Stream Basin: San Gabriel River – Smith Branch
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☒ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Rick Martinez
Entity: Southwestern University
Mailing Address: 1001 E. University Avenue
City, State: Georgetown, TX Zip: 78626
Telephone: 512-863-1425 Fax: N/A
Email Address: rickmartinez@southwestern.edu

8. Agent/Representative (If any):

Contact Person: David Platt
Entity: Steger Bizzell
Mailing Address: 1978 S. Austin Ave
City, State: Georgetown, TX Zip: 78626
Telephone: 512-930-9412 Fax: N/A
Email Address: dplatt@stegerbizzell.com

9. Project Location:

☒ The project site is located inside the city limits of Georgetown.
☐ 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.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

FROM AUSTIN: TRAVELLING NORTH ON I-35, TAKE EXIT 261 ONTO N I-35 FRONTAGE ROAD. STAY ON N I-35 FRONTAGE ROAD AND THEN TURN RIGHT ONTO SH-29. CONTINUE ON SH-29 FOR 1.4 MILES THEN TURN LEFT ONTO SOUTHWESTERN BOULEVARD. THE FIRST PORTION OF THE PROJECT SITE IS LOCATED TO THE RIGHT IMMEDIATELY AFTER TURNING ONTO SOUTHWESTERN BOULEVARD, AND THE SECOND PORTION OF THE PROJECT SITE IS LOCATED FURTHER DOWN SOUTHWESTERN BOULEVARD TO THE LEFT.

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).
☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

    ☒ Survey staking will be completed by this date: 8/25/2023

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. 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

15. 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/Uncleared)

    ☒ Other: Existing Institutional Site

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

    (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

    (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

    (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

    (4) The use of sewage holding tanks as parts of organized collection systems; and

    (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

    (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

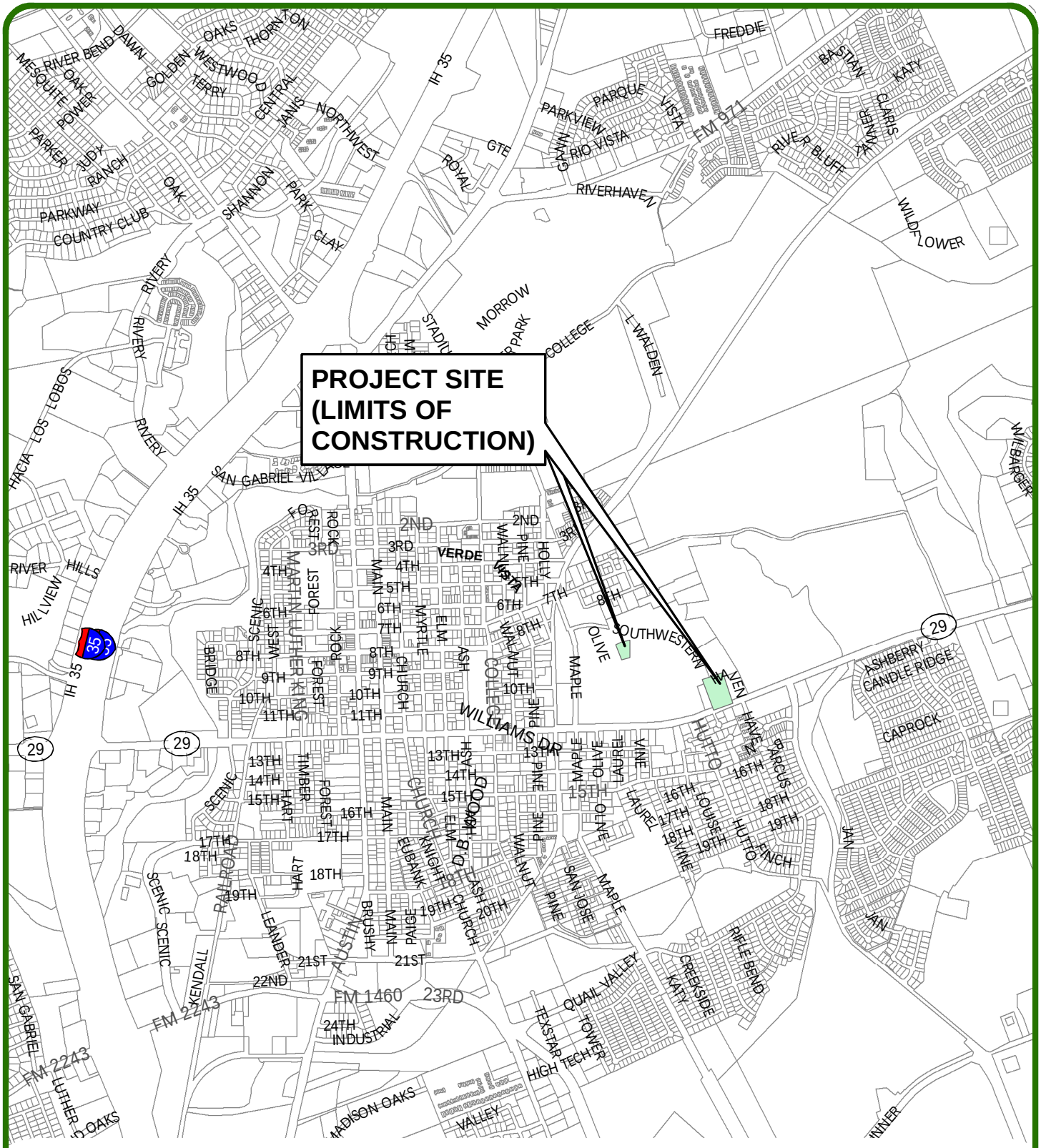
☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
☒ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

☐ TCEQ cashier
☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ 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.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.



ROAD MAP
ATTACHMENT A

SCALE: 1" = 2000'

N
W E
S

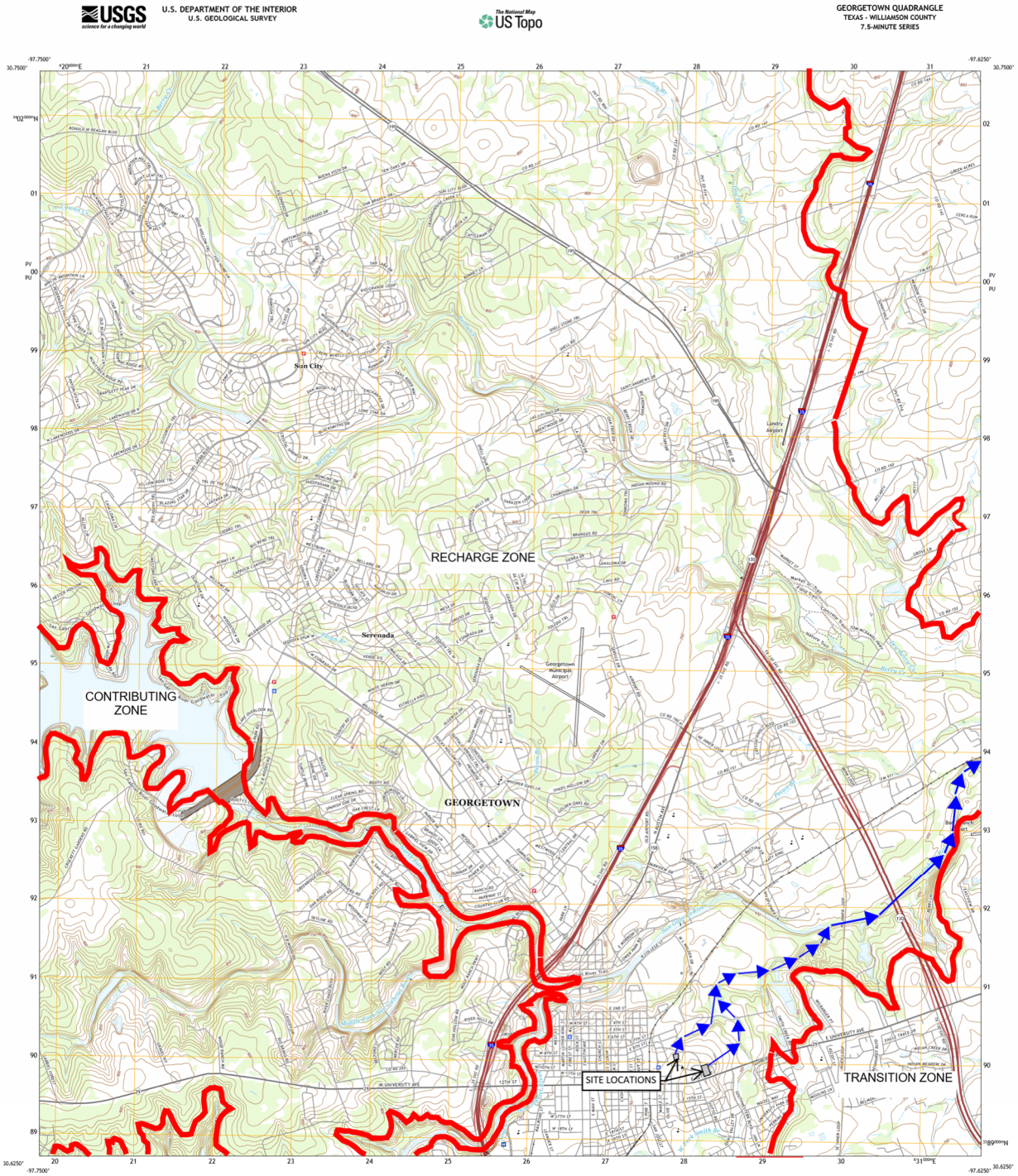
STEGER BIZZELL

TEXAS REGISTERED ENGINNERING FIRM F-181

ADDRESS	1978 S. AUSTIN AVENUE		GEORGETOWN, TX 78626
METRO	512.930.9412	FAX	512.930.9416
WEB	STEGERBIZZELL.COM		
SERVICES	>>ENGINEERS	>>PLANNERS	>>SURVEYORS

JOB NO. 22925 9/28/2023

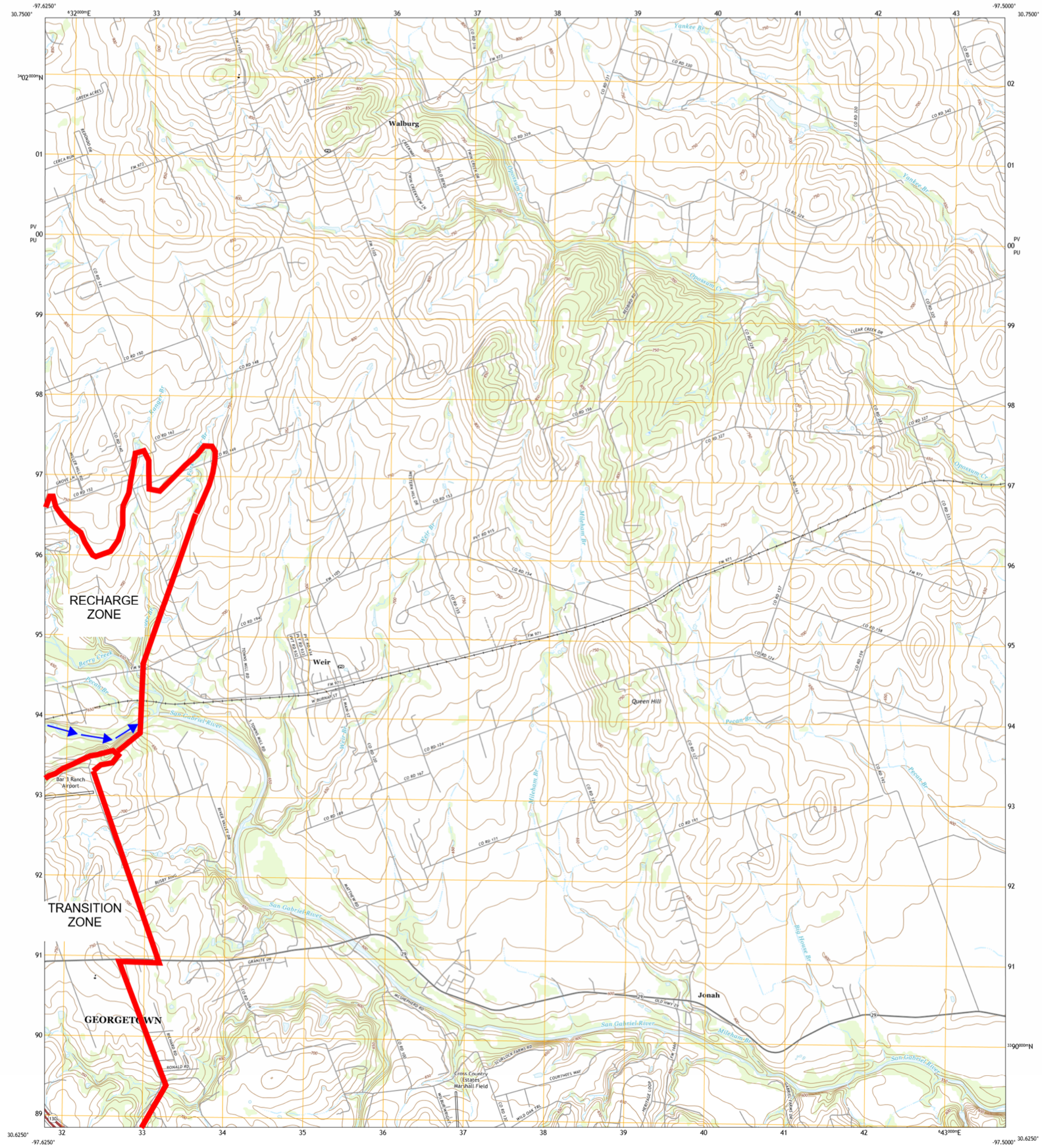
Attachment B – USGS/Edwards Recharge Zone Map



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

The National Map
US Topo

WEIR QUADRANGLE
TEXAS - WILLIAMSON COUNTY
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

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, August 2016 - November 2016
Roads........U.S. Census Bureau, 2015
Names........GNIS, 1979 - 2018
Hydrography........National Hydrography Dataset, 2002 - 2016
Contours........National Elevation Dataset, 2002 - 2004
Boundaries........Multiple sources; see metadata file 2016 - 2017
Wetlands........FWS National Wetlands Inventory 1982

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
0°44' 13 MILS
3°35' 64 MILS

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

SCALE 1:24 000

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 0.6.18

QUADRANGLE LOCATION

1 Cobbs Cavern
2 Jarrell
3 Bartlett
4 Georgetown
5 Granger
6 Round Rock
7 Hutto
8 Taylor

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

WEIR, TX
2019

NSN. 7643016398832
NGA REF NO. USGSX24K72006

Attachment C – Project Description

Southwestern University is proposing to convert 2 separate previously-developed sites into 2 new residence halls and a new welcome center on a portion of their 704.25 Ac. property. The proposed project site is composed of two separate sites that have a limit of construction area totaling 4.41 Ac. The new welcome center and first-year residence hall with associated parking, drive aisles, sidewalks, and utilities will have a construction area of 2.63 Ac. The second-year residence hall with associated sidewalks and utilities will have a construction area of 1.78 Ac. total. A legal description of the property is 704.25 acres of land, situated in the Antonio Flores Survey, Abstract No. 235 and the William Addison Survey, Abstract No. 21, in Williamson County, Texas.

Since both project sites have been previously developed, all existing impervious cover and underground utilities that conflict with the proposed developments will be demolished or relocated prior to construction. For the new welcome center and first-year residence hall site, approximately 0.51 Ac. of impervious cover will be demolished, and the proposed development will include 1.44 Ac. of impervious cover (increase of 0.93 Ac.). For the second-year residence hall site, approximately 0.15 Ac. of impervious cover will be demolished, and the proposed development will include 0.37 Ac. of impervious cover (increase of 0.22 Ac.). The total impervious cover located on the Southwestern property after construction is 70.15 Ac., or 9.96%, of the property. A 20% or Less Imperious Cover Waiver is requested with this WPAP as allowed for schools and currently approved for other areas of Southwestern's property.

There are no sensitive geologic features within the proposed development's limits of construction. No naturally occurring geologic features were identified during the field investigations. All of the man-made features in bedrock are known to the project engineer and do not require any setbacks. The types of these man-made features include, but are not limited to, manholes, power poles, pad mounted transformers, electrical junction boxes, fire hydrants, water vaults, concrete covers, telecommunication lines and boxes, irrigation lines, wastewater lines, water lines, buried electrical conduits, storm sewer lines and drains, light poles, and buildings.

Please refer to the exhibit of the approved Planned Unit Development (PUD) for Southwestern University for information regarding the property boundary.

ORDINANCE NO. 2010-46

An Ordinance of the City Council of the City of Georgetown, Texas, amending part of the Zoning District Map adopted on the 4th Day of April 2002 in accordance with the Unified Development Code passed and adopted on the 11th Day of March 2003, to rezone 704.25 acres in the Addison and Flores Surveys, from AG, Agriculture District and PUD, Planned Unit Development with a base district of RS, Residential Single Family District to PUD, Planned Unit Development with a base district of RS, Residential Single Family District; repealing conflicting ordinances and resolutions; including a severability clause; and establishing an effective date.

Whereas, an application has been made to the City Council for the Purpose of changing the Zoning District Classification of the following described real property ("The Property"):

704.25 acres in the Addison and Flores Surveys, to be known as Southwestern University, as described in Exhibit B, hereinafter referred to as "The Property";

Whereas, the City Council has submitted the proposed change in the Base Ordinance to the Planning and Zoning Commission for its consideration at a public hearing and for its recommendation or report; and

Whereas, notice of such hearing was published in a newspaper of general circulation in the City; which stated the time and place of hearing, which time was not earlier than fifteen (15) days for the first day of such publication; and

Whereas, written notice was given not less than fifteen (15) days before the date set for the meeting before the Planning and Zoning Commission to all the owners of the lots within two hundred feet of the property, as required by law; and

Whereas, the applicant for such zoning change placed on the property such sign(s) as required by law for advertising the Planning and Zoning Commission hearing, not less than fifteen (15) days before the date set for such hearing; and

Whereas, the City Planning and Zoning Commission in a meeting held on November 2, 2010, recommended approval of the requested zoning change for the above described property from AG, Agriculture District and PUD, Planned Unit Development District to PUD, Planned Unit Development with a base district of RS, Residential Single Family District.

Now, therefore, be it ordained by the City Council of the City of Georgetown, Texas, that:

Section 1. The facts and recitations contained in the preamble of this Ordinance are hereby found and declared to be true and correct, and are incorporated by reference herein and expressly made a part hereof, as if copied verbatim. The City Council hereby finds that this Ordinance implements the vision and policies of the Georgetown 2030 Comprehensive Plan and

further finds that the enactment of this Ordinance is not inconsistent or in conflict with any other policies of the Georgetown 2030 Comprehensive Plan.

Section 2. The Zoning District Map of the City, as well as the Zoning District for the Property shall be and the same is hereby changed from AG, Agriculture District and PUD, Planned Unit Development to PUD, Planned Unit Development with a base district of RS, Residential Single Family in accordance with Exhibit A (Location Map), Exhibit B (Field Notes), and Exhibit C (Southwestern University Campus PUD document) and incorporated herein by reference, is hereby adopted by the City Council of the City of Georgetown, Texas.

Section 3. All ordinances and resolutions, or parts of ordinances and resolutions, in conflict with this Ordinance are hereby repealed, and are no longer of any force and effect.

Section 4. If any provision of this Ordinance or application thereof to any person or circumstance shall be held invalid, such invalidity shall not affect the other provisions, or application thereof, of this Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are hereby declared to be severable.

Section 5. The Mayor is hereby authorized to sign this Ordinance and the City Secretary to attest. This Ordinance shall become effective and be in full force and effect on the date of final adoption by City Council.

PASSED AND APPROVED on First Reading on the 23rd day of November 2010.

PASSED AND APPROVED on Second Reading on the 14th day of December 2010.

ATTEST:

Jessica Brettle
City Secretary

THE CITY OF GEORGETOWN:

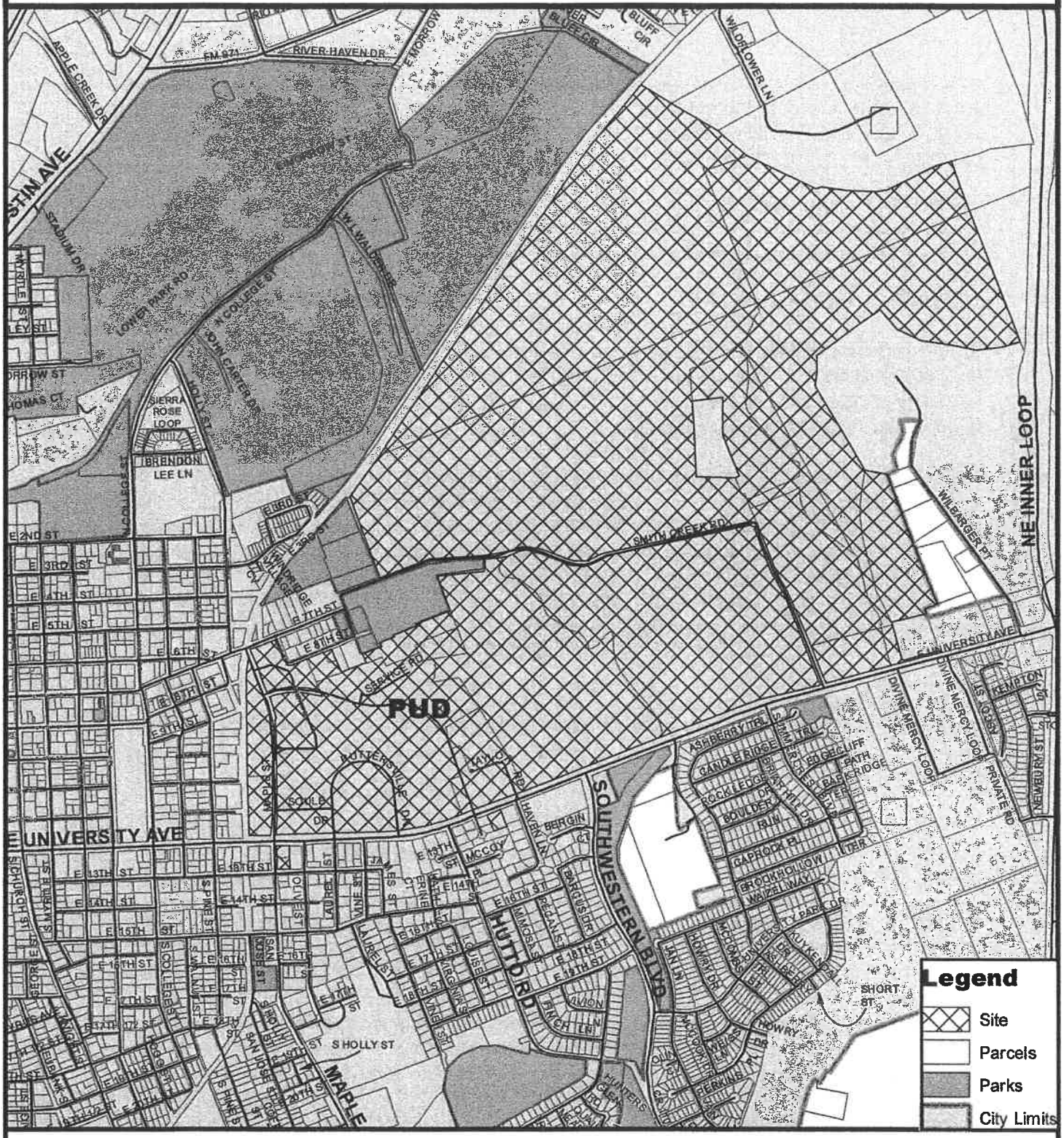
By: George Garver
Mayor

APPROVED AS TO FORM:

Mark Sokolow
City Attorney

 Ord #2010-46

REZ-2009-012 **Exhibit A**



EST. 1848 GEORGETOWN TEXAS

0 1,000 2,000

Feet

Southwestern University PUD
704.25 acres of the Flores and Addison Surveys

"THIS PERIMETER DESCRIPTION WAS PREPARED FROM INFORMATION DERIVED FROM MULTIPLE SOURCES AND WAS NOT PREPARED IN CONJUNCTION WITH AN ON-THE-GROUND SURVEY. IT IS TO BE USED FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TO BE USED AS A LEGAL DESCRIPTION FOR THE TRANSFER OF TITLE."

BEING 704.25 acres of land, situated in the Antonio Flores Survey, Abstract No. 235 and the William Addison Survey, Abstract No. 21, in Williamson County, Texas. Said land being property occupied by Southwestern University and being more particularly described in Three Tracts as follows:

Tract One (703.18 acres)

BEGINNING at the intersection of the north line of University Avenue, State Highway No. 29, and the east line of Holly Street (old MK & T Railroad Right-of-Way) being the Southwest corner of Block 6 of the Snyder's Addition to the City of Georgetown, an addition of record in Volume 57, Page 502, of the Deed Records of Williamson County, Texas, for the Southwest corner hereof;

THENCE, along the said east line of Holly Street, being the old MK & T Railroad Right-of-Way, N 02°10'31" W, at 599.34 feet, pass the Southwest corner of Southwestern University Northwest Entrance Subdivision, a subdivision of record in Cabinet P, Slide 22, of the Plat Records of Williamson County, Texas, continuing along the west line of the said Southwestern University Northwest Entrance Subdivision, leaving the said east line of Holly Street and continuing along the east line of the said old MK & T Railroad Right-of-Way, for a total distance of 1,459.91 feet to the beginning of a curve to the right, (Radius=1,879.86 feet, Long Chord bears N 03°24'06" E, 336.81 feet), an arc distance of 337.26 feet to the most northerly corner of the said Southwestern University Northwest Entrance Subdivision on the west line of Maple Street for a northwesterly corner hereof;

THENCE, crossing Maple Street, N 36°32'18" E, 96.76 feet to the intersection of the east line of Maple Street and the south line of 7th Street for the Northwest corner of Lot 1, Block A, of Southwestern University Student Housing Subdivision, a subdivision of record in Cabinet L, Slide 342, of the Plat Records of Williamson County, Texas, for a Northwesterly corner hereof:

THENCE, along the said south line of 7th Street, N 68°30'11" E, 276.60 feet to the intersection of the said south line of 7th Street and the west line of Olive Street for the most northerly Northeast corner of the said Lot 1, Block A, for the most westerly Northeast corner hereof;

THENCE, along the east line and a northerly line of the said Lot 1, Block A, along Olive Street,
S 21°21'39" E, 243.39 feet, along a curve to the left (Radius=39.91 feet, Long Chord bears
S 66°25'44" E, 56.50 feet), an arc distance of 62.78 feet to the north line of 8th Street, and along the said north line of 8th Street, N 68°30'11" E, 174.70 feet to the most easterly Northeast corner of the said Lot 1, Block A, being the Northwest corner of that certain tract of land, called 1.29 acres, as conveyed to Southwestern University by deed recorded as Document No. 2003095081 of the Official Public Records of Williamson County, Texas, and N 68°56'50" E, at 184.29 feet pass the most northerly Northeast corner of the said 1.29 acre Southwestern University tract, being the Northwest corner of that certain tract of land, called 0.21 of an acre, as conveyed to Southwestern University by deed recorded as Document No. 2004007708 of the Official Public Records of Williamson County, Texas, for a total distance of 260.87 feet, in all, to the Northeast corner of the said 0.21 of an acre Southwestern University tract, for a northeasterly corner hereof;

THENCE, S 22°06'10" E, at 118.78 feet pass the Southeast corner of the said 0.21 of an acre Southwestern University tract, being the most easterly Northeast corner of the said 1.29 acre Southwestern University tract, for a total distance of 249.90 feet to the Southeast corner of the said 1.29 acre Southwestern University tract, for an interior corner hereof;

THENCE, N 68°58'36" E, 260.86 feet to the most westerly Southwest corner of the East Anderson Addition, an addition of record in Cabinet J, Slide 147, of the Plat Records of Williamson County, Texas, for an interior corner hereof;

THENCE, N 21°44'03" W, 105.02 feet to the most westerly Northwest corner of the said East Anderson Addition, being the Southwest corner of the southern portion of the I.O.O.F. Cemetery, for a northwesterly corner hereof;

THENCE, along the north line of the said East Anderson Addition, being the south line of the southern portion of the I.O.O.F. Cemetery, N 68°48'53" E, 209.95 feet; N 21°11'07" W, 35.00 feet; N 68°48'53" E, 161.47 feet; N 21°11'07" W, 22.00 feet; N 68°48'53" E, 252.00 feet; N 21°11'07" W, 26.00 feet and N 68°48'53" E, 367.75 feet to the west line of that certain tract of land, called 4.27 acres, as conveyed to Southwestern University by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas, marking the Northeast corner of the said East Anderson Addition and a southeasterly corner of the said southern portion of the I.O.O.F. Cemetery, for an interior corner hereof;

THENCE, N 20°35'13" W, 371.19 feet to the Northwest corner of the said 4.27 acre Southwestern University tract, being an interior corner of the said southern portion of the I.O.O.F. Cemetery, for a northwesterly corner hereof;

THENCE, N 83°51'49" E, 500.78 feet to an interior corner of the said 4.75 acre Southwestern University tract, being the most easterly Southeast corner of the said southern portion of the I.O.O.F. Cemetery, for an interior corner hereof;

THENCE, N 02°07'55" W, passing the south line of a roadway, being the Northwest corner of the said 4.75 acre Southwestern University tract and the Northeast corner of the said southern portion of the I.O.O.F. Cemetery, for a total distance of 135.97 feet to the north line of the said roadway, being the south line of that certain tract of land, called 200 acres, as conveyed to Southwestern University by deed as recorded in Volume 318, Page 214, of the Deed Records of Williamson County, Texas, for an interior corner hereof;

THENCE, along the north line of the said roadway being the south line of the said 200 acre Southwestern University tract, S 88°01'20" W, 562.52 feet and S 68°31'40" W, 538.35 feet to the Southwest corner of the said 200 acre Southwestern University tract, being the Southeast corner of the northern portion of the I.O.O.F. Cemetery, for a southwesterly corner hereof;

THENCE, N 21°11'07" W, 878.18 feet to the south line of the old MK & T Railroad Right-of-Way, for the Northwest corner of the said 200 Southwestern University tract and the Northeast corner of the said northern portion of I.O.O.F. Cemetery, for the Northwest corner hereof;

THENCE, along the said south line of the old MK & T Railroad Right-of-Way being the north line of the said 200 acre Southwestern University tract, as follows;

Along a curve to the left (Radius=5,779.58 feet, Long Chord bears N 36°56'22" E, 504.03 feet), an arc distance of 504.19 feet,

N 34°26'25" E, 3,216.70 feet to the beginning of a curve to the right (Radius = 5,679.58 feet, Long Chord bears N 37°43'25" E, 650.58 feet), along the said curve for an arc distance of 650.94 feet and N 41°00'25"

E, 726.37 feet to the center of the San Gabriel River, for the most northerly corner of the said 200 acre Southwestern University tract for the most northerly corner hereof;

THENCE, downstream along the center of the San Gabriel River, with its meanders,
S 59°46'14" E, 1,366.94 feet to the most easterly corner of the said 200 acre Southwestern University tract, being the Northeast corner of the remainder of that certain Third Tract, called 30 acres, as conveyed to J.A. Barnett by deed as recorded in Volume 325, Page 300, of the Deed Records of Williamson County, Texas, being on the west line of that certain tract of land, called 77.29 acres, as described in a deed to the D. Robbins Trust of record in Volume 2307, Page 495, of the Official Records of Williamson County, Texas, for an easterly corner hereof;

THENCE, along the south line of the said 200 acre Southwestern University tract,
S 68°13'46" W, 156.76 feet to the Northwest corner of the said remainder of the Barnett tract, being a northerly corner of that certain tract of land, called 117.48 acres, as described in a deed to Southwestern University in Document No. 2001018260 of the Official Records of Williamson County, Texas, for an interior corner hereof;

THENCE, along a northerly line of the said 117.48 acre tract, being the south line of the remainder of the said Barnett tract, S 64°48'15" E, 744.31 feet to an iron pin set and
N 68°41'45" E, 56.70 feet to a point in the center of the San Gabriel River, being the south line of the said Robbins tract, for a northerly corner of the said 117.48 tract, for a northerly corner hereof;

THENCE, downstream, along the center of the San Gabriel River, with its meanders, as follows: S 79°38'15" E, 259.47 feet; S 86°55'45" E, 291.91 feet; N 80°37'15" E, 111.69 feet;
N 64°48'45" E, 531.78 feet and N 72°48'45" E, 160.71 feet to the Northeast corner of the said 117.48 acre tract, being on the south line of the said Robbins Tract, being the Northwest corner of that certain Tract One, called 110.09 acres, as conveyed to Carolyn B. Sharkey and Sara Elizabeth Sharkey by deed as recorded in Volume 2239, Page 95, of the Official Records of Williamson County, Texas, for the most northerly Northeast corner hereof;

THENCE, along the east line of the said 117.48 acre tract, being the west line of the said Sharkey Tract One, as follows; S 19° 10' 45" E, 474.48 feet and S 21° 27' 15" E, 1,399.47 feet to the Northeast corner of the remainder of a 258.657 acre Tract 1 described in a deed to New America, Ltd. in Document No. 9839081 of the Official Records of Williamson County, Texas, for the most easterly Southeast corner of the said 117.48 acre tract, for the most easterly Southeast corner hereof;

THENCE, along a southerly and easterly line of the said 117.48 acre tract, being a northerly and westerly line of the said New America, Ltd., tract, S 75° 01' 15" W, 210.12 feet; S 83° 31' 45" W, 251.00 feet; N 78° 10' 45" W, 223.23 feet; N 81° 52' 45" W, 325.37 feet; N 66° 20' 45" W, 269.51 feet; N 39° 40' 15" W, 250.80 feet; S 55° 20' 45" W, 386.67 feet; S 51° 53' 45" W, 259.15 feet; S 53° 20' 15" W, 134.29 feet; S 0° 00' 45" E, 164.09 feet; S 5° 52' 15" W, 145.13 feet; S 30° 16' 45" E, 973.75 feet the Northwest corner of that certain Tract No. 3 (14.73 acres) as described in a deed to Southwestern University in Document No. 2000068095 of the Official Public Records of Williamson County, Texas, being an interior corner of the said 117.48 acre tract, for a corner hereof;

THENCE, along the north line of said Tract 3, S 80° 43' 15" E, 222.32 feet an interior corner of the said New America, Ltd. tract, being the Northeast corner of the said Tract No. 3 and the Northwest corner of that certain tract of land, called 0.95 of an acre, as conveyed to Bert Holmstrom and wife, Lisa Holmstrom, by deed recorded as Document No. 2000034546 of the Official Records of Williamson County, Texas, for a corner hereof;

THENCE, along an easterly line of the said Tract No. 3, as follows; S 20° 50' 15" E, 159.93 feet to the Southwest corner of the said 0.95 of an acre Holmstrom tract, being the Northwest corner of that certain tract of land, called

0.937 acres, as conveyed to Tommie Edward Norrell, by deed recorded as Document No. 9742821 of the Official Records of Williamson County, Texas;
S 20° 52' 15" E, 150.22 feet to the Southwest corner of the said 0.937 of an acre Norrell tract, being the Northwest corner of that certain tract of land, called 0.793 of an acre, as conveyed to Tommie Edward Norrell, by deed recorded as Document No. 9742821 of the Official Records of Williamson County, Texas; S 20° 52' 45" E, 94.65 feet to the Southwest corner of the said 0.793 of an acre Norrell tract, being the Northwest corner of that certain tract of land, called 2.77 acres, as conveyed to Jimmy Lynn Snow and Susan Snow by deed recorded as Document No. 9656734 of the Official Records of Williamson County, Texas, continuing along the west line of the said 2.77 acre Snow tract, S 21° 05' 45" E, 55.26 feet; S 21° 15° 45" E, 88.10 feet and
S 22° 05' 45" E, at 204.07 feet pass the Southwest corner of the said 2.77 acre Snow tract, being the Northwest corner of that certain tract of land, called 4.87 acres, as conveyed to Gene Lawhon by deed as recorded in Volume 964, Page 577, of the Deed Records of Williamson County, Texas, for a total distance of 254.75 feet, in all, to the most northerly Southwest corner of the said 4.87 acre Lawhon tract, being the Northwest corner of that certain tract of land, called 4.217 acres, as conveyed to Gene L. Lawhon by deed as recorded in Volume 2252, Page 791, of the Official Records of Williamson County, Texas, and S 22° 55' 45" E, 581.93 feet to the north line of that certain tract of land, called 6.06 acres, as conveyed to William James Reinhardt by deed as recorded in Volume 573, Page 469, of the Deed Records of Williamson County, Texas, being a southerly line of the said Tract No. 3, being the Southwest corner of the said 4.217 acre Lawhon tract, for the most easterly Southeast corner of the said Tract No. 3, for a southeasterly corner hereof;

THENCE, S 70° 42' 45" W, 148.12 feet to an interior corner of the said Tract No. 3, being the Northwest corner of the said 6.06 acre Reinhardt tract, for an interior corner hereof;

THENCE, along the west line of the said 6.06 acre Reinhardt tract, being an easterly line of the said Tract No. 3, S 18° 40' 45" E, 56.26 feet to the Northeast corner of that certain tract of land, called 3.420 acres, as conveyed to American Capitol Group, Inc., of record as Document No. 9725466 of the Official Records of Williamson County, Texas, for an southeasterly corner hereof;

THENCE, S 75° 28' 15" W, 356.37 feet to the East line of the said 117.48 acre tract, marking the Northwest corner of the said 3.420 acre American Capitol Group, Inc. tract, being the Southeast corner of the said Tract No. 3, for an interior corner hereof;

THENCE, along the East line of the said 117.48 acre tract being the west line of the said American Capital Group, Inc. tract; S 15° 04' 45" E, 379.97 feet to the beginning of a curve to the left, (Radius = 25.00 feet, Long Chord bears S 60° 04' 45" E, 35.36 feet); Thence, along the said curve for an arc distance of 39.28 feet; Thence, N 74° 54' 45" E, 357.95 feet to the west line of the said 6.06 acres, Reinhardt tract being the Southeast corner of the said American Capital Group, Inc. tract, for a corner hereof;

THENCE, S 18° 31' 15" E, 20.15 feet to the north line of State Highway No. 29, marking the most westerly Southeast corner of the said 117.48 acre tract, being the Southwest corner of the said Reinhardt tract, for the most southerly Southeast corner hereof;

THENCE, along the said north line of State Highway No. 29, S 74° 57' 45" W, at 503.83 feet pass the most southerly Southwest corner of the said 117.48 acre tract, being the Southeast corner of that certain Tract No. 1 (29.39 acres) as described in a deed to Southwestern University in Document No. 2000068095 of the Official Public Records of Williamson County, Texas, for a total distance of 1,703.30 feet, in all, to the beginning of a curve to the left (Radius=1,950.10 feet, Long Chord bears S 71°49'57" W, 204.80 feet);

Along the said curve for an arc distance of 204.90 feet;

S 68°53'56" W, 3,173.37 feet to the beginning of a curve to the right, (Radius=2,250.00 feet, Long Chord bears S 78°20'53" W, 738.76 feet);
Along the said curve for an arc distance of 742.12 feet and
S 87°47'49" W, 1,395.66 feet to the Place of BEGINNING and containing 709.35 acres of land.

Save & Except from the above-described 709.35 acre tract 6.17 acres as conveyed to Milton R. Vrabel and wife, Mary Elizabeth Vrabel, by deed as recorded in Volume 529, Page 550, of the Deed Records of Williamson County, Texas, being more particularly described as follows;

BEGINNING for Reference at the most southerly Southeast corner of the above-referenced 709.35 acre tract of the said north line of State Highway No. 29;

THENCE, along the said north line of State Highway No. 29, S 74°57'45" W, 1,173.28 feet to the east line of the County Road No. 188, for the Southwest corner of the said Tract No. 1;

THENCE, along the said east line of County Road No. 188, being the west line of the said Tract No. 1, as follows; N 22° 27' 45" W, 451.59 feet; N 22° 26' 45" W, 360.48 feet;
N 22° 15' 45" W, 189.60 feet; N 31° 28' 45" W, 33.26 feet; N 31° 30' 45" W, 55.52 feet;
N 31° 48' 15" W, 92.64 feet and N 21° 30' 45" W, at 571.0 feet pass 1.7 feet east of a corner post at a bend in County Road No. 188 and continuing along the east line of a gravel roadway, at 809.75 feet pass, the Southwest corner of that certain Tract No. 2 (15.21 acres as described in a deed to Southwestern University as described in Document No. 2000068095 of the Official Records of Williamson County, Texas,); for a total distance of 869.73 feet, in all, to an interior corner of the said Tract No. 2;

THENCE, crossing the said gravel roadway, S 67° 20' 45" W, 32.31 feet to an iron pin set on the west line of the said gravel roadway, for a southwesterly corner of the said Tract No. 2, being on the east line of that certain First Tract, called 105 acres, as conveyed to Southwestern University by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas;

THENCE, N 21° 58' 15" W, 185.90 feet to an iron pin found on the south line of the said 6.17 acre Vrabel tract, being the most southerly Northeast corner of the certain First Tract, called 105 acres, as conveyed to Southwestern University, by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas, and a point on the West line of said Tract No. 2, for the Point of BEGINNING and the most southerly Southeast corner hereof;

THENCE, N 71° 06' 45" E, 41.97 feet to an iron pin found marking an interior corner of the said Tract No. 2, being the Southeast corner of the said 6.17 acre Vrabel tract, for the most easterly Southeast corner hereof;

THENCE, along the west line of the said Tract No. 2, being the east line of the said 6.17 acre Vrabel tract, N 21° 22' 45" W, 449.00 feet and N 0° 38' 45" E, 378.49 feet to an interior corner of the said Tract No. 2, being the Northeast corner of the said 6.17 acre Vrabel tract, for the Northeast corner hereof;

THENCE, S 82°31'15" W, 307.31 feet to an easterly line of the said 105 acre Southwestern University tract, for the most northerly Southwest corner of the said Tract No. 2, for the Northwest corner of the said 6.17 acre Vrabel tract, the Northwest corner hereof;

THENCE, S 02°21'58" E, 752.38 feet to an interior corner of the said 105 acre Southwestern University tract, for the Southwest corner of the said 6.17 acre Vrabel tract, for the Southwest corner hereof;

THENCE, S 87°19'10" E, 393.77 feet to the Place of BEGINNING and containing 6.17 acres of land.

Leaving a Net Average for Tract One to be 703.18 acres.

Tract Two (0.50 ac)

BEING 0.50 of an acre of land, being a portion of Block 7, of the Snyder's Addition to the City of Georgetown, an addition of record in Volume 57, Page 502, of the Deed Records of Williamson County, Texas, being that certain tract of land as conveyed Southwestern University by deed as recorded in Volume 523, Page 512, of the Deed Records of Williamson County, Texas, and being more particularly described as follows;

BEGINNING at the intersection of the south line of University Avenue, State Highway No. 29, and the east line of Maple Street, for the Northwest corner of the above-referenced Southwestern University tract, for the Northwest corner hereof;

THENCE, along the said south line of University Avenue, being the north line of the said Block 7, N 87°50' E, 121.04 feet to the Northeast corner of the said Southwestern University tract, being the Northwest corner of that certain tract of land, called 0.66 of an acre, as conveyed to Dee Rapp and spouse, Neil D. Rapp, by deed recorded as Document No. 2005090697 of the Official Public Records of Williamson County, Texas, for the Northeast corner hereof;

THENCE, along the West line of the said 0.66 of an acre Rapp tract, S 02°10' E, 179.92 feet to the Southeast corner of the said Southwestern University tract, being the Northeast corner of that certain tract of land as conveyed to Yvonne Stone McGlaun by deed as recorded in Volume 1800, Page 565, of the Official Records of Williamson County, Texas, for the Southeast corner hereof;

THENCE, S 88°10' W, 121.04 feet to the said east line of Maple Street, being the west line of the said Block 7, for the Southwest corner of the said Southwestern University tract, being the Northwest corner of the said McGlaun tract, for the Southwest corner hereof;

THENCE, along the said east line of Maple Street, N 02°10' W, 179.22 feet to the Place of BEGINNING and containing 0.50 of an acre of land.

Tract Three (0.57 acre)

BEING a 0.57 of an acre of land, situated in the William Addison Survey, Abstract No. 21, being a portion of Outlot 14, Division B, City of Georgetown, Williamson County, Texas. Said land being that certain tract of land, called 0.57 of an acre, as conveyed by deed to Southwestern University, recorded as Document No. 2000023484, of the Official Records of Williamson County, Texas, and being more particularly described as follows;

BEGINNING on the south line of State Highway No. 29 (University Avenue), being the Northeast corner of that certain Lot 5, of University Terrace, a subdivision of records in Cabinet A, Slide 378, of the Plat Records of Williamson County, Texas, marking the Northwest corner of the above-referenced 0.57 of an acre Southwestern University tract, for the Northwest corner hereof;

THENCE, with the said south line of Highway No. 29, N 70°56' E, 141.01 feet to the Northeast corner of the said Southwestern University tract, being the Northwest corner of that certain, Tract One, called 0.6039 of an acre as

conveyed to Southwestern University by deed recorded in Volume 832, Page 513, of the Deed Records of Williamson County, Texas, for the Northeast corner hereof;

THENCE, S 18°51'30" E, passing the Southwest corner of the said 0.6039 of an acre Southwestern University Tract One, and passing the Northwest corner of that certain Lot 1, of Haven Heights, a subdivision of record in Cabinet B, Slide 135, of the Plat Records of Williamson County, Texas, for a total distance of 178.30 feet to the Southeast corner of the said 0.57 of an acre Southwestern University tract, being on the west line of the said Lot 1, Haven Heights, and being the Northeast corner of that certain Lot 7, of the said University Terrace, for the Southeast corner hereof;

THENCE, with the north line of the said Lot 7, of University Terrace, S 70°59'30" W, 139.23 feet to the southwest corner of the said 0.57 of an acre Southwestern University tract, being the Southeast corner of that certain Lot 6, of the said University Terrace, for the Southwest corner hereof;

THENCE, N 19°26' W, passing the Northeast corner of the said Lot 6, and the Southeast corner of the said Lot 5, a total distance of 178.17 feet to the Place of BEGINNING and containing 0.57 of an acre of land.

SOUTHWESTERN UNIVERSITY

Campus Planned Unit Development

Georgetown, Texas

October 7, 2010

Group Two Architecture, Inc.

101 West Sixth Street, Suite 615

Austin, Texas 78701

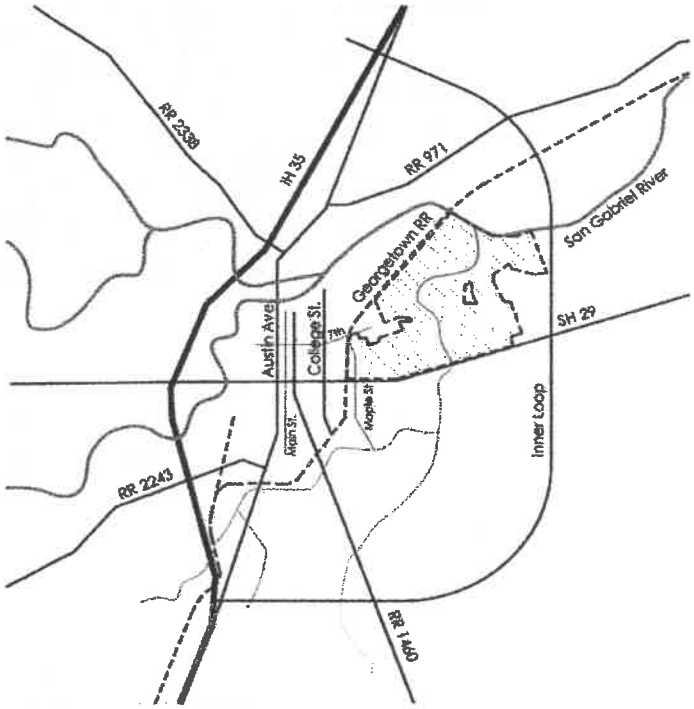
512.478.6817

Development Plan

List of Attachments

	Tables/Surveys/Letters
Exhibit 1.	Proposed (and Prohibited) Use Categories
Exhibit 2.	Proposed Facilities
Exhibit 3A.	Parking Summary
Exhibit 3B.	Campus Parking Detail
Exhibit 4.	Survey
Exhibit 5.	TIA Determination Letter (Klotz Associates)
Exhibit 6.	Drainage Summary Letter (Steger Bizzell)

	Plans
Exhibit A.	Existing and Proposed PUD Properties
Exhibit B.	Campus Master Plan
Exhibit C.	Parking Plan
Exhibit D.	Maple Street / West Campus Master Plan
Exhibit D1, 2, 3	Street Sections
Exhibit E.	Existing Campus
Exhibit F.	1999 Master Plan



Vicinity Map

DEVELOPMENT PLAN

1. GENERAL

a. **Purpose:** A University Campus is a unique type of development, not specifically identified by the UDC. Therefore modifications to the Code are necessary to implement development. This Campus PUD will allow Southwestern University to plan, fund and develop university districts, facilities, infrastructure in an orderly manner and consistent with goals of the UDC and Comprehensive Plan.

b. **Development History:** In 1994, the City and University adopted a Development Agreement which identified facilities, standards, and requirements. The last major master plan revision (Exhibit F) occurred in 1999 (not including minor amendments or previous master plan updates). With the adoption of the UDC, Southwestern University was automatically rezoned from RP to PUD with an RS Base District.

c. **Property:** Southwestern University's current landholdings along University Avenue (SH 29) include 517.6 acre PUD, 179.5 acres (Agriculture) and 6.0 acres (Single Family) north of SH 29. There are several tracts south of SH 29 with various zoning designations (including .5 ac. and .57 ac. PUD lots). **Refer to Exhibit A and Exhibit 4.**

d. **Rezoning:** Southwestern desires to rezone the Agriculture (A) and Single Family (RS) properties to PUD, including them in the overall University PUD. This proposed rezoning to PUD is not inconsistent with the 2030 Plan and proposed intensity of uses near the Inner Loop.

e. **The Concept Plan:** The attached plans illustrate the intent of the PUD. They will serve as general vision and guideline, but not final plan. The Master Plan may be further updated from time to time via the public process.

f. **Development/Implementation:** Prior to development of each project, Southwestern University shall submit Site Plans and Construction Plans for City's administrative review for compliance to approved PUD criteria. Note that the Concept Plan is just that, conceptual, and that further refinement of a facility or area will be defined with its Site Plan development.

2. BACKGROUND

a. **History:** Southwestern is a private (Methodist Church affiliated), four year, liberal arts university. Historically, it is Texas' first university, one of its four root institutions was founded in 1840. The University is a well established, cultural institution of Georgetown. The Cullen Building and Mood Bridwell Hall on are the National Register.

b. **Enrollment:** Per the University's 2010 Strategic Master Plan, the full time enrollment (FTE) is 1,250 students.

c. **Campus Community:** Southwestern is a "traditional" university in that students live on campus and many of their basic needs are addressed by campus services (food, lodging, education, recreation, etc.). Currently, 85% of the students can be housed on campus; the University's goal is 95%. There are 500 faculty and staff members.

d. **Compact Development/Efficient Layout:** Within the 703 contiguous acres of university property, the "built" portion of campus is concentrated in the southwest quadrant within 180 acres. This "compactness" provides efficient infrastructure (utilities and pavement) and preserves campus open space. It facilitates the pedestrian oriented campus - nearly all facilities are within a 5 minute walk (1/4 mile radius) from the central mall.

e. **Campus Organization:** There is a formal, symmetrical layout of larger campus buildings radiating around the Academic Mall with a north-south axis centered on the chapel. There is a generous front yard along University Avenue. With some overlap of districts and dual use facilities, the campus is generally laid out in tiers with academics central, residential in the second tier and athletics in the perimeter. **Refer to Exhibit B.**

3. **BASE DISTRICT**
   a. **RS** Residential Single Family (existing base district)
   b. The UDC does NOT contain a zoning designation representative of a University Campus. Therefore, this PUD will continue with the existing, **RS** Base District with the addition of the following uses and modifications to UDC requirements.
   c. The exceptions noted herein are from the Georgetown Unified Development Code (UDC) adopted on July 14, 2009, in effect at the time of the application.
   d. **Downtown Gateway Overlay District:** Southwestern's border along University Avenue (SH 29) is part of the Downtown Gateway. Further discussion below in Circulation and Landscape.
   e. **Old Town Overlay District:** One small lot at the southeast corner of University Avenue and Maple Street lies within the Old Town Overlay District. No changes are planned on this lot at this time, but should a modification be proposed, it will require code compliance or PUD amendment. Regulations apply to site, buildings and modifications and require Historic & Architectural Review Commission approval and Certificate of Design Compliance.

4. **PROPOSED USES**
   a. **Primary Use**: Educational Facility, Higher Learning, Private, Religious Affiliation
   b. **Educational Facilities**: including classrooms and labs, administrative and faculty offices, meeting spaces, libraries, university housing, campus services (food, health, maintenance), chapel (w/columbarium), support commercial (bookstore), theater, parking/structures, recreation, athletics, golf course, open space.
   c. **Secondary or Support Uses:** Uses that are customary to university operation/student services where the campus community is the primary user/beneficiary: campus police, campus post office, university museum, student health and counseling clinic.
   d. **Proposed Permitted Uses: Refer to Exhibit 1** for Proposed Permitted and Prohibited Uses. **NOTE that ALL of the Proposed Permitted Uses already exist on campus.**

5. **CONCEPT**
   a. **Community:** Although the campus is nearly a community within the community (where many of the student/staff daily needs are fulfilled by services provided on campus), the City and surrounding neighborhoods are integral to Southwestern and vise versa. Citizens visit campus for cultural or athletic events and Southwestern students frequent stores and restaurants and volunteer in the community. In Richard Ekman's article "Creating Campus Appeal," University Business, (Mar. 2007), he notes "...the openness of Southwestern's campus and its connection to the surrounding areas, reminiscent of the early 20th-century Garden City movement in Great Britain."
   b. **Enduring Sense of Place:** Integral to the campus experience, is the sense of place created by design sensitive to the natural and built environment, historic and cultural elements and reflective of the mission of higher education. Southwestern strives to preserve trees and buildings and all of the new facilities are built with quality and diligence for longevity.
   c. **Undeveloped Reserve:** The University is fortunate to have accrued acreage which serves as natural buffer, environmental study, potential recreation, and, importantly, a reserve for the future (expansion or valuable asset). Therefore, its handling/management is critical – to preserve intact for future generations of students.
   d. **Established Standards / Context:** In general, Southwestern proposes development standards that are consistent with existing contextual standards that have long been established on campus - architectural styles, patterns, elements, building setbacks, heights, materials, etc. - for consistency and quality. (Note that campus construction started before 1900.) Similarly, Southwestern intends to continue its stewardship of its land by preserving trees and open space with efficient site layout.

6. **BUILDINGS / FACILITIES**
   a. **Layout & Building Envelopes:** Generally, the proposed buildings are as shown on plans; actual buildings may vary slightly in location, area, and configuration. Refer to **Exhibit B and Exhibit 2** for proposed facilities, square footage, height, and approximate phasing.
   b. **Prior City Approval:** Half of the proposed facilities were approved by public process in 1999. **Exhibits B and 2** indicate those previously approved facilities and those newly proposed.
   c. **Dwelling Units/Density:** There exists a variety of housing types on campus (fraternity houses, dormitories, student apartments) for which the definition of "dwelling unit" does not easily/uniformly apply.
   d. **Units Per Structure:** For student apartments, the maximum number of apartments per structure is thirty-two (32) as established by the McCombs Residential Center (in lieu of the UDC maximum of 24 units/structure). For dormitories, the maximum number of beds per residence hall is (170) as established by Mabee Hall. (Up to an additional 170 beds may be added in an expansion.)
   e. **Building Height:** The existing Cullen Building (excluding the 5-story tower) and Fondren Jones Science Hall are four-story buildings. The main portion of the Cullen Building (measured from midpoint of ridge and eave to the finished floor) is more than 60'. Due to the scale of the existing campus buildings (necessary to their uses), this PUD maintains the maximum building height already established at sixty-five feet (65') above finished floor elevation. Therefore, this building height standard is an exemption from the UDC 35' height limit in residential district and the 1' additional setback per 1' additional height requirement.
   f. **Building Setbacks:**
      i. **Front Yard Setback:** The Front Yard Setback along University Avenue shall be no less than 50' per UDC section 5.02.050, for educational facilities in a residential district.
      ii. **Setback from Maple Street:** The right of way along Maple Street is inconsistent and varies. The northern portion indicates a 60' ROW with a 25' setback (which equals 55' from centerline of street). For simplicity, Southwestern proposes to continue the setback of 55' measured from centerline of the existing street (UDC section 6.02.040 allows for a reduction in setback for public purpose). This provides a consistent standard for proposed structures. Existing structures are exempt from this setback.
      iii. **Side and Rear Setback:** 25' side and rear setbacks where non-residential use abuts residential district per code (6.03.040). Residential uses may have 20' setbacks.
      iv. Front, Side and Rear Setbacks shall not increase for building height per item 6.e above.
      v. Setback requirements do not apply to internal campus roads or areas.
   g. **Limits of Construction:** Due to the many existing improvements (buildings, trees, utilities, etc.) limits of construction will be as minimal as possible and only as required per project.
   h. **Building Elevations/Articulation:** New facilities to fit within established campus context by matching/complimenting the existing Southwestern University architectural style, massing, articulation, materials, etc. As Southwestern is a residential campus, building entries and site amenities are scaled for pedestrians. Alternative plans for Building Articulation may be submitted with Site Plan per UDC for facilities fronting public streets.

7. **PARKING**
   a. **Parking Requirements:** The proposed quantity of campus parking is based on the fixed campus population instead of building square footage and use (since students/staff visit multiple facilities within walking distance on campus).
   b. **The Parking Ratios** are the same as those used since the initial Development Agreement (based on Sasaki Associates and ENO data). This Parking Summary, **Exhibit 3**, updates overall requirements by adjusting the quantity of students living on campus (proposed to increase) and off-campus (proposed to decrease), faculty/staff and overflow.

c. **Handicap parking** is distributed throughout campus and quantity is based on overall parking count (not per building). The University has an approved handicap parking master plan on file with TDLR.
d. **Layout:** Existing and proposed parking lot locations are as shown on plans. **Refer to Exhibit C.** As the campus is pedestrian based and inward oriented, parking lots are generally located around the perimeter. Parking total includes the on-street parking along Maple Street.
e. **Alternative Transportation:** In its commitment to the environment, Southwestern encourages alternatives to cars within the campus and the community. In addition to walking across campus, options include personal bikes, Yellow Bikes, electric carts (staff). For campus commuters, the University provides incentives and/or preferred parking for ride share and fuel efficient vehicles, shower/changing rooms for cyclists. The future may include City bus stops and campus shuttle for remote parking or special events.

8. **VEHICULAR & PEDESTRIAN CIRCULATION / ACCESS**
   a. **Traffic Impact Analysis:** Per letter from Klotz Associates (traffic engineer) to David Munk, dated June 11, 2009, a TIA is not required at this time as there is no proposed development which would generate any additional traffic. **Refer to Exhibit 5.**
   b. **University-Owned Streets**
      i. **Campus Streets:** As previously noted the campus is pedestrian oriented. For the safety of the campus community and to minimize off-campus traffic, all streets, except (possibly) Maple Street, within the built portion of campus are University owned (private): Southwestern Boulevard, Wesleyan, McKenzie, Soule, Ruterville, Service Drive, Taylor, etc. All existing and proposed streets shall meet City design and construction standards.
      ii. **Soule Drive:** To further the pedestrian experience and link the Cullen Building with the Academic Mall, Southwestern proposes that a portion of Soule is turned into a pedestrian promenade similar to the main Pedestrian Mall. This new pedestrian way would be EMS/Fire Truck accessible with mountable curb, removable bollard (Knox Box) or chain, and 24' solid surface for fire truck outriggers similar to the existing mall pavement.
   c. **City Collector Streets** (Alt CR 188 / Smith Creek Road Extension / former CR 188)
      i. **Undeveloped Reserve:** Southwestern does not plan any development in the area east of the Smith Branch or facilities that would be primarily served by the City's proposed Alt CR 188 or Smith Creek Road Extension. The University wishes to preserve this undeveloped land as natural wooded, agricultural, environmental research, and buffer area. In the future the University may decide to develop (and amend the PUD.)
      ii. **Rights of Way:** Should the City desire to build the collectors per the 2030 Plan, Southwestern University to negotiate appropriate size and layout of rights of way.
      iii. **Layout:** Roads are shown at "seams" in property to preserve contiguous natural areas, minimize encumbrance on University land and allow flexibility of future use. The University and City Staff met several times (beginning June 2008) to discuss this alternative layout of Alt CR 188 with the tie into the City park. The proposed alignment of Smith Branch Road Extension was shifted away from the steep slopes and ponds toward the south.
      iv. **Street Sections:** Per the Overall Transportation Plan (OTP), these designated Collectors to have 73' ROW and 2 lanes. Paved section shall be 37' wide per UDC. Refer to Street Section Options, **Exhibits D2 and D3.**
   d. **University Avenue (State Highway 29):** TXDoT planned to widen SH 29 to 5 lanes east of Haven Lane, however the local TXDoT staff and City planners did not know if or when this work would occur. The proposed right of way will need to be determined prior to any Downtown Gateway improvements along University Avenue.
   e. **Maple Street**
      i. **Existing Maple Street:** The street is two lanes with parallel parking on both sides. The speed limit to remain 20 miles per hour given that the street bisects campus uses.

ii. **Safety:** Additional measures to enhance safety and calm traffic include: all-way stops (if warranted) at Southwestern Boulevard and McKenzie Drive; decorative pavement at intersections and crosswalks; sidewalk/bikeway at west side of Maple, fence (possibly chainlink) at playing fields, etc. Landscaped peninsulas may be built to better define and contain on-street parking. **Refer to Exhibits D and D1.**

iii. **Maple Street Relocation:** In the future, Maple Street may be relocated adjacent to the railroad tracks (dashed line on plan).

f. **Bicycle Access**

i. **Within Campus:** Bicycling is encouraged with racks at building entries and University provided Yellow Bikes. There is no separation of pedestrian and bike circulation as main walkways are generous widths.

g. **Pedestrian Access/Circulation**

i. **Within Campus:** Sidewalks are as shown on master plan (location and size may vary slightly). There is a hierarchy of widths per usage and context. Walkways are appointed with benches, kiosks, detailed plantings, pedestrian scaled light fixtures. Where sidewalks are adjacent to streets, walks will abut curbs to minimize maintenance.

ii. **Adjacent to Proposed City Streets:** Similarly, sidewalks may abut curb to minimize maintenance. Sidewalk(s) may be built at time of adjacent land development (one side or both per development location).

iii. **Downtown Gateway:** Southwestern's border along University Avenue is within the Downtown Gateway District which requires sidewalks, trees and shrubs. Existing sidewalks (and trees, shrubs) shall count toward this requirement. Where none exist, sidewalks (and/or plantings) will be installed at time of adjacent facility or land development. See Landscape below.)

iv. **Cost Share:** The University's frontage within the Downtown Gateway (on the north side alone) is roughly 7,000 lf. (This equates to over 35,000 square feet of sidewalk, 200 trees, 500 shrubs, lawn, and irrigation.) Southwestern may request city participation in Gateway development, including sidewalks as noted in the UDC.

9. LIGHTING

a. **General:** Street, Parking Lot, Pedestrian, and Building Lighting is provided for security and safety. Cones of light to be shielded from adjacent property and public streets.

b. **Street Lights:** Light standards to match campus which meet or exceed City standards. Street light spacing is approximately 300' on center.

c. **Athletic Field Lighting:** Stadium and softball fields will be lit similar to the baseball field. The athletic lighting to meet NCAA standards. The fixtures to be shielded to avoid light spill onto adjacent properties and public streets.

10. SIGNAGE

a. A Master Sign Plan shall be submitted to the City Building Official for administrative review (along with individual sign permit applications) prior to construction of any signs along University Avenue (SH 29) and Maple Street.

11. OPEN SPACE

a. **Natural Features:** The plans show the 100 Year Floodplain at the San Gabriel River and Smith Branch which edge and bisect the University's property.

b. **Parkland**

i. **Applicability:** As confirmed with the Planning Department, parkland dedication does not apply to the university campus use. However, Southwestern University does provide a large variety and vast area of park-like opportunities for students (including some public venues).

ii. **Golf Course:** Southwestern University's Kurth Landrum Golf Course is open to the public.

iii. **City Trails:** Southwestern University is amenable to park trail(s) providing connectivity across it's property. Trail alignment to be determined at time of adjacent land development and as agreed by Southwestern University and City.

c. **Campus Open Space**
   i. **Residential Campus:** Open space is inherent in the residential campus - both structured (courtyards to sports fields) and passive (greens and pedestrian connections). The efficient campus layout emphasizes "walkability" and minimizes roads and parking.
   ii. **Open Space Ratios:** Within the 180 acre "inner campus", approximately 80% is open space (see Variety below). There is more than an acre of open space per every 9 students within the inner campus. Within the University's 703 contiguous acres, the open space ratio jumps to more than 1 acre per every 2 students.

d. **Variety of Open Space**
   i. **Pedestrian "Greenways":** Series of courtyards, malls, and tree-lined pedestrian corridors link all facilities on campus. The main hub is the Academic Mall and central green on axis with the chapel. Fountains, seating areas, kiosks, (picnic tables and grilles at residential sites), trees, and detailed planting provide interest, comfort and pedestrian scale.
   ii. **Athletics:** Southwestern provides (and proposes) fields and courts for the following NCAA level, intramurals and "pick up" sports: baseball, softball, tennis, soccer, lacrosse, track & field, volleyball, Frisbee golf, and golf. The Kurth Landrum 9-hole golf course is open to the public. (The course is currently 6-holes, but may be modified or expanded back to nine holes.)
   iii. **Gardens:** Most of the University buildings have associated courtyards or gardens for instruction (horticulture garden, outdoor classroom, sculpture garden, etc.) or informal gatherings. The Community Garden, Green Hall Garden and assorted smaller plots around campus involve students and Georgetown community in sustainable gardening.
   iv. **Agricultural and Undeveloped:** The large majority of the University's contiguous land is undeveloped, agricultural or floodplain. Some of this property is used for cattle grazing, environmental or biology research, or land reserve.

12. LANDSCAPE

a. **Alternative Landscape Plans** may be submitted by a Landscape Architect for administrative review with Site Plans illustrating that the aesthetic, buffering and environmental intent of the code is met.

b. **Primary Landscape and Tree Canopy Calculations**
   i. **Existing Trees and Open Space:** Due to the high percentage of campus open space and the large quantity of existing trees and planting, Southwestern requests consideration in calculating primary landscape and tree canopy area.
   ii. **Limits of Construction:** Construction areas for each project are kept to a minimum to avoid disturbance of adjacent improvements and landscape. However, this skews the landscape requirements - a high ratio of impervious cover within a relatively small limit of construction. In the past this results in excess trees with little room to plant (and credit cannot be taken for adjacent trees outside the limits). Therefore:
   iii. **Primary Landscape** requirements may be based on 20% impervious cover within limits of construction. City provides credit for existing 4" to 12" caliper trees per UDC 8.10.
   iv. **Tree Canopy** requirements may be based on 15% of the limits of construction.

c. **Street Trees:**
   i. Street Trees will be installed per UDC at Maple Street and Hwy 29 (Refer to Downtown Gateway, below.); other campus streets are private and alternate landscape plans will be submitted.
   ii. Credit shall be given for all existing, comparable trees between curb and building façade.

iii. Planting shall occur when adjacent facility or land is developed, therefore installation may be phased.

d. **Parking Lot Landscaping:** All new parking lots to comply with the UDC requirements for parking lot planting.
e. **Bufferyard Landscaping:** All new development to meet buffering requirements of the UDC.
f. **Screening:** All new parking lots, mechanical equipment, dumpsters, loading docks, etc. to meet screening requirements of the UDC when visible from off-site.
g. **Tree Replacement:** Refer to Environmental Protection below.
h. **Downtown Gateway**
   i. **Existing and New Improvements:** Southwestern University's border along University Avenue is within the Downtown Gateway District. Existing sidewalks, trees, and shrubs between the curb and building facade shall count toward the requirements of this district. Where none exist, sidewalks and/or plantings will be installed at time of adjacent facility or land development (Site Plan submittal). Therefore installation may be incremental or phased.
   ii. **Right of Way:** As previously noted, the right of way location where TXDOT may widen University Avenue (SH 29) to five lanes needs to be determined prior to Gateway development.
   iii. **Alternate Tree Species:** Due to the large number of required trees, the University may submit alternative, but comparable, species for street tree planting during Site Plan development for consideration.

13. ENVIRONMENTAL PROTECTION

a. **Protected and Heritage Trees**
   i. **Deferred Tree Survey:** As projects are phased over 20 or more years, Southwestern proposes to survey trees at the time of project development in order to provide current information. The following is a condition of this PUD per the Director of Planning:

      "A tree survey of all Protected and Heritage trees will be required prior to site plan. Building and recreation locations shown on this Development Plan are not final and are subject to change if it is found that significant stands of trees or Heritage Trees exist in those locations. Minor adjustments in building location due to trees may be approved by the Director of Planning. However, if the Director determines the adjustments to be major, an amendment to the PUD Development Plan will be required to be approved by City Council."

b. **Impervious Cover and Stormwater Management**
   i. **Impervious Cover** will not exceed the (45%) impervious cover limit of the base district per the UDC as measured over the University's total property area.
   ii. **Drainage Study:** Southwestern University commissioned a drainage study with Steger Bizzell Civil Engineers in 2004 and updates this regularly. The University tracks the affects of development on drainage with each Site Plan. Refer to the civil engineer update, **Exhibit 6.**
   iii. **TCEQ Master Water Pollution Abatement Plan:** Southwestern has a Master WPAP approved by TCEQ which tracks projects as they are developed. As the proposed impervious cover is below 20%, permanent pollution abatement is not required by TCEQ for this land use.
   iv. **Development within the 100 Year Floodplain:** Southwestern University reserves the right to develop within the floodplain and in compliance with local, state and federal regulations. Development may include, but is not limited to, athletic fields, golf course, trails, etc. Southwestern to coordinate with Georgetown Floodplain Administrator.
   v. **Low Impact Site Design:** The University may implement the following or similar features to minimize the affects of stormwater as illustration of environmental commitment: rainwater harvesting, preserving stream buffers, wet ponds, vegetated swales, etc.

PROPOSED (AND PROHIBITED) USE CATEGORIES

Note: Primary and Permitted Uses already exist on campus.

Primary Use:	
Educational Facility	including classrooms and labs, administrative and faculty offices, meeting spaces, libraries, university housing, campus services (food, health, maintenance), chapel (w/columbarium), support commercial (bookstore), theater, parking/structures, recreation, athletics, golf, open space, plazas,

Permitted Uses:	**existing and/or proposed examples**
Residential Uses	
Note: On-campus living is for university students and employees only	
household living	
single family, detached	university president, chaplain
multifamily dwelling	student apartments
group living	
group living (6 or less)	dormitories, fraternity, sorority
group living (7 or more)	dormitories, fraternity, sorority
Public and Civic Uses	
community services	community service and non-profit organizations (Upward Bound, Operation Achievement, Community Outreach)
government facilities	campus police, post office,
educational facilities	(main land use)
medical facilities	university health and counseling
parks and open areas	
golf course	golf course
athletic facilities	NCAA & intramural fields, courts, stadium, track, pool, frisbee golf
accessory uses	field house, press box, concessions, restrooms, maintenance & equipment storage,
open space	plazas, gardens, biology research
place of worship	chapel, support buildings, columbarium
parking	surface lots, on street, future structure
utilities	campus boiler plant, detention ponds, water wells, rain water collection, irrigation ponds, gray water pond or tank; City waste water lift stations, City electric, water, gray water lines
Commercial Uses	
Note: The main user is campus community, however many facilities/events are open to the public	
eating establishments	university food service, catering, concessions
indoor entertainment	theater, music performance, guest, faculty, student lecture/performance, exhibits, college sports, games, movies
outdoor entertainment	music performance, guest, faculty, student lecture/performance, exhibits, college sports, events
office	university administrative and some community based
retail sales	university bookstore, ATM, sundries shop
Industrial Uses	
Light Industrial Services	campus (on-site) associated janitorial/building/grounds maintenance (service and facilities); vehicle and equipment maintenance; welding, machine and other shops
Warehouse and Freight Movement	vehicle storage (university vehicles - trucks, construction equipment, mini-vans); stock pile (landscape materials - mulch, topsoil, gravel, sports field mix)
Other Uses	
Agriculture	animal raising; green house; crops; pasturage; horticulture; community garden
Wireless Transmission	satellite dishes (existing)

Prohibited Uses

Heavy Industry; detention centers; institutions for treatment; adult entertainment

PROPOSED FACILITIES

KEY	Phase	1999 PUD	Exp/ New	RES.	BUILDING	NON-RESIDENTIAL Total SF New Construction	ALL BUILDINGS Total SF New Construction	Stories	Ht (ft)	Notes
1A	0-5 yr	no	N	R	West Residences	-	25,000	2	30-35	12,500 sf ea building; 48 beds (24 beds/building)
1B	0-5 yr	no	N	R	West Residences - Phase 2	-	25,000	2	30-35	12,500 sf ea building; 48 beds (24 beds/building)
2	10-20 yr	no	N		Future Building (Administration or Academic)	28,000	28,000	2	30-35	
3	0-5 yr	yes	E		Fondren-Jones Science Hall	26,000	26,000	4	< 60	26,000 sf expansion + renovation of old building
4	5-10 yr	yes	E	R*	Martin Ruter Residence Hall	9,000	9,000	3	45-50	3 RA units; service areas (lobbies, laundry, elevator,
5	20 yr	no	E		A. Frank Smith, Jr. Library Center	51,000	51,000	3	45-50	
6	10-20 yr	yes	E		Alma Thomas Fine Arts Center	40,000	40,000	3	45-50	
7	5-10 yr	yes	E		Chaplain Expansion, Auxiliary Building, & Columbarium	5,000	5,000	1-2	30-35	
8	10-20 yr	yes	N		Academic or Technology Center	59,000	59,000	3	45-50	
9	5-10 yr	yes	E		Warehouse	-	-	2	30-35	replaces existing 20,000 sf
10	0-5 yr	yes	N		Fieldhouse	24,000	24,000	2	45-50	
10B	5-10 yr	no	N		Parking Structure (& Observatory - Alt. Location)		-	4		400 -500 parking spaces (100/level+roof)/32,000 footprint
11	5-10 yr	no	E		Corbin J. Robertson Center	16,500	16,500	2	30-35	
12	0-5 yr	yes	E	R	J.E. and L.E. Mabee Residence Hall Expansion	-	40,000	3	45-50	75 -100 beds
13					not used					
14	5-10 yr	no	E		Alumni Center	5,000	5,000	1	25	
15	10-20 yr	yes	N		Baseball Center	5,000	5,000	1	25	locker rooms/concessions/restrooms
16	5-10 yr	no	N		Environmental Center	8,000	8,000	1	25	
17	10-20 yr	no	N		Natatorium	45,000	45,000	1	30-35	
					PROPOSED SITE WORK					
A	0-5 yr	no	S		Maple Street Modification (intersections)					
B	0-5 yr	no	S		NW Parking Lot Expansion					additional 44 spaces
C	10-20 yr	no	S		SW Parking Lot					approx 50 spaces
D	0-5 yr	no	S		Soule Promenade					
E	5-10 yr	no	S		Pool (w/fence) and Pavilion	600	600	1	25	minor RR and vending
F	5-10 yr	yes	S		Tennis Center/Courts					4 courts = 28,000 sf
G	0-5 yr	yes	S		Special Events Parking/East Parking					approx 180 spaces
H	0-5 yr	yes	S		Intramural Fields					
J	20 yr	yes	S		Stadium/Implement Field	7,500	7,500	2	30-35	press box, concessions, public restrooms, storage
K	0-5 yr	yes	S		Modifications/expansion to existing Golf Course (9 holes)					
L	5-10 yr	yes	S		Relocate Detention/Filtration Pond					
M	20 yr	no	S		Maple Street Relocation/street connections/replacement parking					
					Total New Construction - Buildings (sf)	**329,600**	**419,600**			

NOTES:

1. Buildings are shown schematically. Allow for minor variations in building size, locations and configurations.
2. Building Phasing is speculation only. Actual implementation is based on University needs and funding which varies widely.

EXHIBIT 2
10.07.10

PARKING SUMMARY

Previously Approved Required Parking 1999 PUD **1,283 spaces**

Proposed Parking for Campus PUD:

		population	ratio (2)	Parking Spaces required (3)	existing (4)	proposed (5)	total incl. future/ alternate (6)
		1,250					
(1)	commuter students (5%)	63	0.37	23			
(1)	living on campus (95%)	1,188	0.67	796			
	faculty/staff	500	0.90	450			
	visitor	435	0.33	144			
	total:	2,185	0.65	1,412	1,399	1,429	1,662

Notes:

1 **proposed** percentages of students living on campus and commuters (existing are 85% on campus, 15% commuter)
2 existing SU parking ratios
3 Parking Required adjusted for proposed increase in proportion of students living on-campus to off-campus
4 Existing Parking per SU field count in July 2009
5 Proposed Parking generally reflects parking gains (losses) for projects proposed over next 5 years
6 Future/Alternate Parking includes additional, alternate and/or event parking

- see Campus Parking Detail, Exhibit 3B and Parking Plan, Exhibit C1 for more detail
- **Parking Summary to be updated and submitted to the City with each project's Site Plan**

CAMPUS PARKING DETAIL

			EXISTING PARKING					TOTAL EXISTING & PROPOSED (INCLUDING POSSIBLE ALTERNATE & ADDITIONAL) PARKING				
notes	Key	Lot	Faculty/ Staff	Special Permit	Student	Unre-stricted	Total	Faculty /Staff	Special Permit	Student	Unre-stricted	Total
	W1	Maple Street	43			68	**111**	45			70	**115**
	W2	Northwest Lot			92		**92**			92		**92**
*	W3	Northwest Lot Expansion								35		**35**
1	W4	Cullen Lot/Bldg/Soule	94				**94**	86				**86**
*	W5	SW Parking Lot								50		**50**
	NW1	Lord Center			84		**84**			84		**84**
2	NW2	DML Res. Center			5		**5**			5		**5**
1	C1	W. Rutersville/Library				21	**21**				19	**19**
3	C2	North Fraternity Lots				58	**58**				48	**48**
	C3	Wesleyan/McKenzie	42			109	**151**	42			109	**151**
	C4	Southwestern Blvd.				188	**188**				188	**188**
	C5	Chapel Lot	20				**20**	20				**20**
4	C6	Chapel Overflow	29				**29**					
5	N1	North Lot			65	76	**141**			54	71	**125**
6	N2	Physical Plant Lot A		56			**56**		0		43	**43**
	N3	Physical Plant Lot Expansion									36	**36**
7		Possible Parking Structure									?	
	SE1	Fine Arts Lot	78				**78**	78				**78**
8	SE2	Brown-Cody/Kurth Lot			200		**200**			187		**187**
	SE3	East Lot	22			23	**45**	22			23	**45**
*	SE4	East Lot Expansion									49	**49**
* 9	SE5	Stadium Lot									180	**180**
	S	Outreach/Maple House/Apt	26				**26**	26				**26**
												-
		Totals	**354**	**56**	**446**	**543**	**1,399**	**319**	**-**	**507**	**836**	**1,662**

Master Plan Requirement Based on 1250 FTE, 95% on campus living **1,412**
amount over required parking 250

GENERAL:

- **Numbers per lot are subject to slight modification, but will be reviewed by City with Site Plan submittals.**
- **Refer to Exhibits C (Parking Plan) and D (Maple Street/West Campus Master Plan)**
- **Included in notes below are explanations for removing some existing parking spaces. Parking will only be removed when replacement parking has been provided and parking counts reflect the campus population.**

KEYED NOTES:

* **New parking lots are triggered with construction of residential expansion (and/or stadium) - new west lots w/west residences, east lots with east residences (or stadium)**

1 Some existing parking lost in this location when Soule Drive becomes pedestrian promenade.
2 The existing parking spaces are for handicap only and (1) RA.
3 Access to lots and pump house from Maple to be removed. Lots to be restriped. Several spaces lost. Refer to Exhibit D.
4 Return chapel plaza to pedestrian-only use when replacement parking is built.
5 Return drive to 2 way traffic when replacement parking is built.
6 Existing lot is restricted for daytime staff only. When observatory is moved, lot is expanded and lighted it will become unrestricted lot.
7 Potential site for parking structure (parking spaces NOT included in summary)
8 Some existing parking will become landscape area when replacement parking is built.
9 Stadium lot to be built with stadium or east residence hall expansion, whichever comes first.

SOUTHWESTERN UNIVERSITY CAMPUS PLANNED UNIT DEVELOPMENT EXHIBIT 4

10.07.10

"THIS PERIMETER DESCRIPTION WAS PREPARED FROM INFORMATION DERIVED FROM MULTIPLE SOURCES AND WAS NOT PREPARED IN CONJUNCTION WITH AN ON-THE-GROUND SURVEY. IT IS TO BE USED FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TO BE USED AS A LEGAL DESCRIPTION FOR THE TRANSFER OF TITLE."

BEING 704.25 acres of land, situated in the Antonio Flores Survey, Abstract No. 235 and the William Addison Survey, Abstract No. 21, in Williamson County, Texas. Said land being property occupied by Southwestern University and being more particularly described in Three Tracts as follows:

Tract One (703.18 acres)

BEGINNING at the intersection of the north line of University Avenue, State Highway No. 29, and the east line of Holly Street (old MK & T Railroad Right-of-Way) being the Southwest corner of Block 6 of the Snyder's Addition to the City of Georgetown, an addition of record in Volume 57, Page 502, of the Deed Records of Williamson County, Texas, for the Southwest corner hereof;

THENCE, along the said east line of Holly Street, being the old MK & T Railroad Right-of-Way, N 02°10'31" W, at 599.34 feet, pass the Southwest corner of Southwestern University Northwest Entrance Subdivision, a subdivision of record in Cabinet P, Slide 22, of the Plat Records of Williamson County, Texas, continuing along the west line of the said Southwestern University Northwest Entrance Subdivision, leaving the said east line of Holly Street and continuing along the east line of the said old MK & T Railroad Right-of-Way, for a total distance of 1,459.91 feet to the beginning of a curve to the right, (Radius=1,879.86 feet, Long Chord bears N 03°24'06" E, 336.81 feet), an arc distance of 337.26 feet to the most northerly corner of the said Southwestern University Northwest Entrance Subdivision on the west line of Maple Street for a northwesterly corner hereof;

THENCE, crossing Maple Street, N 36°32'18" E, 96.76 feet to the intersection of the east line of Maple Street and the south line of 7th Street for the Northwest corner of Lot 1, Block A, of Southwestern University Student Housing Subdivision, a subdivision of record in Cabinet L, Slide 342, of the Plat Records of Williamson County, Texas, for a Northwesterly corner hereof:

THENCE, along the said south line of 7th Street, N 68°30'11" E, 276.60 feet to the intersection of the said south line of 7th Street and the west line of Olive Street for the most northerly Northeast corner of the said Lot 1, Block A, for the most westerly Northeast corner hereof;

THENCE, along the east line and a northerly line of the said Lot 1, Block A, along Olive Street,
S 21°21'39" E, 243.39 feet, along a curve to the left (Radius=39.91 feet, Long Chord bears
S 66°25'44" E, 56.50 feet), an arc distance of 62.78 feet to the north line of 8th Street, and along the said north line of 8th Street, N 68°30'11" E, 174.70 feet to the most easterly Northeast corner of the said Lot 1, Block A, being the Northwest corner of that certain tract of land, called 1.29 acres, as conveyed to Southwestern University by deed recorded as Document No. 2003095081 of the Official Public Records of Williamson County, Texas, and N 68°56'50" E, at 184.29 feet pass the most northerly Northeast corner of the said 1.29 acre Southwestern University tract, being the Northwest corner of that certain tract of land, called 0.21 of an acre, as conveyed to Southwestern University by deed recorded as Document No. 2004007708 of the Official Public Records of Williamson County, Texas, for a total distance of 260.87 feet, in all, to the Northeast corner of the said 0.21 of an acre Southwestern University tract, for a northeasterly corner hereof;

THENCE, S 22°06'10" E, at 118.78 feet pass the Southeast corner of the said 0.21 of an acre Southwestern University tract, being the most easterly Northeast corner of the said 1.29 acre Southwestern University tract, for a total distance of 249.90 feet to the Southeast corner of the said 1.29 acre Southwestern University tract, for an interior corner hereof;

THENCE, N 68°58'36" E, 260.86 feet to the most westerly Southwest corner of the East Anderson Addition, an addition of record in Cabinet J, Slide 147, of the Plat Records of Williamson County, Texas, for an interior corner hereof;

THENCE, N 21°44'03" W, 105.02 feet to the most westerly Northwest corner of the said East Anderson Addition, being the Southwest corner of the southern portion of the I.O.O.F. Cemetery, for a northwesterly corner hereof;

THENCE, along the north line of the said East Anderson Addition, being the south line of the southern portion of the I.O.O.F. Cemetery, N 68°48'53" E, 209.95 feet; N 21°11'07" W, 35.00 feet; N 68°48'53" E, 161.47 feet; N 21°11'07" W, 22.00 feet; N 68°48'53" E, 252.00 feet; N 21°11'07" W, 26.00 feet and N 68°48'53" E, 367.75 feet to the west line of that certain tract of land, called 4.27 acres, as conveyed to Southwestern University by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas, marking the Northeast corner of the said East Anderson Addition and a southeasterly corner of the said southern portion of the I.O.O.F. Cemetery, for an interior corner hereof;

THENCE, N 20°35'13" W, 371.19 feet to the Northwest corner of the said 4.27 acre Southwestern University tract, being an interior corner of the said southern portion of the I.O.O.F. Cemetery, for a northwesterly corner hereof;

THENCE, N 83°51'49" E, 500.78 feet to an interior corner of the said 4.75 acre Southwestern University tract, being the most easterly Southeast corner of the said southern portion of the I.O.O.F. Cemetery, for an interior corner hereof;

THENCE, N 02°07'55" W, passing the south line of a roadway, being the Northwest corner of the said 4.75 acre Southwestern University tract and the Northeast corner of the said southern portion of the I.O.O.F. Cemetery, for a total distance of 135.97 feet to the north line of the said roadway, being the south line of that certain tract of land, called 200 acres, as conveyed to Southwestern University by deed as recorded in Volume 318, Page 214, of the Deed Records of Williamson County, Texas, for an interior corner hereof;

THENCE, along the north line of the said roadway being the south line of the said 200 acre Southwestern University tract, S 88°01'20" W, 562.52 feet and S 68°31'40" W, 538.35 feet to the Southwest corner of the said 200 acre Southwestern University tract, being the Southeast corner of the northern portion of the I.O.O.F. Cemetery, for a southwesterly corner hereof;

THENCE, N 21°11'07" W, 878.18 feet to the south line of the old MK & T Railroad Right-of-Way, for the Northwest corner of the said 200 Southwestern University tract and the Northeast corner of the said northern portion of I.O.O.F. Cemetery, for the Northwest corner hereof;

THENCE, along the said south line of the old MK & T Railroad Right-of-Way being the north line of the said 200 acre Southwestern University tract, as follows;

Along a curve to the left (Radius=5,779.58 feet, Long Chord bears N 36°56'22" E, 504.03 feet), an arc distance of 504.19 feet,

N 34°26'25" E, 3,216.70 feet to the beginning of a curve to the right (Radius = 5,679.58 feet, Long Chord bears N 37°43'25" E, 650.58 feet), along the said curve for an arc distance of 650.94 feet and N 41°00'25"

E, 726.37 feet to the center of the San Gabriel River, for the most northerly corner of the said 200 acre Southwestern University tract for the most northerly corner hereof;

THENCE, downstream along the center of the San Gabriel River, with its meanders,
S 59°46'14" E, 1,366.94 feet to the most easterly corner of the said 200 acre Southwestern University tract, being the Northeast corner of the remainder of that certain Third Tract, called 30 acres, as conveyed to J.A. Barnett by deed as recorded in Volume 325, Page 300, of the Deed Records of Williamson County, Texas, being on the west line of that certain tract of land, called 77.29 acres, as described in a deed to the D. Robbins Trust of record in Volume 2307, Page 495, of the Official Records of Williamson County, Texas, for an easterly corner hereof;

THENCE, along the south line of the said 200 acre Southwestern University tract,
S 68°13'46" W, 156.76 feet to the Northwest corner of the said remainder of the Barnett tract, being a northerly corner of that certain tract of land, called 117.48 acres, as described in a deed to Southwestern University in Document No. 2001018260 of the Official Records of Williamson County, Texas, for an interior corner hereof;

THENCE, along a northerly line of the said 117.48 acre tract, being the south line of the remainder of the said Barnett tract, S 64°48'15" E, 744.31 feet to an iron pin set and
N 68°41'45" E, 56.70 feet to a point in the center of the San Gabriel River, being the south line of the said Robbins tract, for a northerly corner of the said 117.48 tract, for a northerly corner hereof;

THENCE, downstream, along the center of the San Gabriel River, with its meanders, as follows: S 79°38'15" E, 259.47 feet; S 86°55'45" E, 291.91 feet; N 80°37'15" E, 111.69 feet;
N 64°48'45" E, 531.78 feet and N 72°48'45" E, 160.71 feet to the Northeast corner of the said 117.48 acre tract, being on the south line of the said Robbins Tract, being the Northwest corner of that certain Tract One, called 110.09 acres, as conveyed to Carolyn B. Sharkey and Sara Elizabeth Sharkey by deed as recorded in Volume 2239, Page 95, of the Official Records of Williamson County, Texas, for the most northerly Northeast corner hereof;

THENCE, along the east line of the said 117.48 acre tract, being the west line of the said Sharkey Tract One, as follows; S 19° 10' 45" E, 474.48 feet and S 21° 27' 15" E, 1,399.47 feet to the Northeast corner of the remainder of a 258.657 acre Tract 1 described in a deed to New America, Ltd. in Document No. 9839081 of the Official Records of Williamson County, Texas, for the most easterly Southeast corner of the said 117.48 acre tract, for the most easterly Southeast corner hereof;

THENCE, along a southerly and easterly line of the said 117.48 acre tract, being a northerly and westerly line of the said New America, Ltd., tract, S 75° 01' 15" W, 210.12 feet; S 83° 31' 45" W, 251.00 feet; N 78° 10' 45" W, 223.23 feet; N 81° 52' 45" W, 325.37 feet; N 66° 20' 45" W, 269.51 feet; N 39° 40' 15" W, 250.80 feet; S 55° 20' 45" W, 386.67 feet; S 51° 53' 45" W, 259.15 feet; S 53° 20' 15" W, 134.29 feet; S 0° 00' 45" E, 164.09 feet; S 5° 52' 15" W, 145.13 feet; S 30° 16' 45" E, 973.75 feet the Northwest corner of that certain Tract No. 3 (14.73 acres) as described in a deed to Southwestern University in Document No. 2000068095 of the Official Public Records of Williamson County, Texas, being an interior corner of the said 117.48 acre tract, for a corner hereof;

THENCE, along the north line of said Tract 3, S 80° 43' 15" E, 222.32 feet an interior corner of the said New America, Ltd. tract, being the Northeast corner of the said Tract No. 3 and the Northwest corner of that certain tract of land, called 0.95 of an acre, as conveyed to Bert Holmstrom and wife, Lisa Holmstrom, by deed recorded as Document No. 2000034546 of the Official Records of Williamson County, Texas, for a corner hereof;

THENCE, along an easterly line of the said Tract No. 3, as follows; S 20° 50' 15" E, 159.93 feet to the Southwest corner of the said 0.95 of an acre Holmstrom tract, being the Northwest corner of that certain tract of land, called

0.937 acres, as conveyed to Tommie Edward Norrell, by deed recorded as Document No. 9742821 of the Official Records of Williamson County, Texas;
S 20° 52' 15" E, 150.22 feet to the Southwest corner of the said 0.937 of an acre Norrell tract, being the Northwest corner of that certain tract of land, called 0.793 of an acre, as conveyed to Tommie Edward Norrell, by deed recorded as Document No. 9742821 of the Official Records of Williamson County, Texas; S 20° 52' 45" E, 94.65 feet to the Southwest corner of the said 0.793 of an acre Norrell tract, being the Northwest corner of that certain tract of land, called 2.77 acres, as conveyed to Jimmy Lynn Snow and Susan Snow by deed recorded as Document No. 9656734 of the Official Records of Williamson County, Texas, continuing along the west line of the said 2.77 acre Snow tract, S 21° 05' 45" E, 55.26 feet; S 21° 15° 45" E, 88.10 feet and
S 22° 05' 45" E, at 204.07 feet pass the Southwest corner of the said 2.77 acre Snow tract, being the Northwest corner of that certain tract of land, called 4.87 acres, as conveyed to Gene Lawhon by deed as recorded in Volume 964, Page 577, of the Deed Records of Williamson County, Texas, for a total distance of 254.75 feet, in all, to the most northerly Southwest corner of the said 4.87 acre Lawhon tract, being the Northwest corner of that certain tract of land, called 4.217 acres, as conveyed to Gene L. Lawhon by deed as recorded in Volume 2252, Page 791, of the Official Records of Williamson County, Texas, and S 22° 55' 45" E, 581.93 feet to the north line of that certain tract of land, called 6.06 acres, as conveyed to William James Reinhardt by deed as recorded in Volume 573, Page 469, of the Deed Records of Williamson County, Texas, being a southerly line of the said Tract No. 3, being the Southwest corner of the said 4.217 acre Lawhon tract, for the most easterly Southeast corner of the said Tract No. 3, for a southeasterly corner hereof;

THENCE, S 70° 42' 45" W, 148.12 feet to an interior corner of the said Tract No. 3, being the Northwest corner of the said 6.06 acre Reinhardt tract, for an interior corner hereof;

THENCE, along the west line of the said 6.06 acre Reinhardt tract, being an easterly line of the said Tract No. 3, S 18° 40' 45" E, 56.26 feet to the Northeast corner of that certain tract of land, called 3.420 acres, as conveyed to American Capitol Group, Inc., of record as Document No. 9725466 of the Official Records of Williamson County, Texas, for an southeasterly corner hereof;

THENCE, S 75° 28' 15" W, 356.37 feet to the East line of the said 117.48 acre tract, marking the Northwest corner of the said 3.420 acre American Capitol Group, Inc. tract, being the Southeast corner of the said Tract No. 3, for an interior corner hereof;

THENCE, along the East line of the said 117.48 acre tract being the west line of the said American Capital Group, Inc. tract; S 15° 04' 45" E, 379.97 feet to the beginning of a curve to the left, (Radius = 25.00 feet, Long Chord bears S 60° 04' 45" E, 35.36 feet); Thence, along the said curve for an arc distance of 39.28 feet; Thence, N 74° 54' 45" E, 357.95 feet to the west line of the said 6.06 acres, Reinhardt tract being the Southeast corner of the said American Capital Group, Inc. tract, for a corner hereof;

THENCE, S 18° 31' 15" E, 20.15 feet to the north line of State Highway No. 29, marking the most westerly Southeast corner of the said 117.48 acre tract, being the Southwest corner of the said Reinhardt tract, for the most southerly Southeast corner hereof;

THENCE, along the said north line of State Highway No. 29, S 74° 57' 45" W, at 503.83 feet pass the most southerly Southwest corner of the said 117.48 acre tract, being the Southeast corner of that certain Tract No. 1 (29.39 acres) as described in a deed to Southwestern University in Document No. 2000068095 of the Official Public Records of Williamson County, Texas, for a total distance of 1,703.30 feet, in all, to the beginning of a curve to the left (Radius=1,950.10 feet, Long Chord bears S 71°49'57" W, 204.80 feet);

Along the said curve for an arc distance of 204.90 feet;

S 68°53'56" W, 3,173.37 feet to the beginning of a curve to the right, (Radius=2,250.00 feet, Long Chord bears S 78°20'53" W, 738.76 feet);
Along the said curve for an arc distance of 742.12 feet and
S 87°47'49" W, 1,395.66 feet to the Place of BEGINNING and containing 709.35 acres of land.

Save & Except from the above-described 709.35 acre tract 6.17 acres as conveyed to Milton R. Vrabel and wife, Mary Elizabeth Vrabel, by deed as recorded in Volume 529, Page 550, of the Deed Records of Williamson County, Texas, being more particularly described as follows;

BEGINNING for Reference at the most southerly Southeast corner of the above-referenced 709.35 acre tract of the said north line of State Highway No. 29;

THENCE, along the said north line of State Highway No. 29, S 74°57'45" W, 1,173.28 feet to the east line of the County Road No. 188, for the Southwest corner of the said Tract No. 1;

THENCE, along the said east line of County Road No. 188, being the west line of the said Tract No. 1, as follows; N 22° 27' 45" W, 451.59 feet; N 22° 26' 45" W, 360.48 feet;
N 22° 15' 45" W, 189.60 feet; N 31° 28' 45" W, 33.26 feet; N 31° 30' 45" W, 55.52 feet;
N 31° 48' 15" W, 92.64 feet and N 21° 30' 45" W, at 571.0 feet pass 1.7 feet east of a corner post at a bend in County Road No. 188 and continuing along the east line of a gravel roadway, at 809.75 feet pass, the Southwest corner of that certain Tract No. 2 (15.21 acres as described in a deed to Southwestern University as described in Document No. 2000068095 of the Official Records of Williamson County, Texas,); for a total distance of 869.73 feet, in all, to an interior corner of the said Tract No. 2;

THENCE, crossing the said gravel roadway, S 67° 20' 45" W, 32.31 feet to an iron pin set on the west line of the said gravel roadway, for a southwesterly corner of the said Tract No. 2, being on the east line of that certain First Tract, called 105 acres, as conveyed to Southwestern University by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas;

THENCE, N 21° 58' 15" W, 185.90 feet to an iron pin found on the south line of the said 6.17 acre Vrabel tract, being the most southerly Northeast corner of the certain First Tract, called 105 acres, as conveyed to Southwestern University, by deed as recorded in Volume 333, Page 145, of the Deed Records of Williamson County, Texas, and a point on the West line of said Tract No. 2, for the Point of BEGINNING and the most southerly Southeast corner hereof;

THENCE, N 71° 06' 45" E, 41.97 feet to an iron pin found marking an interior corner of the said Tract No. 2, being the Southeast corner of the said 6.17 acre Vrabel tract, for the most easterly Southeast corner hereof;

THENCE, along the west line of the said Tract No. 2, being the east line of the said 6.17 acre Vrabel tract, N 21° 22' 45" W, 449.00 feet and N 0° 38' 45" E, 378.49 feet to an interior corner of the said Tract No. 2, being the Northeast corner of the said 6.17 acre Vrabel tract, for the Northeast corner hereof;

THENCE, S 82°31'15" W, 307.31 feet to an easterly line of the said 105 acre Southwestern University tract, for the most northerly Southwest corner of the said Tract No. 2, for the Northwest corner of the said 6.17 acre Vrabel tract, the Northwest corner hereof;

THENCE, S 02°21'58" E, 752.38 feet to an interior corner of the said 105 acre Southwestern University tract, for the Southwest corner of the said 6.17 acre Vrabel tract, for the Southwest corner hereof;

THENCE, S 87°19'10" E, 393.77 feet to the Place of BEGINNING and containing 6.17 acres of land.

Leaving a Net Average for Tract One to be 703.18 acres.

Tract Two (0.50 ac)

BEING 0.50 of an acre of land, being a portion of Block 7, of the Snyder's Addition to the City of Georgetown, an addition of record in Volume 57, Page 502, of the Deed Records of Williamson County, Texas, being that certain tract of land as conveyed Southwestern University by deed as recorded in Volume 523, Page 512, of the Deed Records of Williamson County, Texas, and being more particularly described as follows;

BEGINNING at the intersection of the south line of University Avenue, State Highway No. 29, and the east line of Maple Street, for the Northwest corner of the above-referenced Southwestern University tract, for the Northwest corner hereof;

THENCE, along the said south line of University Avenue, being the north line of the said Block 7, N 87°50' E, 121.04 feet to the Northeast corner of the said Southwestern University tract, being the Northwest corner of that certain tract of land, called 0.66 of an acre, as conveyed to Dee Rapp and spouse, Neil D. Rapp, by deed recorded as Document No. 2005090697 of the Official Public Records of Williamson County, Texas, for the Northeast corner hereof;

THENCE, along the West line of the said 0.66 of an acre Rapp tract, S 02°10' E, 179.92 feet to the Southeast corner of the said Southwestern University tract, being the Northeast corner of that certain tract of land as conveyed to Yvonne Stone McGlaun by deed as recorded in Volume 1800, Page 565, of the Official Records of Williamson County, Texas, for the Southeast corner hereof;

THENCE, S 88°10' W, 121.04 feet to the said east line of Maple Street, being the west line of the said Block 7, for the Southwest corner of the said Southwestern University tract, being the Northwest corner of the said McGlaun tract, for the Southwest corner hereof;

THENCE, along the said east line of Maple Street, N 02°10' W, 179.22 feet to the Place of BEGINNING and containing 0.50 of an acre of land.

Tract Three (0.57 acre)

BEING a 0.57 of an acre of land, situated in the William Addison Survey, Abstract No. 21, being a portion of Outlot 14, Division B, City of Georgetown, Williamson County, Texas. Said land being that certain tract of land, called 0.57 of an acre, as conveyed by deed to Southwestern University, recorded as Document No. 2000023484, of the Official Records of Williamson County, Texas, and being more particularly described as follows;

BEGINNING on the south line of State Highway No. 29 (University Avenue), being the Northeast corner of that certain Lot 5, of University Terrace, a subdivision of records in Cabinet A, Slide 378, of the Plat Records of Williamson County, Texas, marking the Northwest corner of the above-referenced 0.57 of an acre Southwestern University tract, for the Northwest corner hereof;

THENCE, with the said south line of Highway No. 29, N 70°56' E, 141.01 feet to the Northeast corner of the said Southwestern University tract, being the Northwest corner of that certain, Tract One, called 0.6039 of an acre as

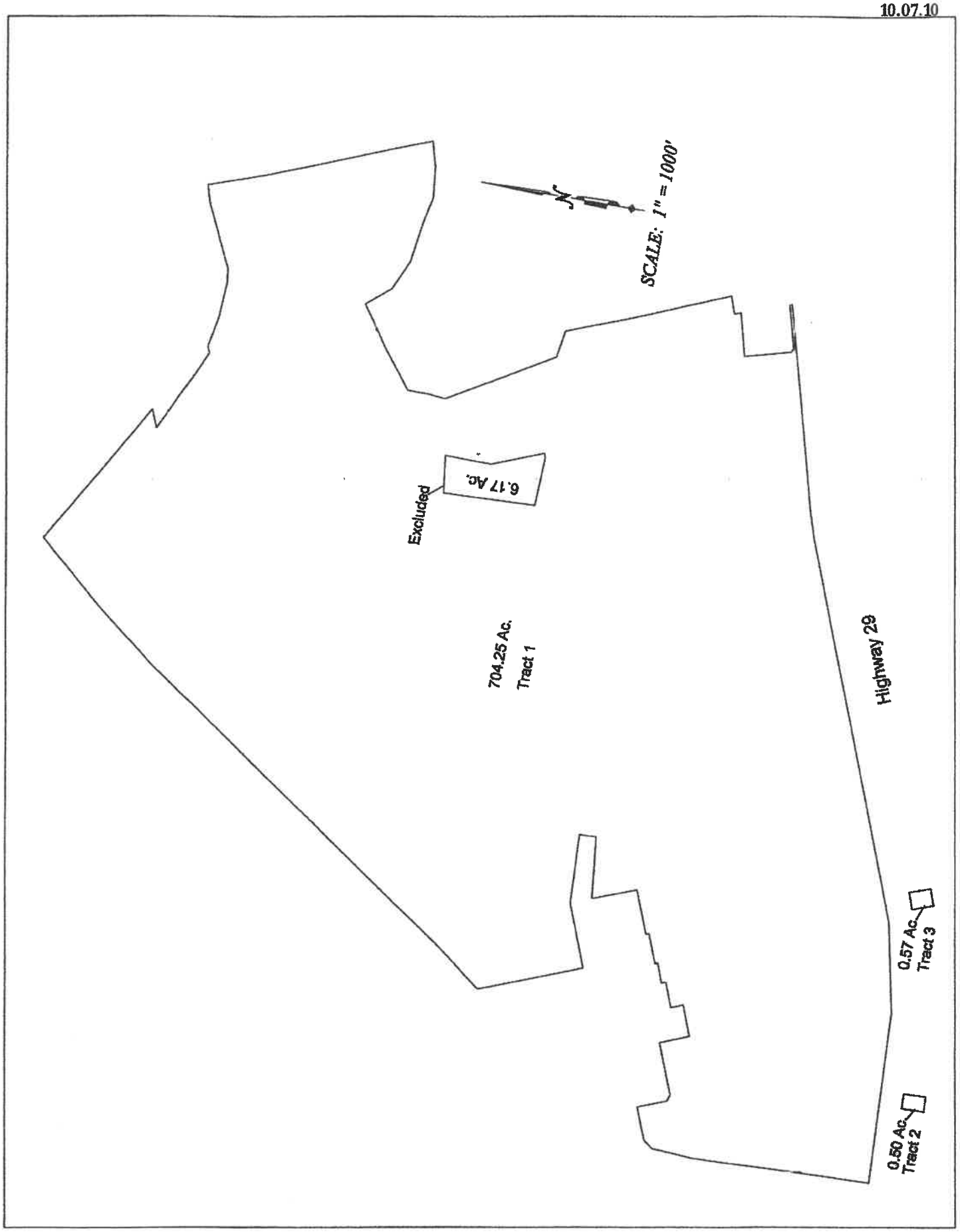
conveyed to Southwestern University by deed recorded in Volume 832, Page 513, of the Deed Records of Williamson County, Texas, for the Northeast corner hereof;

THENCE, S 18°51'30" E, passing the Southwest corner of the said 0.6039 of an acre Southwestern University Tract One, and passing the Northwest corner of that certain Lot 1, of Haven Heights, a subdivision of record in Cabinet B, Slide 135, of the Plat Records of Williamson County, Texas, for a total distance of 178.30 feet to the Southeast corner of the said 0.57 of an acre Southwestern University tract, being on the west line of the said Lot 1, Haven Heights, and being the Northeast corner of that certain Lot 7, of the said University Terrace, for the Southeast corner hereof;

THENCE, with the north line of the said Lot 7, of University Terrace, S 70°59'30" W, 139.23 feet to the southwest corner of the said 0.57 of an acre Southwestern University tract, being the Southeast corner of that certain Lot 6, of the said University Terrace, for the Southwest corner hereof;

THENCE, N 19°26' W, passing the Northeast corner of the said Lot 6, and the Southeast corner of the said Lot 5, a total distance of 178.17 feet to the Place of BEGINNING and containing 0.57 of an acre of land.

SOUTHWESTERN UNIVERSITY CAMPUS PLANNED UNIT DEVELOPMENT **EXHIBIT 4**
10.07.10



klotz associates

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June 11, 2009

Mr. David Munk, P.E.
City of Georgetown
300 Industrial Avenue, Bldg. 1
Georgetown, Texas 78626

Subject: Southwestern University PUD
Klotz Associates No. 0573.006.000

Dear Mr. Munk:

Klotz Associates, Inc. has met with Southwestern University representatives and reviewed the proposed Southwestern University PUD changes. The existing PUD consists of approximately 500 acres that is primarily comprised of student housing, teaching and athletic facilities, and other associated University facilities. As proposed, the University has acquired an additional 185 acres (approximately) that are along the eastern/northeastern edges of the existing property. The attached figure depicts the Southwestern University property in its entirety. For the time being this land will remain undeveloped and there are currently no plans to develop this property in any manner.

In reviewing the existing PUD and the additional property, we have determined that as currently plan, the additional property will not generate additional traffic above that which is currently generated by Southwestern University. As envisioned, the additional property will continue to serve the existing student and faculty population.

Further more, once plans have been developed for this additional piece of property the University shall begin discussions with the City of Georgetown to determine if a Traffic Impact Analysis (TIA) is required. As noted, if a TIA is triggered by future non-university land uses, it should only be required for projects being constructed within the additional 185 acres or if development on the original acreage necessitates the relocation of University associated facilities onto the additional acreage. Please do not hesitate to call if there are any further questions.

Yours sincerely,

Rebecca A. Bray, P.E., PTOE, AICP
Senior Project Manager

STEGER BIZZELL

This summary has been prepared to supplement a Planned Unit Development (PUD) application for the development of the Southwestern University campus.

Existing natural features, drainage ways, one-hundred year flood plain, if applicable, existing topography at a maximum of 5-foot contour intervals.

Southwestern University's current properties total approximately 703 acres and include the developed campus and other undeveloped acreage. The undeveloped portion of the property is tree covered along the Smith Branch with steep slopes that follow the creek. Other portions of the undeveloped area are open pastures with gradual slopes and stabilized vegetation.

There is 100 year Flood Plain along the Smith Branch as determined by FEMA Flood Hazard Boundary Map, Community Panel – Number 48491C0295E, effective September 26, 2008. This area has also been studied by Raymond Chan, P.E. and detailed in a report prepared for the City of Georgetown.

A Master Drainage Report was prepared by Steger Bizzell in 2004 to analyze the impact of campus development on storm water runoff. The Southwestern University property was divided into four drainage areas. Area A included the inner campus. Area B included the portion of the property west of the Smith Branch and Area C included the area east of the Smith Branch. Area D drains to the San Gabriel River and is located in the northern portion of the University's property. This report only analyzed the area within the boundary of University's property and did not include analysis of contributing off-site drainage areas.

The amount of impervious cover in each drainage area was determined based on an extensive ground and aerial survey. In addition to the proposed impervious cover outlined in the 2004 Master Plan, 3% of additional impervious cover (approx. 79,276 sf) was added to the proposed impervious tabulation for Area A (Inner Campus) to accommodate any minor additions of sidewalk or pavement.

With the expansion of Southwestern University's property along the San Gabriel River, the University has basically purchased the Smith Branch, a major conveyor of stormwater runoff directly to the San Gabriel. Previously, the University was limited to an agreed amount of runoff that could be transported to the Smith Branch.

Under developed conditions, only Areas A and C showed an increase in the Runoff Curve Number. The projected increase in runoff due to future development was minimal. The use of detention to offset the projected increase in runoff was not recommended.

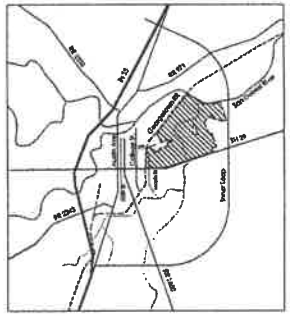
ADDRESS 1978 S. AUSTIN AVENUE | GEORGETOWN, TX 78626
PHONE 512.930.9412
FAX 512.930.9416
WEB STEGERBIZZELL.COM
MEMBER AASHTO, AWWA, NSPE, TRWA, TSPS
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

Demonstrate compliance with Chapters 11 and 12 of the UDC, including impervious cover.

The development will comply with Chapters 11 and 12 of the UDC and will not exceed 45% impervious cover as allowed under the base RS zoning.

In 2004, a Master Water Pollution Abatement Plan (WPAP) for the 703 acres of University property was prepared by Steger Bizzell and was subsequently reviewed and approved by the Texas Commission on Environmental Quality. The WPAP analyzed the impact of campus development on storm water quality. Several projects described in the WPAP have been constructed or are under construction. These projects include the Fine Arts Renovation and expansion, Admissions Building and the Center for Lifelong Learning.

The amount of projected impervious cover is below 20% and permanent pollution abatement is not required by the TCEQ.



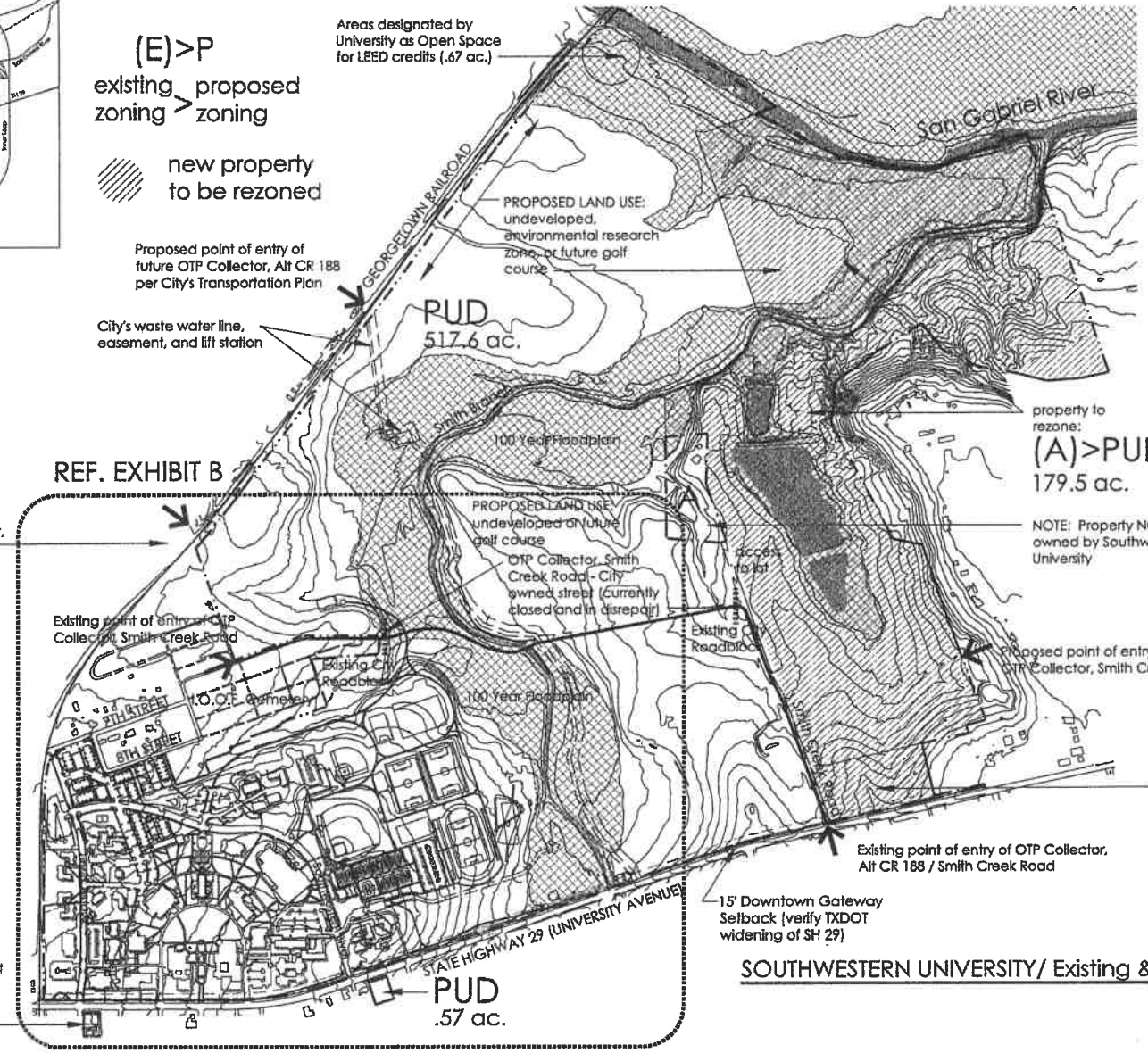
Vicinity Map

(E)>P
existing zoning > proposed zoning

new property to be rezoned

Areas designated by University as Open Space for LEED credits (.67 ac.)

PROTECTED AND HERITAGE TREE NOTE:
A tree survey of all Protected and Heritage trees will be required prior to site plan. Building and recreation locations shown on this Development Plan are not final and are subject to change if it is found that significant stands of trees or Heritage Trees exist in those locations. Minor adjustments in building location due to trees may be approved by the Director of Planning. However, if the Director determines the adjustments to be major, an amendment to the PUD Development Plan will be required to be approved by City Council.



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SOUTHWESTERN UNIVERSITY/ Existing & Proposed PUD Properties: Exhibit A

Group Two Architecture
OCTOBER 7, 2010

PROPOSED FACILITIES

PROPOSED FACILITIES

KEY	Phase (years)	PUD	Exp/New	RES.	BUILDING	NON-RESIDENTIAL Total SF New Construction	ALL BUILDINGS Total SF New Construction	Stories	Ht (ft) Notes
1A	0-5 yr	no	N	R	West Residence	-	25,000	2	30-35 12,500 sf ea building; 48 beds (24 beds/building)
1B	[illegible]	no	N	R	West Residence - Phase 2	-	25,000	2	30-35 12,500 sf ea building; 48 beds (24 beds/building)
2	10-20 yr	no	N		Future Building (Administration or Academic)	28,000	28,000	2	30-35
3	0-5 yr	yes	E		Fondren-Jones Science Hall	24,000	24,000	4	< 60 24,000 sf expansion + renovation of old building
4	5-10 yr	yes	E	R	Martin Ruter Residence Hall	9,000	9,000	3	45-60 3 RA units; service areas (lobbies, laundry, elevator,
5	[illegible]	no	E		A. Frank Smith, Jr. Library Center	31,000	31,000	3	45-50
6	10-20 yr	yes	E		Alma Thomas Fine Arts Center	40,000	40,000	3	45-50
7	5-10 yr	yes	E		Chaplain Expansion, Auxiliary Building, & Columbarium	5,000	5,000	1-2	30-35
8	10-20 yr	yes	N		Academic or Technology Center	59,000	59,000	3	45-50
9	5-10 yr	yes	E		Warehouse	-	-	2	30-35 replaces existing 20,000 sf
10	[illegible]	yes	N		Fieldhouse	24,000	24,000	2	45-50
10B	5-10 yr	no	N		Parking Structure (& Observatory - Alt. Location)		-	4	400-500 parking spaces (100/level+roof)/32,000 footprint
11	5-10 yr	no	E		Corbin J. Robertson Center	14,500	14,500	2	30-35
12	0-5 yr	yes	E	R	J.E. and L.E. Mabee Residence Hall Expansion	-	40,000	3	45-60 75-100 beds
13					not used				
14	5-10 yr	no	E		Alumni Center	5,000	5,000	1	25
15	10-20 yr	yes	N		Baseball Center	5,000	5,000	1	25 locker rooms/concessions/restrooms
16	5-10 yr	no	N		Environmental Center	8,000	8,000	1	25
17	10-20 yr	no	N		Natatorium	45,000	45,000	1	30-35
					PROPOSED SITE WORK				
A	0-5 yr	no	S		Maple Street Modification (intersections)				
B	0-5 yr	no	S		NW Parking Lot Expansion				additional 44 spaces
C	10-20 yr	no	S		SW Parking Lot				approx 50 spaces
D	0-5 yr	no	S		South Promenade				
E	5-10 yr	no	S		Pool (w/fence) and Pavilion	800	800	1	25 minor [illegible] and vending
F	5-10 yr	yes	S		Tennis Center/Courts				4 courts = 28,000 sf
G	0-5 yr	yes	S		Special Events Parking/East Parking				approx 180 spaces
H	0-5 yr	yes	S		Intramural Fields				
J	20 yr	yes	S		Stadium/[illegible] Field	7,500	7,500	2	30-35 press box, concessions, [illegible] storage
K	0-5 yr	yes	S		Modifications/expansion to existing Golf Course (9 holes)				
L	5-10 yr	yes	S		Relocate Detention/Filtration Pond				
M	20 yr	no	S		Maple Street Relocation/street connections/replacement parking				
					Total New Construction - Buildings (sf)	[illegible]	[illegible]		

NOTES:
1. Buildings are shown schematically. Allow for minor variations in building size, locations and configurations.
2. Building Phasing is speculation only. Actual implementation is based on University needs and funding which varies widely.

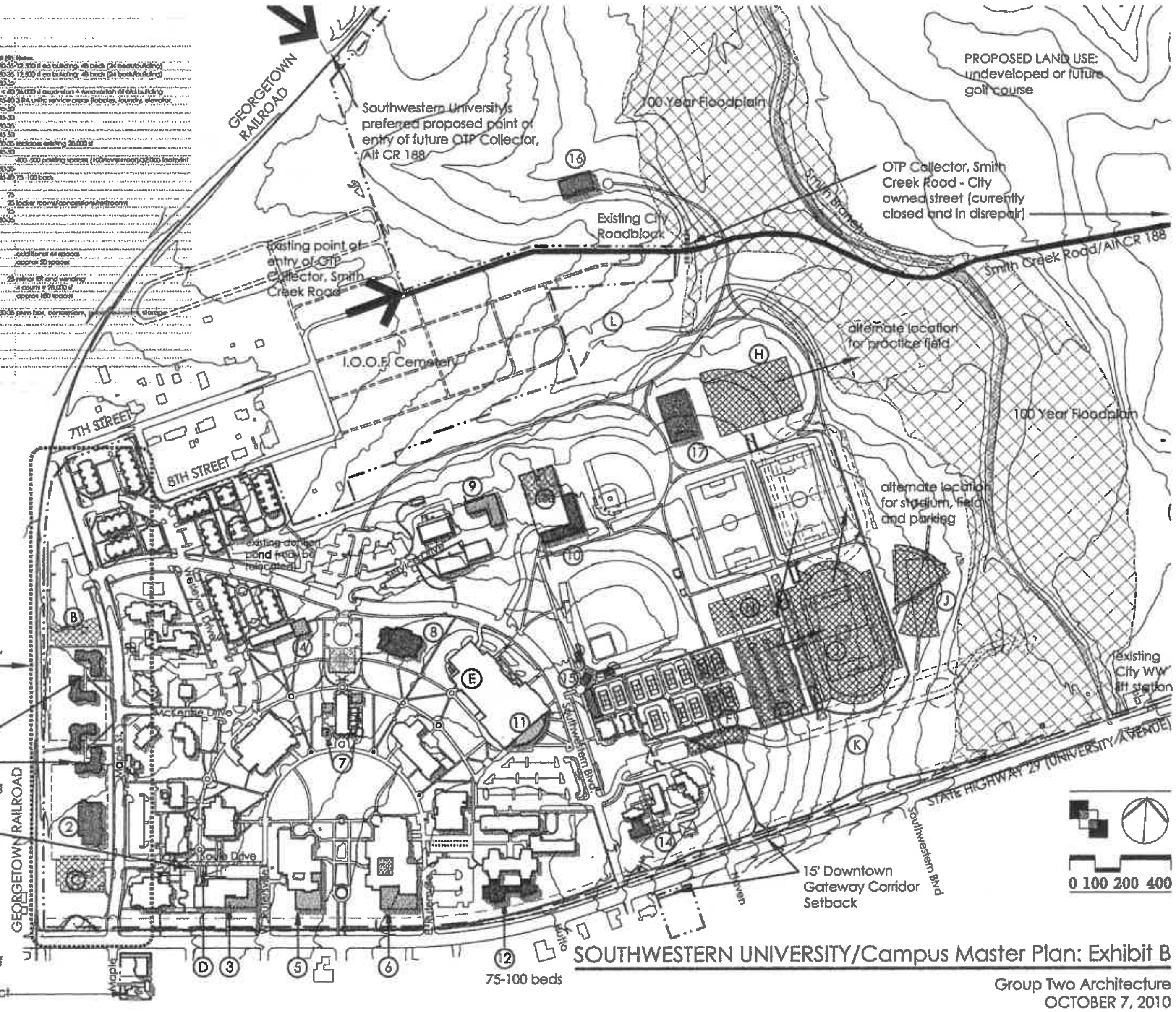
LEGEND

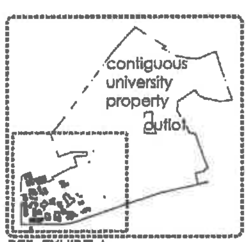
1999 Approved Development Agreement Master Plan:

- Building Expansion
- New Building
- New Site Improvement

Proposed PUD:

- Building Expansion
- New Building
- New Site Improvement





REF. EXHIBIT A

SOUTHWESTERN UNIVERSITY/Campus Master Plan: Exhibit B

Group Two Architecture
OCTOBER 7, 2010

PARKING SUMMARY

Previously Approved Required Parking 1999 PUD 1,283 spaces

Proposed Parking for Campus PUD:

	population	ratio (2)	Parking Spaces: required (3)	existing (4)	proposed (5)	total incl. future/ alternate (6)
	1,280					
(1) commuter students (5%)	65	0.37	23			
(1) living on campus (95%)	1,185	0.67	796			
faculty/staff	500	0.90	450			
visitor	435	0.33	144			
total:	2,184	0.65	1,412	1,399	1,429	1,662

Notes:
1 proposed percentages of students living on campus and commuters (existing is 85% on campus, 15% commuter)
2 existing SU parking ratios
3 Parking Required adjusted for proposed increase in proportion of students living on-campus to off-campus
4 Existing Parking per SU field count in July 2009
5 Proposed Parking generally reflects parking gains (losses) for projects proposed over next 5 years
6 Future/Alternate Parking includes additional, alternate and/or event parking

* see Campus Parking Detail, Exhibit 3B and Parking Plan, Exhibit C1 for more detail
* Parking Summary to be updated and submitted to the City with each project's Site Plan

CAMPUS PARKING DETAIL

notes	Key	Lot	EXISTING PARKING: Faculty /Staff	Special Permit	Student	Unrestricted	Total	TOTAL EXISTING & PROPOSED (INCLUDING POSSIBLE ALTERNATE & ADDITIONAL) PARKING: Faculty /Staff	Special Permit	Student	Unrestricted	Total
	W1	Maple Street	65			46	111	45			70	115
	W2	Northwest Lot			92		92			92		92
*	W3	Northwest Lot Expansion								35		35
1	W4	Cullen Lot/Bldg/Soule	94				94	86				86
*	W5	SW Parking Lot								50		50
	NW1	Lord Center			84		84			84		84
2	NW2	Dvl. Res. Center			5		5			5		5
1	C1	W. Rutersville/Library				21	21				19	19
3	C2	North Fraternity Lots				56	56				48	48
	C3	[illegible]	42			109	151	42			109	151
	C4	Southwestern Blvd.				188	188				188	188
	C5	Chapel Lot	20				20	20				20
4	C6	Chapel Overflow	29				29					
6	N1	North Lot			65	76	141			54	71	125
6	N2	Physical Plant Lot A		56			64		D		43	43
	N3	Physical Plant Lot Expansion									36	36
7		Possible Parking Structure									9	
	SE1	Fine Arts Lot	78				78	78				78
5	SE2	Brown-Cody/Kurth Lot			200		200			187		187
	SE3	East Lot	22			23	45	22			23	45
*	SE4	East Lot Expansion									49	49
* 9	SE5	Stadium Lot									180	180
	S	Outreach/Maple House/Apt.	26				26	26				26
		Totals	264	84	446	605	1,399	319	-	507	536	1,662

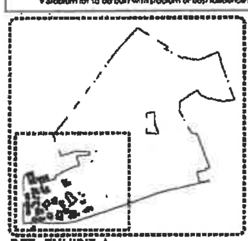
Master Plan Requirement based on 1250 FTE, 95% on campus living 1,412
amount over required parking 250

GENERAL:
- Numbers per lot are subject to slight modification, but will be reviewed by City with Site Plan submittals.
- Refer to Exhibits C (Parking Plan) and D (Maple Street/West Campus Master Plan)
- Included in notes below are explanations for removing some existing parking spaces. Parking will only be removed when replacement parking has been provided and parking counts reflect the campus population.

KEYED NOTES:

* New parking lots are triggered with construction of residential expansion (and/or stadium) - new west lots w/west residences, east lots with east residences (or stadium)

1 Some existing parking lost in this location when Soule Drive becomes pedestrian promenade.
2 The existing parking spaces are for handicap only and (1) RA.
3 Access to lots and pump house from Maple to be removed. Lots to be restriped. Several spaces lost. Refer to Exhibit D.
4 Return chapel plaza to pedestrian-only use when replacement parking is built.
5 Return drive to 2 way traffic when replacement parking is built.
6 Existing lot is restricted for daytime staff only. When observatory is moved, lot is expanded and lighted it will become unrestricted lot.
7 Potential site for parking structure (parking spaces NOT included in summary)
8 Some existing parking will become landscape area when replacement parking is built.
9 Stadium lot to be built with stadium or east residence hall expansion, whichever comes first.

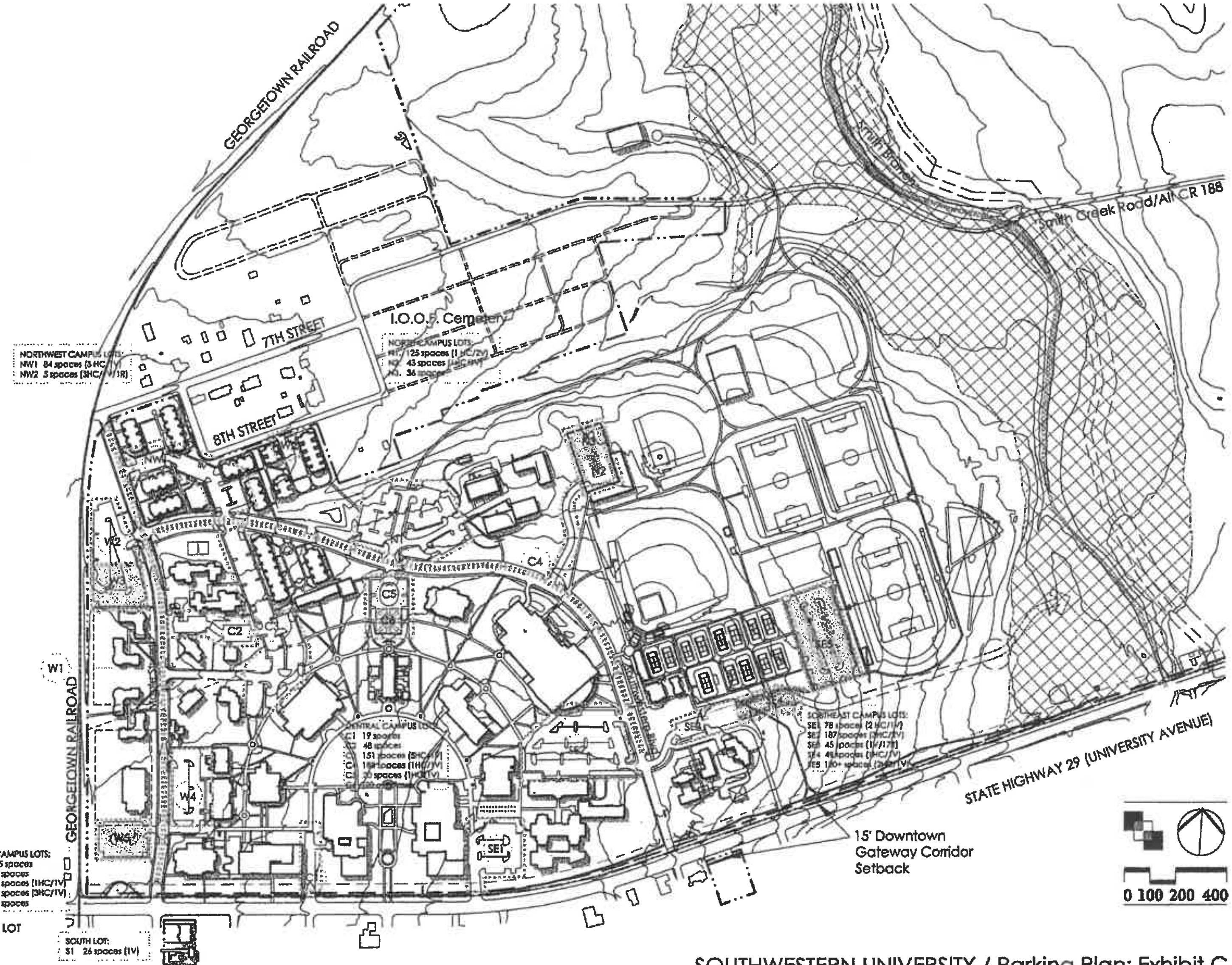


REF. EXHIBIT A

FUTURE PLAN SHOWS
ADDITIONAL 250
SPACES ABOVE SU
SUMMARY
REQUIREMENT

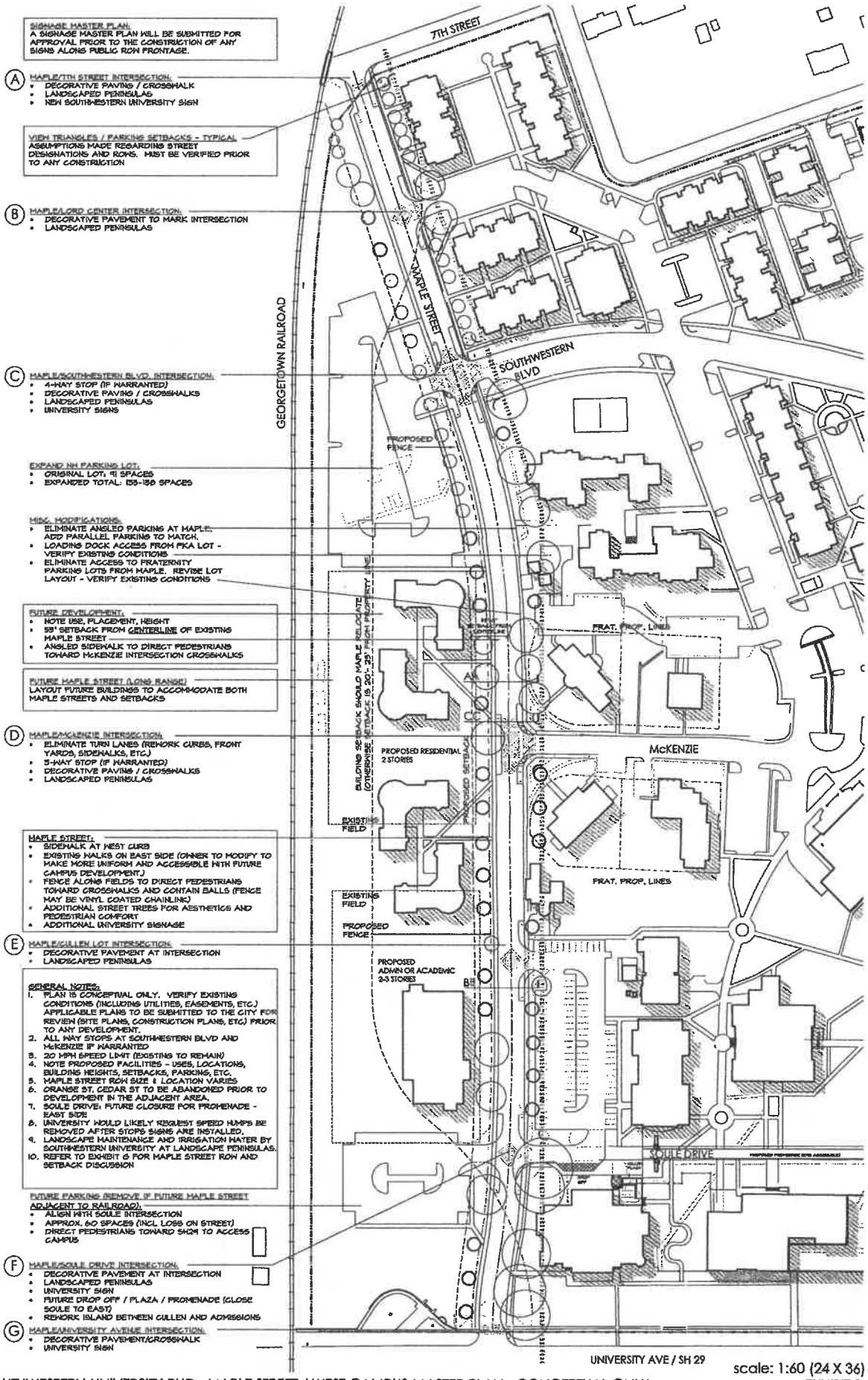
PROPOSED PARKING LOT

EXISTING PARKING LOT



SOUTHWESTERN UNIVERSITY / Parking Plan: Exhibit C

Group Two Architecture
OCTOBER 7, 2010



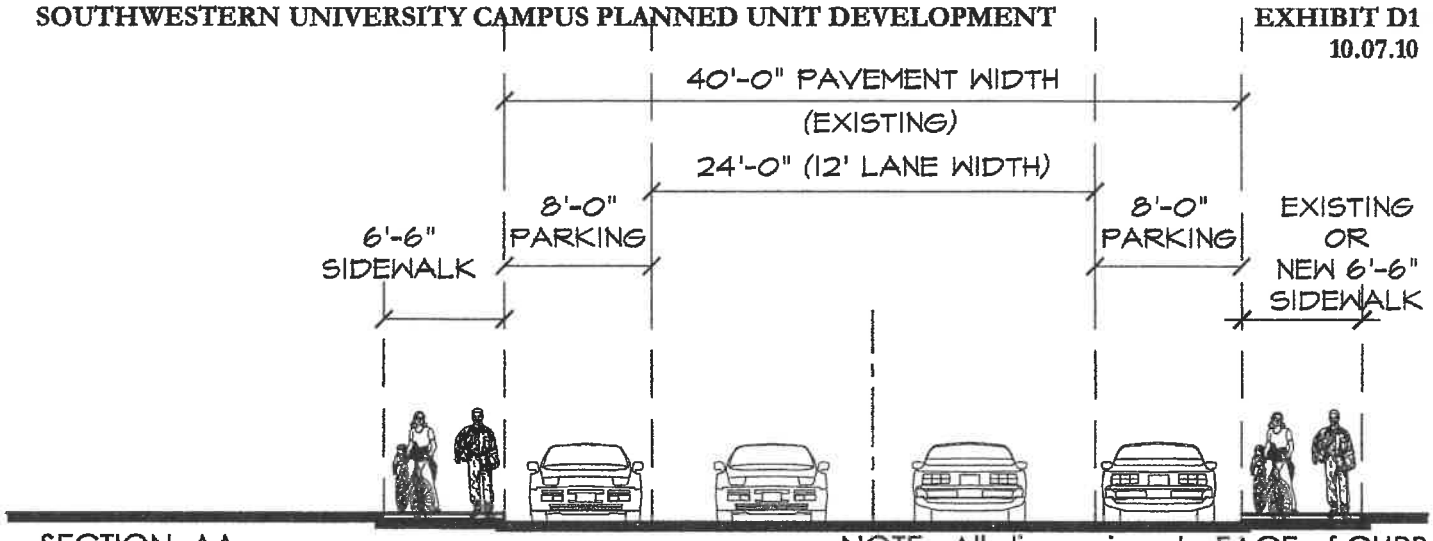
SOUTHWESTERN UNIVERSITY PUD: MAPLE STREET / WEST CAMPUS MASTER PLAN - CONCEPTUAL ONLY

Group Two Architecture

scale: 1:60 (24 X 36)

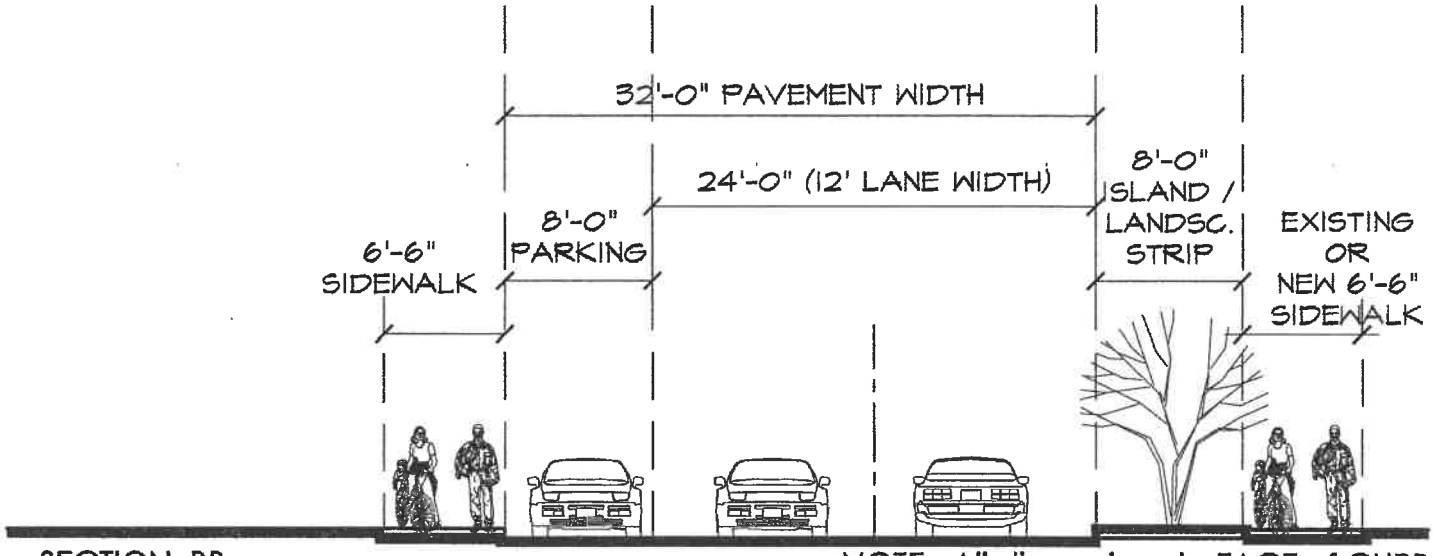
EXHIBIT D

OCTOBER 7, 2010



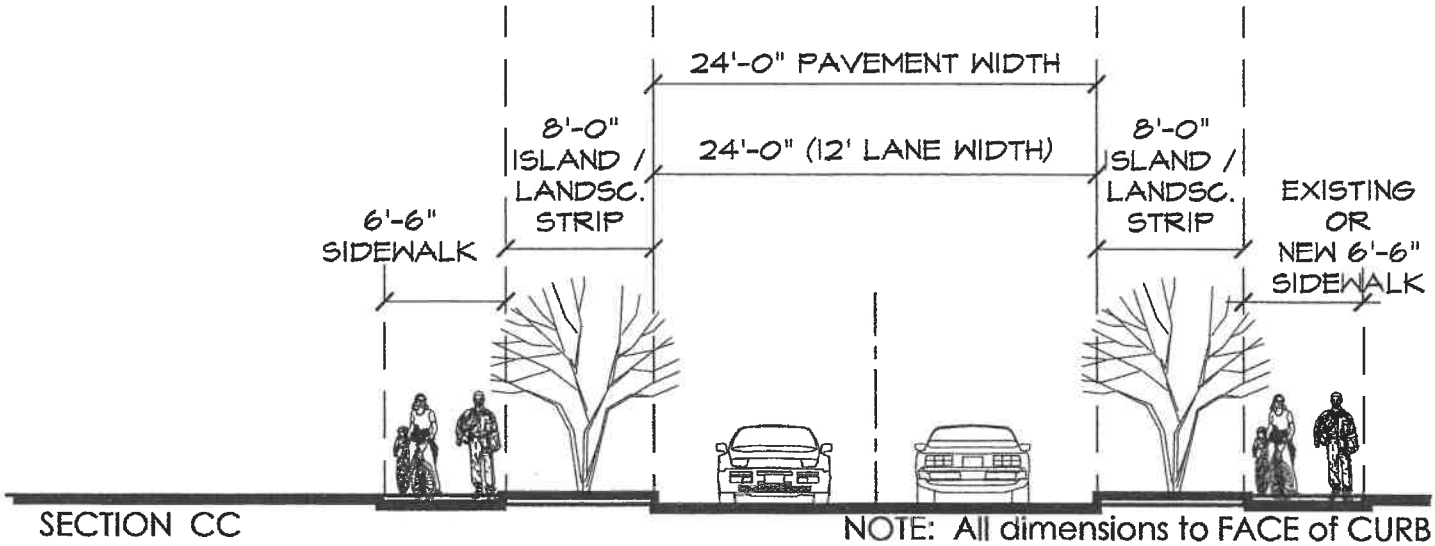
SECTION AA

NOTE: All dimensions to FACE of CURB



SECTION BB

NOTE: All dimensions to FACE of CURB

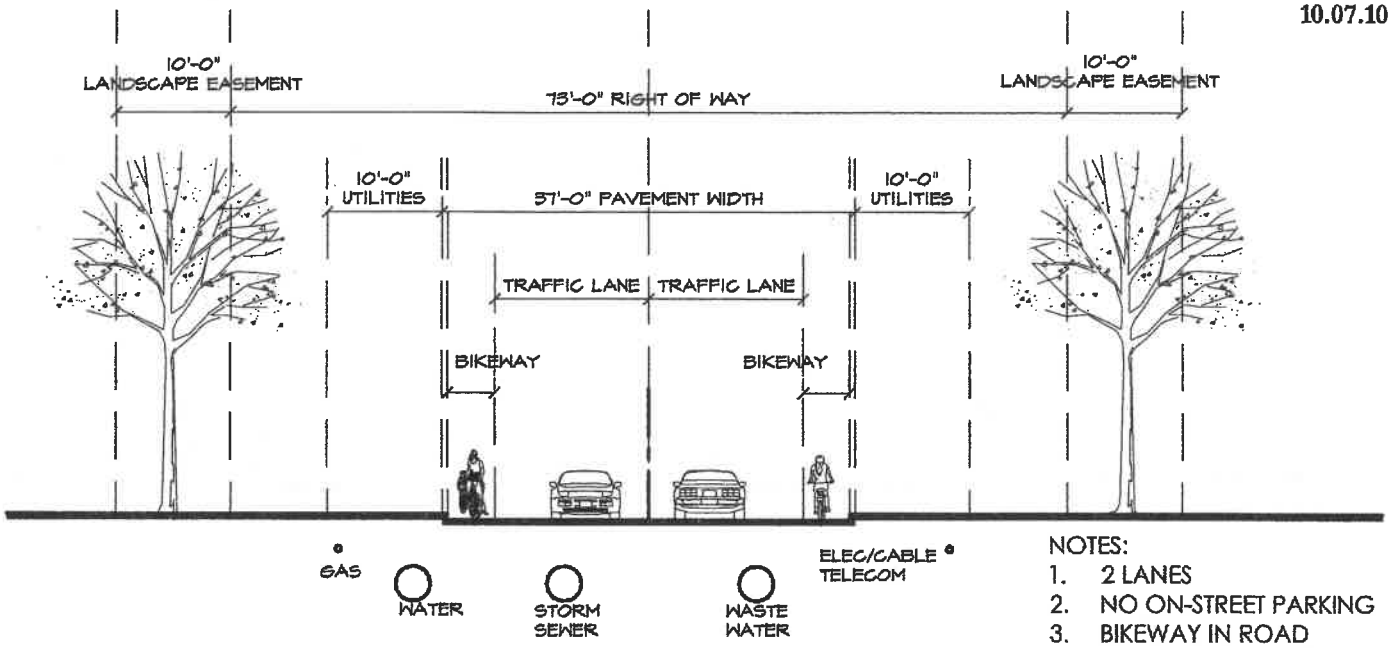


SECTION CC

NOTE: All dimensions to FACE of CURB

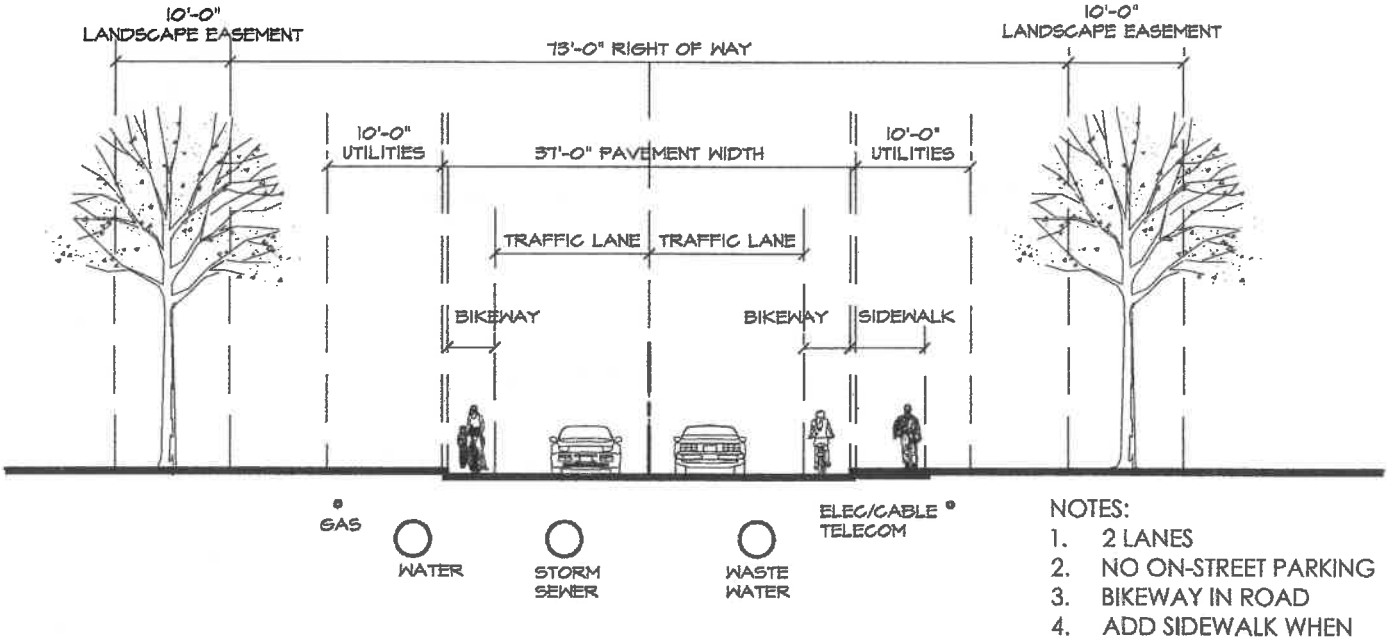
SOUTHWESTERN UNIVERSITY PUD: MAPLE STREET (EXISTING LOCATION) scale: 1:10

Group Two Architecture



NOTES:
1. 2 LANES
2. NO ON-STREET PARKING
3. BIKEWAY IN ROAD
4. NO SIDEWALK (UNTIL DEVELOPMENT)

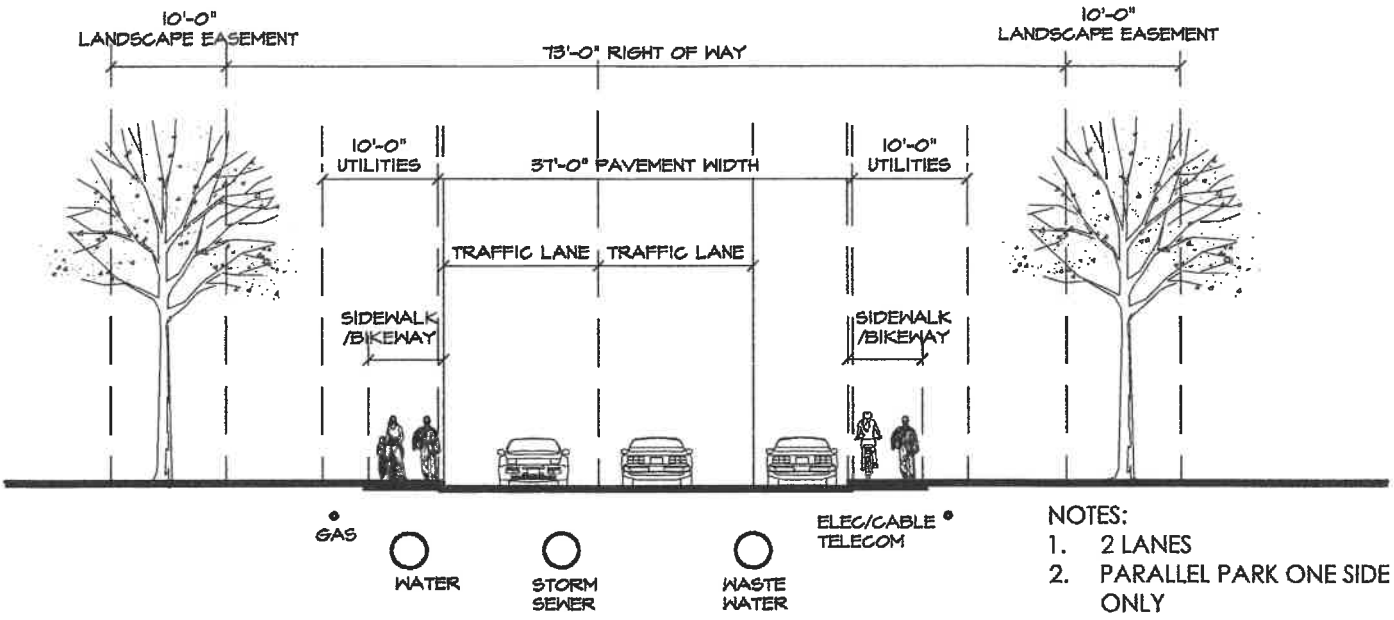
OPTION A: 37' COLLECTOR W/NO ADJACENT DEVELOPMENT



NOTES:
1. 2 LANES
2. NO ON-STREET PARKING
3. BIKEWAY IN ROAD
4. ADD SIDEWALK WHEN DEVELOPED

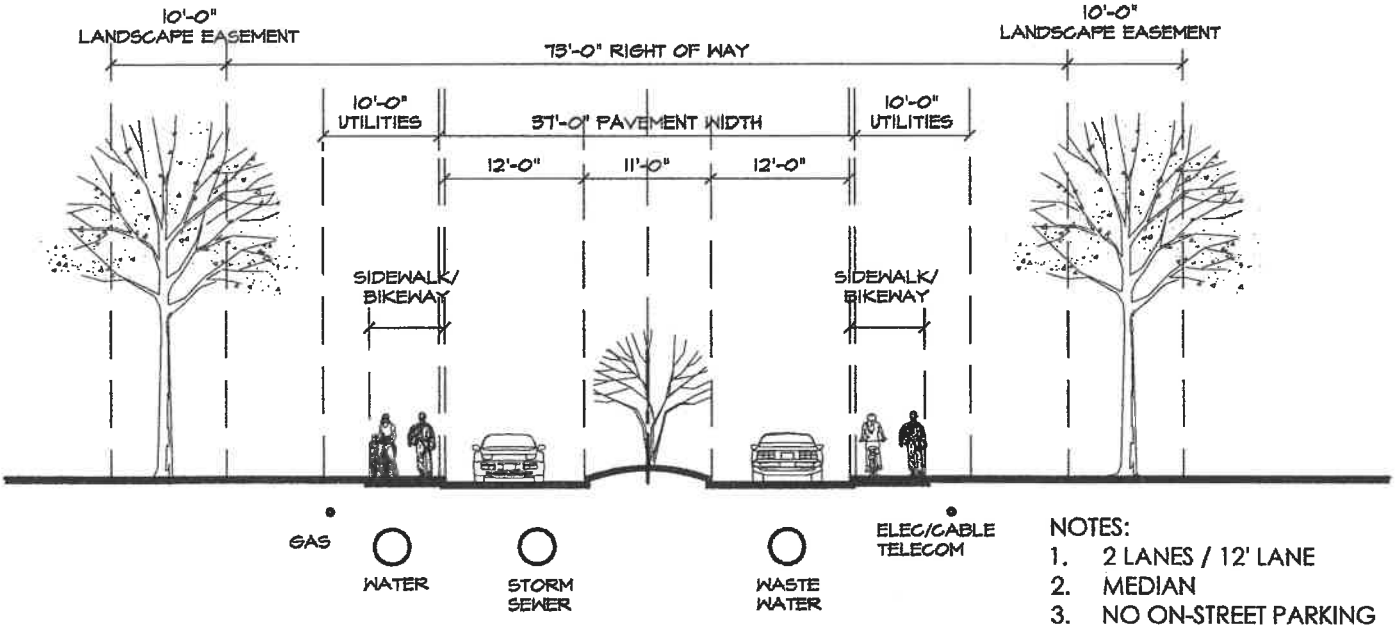
OPTION B: 37' COLLECTOR W/DEVELOPMENT ON ONE SIDE OF ROAD

SOUTHWESTERN UNIVERSITY PUD: 37' WIDE PAVED COLLECTOR OPTIONS scale: 1:16
Group Two Architecture



NOTES:
1. 2 LANES
2. PARALLEL PARK ONE SIDE ONLY
3. SIDEWALK/BIKEWAY SHARED

OPTION C: 37' COLLECTOR W/ON-STREET PARKING ONE SIDE ONLY

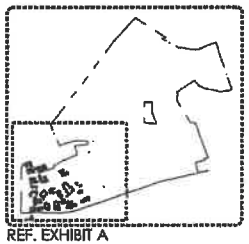


NOTES:
1. 2 LANES / 12' LANE
2. MEDIAN
3. NO ON-STREET PARKING
4. SIDEWAY/BIKEWAY SHARED

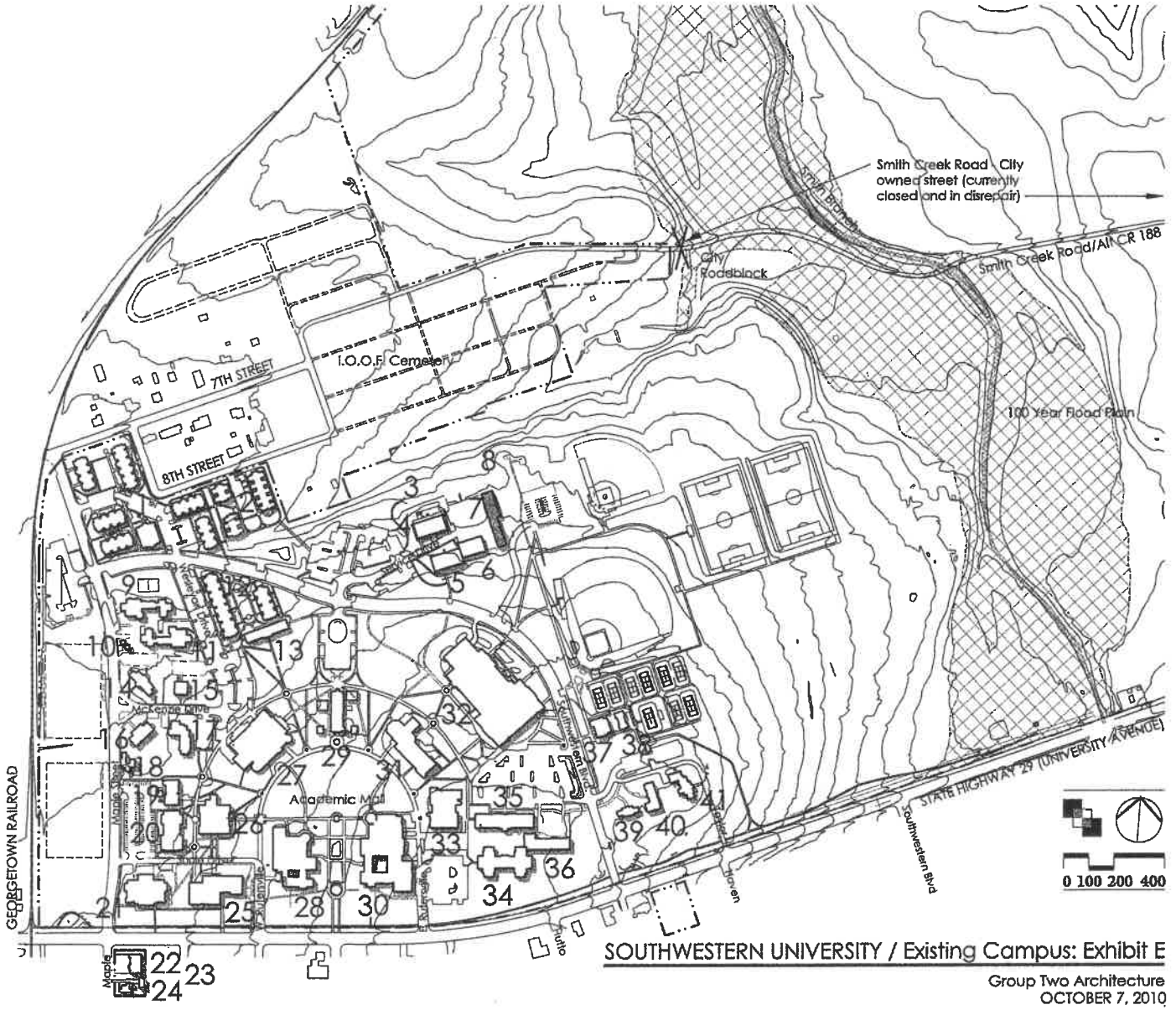
OPTION D: 37' COLLECTOR W/ LANDSCAPE MEDIAN; NO ON-STREET PARKING

SOUTHWESTERN UNIVERSITY PUD: 37' WIDE PAVED COLLECTOR OPTIONS scale: 1:20
Group Two Architecture

Building	Primary use
1 The Grogan & Betty Lord Residential Center	Residential
2 Dorothy Manning Lord Residential Center	Residential
3 Greenhouse	Academic
4 Rufus Franklin Edwards Studio Arts Building	Academic
5 Joe S. Mundy Hall	Academic
6 Physical Plant Building	Facility Services
7 Physical Plant Maintenance/Warehouse	Facility Services
8 Fountainwood Observatory	Academic
8 Observatory (new)	Academic
9 Moody-Sheam Residence Hall	Residential
10 Landrum Pump House	Facility Services
11 Herman Brown Residence Hall	Residential
12 McCombs Residential Center	Residential
13 Martin Ruter Residence Hall	Residential
14 Pi Kappa Alpha House	Residential
15 Kappa Sigma House	Residential
16 Kappa Alpha House	Residential
17 Phi Delta Theta House	Residential
18 Field House	Student Life
19 Boiler Plant	Facility Services
20 Wilhelmina Cullen Admission Center	Admin
21 Hugh Roy and Lillie Cullen Building	Admin
22 Outreach Center	Auxiliary
23 Maple Street Apartment	Residential
24 Maple Street House (1205 Maple)	Admin
25 Fondren-Jones Science Hall	Academic
26 Mood-Bridwell Hall	Academic
27 Red & Charline McCombs Campus Center	Student Life
28 A. Frank Smith, Jr. Library Center	Academic
29 Lois Perkins Chapel	Student Life
30 The Alma Thomas Fine Arts Center	Academic
31 F. W. Olin Building	Academic
32 Corbin J. Robertson Center	Athletics
33 Center for Lifelong Learning	Academic
34 J.E. and L.E. Mabee Residence Hall	Residential
35 Brown-Cody Hall	Residential
36 Ernest L. Kurth Residence Hall	Residential
37 Julie Puett Howry Center	Auxiliary
38 Golf Course Maintenance Building	Auxiliary
39 McCook-Crain Building	Student Life
40 Kyle E. White Building	Academic
41 Turner-Fleming House (President's House)	Residential



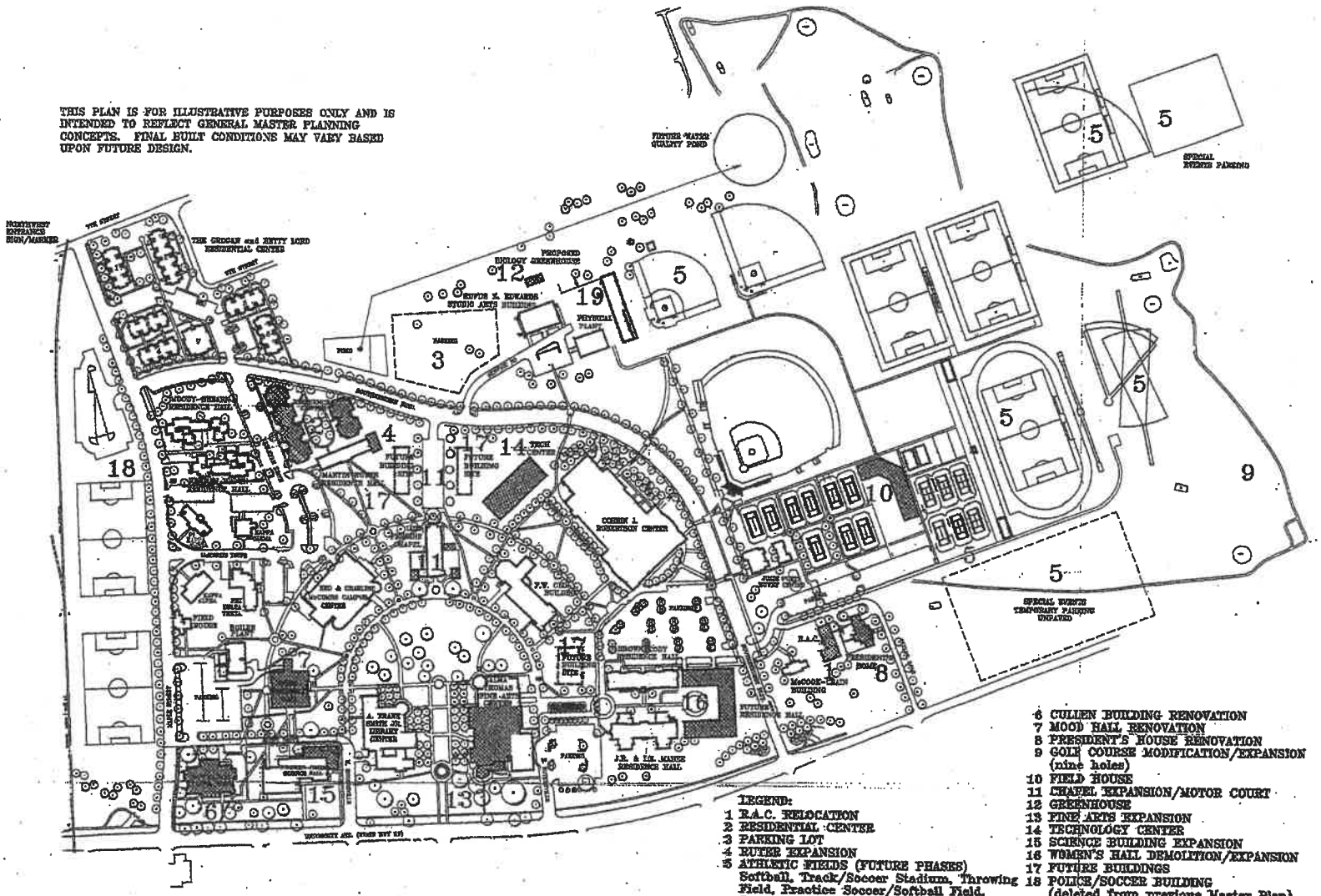
REF. EXHIBIT A



SOUTHWESTERN UNIVERSITY / Existing Campus: Exhibit E

Group Two Architecture
OCTOBER 7, 2010

THIS PLAN IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS INTENDED TO REFLECT GENERAL MASTER PLANNING CONCEPTS. FINAL BUILT CONDITIONS MAY VARY BASED UPON FUTURE DESIGN.



LEGEND:
1 R.A.C. RELOCATION
2 RESIDENTIAL CENTER
3 PARKING LOT
4 RUTER EXPANSION
5 ATHLETIC FIELDS (FUTURE PHASES) Softball, Track/Soccer Stadium, Throwing Field, Practice Soccer/Softball Field, Tennis, Basketball, Volleyball, Parking
6 CULLEN BUILDING RENOVATION
7 MOOD HALL RENOVATION
8 PRESIDENT'S HOUSE RENOVATION
9 GOLF COURSE MODIFICATION/EXPANSION (nine holes)
10 FIELD HOUSE
11 CHAPEL EXPANSION/MOTOR COURT
12 GREENHOUSE
13 FINE ARTS EXPANSION
14 TECHNOLOGY CENTER
15 SCIENCE BUILDING EXPANSION
16 WOMEN'S HALL DEMOLITION/EXPANSION
17 FUTURE BUILDINGS
18 POLICE/SOCCER BUILDING (deleted from previous Master Plan)
19 PHYSICAL PLANT WAREHOUSE

0 50 100 200 400

SOUTHWESTERN UNIVERSITY: Master Plan

Group Two Architecture in association with S.O.M.

For Illustrative Purposes Only

Revised: November 1, 1999

EXHIBIT F

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 Telephone: (512) 347-9000

Date: 7/6/2023 Fax: (512) 306-0974

Representing: aci Group LLC TBPG License No. 50260 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center

Project Information

1. Date(s) Geologic Assessment was performed: 6/7/2023
2. Type of Project:

   ☒ 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 Section 4.0 of report		

** 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" = 40'
   Site Geologic Map Scale: 1" = 40'
   Site Soils Map Scale (if more than 1 soil type): 1" = 250'

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 _____ (#) 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.

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June 2023

Geologic Assessment for the Southwestern University New Residence Halls and Welcome Center Project, located in Williamson County, Texas

1.0 INTRODUCTION

The Texas Commission on the Environmental Quality (TCEQ) regulates activities that have the potential to pollute the Edwards Aquifer through the Edwards Aquifer Protection Program. Projects meeting a certain criterion over the Edwards Aquifer Recharge Zone must submit an Edwards Aquifer Protection Plan (EAPP).

The purpose of this report is to identify all potential pathways for contaminant movement to the Edwards Aquifer and provide sufficient geologic information so that the appropriate Best Management Practices (BMPs) can be proposed in the Edwards Aquifer Protection Plan (EAPP). 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. Per the Rules, the Geologic Assessment must be completed by a Geologist licensed according to the Texas Geoscience Practice Act.

2.0 PROJECT INFORMATION

The approximately 5-acre Southwestern University New Residence Halls and Welcome Center Project, hereafter referred to as the project area or site, is located 1001 E University Ave, in the city of Georgetown, Williamson County, Texas (**Attachment A, Figure 1**). Pedestrian investigations of the 5-acre site were performed on June 7th, 2023, by Marcos Cardenas and Gabriel Nejad, under the supervision of Mark Adams, P.G. with **aci consulting**.

This report is intended to satisfy the requirements for a Geologic Assessment, which shall be included as a component of a Water Pollution Abatement Plan (WPAP) and Sewage Collection System (SCS). The project area is approximately 5 acres in size. The project area is already developed and is currently utilized as the school grounds for Southwestern University, which has proposed infrastructure including the construction of two new residence halls, a new welcome center, and associated infrastructure upgrades (water, wastewater, dry utilities, paving, and drainage). The scope of the

report consists of a site reconnaissance, 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. °

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 SOILS AND GEOLOGY

The following includes a site-specific description of the soils, geologic stratigraphy, geologic structure, and karstic characteristics as they relate to the Edwards Aquifer. Also included in this section is a review of historic aerials for presence of geologic changes or changes to manmade features in bedrock.

Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2023), five soil units occur within the project area (**Attachment A, Figure 2**):

- DnB—Denton silty clay, 1 to 3 percent slopes

The Denton component makes up 88 percent of the map unit. Slopes are 1 to 3 percent. This component is on hillslopes on dissected plateaus. The parent material consists of silty and clayey slope alluvium over residuum weathered from limestone. Depth to a

root restrictive layer, bedrock, lithic, is 22 to 60 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 low. Shrink-swell potential is moderate. 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 the criteria for hydric soils. Hydrologic Soil Group: D.

Krum (6%), Doss (4%) and Anhalt (2%) are minor components that make up the remaining 12% of the map unit. These do not meet the criteria for hydric soils.

- DoC - Doss silty clay, moist, 1 to 5 percent slopes

The Doss component makes up 85 percent of the map unit. Slopes are 1 to 5 percent. This component is on hillslopes on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, paralithic, is 11 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. Shrinkswell potential is moderate. 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 the criteria for hydric soils. Hydrologic Soil Group: D.

Brackett (7%), Bolar (5%), Purves (1%), Denton (1%), and Eckrant (1%), are minor components that make up the remaining 15% of the map unit. These do not meet the criteria for hydric soils.

- HeB - Heiden clay, 1 to 3 percent slopes

The Heiden component makes up 85 percent of the map unit. Slopes are 1 to 3 percent. This component is on ridges on dissected plains. The parent material consists of clayey residuum weathered from mudstone. Depth to a root restrictive layer, densic material, is 40 to 65 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is very high. 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 the criteria for hydric soils. Hydrologic Soil Group: D.

Houston Black (10%) and Ferris (5%) are minor components that make up the remaining 15% of the map unit. These do not meet the criteria for hydric soils.

- HedC2—Heiden clay, 2 to 5 percent slopes, moderately eroded

The Heiden, moderately eroded component makes up 85 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges on dissected plains. The parent material consists of clayey residuum weathered from mudstone. Depth to a root restrictive layer, densic material, is 40 to 65 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is very high. 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 the criteria for hydric soils. Hydrologic Soil Group: D.

Ferris, moderately eroded (8%), and Heiden (7%) are minor soil components that make up the remaining 15% of the map unit. These do not meet the criteria for hydric soils.

- KrB—Krum silty clay, 1 to 3 percent slopes

The Krum component makes up 100 percent of the map unit. Slopes are 1 to 3 percent. This component is on stream terraces on dissected plains. The parent material consists of clayey alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. 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 the criteria for hydric soils. Hydrologic Soil Group: C.

Geologic Stratigraphy

According to the *Geologic Map of the Georgetown Quadrangle, Texas*, two geologic units occur within the project area (**Attachment A, Figure 3**). These units and a description by Collins (1997) are as follows:

- Buda Limestone (Kbu)

"Gravel, sand, silt and clay along streams and rivers; inundated regularly. Gravel is mostly limestone and chert. Along minor drainages, includes undivided low terrace deposits. Includes some local bedrock outcrops that are undivided."

- Del Rio Clay (Kdr)

"Limestone, dolomitic limestone and marl. Massive to thin beds, chert, and fossiliferous; fossils include rudistids. Shallow subtidal to tidal-flat cycles. Honeycomb textures, voids in collapsed breccias, and cavern systems. Accounts for most of the Edwards Aquifer strata. Thickness is between 100ft to 300ft; thins northward."

Site-Specific Stratigraphic Column

Formation	Members	Thickness (Barnes, 1981)
Buda Limestone	N/A	0-45 feet
Del Rio Clay	N/A	40-70 feet

Geologic Structure

The geologic strata associated with the Edwards Aquifer include the Georgetown Limestone Formation of the Washita Group, the Edwards Limestone Group which is interfingered with the Comanche Peak Formation, followed by the Walnut formation, and finally the Glen Rose Formation of the Trinity Group. These Groups dip gently to the southeast and are a characterized by the Balcones Fault Escarpment, a zone of en echelon normal faults downthrown to the southeast. Locally, the dominant structural trend of faults within the area is 15°, as evidenced by the mapped fault patterns (**Attachment A, Figure 4**). Thus, all features that have a trend ranging from 0° to 30° are considered "on trend" and were awarded the additional 10 points in the Geologic Assessment Table.

The natural landscape has been notably impacted and improved over the years for the development of the university. The subject area is fully developed featuring a range of structures, subsurface infrastructure, concrete sidewalks, parking lots, and maintained lawns containing mature oak trees throughout. Distinctions in local geology were not observed due to the disturbance of the natural landscape.

Karstic Characteristics

In limestone landscapes, karst is expressed by erratically developed cavernous porosity from dissolution of bedrock as water combined with weak acids moves through the subsurface. Karst terrains are typical of the Edwards Limestone, occurring across a vast region of Central Texas, including the Balcones Fault Escarpment. The features produced by karst processes include, but are not limited to, sinkholes, solution cavities, solution enlarged fractures, and caves. These features can eventually provide conduits for fluid movement such as surface water runoff, as "point recharge" to the Edwards Aquifer. Faults and manmade features within bedrock can also provide conduits for point recharge in many cases.

According to Edwards Aquifer zone map produced by the TCEQ (2005), the entire subject area is within the northern segment of the Edwards Aquifer Recharge Zone. Thus, all karst features identified as sensitive within the project limits have the potential to be point recharge features into the Edwards Aquifer.

Review of Historic Aerials

Aerial photographs from the years 1941, 1954, 1964, 1976, 1981, 1988, 1995, 2004, 2010, 2016, and 2020 were reviewed for the site and it was determined that the project area has been developed and utilized as the current Southwestern University since before the first aerial dated 1941 (the university was founded in 1840) (**Attachment C**). Fewer buildings are present in the 1941 aerial, with portions in the north utilized as agricultural land. Changes to the structures and roads within the project area begin to appear in the 1964 aerial, with more of the undeveloped land in the north becoming developed. Additional development occurs between the 1964 and 2004 aerial, with the addition of several buildings and parking lots, as well as changes to some of the previously existing buildings. No major changes are visible between the 2004 and 2020 aerials.

5.0 GEORGETOWN WATER QUALITY ORDINANCE

On February 24, 2015, the City of Georgetown (CoGt) passed a finalized ordinance regarding water quality regulations over the Edwards Aquifer Recharge Zone (EARZ), which established setbacks or buffers around springs and streams in the EARZ as well as for occupied salamander sites. **aci consulting** scientists surveyed the subject area as part of the Geologic Assessment (GA) and included obtained pertinent information on

springs, streams, and Georgetown Salamander Critical Habitat Units (CHUs) as part of the assessment.

aci consulting verified that the entire site is contained within the Edwards Aquifer Recharge Zone (EARZ), based on the mapped boundaries. There were no springs or mapped salamander sites or known surface or subsurface CHUs within the subject area. Additionally, there are no mapped flowlines or waterbodies within the site, according to the National Hydrography Dataset (NHD), nor are there any mapped wetlands within the site according to the National Wetland Inventory (NWI). The nearest CHU for the Georgetown Salamander occurs approximately 3 miles northwest of the project area, along the North Fork San Gabriel River.

As there are no springs or waterways located within the project area, there are no buffers or setbacks required as part of the Georgetown Water Quality Ordinance.

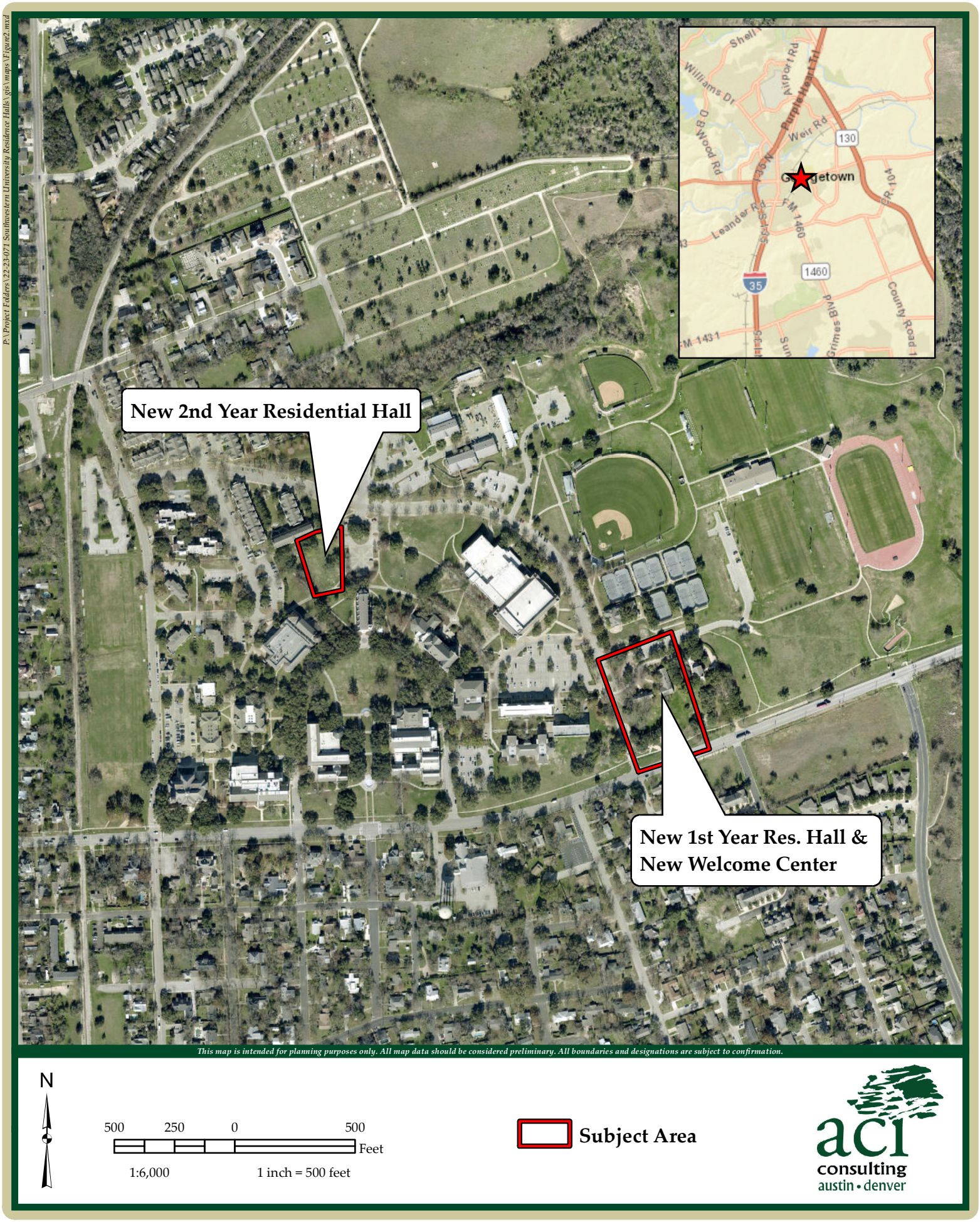
6.0 SUMMARY OF FINDINGS

This report documents the findings of a geologic assessment conducted by **aci consulting** personnel on June 7th, 2023. A map of the observed surface and known subsurface man-made (infrastructure) features in bedrock can be found on **Figure 5**. Due to the extensive number of man-made features in bedrock present within the project area, comprehensive descriptions for each feature have been omitted; however, the utility locations were field verified during the pedestrian investigation conducted on June 7th. Some general examples of several of the man-made features in bedrock can be found in **Attachment B**.

No naturally occurring geologic features were identified during the field investigations. All of the man-made features in bedrock are known to the project engineer and do not require any setbacks. The types of these man-made features include, but are not limited to, manholes, power poles, pad mounted transformers, electrical junction boxes, fire hydrants, water vaults, concrete covers, telecommunication lines and boxes, irrigation lines, wastewater lines, water lines, buried electrical conduits, storm sewer lines and drains, light poles, and buildings.

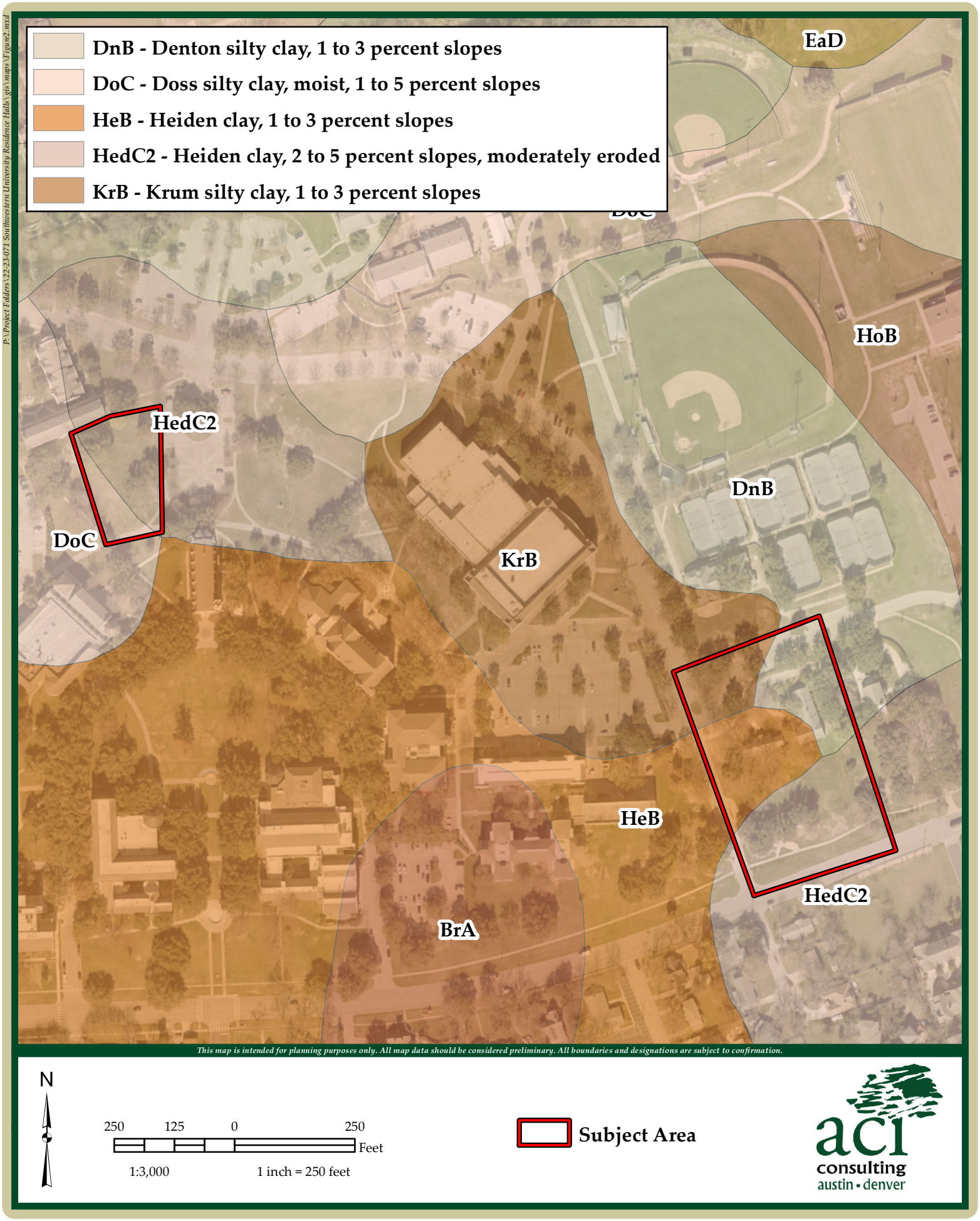
ATTACHMENT A

Site Maps



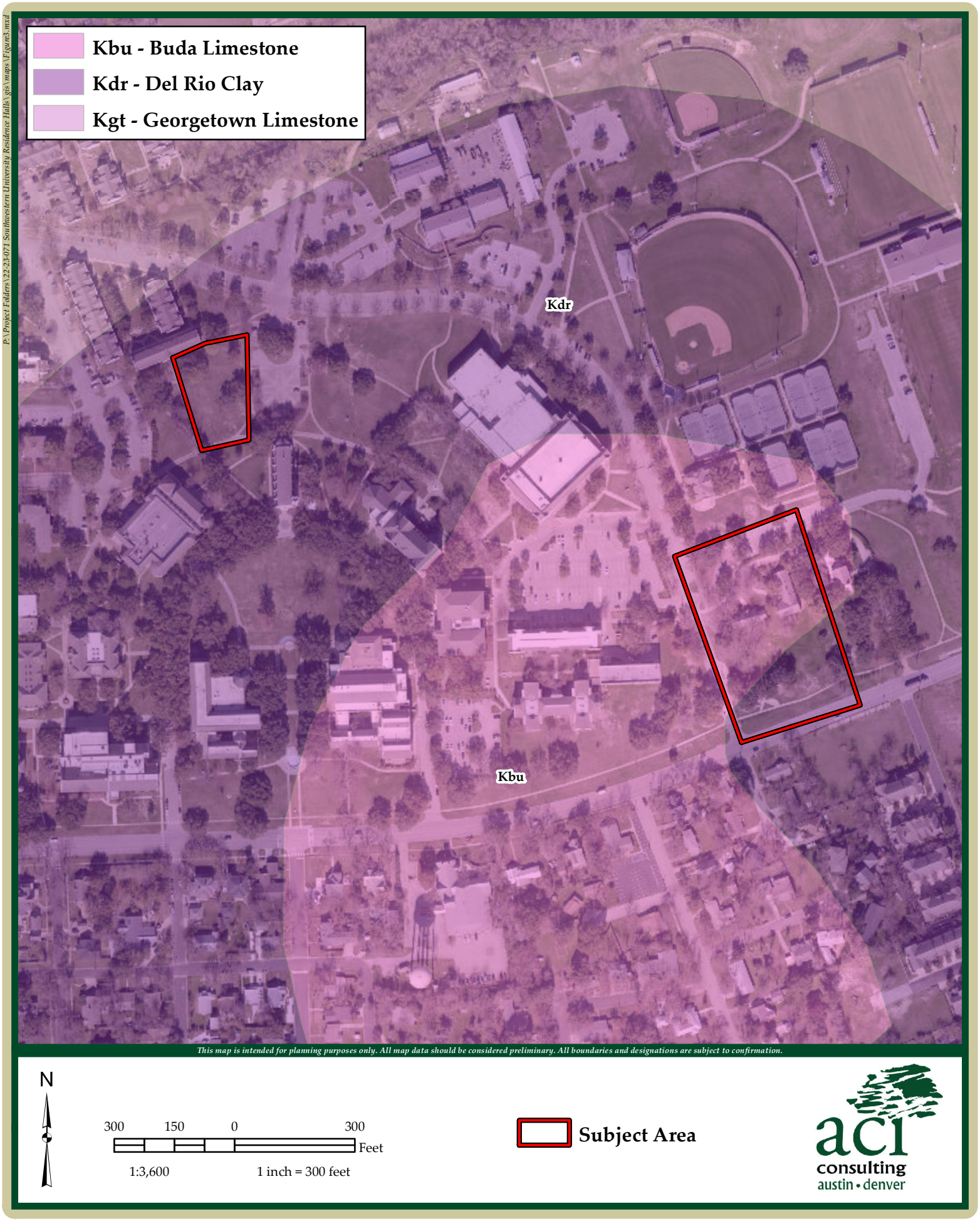
Southewestern University New Res. Halls & Welcome Center **aci Project No.: 22-23-071**

Figure 1: Site Location **July 2023**



Southwestern University New Res. Halls & Welcome Center **aci Project No.: 22-23-071**

Figure 2: Soils **July 2023**



Southwestern University New Res. Hall & Welcome Center **aci Project No.: 22-23-071**

Figure 3: Geology **July 2023**

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ATTACHMENT B

Geologic Table
Geologic and Manmade Feature Map (Figure 5)
Feature Descriptions and Recommendations

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Southwestern University New Residence Halls & Welcome Center

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	
MB			*See Figure 5 for the Utility Layout.*																	

* DATUM: NAD 1983 State Plane 4203

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

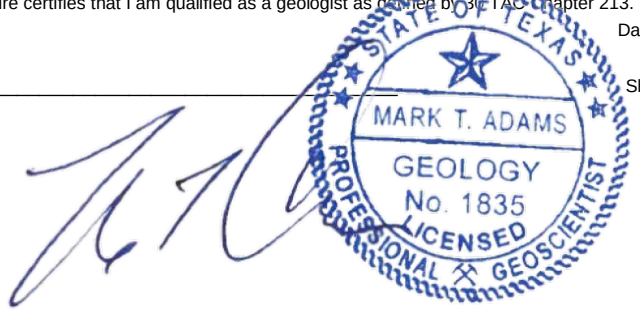
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

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 7/6/2023

Sheet __1___ of __1____



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

P:\Project Folders\22-23-071 Southwestern University Residence Halls\gis\maps\Figure 5.1 (to scale).mxd

Geology (24K)

Kbu - Buda Limestone

Kdr - Del Rio Clay

ELECTRIC BOX

MH

MH

Kbu

225ABC

ELECTRIC BOX

ELECTRIC BOX

EXIST.

TRANSFORMER

50ABC

2" WL

Kdr

STOP

MTC PAD
50A

7/6/2023

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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

N

40 20 0 40 Feet

1:4801 inch = 40 Feet

Subject Area

Water Line
Wastewater Line
Electric
Stormsewer Line

The project area is entirely within the Edwards Aquifer Recharge Zone.
There are no mapped flowlines according to the National Hydrography Dataset (NHD).
There are no mapped waterbodies according to the National Hydrography Dataset (NHD).
There are no mapped wetlands within the project area according to the National Wetland Inventory (NWI).
There are no mapped FEMA Flood Hazard Zones.

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Southwestern University New Residence Hall and Welcome Center
Figure 5 - Geologic Feature Map (Page 1 of 2: New 1st Year Res. Hall & New Welcome Center)

aci Project No.: 22-23-071
July 2023

N

40 20 0 40 Feet

1:4801 inch = 40 Feet

Subject Area

Water Line
Wastewater Line
Electric
Stormsewer Line
Chill Water Supply/Return

The project area is entirely within the Edwards Aquifer Recharge Zone.
There are no mapped flowlines according to the National Hydrography Dataset (NHD).
There are no mapped waterbodies according to the National Hydrography Dataset (NHD).
There are no mapped wetlands within the project area according to the National Wetland Inventory (NWI).
There are no mapped FEMA Flood Hazard Zones.

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Southwestern University New Residence Hall and Welcome Center
Figure 5 - Geologic Feature Map (Page 2 of 2: New 2nd Year Residential Hall)

aci Project No.: 22-23-071
July 2023

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ATTACHMENT C

Historic Aerial Photographs

Date: 2020
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), 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.

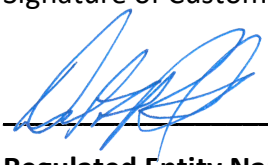
Signature

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 **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: David Platt

Date: 10/6/2023

Signature of Customer/Agent:



Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots: 0
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☐ Commercial
   ☐ Industrial
   ☒ Other: Institutional

2. Total site acreage (size of property): 704.25 (4.41 limits of construction)

3. Estimated projected population: 298 (within limits of construction)

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 – Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	728,361	÷ 43,560 =	16.72
Parking	712,380	÷ 43,560 =	16.35
Other paved surfaces	1,615,142	÷ 43,560 =	37.08
Total Impervious Cover	3,055,883	÷ 43,560 =	70.15

Total Impervious Cover 70.15 **÷ Total Acreage** 704.25 **X 100 =** 9.96**% Impervious Cover**

5. ☒ **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

6. ☒ Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. 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.

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

   Width of R.O.W.: _____ feet.
   L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. 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.

11. ☐ A rest stop will be included in this project.

    ☐ A rest stop will not be included in this project.

12. ☐ 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

13. ☒ Attachment B - 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 the 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

14. The character and volume of wastewater is shown below:

100% Domestic	20,860 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day

TOTAL gallons/day 20,860

15. Wastewater will be disposed of by:

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

☐ **Attachment C - 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):

☐ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

☒ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

☐ The SCS was previously submitted on_____.

☒ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the San Gabriel Wastewater (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 100'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Map Panel Number 48491C0293F effective December 20, 2019.

19. ☒ 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, open space, etc. are shown on the plan.

☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☐ There are 0 (#) 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 §76.

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

21. Geologic or manmade features which are on the site:

☐ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☒ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

23. ☒ Areas of soil disturbance and areas which will not be disturbed.

24. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. ☒ Locations where soil stabilization practices are expected to occur.

26. ☐ Surface waters (including wetlands).

    ☒ N/A

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☒ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

29. ☒ 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.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Attachment A – Factors Affecting Surface Water Quality

The following factors are anticipated to adversely affect surface water and groundwater quality:

- Disturbance of vegetated areas.
- Leaking oil from parked vehicles.
- Malfunctioning wastewater collection system and spill on site.
- Loss of vegetative ground cover due to inadequate watering or mismanagement.
- Over fertilizing vegetative areas.
- The use of roads by automotive traffic and subsequent oil/grease pollutants from normal use.
- The accidental or improper discharge of the following:
    a) Concrete
    b) Cleaning solvents
    c) Detergents
    d) Petroleum based products
    e) Paints
    f) Paint solvents
    g) Acids
    h) Concrete additives

Attachment B – Volume and Character of Storm Water

The drainage from the proposed Southwestern University New Residence Halls and Welcome Center project is divided up into 3 separate basins. The first basin, "Basin A," contains a proposed welcome center and first-year residence hall. The second and third basins, "Basin B1" and "Basin B2," contain only a proposed second-year residence hall. All 3 drainage basins are located within the 704.25 Ac. Southwestern University property boundary. Please see sheets 47-50 in the attached plan set for further clarification on the location and qualities of the drainage basins. The characteristics of the storm water generated by the project's basins are typical of an institutional site. Drainage from Basin A typically flows to the east, while drainage from Basin B1 and Basin B2 typically flows to the west. All drainage basins discharge into Smith Branch and then into the San Gabriel River further downstream. A summary of the drainage calculations is below.

Table 1: Basin A Peak Flow Comparison

	Storm Frequency Peak Flow [cfs]			
Basin	**2 Year**	**10 Year**	**25 Year**	**100 Year**
Existing Basin A	5.2	10.6	13.8	19.1
Proposed Basin A	6.8	12.3	15.5	20.9
Delta	1.6	1.7	1.7	1.8

Table 2: Basin B Peak Flow Comparison

	Storm Frequency Peak Flow [cfs]			
Basin	**2 Year**	**10 Year**	**25 Year**	**100 Year**
Existing Basin B	3.1	6.8	8.9	12.5
Proposed Basin B1	2	4	5.2	7.1
Proposed Basin B2	1.6	3	3.8	5.2
Delta	0.5	0.2	0.1	-0.2

SITE DEVELOPMENT PLAN (2023-50-SDP)
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
CITY OF GEORGETOWN, WILLIAMSON COUNTY, TEXAS

PROJECT INFORMATION

SITE ADDRESS:	911 (2nd Year Residence Hall), 1011 (1st Year Residence Hall), & 1015 (Welcome Center) Southwestern Blvd. Georgetown, TX 78626
OWNER:	Southwestern University 1001 E. University Ave Georgetown, TX 78626 512-863-6511 southwestern.edu
ARCHITECT:	Kirksey Architecture 1023 Springdale Road, Building 11A Austin, Texas 78721 512-640-1071 kirksey.com
MEP ENGINEER:	DBR Engineering Consultants 9990 Richmond Avenue South Building, Suite 300 Houston, Texas 77042 713-914-4333 dbrinc.com
STRUCTURAL ENGINEER:	JQ Engineering 108 Wild Basin Road, Suite 350 Austin, Texas 78746 512-582-5468 jqeng.com info@jqeng.com
CIVIL ENGINEER/SURVEYOR:	Steger Bizzell 1978 S. Austin Avenue Georgetown, TX 78626 512-930-9412 stegerbizzell.com info@stegerbizzell.com
LANDSCAPE ARCHITECT:	Oro Design Group 7708 Rialto Boulevard, Suite 125 Austin, TX 78735 512-765-0314 orodesigngroup.com info@orodesigngroup.com
ZONING DISTRICT:	Southwest University Campus PUD (ORD 2010-46) Base Zoning District RS
ACREAGE:	704.25 AC OVERALL
EXISTING IMPERVIOUS COVER:	69 AC (9.8%)
PROPOSED IMPERVIOUS COVER:	1.15 AC ADDED (0.2%) & 70.15 AC TOTAL (10.0%)
LIMITS OF CONSTRUCTION:	1.78 AC - RESIDENCE HALL & 2.61 AC - WELCOME CENTER
LEGAL DESCRIPTION:	704.25 acres of land, situated in the Antonio Flores Survey, Abstract No. 235 and the William Addison Survey, Abstract No. 21, in Williamson County, Texas.
PROPOSED USE:	Residence Halls and Welcome Center
UTILITY PROVIDERS:	Water, Wastewater, and Electric: City of Georgetown Utility Systems 300-1 Industrial Ave., Georgetown, Texas 78626 512-930-3640 https://gus.georgetown.org/
ORIGINAL DATE:	July 14, 2023
REVISION DATE:	

NOTES:

1. It is the responsibility of the property owner, and successors to the current property owner, to ensure the subject property and any improvements are maintained in conformance with this Site Development Plan.
2. This development shall comply with all standards of the Unified Development Code (UDC), the City of Georgetown Construction Standards and Specifications Manual, the Development Manual, the Southwestern University Campus PUD (ORD 2010-46) and all other applicable City standards.
3. This Site Development Plan shall meet the UDC Stormwater requirements.
4. All signage requires a separate application and approval from the Inspection Services Department. No signage is approved with the Site Development Plan.
5. Sidewalks shall be provided in accordance with the UDC.
6. Driveways will require approval by the Development Engineer of the City of Georgetown.
7. Outdoor lighting shall comply with Section 7.04 of the UDC.
8. Screening of mechanical equipment, dumpsters and parking shall comply with Chapter 8 of the UDC. The screening is shown on the Landscape and Architectural Plans, as applicable.
9. The companion Landscape Plan has been designed and plant materials shall be installed to meet all requirements of the UDC and the Southwestern University Campus PUD (ORD 2010-46).
10. All maintenance of required landscape shall comply with the maintenance standards of Chapter 8 of the UDC.
11. A separate Irrigation Plan shall be required at the time of building permit application.
12. Fire flow requirements of ---- gallons per minute are being met by this plan.
13. Any Heritage Tree noted on this Site Development Plan is subject, in perpetuity, to the maintenance, care, pruning and removal requirements of the Unified Development Code and the Southwestern University Campus PUD (ORD 2010-46).
14. The construction portion of these plans were prepared, sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the construction plans for construction of the proposed project are hereby approved subject to the Standard Construction Specifications and Details Manual and all other applicable City, State and Federal Requirements and Codes.
15. This project is subject to all City Standard Construction Specifications and Details in effect at the time of submittal of the project to the City.
16. Where no existing overhead infrastructure exists, underground electric utility lines shall be located along the street and within the site. Where existing overhead infrastructure is to be relocated, it shall be re-installed underground and the existing facilities shall be removed at the discretion of the Development Engineer.
17. The property subject to this application is subject to the Water Quality Regulations of the City of Georgetown.
18. All electric and communication infrastructure shall comply with UDC Section 13.06.
19. A Geologic Assessment, in accordance with the City of Georgetown Water Quality Regulations, was completed on July 6, 2023. Any springs and streams as identified in the Geologic Assessment are shown herein.
20. No Springs are identified for this site and the Smith Branch and its tributaries are not within 500 feet of the limits of construction of either site.
21. All detention and water quality plans for this project are regulated by the Southwestern University Campus PUD (ORD 2010-46).

Location Map
1" = 2000'

Submitted By:

DAVID L. PLATT, P.E.

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER

2023-10-06
Date

NOTE:
CONTRACTOR IS TO FURNISH A SET OF CONSTRUCTION PLANS BACK TO THE ENGINEER AT THE END OF THE PROJECT WITH ALL DEVIATIONS NOTED IN RED INK ON THE PLAN SHEETS. CONTRACTOR SHALL NOT RECEIVE FINAL PAYMENT UNTIL COMPLETE "AS-BUILT" SET IS RETURNED TO ENGINEER.

ITE TRIP GENERATION:

AM PEAK TRIPS
UNIVERSITY/COLLEGE = 39 TRIPS (29 ENTRY, 10 EXIT)

PM PEAK TRIPS
UNIVERSITY/COLLEGE = 42 TRIPS (13 ENTRY, 29 EXIT)

AVERAGE DAILY TRIPS
UNIVERSITY/COLLEGE = 465 TRIPS (232 ENTRY, 233 EXIT)

BENCHMARKS:

BM #1: APPROX. 10' NORTH OF HIGHWAY 29.
GRID NORTHING: 10204503.60
GRID EASTING: 3136969.47
ELEV: 745.62

BM #2: APPROX. 103' EAST OF SOUTHWESTERN BOULEVARD
GRID NORTHING: 10204849.17
GRID EASTING: 3136715.52
ELEV: 761.91

BM #2: APPROX. 183' SOUTH OF SOUTHWESTERN BOULEVARD
GRID NORTHING: 10205309.97
GRID EASTING: 3135508.15
ELEV: 748.37

Sheet Index

BEFORE YOU DIG Texas811.com
TEXAS ONE-CALL 800-344-8377

NOTE:
CONTRACTOR SHALL UNCOVER AND VERIFY LOCATIONS, BOTH HORIZONTALLY AND VERTICALLY, OF ALL EXISTING UTILITIES ALONG THE PROPOSED ROUTE. IF A CONFLICT EXISTS BETWEEN THE PROPOSED PROJECT AND ANY EXISTING UTILITY, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED.

STEGER BIZZELL
1978 S. AUSTIN AVENUE | GEORGETOWN, TX 78626
512.930.9412 | TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 | WEB STEGERBIZZELL.COM
>>ENGINEERS >>PLANNERS >>SURVEYORS

Warning!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

2"x3" SPACE RESERVED
FOR CITY APPROVAL STAMP

COG Project Number: 2023-50-SDP
Project Number: 22925
Sheet 1 OF 62

REVIEW SET NOT FOR CONSTRUCTION

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\1 COVER SHEET.dwg, 10/6/2023 4:36:09 PM

HANDICAP ACCESSIBILITY NOTES:

1. TEXTURES SHALL CONSIST OF EXPOSED CRUSHED STONE AGGREGATE, ROUGHENED CONCRETE, RUBBER, RAISED ABRASIVE STRIPS, OR GROOVES EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP. SURFACES THAT ARE RAISED, ETCHED, OR GROOVED IN A WAY THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.

2. FOR PURPOSES OF WARNING, THE FULL WIDTH AND DEPTH OF CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.

3. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST 8 FEET WIDE.

4. PARKING SPACES AND AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS.

5. ACCESSIBLE AISLES SHALL BE A MINIMUM OF 5 FEET WIDE. VAN ACCESSIBLE AISLES SHALL BE A MINIMUM OF 8 FEET WIDE.

6. ADDITIONAL INFORMATION ON CURB RAMPS, PARKING SPACES AND AISLES MAY BE FOUND IN THE CURRENT ADDITION OF TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE T.D.L.R.

7. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB. CURB RAMPS ARE GENERALLY INTERPRETED AS ONLY THE PORTION TYING DIRECTLY INTO THE ROADWAY.

8. ALL SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

9. UNDER NO CIRCUMSTANCE, REGARDLESS OF WHAT IS SHOWN IN THESE PLANS, IS THE CONTRACTOR RELIEVED OF HIS SOLE RESPONSIBILITY FOR COMPLIANCE WITH ALL ACCESSIBILITY LAWS AND/OR RULES BY THE ADA, TDLR OR OTHER REGULATORY AGENCY. SEE GENERAL NOTES SHEET FOR ADDITIONAL INFO.

ACCESSIBILITY NOTES

1. Project shall be constructed in full compliance with the Texas Accessibility Standards (TAS) 2012.
2. Slopes in the direction of pedestrian travel shall not exceed 5% (1:20) or have a cross slope greater than 2% (1:48). This shall include routes that cross-vehicular ways including but not limited pedestrian/ vehicular ways such as street intersections.
   A. Exception: Per TAS 405.8 and 68.102 (1) grades at the new sidewalks parallel to the streets shall be equal to, or less than, the street grade. Should the new sidewalks exceed the street grade, and the new sidewalk grades exceed 5% in the direction of travel, ramps complying with TAS 405 are required at these conditions.
3. Curb Ramps:
   A. Curb ramps shall not exceed 8.3% (1:12) in the direction of pedestrian ravel.
   B. Curb ramps flares (wings) shall not exceed 1:10.
   C. Minimum width of a curb ramp is 36".
   D. Top of the curb ramp must be 2% in all directions for an area 36" wide and 48" deep.
   E. When truncated domes are used, the truncated dome system shall extend the full width of the curb ramp and for a minimum depth of 24" at the bottom of the curb ramp.
   F. Returned curb ramps shall only be used where the adjacent surface on one or both sides of the curb ramp do not allow pedestrian travel such as but not limited to stop lights, stop signs and permanently mounted waste receptacles.
4. There shall be no changes in level greater than ¼" on any accessible route or ½" with a 1:2 bevel.
5. Decomposed granite surfaces, or similar Engineer-approved surfaces shall be compacted tight and maintained by the Owner at all times.
6. Provide directional signage using the international symbol of accessibility when not all routes are accessible. Signage shall be placed at the beginning of the route to avoid a patron from proceeding on a non-accessible route.
7. Verify that no plantings or other site elements on circulation paths would be protruding objects based on TAS 307 (protrudes more 4" and is higher than 27" from the surface and less than 80" from the surface).

Contractor shall notify the Engineer before proceeding with any Work, which is in conflict with the Texas Accessibility Standards. Contractor is financially responsible for proceeding with any Work without written direction on any clarification from the Engineer.

FIRE PROTECTION NOTES

1. Approval of this site plan does not imply approval to install underground fire lines. Prior to installation of underground fire lines, a separate permit shall be submitted, Under Ground Fire Line Supply.
2. Backflow protection will be provided in accordance with The City of Georgetown requirements when required. Backflow protection will be installed in accordance with the detail provided in the utility drawings.
3. All private fire lines and what they provide service to will be installed in accordance with NFPA 24 Instillation of Private Service Mains and Their Appurtenances.
4. All tees, plugs, caps, bends, reducers, valves shall be restrained against movement. Thrust blocking and joint restrained will be installed in accordance with NFPA 24.
5. All underground shall remain uncovered until a visual inspection is conducted by The Georgetown Fire Marshal's Office (FMO). All joint restraints and thrust blocking shall be uncovered for visual inspection.
6. All underground shall be flushed per the requirements of NFPA Standard 24 and witnessed by Georgetown FMO.
7. All underground shall pass a hydrostatic test witnessed by Georgetown FMO. All joints shall be uncovered for hydrostatic testing. All piping and attachments subjected to system working pressure shall be tested at 200 psi. or 50 psi in excess of the system working pressure, whichever is greater, and shall maintain that pressure + or - 5 psi for 2 hours.
8. Fences, landscaping, and other items will not be installed within 3 Ft, and where they will obstruct the visibility or access to hydrants, or remote FDCs.
9. License requirements of either RME-U or G. When connecting by underground to the water purveyor's main from the point of connection or valve where the primary purpose of water is for fire protection sprinkler system.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
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/National Sanitation Foundation (ANSI/NSF) Standard 61-G 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 National Sanitation Foundation Seal of Approval (NSF pw-G) 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;

$$Q = \frac{LD\sqrt{P}}{148{,}000}$$

Where:

- 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;

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

Where:

- 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. Projects constructed on or after January 4, 2014 must comply with changes to the Safe Drinking Water Act that reduce 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).

GENERAL CONSTRUCTION NOTES

1. All construction shall be in accordance with the latest City of Georgetown Technical Specifications and Details.

2. Prior to beginning construction, the Owner or his authorized representative shall convene a Pre-Construction Conference between the City of Georgetown, Engineer, Contractor, County Engineer (if applicable), Texas Commission on Environmental Quality Field Office, and any other affected parties. Notify all such parties at least 48 hours prior to the time of the conference and 48 hours prior to beginning construction. Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, the name of the prime contractor and the name and telephone number of the contact person.

3. The Contractor shall give the City a minimum of 48 hours notice before beginning each phase of construction, call 512-930-3555.

4. No blasting will be permitted on this project.

5. Any existing utilities, pavement, curbs, and/or sidewalks damaged or removed will be repaired by the Contractor at his expense before acceptance of the project.

6. The location of any existing water and/or wastewater lines shown on the plans must be verified by the Georgetown Utility Systems Department.

7. Manhole frames, covers, water valve covers, etc., shall be raised to finished pavement grade at the Contractor's expense by a qualified contractor with City inspection. All utility adjustments shall be completed prior to final paving construction.

8. The Contractor is responsible for any damages to any public improvements.

9. Replace all destructed CMP culverts with CMP of equal size.

SEQUENCE OF CONSTRUCTION

Note: Other contractors could be working on this site. Coordinate all activities with the activities of others.

1. Call all affected parties at least 48 hours prior to beginning any construction to schedule a pre-construction conference and secure all required permits. Install TCP and BC in accordance to TxDOT Standard sheets.
2. Install temporary erosion controls prior to any clearing and grubbing. Notify the City of Georgetown when installed.
3. Clear and grub site.
4. Install all utility mains & services.
5. Ensure that all underground utility installations are complete.
6. Complete construction of driveways, parking, and buildings.
7. Complete final site grading and revegetation.
8. Remove and dispose of temporary erosion controls.
9. Complete any necessary final dress-up.

PERMANENT EROSION CONTROL NOTES

1. All disturbed areas shall be restored as noted below:
   1.a. A minimum of six inches of imported sandy loam topsoil or approved equal shall be placed in all drainage channels (except rock) and on all cleared areas.
   1.b. The seeding for permanent erosion control shall be applied over areas disturbed by construction as follows, unless specified elsewhere:
      1.b.a. From September 15 to March 1, seeding shall be with a combination of 1 pound per 1,000 square feet of unhulled Bermuda and 7 pounds per 1,000 square feet of Winter Rye with a purity of 95% with 90% germination.
      1.b.b. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 3 pounds per 1,000 square feet with a purity of 95% with 85% germination.
   1.c. Fertilizer shall be slow release granular or pelleted type and shall have an analysis of 15-15-15 and shall be applied at the rate of 23 pounds per acre once at the time of planting and again once during the time of establishment.
   1.d. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six inches. The irrigation shall occur at ten-day intervals during the first two months. Rainfall occurrences of 1/2 inch or more shall postpone the watering schedule for one week.
   1.e. Mulch type used shall be Mulch, applied at a rate of 1,500 pounds per acre.

TEMPORARY EROSION CONTROL NOTES

1. The Contractor shall install erosion/sedimentation controls and tree protective fencing prior to any site preparation work (clearing, grubbing or excavation).

2. The placement of erosion/sedimentation controls shall be in accordance with the PLANS.

3. Any significant variation in materials or locations of controls or fences from those shown on the approved plans must be approved by the City Engineer.

4. The Contractor is required to inspect all controls and fences at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.

5. Prior to final acceptance, haul roads and waterway crossings constructed for temporary Contractor access must be removed, accumulated sediment removed from the waterway, and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.

6. Field revisions to the EROSION & SEDIMENTATION CONTROL PLANS may be required by the Engineer or field inspector with the Texas Commission on Environmental Quality (TCEQ) during the course of construction to correct control inadequacies. Major revisions must be approved by the TCEQ.

CITY OF GEORGETOWN HERITAGE TREE PROTECTION DURING CONSTRUCTION

1. Prior to the commencement of any development, a tree protection fence constructed of approved materials shall encompass the Critical Root Zone (CRZ) of any Heritage Tree. Said tree protection fence must be maintained throughout the construction process, and must also comply with Chapter 11 of this Code.
2. During construction, no materials including but not limited to excess soil, vehicles, equipment, liquids, trash, or construction debris may be placed inside of the tree protection fence, nor shall the tree protection fence be altered in any way so as to increase the encroachment of the construction.
3. Excavation, grading, soil deposit, impervious covering, drainage and leveling within the CRZ of Heritage Trees is prohibited unless approved by the Urban Forester. Any impervious cover proposed within the CRZ of a Heritage Tree will be reviewed on a case by case basis by the Urban Forester upon field inspections and or plan reviews. In any case, generally no more than 50% of the CRZ of any Heritage Tree can be covered with impervious cover. Any protective fencing being used around Heritage Trees may only be reduced while impervious cover activity is being done. The remainder of the protective fencing must stay intact for the duration of the project.
4. Disposal or depositing of oil, gasoline, chemicals, paints, solvents or other materials is prohibited within the CRZ of Heritage Trees.
5. The attachment of wires, signs and ropes to any Heritage Tree is prohibited.
6. The location of utility service and irrigation lines inside the CRZ of Heritage Trees is only allowed when approved by the Urban Forester. If boring is used to provide underground utility access, the minimum length of the bore shall be the width of the tree's mature canopy. The minimum depth of the bore shall be specified by the Urban Forester, but in no event be less than 24" below the natural grade existing prior to any development activity within the CRZ..
7. Soil disturbance or other injurious and detrimental activity within the CRZ of Heritage Trees is prohibited.
8. At applicant's expense, an ISA Certified Arborist or their employee(s) shall be present whenever activities occur which will pose a potential threat to the health of the Heritage Tree such as pruning, or whenever any work needs to be done within the CRZ of such tree.
9. Should the area within the CRZ become compacted during excavation or grading, the affected area shall be aerated. The Urban Forester shall be notified whenever any Damage or injury occurs to a Heritage Tree during construction so that proper treatment may be administered.
10. The Urban Forester shall be notified whenever any Damage or injury occurs to a Heritage Tree during construction so that proper treatment may be administered.
11. Contact the City of Georgetown's Urban Forester (512-930-6113) when tree protection is installed and prior to any fencing being removed.

CITY OF GEORGETOWN GENERAL NOTES

1. These Construction plans were prepared, sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore based on the engineer's concurrence of compliance, the construction plans for construction of the proposed project are hereby approved subject to the standard Construction Specifications and Details Manual and all other applicable City, State, and Federal Requirements and Codes.
2. This project is subject to all City Standard Specifications and Details in effect at the time of submittal of the project to the City.
3. The site construction plans shall meet all requirements of the approved site plan.
4. Wastewater mains and service lines shall be SDR-26 PVC.
5. Wastewater mains shall be installed without horizontal or vertical bends.
6. Maximum distance between wastewater manholes is 500 feet.
7. Wastewater mains shall be low pressure air tested and mandrel tested by the contractor according to City of Georgetown and TCEQ requirements.
8. Wastewater manholes shall be vacuum tested and coated by the contractor according to City of Georgetown and TCEQ requirements.
9. Wastewater mains shall be camera tested by the contractor and submitted to the City on DVD format prior to paving the streets.
10. Private water system fire lines shall be tested by the contractor to 200 psi for 2 hours.
11. Private water system fire lines shall be ductile iron piping from the water main to the building sprinkler system, and 200 psi C900 DR-18 PVC for all others.
12. Public water system mains shall be 150 psi C900 DR-18 PVC and tested by the contractor at 150 psi for 4 hours.
13. All bends and changes in direction on water mains shall be restrained and thrust blocked.
14. Fire hydrant leads shall be restrained.
15. All water lines are to be bacteria tested by the contractor according to the City standards and specifications.
16. Water and Sewer main crossings shall meet all requirements of the TCEQ and the City.
17. Flexible base material for public streets shall be TXDOT Type A Grade 1.
18. Hot mix asphaltic concrete pavement shall be Type D unless otherwise specified and shall be a minimum of 2 inches thick on public streets and roadways.
19. All sidewalk ramps are to be installed with the public infrastructure.
20. A maintenance bond is required to be submitted to the City prior to acceptance of the public improvements. This bond shall be established for 2 years in the amount of 10% of the cost of the public improvements and shall follow the City format.
21. Record drawings of the public improvements shall be submitted to the City by the design engineer prior to acceptance of the project. These drawings shall be submitted on a flash drive or emailed through a cloud source.
22. Prior to the start of construction, the City shall be provided with a WPAP approval letter, WPAP recordation receipt, NOI, approved SWPPP, and contact information of the compliance inspector.
23. During construction, all compliance inspections and resolutions shall be copied to the City inspector upon receipt.
24. At the completion of construction, Engineer's letter of concurrence and Notice of Termination shall be provided.
25. Prior to construction above the slab, Contractor to provide an all-weather drive surface of asphalt, concrete, or chip seal placed onto base material engineered to withstand 75,000 lbs. An acceptance inspection by Fire Inspections is required. 2012 IFC 503 and D102.1.

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated 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 must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.
4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
5. 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 approved plans and 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.
6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
7. Sediment must be removed from the sediment traps or sedimentation basins not later than when it occupies 50% of the basin's design capacity.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. If portions of the site will have a temporary or permanent 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.
11. The following records shall 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.
12. The holder of any approved Edward Aquifer protection 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 water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

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 Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

TCEQ-0592 (Rev. July 15, 2015)

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

NO.	REVISION	BY	DATE

DLP, KWM — DESIGNED BY: — DATE
AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE | GEORGETOWN, TX 78626
METRO 512.930.9412 | TEXAS REGISTERED ENGINEERING FIRM F-181, TBPLS FIRM No.10003700 | WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

GENERAL NOTES (1 OF 2)

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 2 of 62

File Name: P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\2 GENERAL NOTES (1 OF 2).dwg By: Adam Kish Date: 10/6/2023 4:36 PM

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ORGANIZED SEWAGE COLLECTION SYSTEM 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 Georgetown 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 Plan Sheets 28 to 29, 34, and 35 to 46 of these plans. All sewer pipes joints must meet the requirements in 30 TAC §217.53(c) an 217.65.

7. 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: ASTM D 3034, F679, AWWAC900, CL150.

   The pipe material, the pressure classes, and the SDR and/or DR designations are: PVC SDR-26, PS-115, PVC SDR-26 (PRESSURE-RATED), PS-160.

8. 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.

9. 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.

10. 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.

11. 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 Sheets 28 to 29, 34, and 35 to 46.

    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.

12. 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).

13. Where sewers lines deviate from straight alignment and uniform grade all curvature of sewer pipe must be achieved by the following procedure which is recommended by the pipe manufacturer:
    NOT APPLICABLE.

    If pipe flexure is proposed, the following method of preventing deflection of the joint must be used: NOT APPLICABLE.

    Specific care must be taken to ensure that the joint is placed in the center of the trench and properly bedded in accordance with 30 TAC §217.54.

14. 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 laterals is shown in the detail on Plan Sheet 45. (For potential future laterals).

    The private service lateral stub-outs must be installed as shown on the plan and profile sheets on Plan Sheets 28 to 29, 34, and 35 to 30 and marked after backfilling as shown in the detail on Plan Sheet 44.

15. 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.

16. 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).

17. 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:

    17.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:

    17.a.1. Low Pressure Air Test.

    17.a.1.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.

    17.a.1.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.

    17.a.1.B.a. A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the pipe.

    17.a.1.B.b. 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 $$T = \frac{0.085 \times D \times K}{Q}$$

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

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 (IN)	MINIMUM TIME (SEC)	MAXIMUM LENGTH FOR MINIMUM TIME (FT)	TIME FOR LONGER LENGTH (SEC/FT)
6	340	398	0.8550
8	454	298	1.5200
10	567	239	2.3740
12	680	199	3.4190
15	850	159	5.3420
18	1020	133	7.6930
21	1190	114	10.4710
24	1360	100	13.6760
27	1530	88	17.3090
30	1700	80	21.3690
33	1870	72	25.8560

17.a.1.C. An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.

17.a.1.D. 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.

17.a.1.E. 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.

17.a.1.F. A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.

17.a.2. Infiltration/Exfiltration Test.

17.a.2.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.

17.a.2.B. An owner shall use an infiltration test in lieu of an exfiltration test when pipes are installed below the groundwater level.

17.a.2.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.

17.a.2.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.

17.a.2.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.

17.b. If a gravity collection pipe is composed of flexible pipe, deflection testing is also required. The following procedures must be followed:

17.b.1. For a collection pipe with inside diameter less than 27 inches, deflection measurement requires a rigid mandrel.

17.b.1.A. Mandrel Sizing.

17.b.1.A.a. 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.

17.b.1.A.b. 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.

17.b.1.A.c. All dimensions must meet the appropriate standard.

17.b.1.B. Mandrel Design.

17.b.1.B.a. A rigid mandrel must be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed.

17.b.1.B.b. A mandrel must have nine or more odd number of runners or legs.

17.b.1.B.c. A barrel section length must equal at least 75% of the inside diameter of a pipe.

17.b.1.B.d. Each size mandrel must use a separate proving ring.

17.b.1.C. Method Options.

17.b.1.C.a. An adjustable or flexible mandrel is prohibited.

17.b.1.C.b. A test may not use television inspection as a substitute for a deflection test.

17.b.1.C.c. 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.

17.b.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.

17.b.3. A deflection test method must be accurate to within plus or minus 0.2% deflection.

17.b.4. An owner shall not conduct a deflection test until at least 30 days after the final backfill.

17.b.5. Gravity collection system pipe deflection must not exceed five percent (5%).

17.b.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.

18. All manholes must be tested to meet or exceed the requirements of 30 TAC §217.58.

19. 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.

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS

MANHOLE TESTING

All manholes must pass a leakage test. 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.

HYDROSTATIC TESTING

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. To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water and maintain the test for at least one hour. A test for concrete manholes may use a 24 hour wetting period before testing to allow saturation of the concrete.

VACUUM TESTING

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. No grout must be placed in horizontal joints before testing. Stub outs, manhole boots and pipe plugs must be secured to prevent movement while a vacuum is drawn. 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. 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. There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test. A test does not begin until after the vacuum pump is off. A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is a least 9.0 inches of mercury.

ADDITIONAL WASTEWATER NOTES

1. If a conflict exists between the various documents, the documents will take precedence in the following order:
   a. Municipal Utility Specifications
   b. Change Orders
   c. Addenda Issue During Bidding
   d. Construction Plans
   e. Project Specifications

2. The following pipe diameters, pipe material and national standard specifications are proposed for this project:

PIPE DIAMETER (IN)	LINEAR FEET (FT)	PIPE MATERIAL	NATIONAL STANDARD FOR PIPE MATERIAL	NATIONAL STANDARD FOR PIPE JOINTS
6	1383	PVC SDR-26	ASTM D 3034	ASTM D 3212
6	80	PVC SDR-26 (PRESSURE RATED)	ASTM D 2241	ASTM D 3212

3. Watertight, size on size resilient connectors conforming to ASTM C 923 must be used for connecting pipe to manholes.

4. The bedding class for each diameter of flexible pipe and each flexible pipe material is as follows:

PIPE DIAMETER (IN)	PIPE MATERIAL	BEDDING CLASS
6	PVC SDR-26/PVC SDR-26 (PRESSURE RATED)	1B

5. Brick manhole construction is not allowed. Use of brick for adjusting manhole covers to grade is also prohibited.

6. All manholes shall be of precast concrete construction.

7. The structural integrity of the collection line due to high soil P.I.'s will require the bedding around the pipe to be 6" minimum below the pipe, 6" minimum on each side of the pipe, and 12" minimum above the pipe.

8. If faults, caverns, or subsidence are discovered during construction, construction shall be halted to allow the features to be inspected by the design engineer or a geological or geotechnical engineer. Based on this inspection, revisions approval to the design may be required.

9. The trench walls shall be vertical to at least one foot above the pipe.

10. The trench backfill shall be free of stones greater than 6 inches in diameter and free of organic or any other unstable material.

11. Manholes shown on the plans with sealed and gasketed covers are provided as protection against inflow for those manholes which lie 1) within a 100 year flood plain, 2) lie with a drainageway, 3) lie within a street subject to carrying drainage flows, and 4) additional locations as determined necessary by the Engineer.

12. No drop connections are proposed in these plans.

13. The minimum allowable tensile strength and cell class for each flexible pipe shall be as follows:

PIPE MATERIAL	TENSILE STRENGTH	CELL CLASS (PVC ONLY)
SDR-26	7,000	12454-B
PS-115	7,000	12454-B

14. All gravity lines utilizing flexible pipe must be tested for deflection by pulling a rigid mandrel through the installed pipe. The test must be conducted at least 30 days after placement and compaction of final backfill. No pipe shall exceed a deflection of 5 rigid mandrel shall be used to measure deflection. The test must be performed without mechanical pulling devices. The mandrel's minimum outside diameter is 95 inside diameter. The mandrel must have an odd number of runners, totaling nine or more. The barrel section of the mandrel must have a length at least 75 inside diameter. A TV test cannot substitute for the deflection test.

15. A leakage test is required for all gravity lines. For line that is not horizontally curved, a hydrostatic test and/or a low pressure air test must be performed on all proposed gravity sanitary sewer collection piping. These tests must comply with Section 217.57(a) of the TCEQ's rules. The contractor shall have the option of utilizing either a hydrostatic test or a low pressure air test.

16. Manholes must be tested for leakage. Manholes will be tested with a hydrostatic test, or with a vacuum test, Contractor's Option.

17. The hydrostatic manhole test shall comply with the test requirements detailed in Section 217.58(b)(1) of the TCEQ's rules.

18. Each manhole shall be tested immediately after assembly and prior to backfilling. Manholes which have been backfilled shall either be excavated to expose the entire exterior prior to vacuum testing or the manhole shall be tested for leakage by means of a hydrostatic test.

19. All lift holes and exterior joints shall be plugged with an approved non-shrink grout.

20. No grout shall be placed in horizontal joints before testing.

21. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole.

22. Stubouts, manhole boots and pipe plugs shall be secured to prevent movement while the vacuum is drawn.

23. A minimum 60-inch/lb torque wrench shall be used to tighten the external clamps that secure the test cover to the top of the manhole.

24. The test head shall be placed at the inside of the top of the cone section and the seal inflated in accordance with the manufacturer's recommendation.

25. A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to 9 inches of mercury. The manhole shall pass if the time is greater than 2 minutes. If the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is still being drawn. If the manhole fails a second time, repairs should again be made and the manhole shall be tested by means of a hydrostatic test which complies with Section 217.58(b)(1) of the TCEQ's rules. If any manhole fails the hydrostatic test, after failing the vacuum test twice, the contractor should consider replacing that manhole. If the contractor chooses to attempt to repair that manhole, the manhole must be retested by means of the hydrostatic test outlined in Section 217.58(b)(1) of the TCEQ's rules, until it passes.

26. Inspection must be provided during critical phases of construction by a qualified inspector under the direction of a P.E. Critical phases of construction are deemed at a minimum to include testing of pipe and manholes for leakage, testing of flexible pipe for installed deflection, and any other as directed by the City. The City and design engineer shall provide inspection as appropriate.

27. TCEQ approval letters for plans and specifications review contain the requirement that once the project is completed, a P.E. registered in the state of Texas must certify that the construction was performed substantially in accordance with the approved plans and specifications. If flexible pipe was installed, a P.E. must also certify that all pipe was subjected to and passed the required deflection test. The design engineer, with concurrence of the City, will certify the installation.

28. The project plans and specifications must ensure that the pipe installation will adhere to the minimum separation distances allowed by 217.53 (d), TCEQ's rules.

    Separation Distances.
    The following rules apply to separation distances between potable water and wastewater treatment plants, and waterlines and sanitary sewers.

    (a) Water line/new sewer line separation. When new sanitary sewers are installed, they shall be installed no closer to waterlines than nine feet in all directions. Sewers that parallel waterlines must be installed in separate trenches. Where the nine foot separation distance cannot be achieved, the following guidelines will apply:
    (b) SDF

    (1) Where a sanitary sewer parallels a waterline, the sewer shall be constructed of cast iron, ductile iron or PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi. The vertical separation shall be a minimum of two feet between outside diameters and the horizontal separation shall be a minimum of four feet between outside diameters. The sewer shall be located below the waterline.
    (2) Where a sanitary sewer crosses a waterline and the sewer is constructed of cast iron, ductile iron or PVC with a minimum pressure rating of 150 psi, an absolute minimum distance of 6 inches between outside diameters shall be maintained. In addition the sewer shall be located below the waterline where possible and one length of the sewer pipe must be centered on the waterline.
    (3) Where a sewer crosses under a waterline and the sewer is con- structed of ABS truss pipe, similar semi-rigid plastic composite pipe, clay pipe or concrete pipe with gasketed joints, a minimum two foot separation distance shall be maintained. The initial backfill shall be cement stabilized sand (two or more bags of cement per cubic yard of sand) for all sections of sewer within nine feet of the waterline. This initial backfill shall be from one quarter diameter below the centerline of the pipe to one pipe diameter (but not less than 12 inches) above the top of the pipe.
    (4) Where a sewer crosses over a waterline all portions of the sewer within nine feet of the waterline shall be constructed of cast iron, ductile iron, or PVC pipe with a pressure rating of at least 150 psi using appropriate adapters. In lieu of this procedure the new conveyance may be encased in a joint of 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 5 feet intervals with spacers or be filled to the springline with washed sand. The encasement pipe should be centered on the crossing and both ends sealed with cement grout or manufactured seal.

    b) Water line/manhole separation. Unless sanitary sewer manholes and the connecting sewer can be made watertight and tested for no leakage, they must be installed so as to provide a minimum of nine feet of horizontal clearance from an existing or proposed waterline. Where the nine foot separation distance cannot be achieved, a carrier pipe as des- cribed in subsection (a)(4) of this section may be used where appropriate.

The separation distance between any unknown water lines which are discovered during the installation phase of the project, and, the gravity sanitary sewer pipe which will be installed, shall be sufficient to comply with the minimum separation distances allowed by 217.53(d) of the TCEQ's rules as stated above.

29. AN EROSION AND SEDIMENTATION CONTROL PLAN is included with these plans. These provisions are intended to control erosion and sedimentation due to runoff during construction. These provisions must be installed prior to any other construction activities.

30. It is the intent of this project that portable ladders be used to access manholes during construction by the Contractor as well as for maintenance purposes after construction is complete by the City.

31. It is the intent of this project that personal gas detectors are required for wear by all personnel whose jobs require entering enclosed spaces (such as manholes and lift stations) capable of accumulations of hydrogen sulfide or other harmful gases. It shall be the responsibility of the Contractor to ensure these detectors are provided to the appropriate personnel during the construction of this project. It shall be the responsibility of the City to ensure these detectors are provided to the appropriate personnel during the maintenance of this project after construction.

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

NO.	REVISION	BY	DATE

DLP, KWM — DESIGNED BY: — DATE
AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS · DAVID L. PLATT · 115964 · LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE, GEORGETOWN, TX 78626
METRO 512.930.9412 | TEXAS REGISTERED ENGINEERING FIRM F-181, TBPLS FIRM No.10003700 | WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

GENERAL NOTES (2 OF 2)

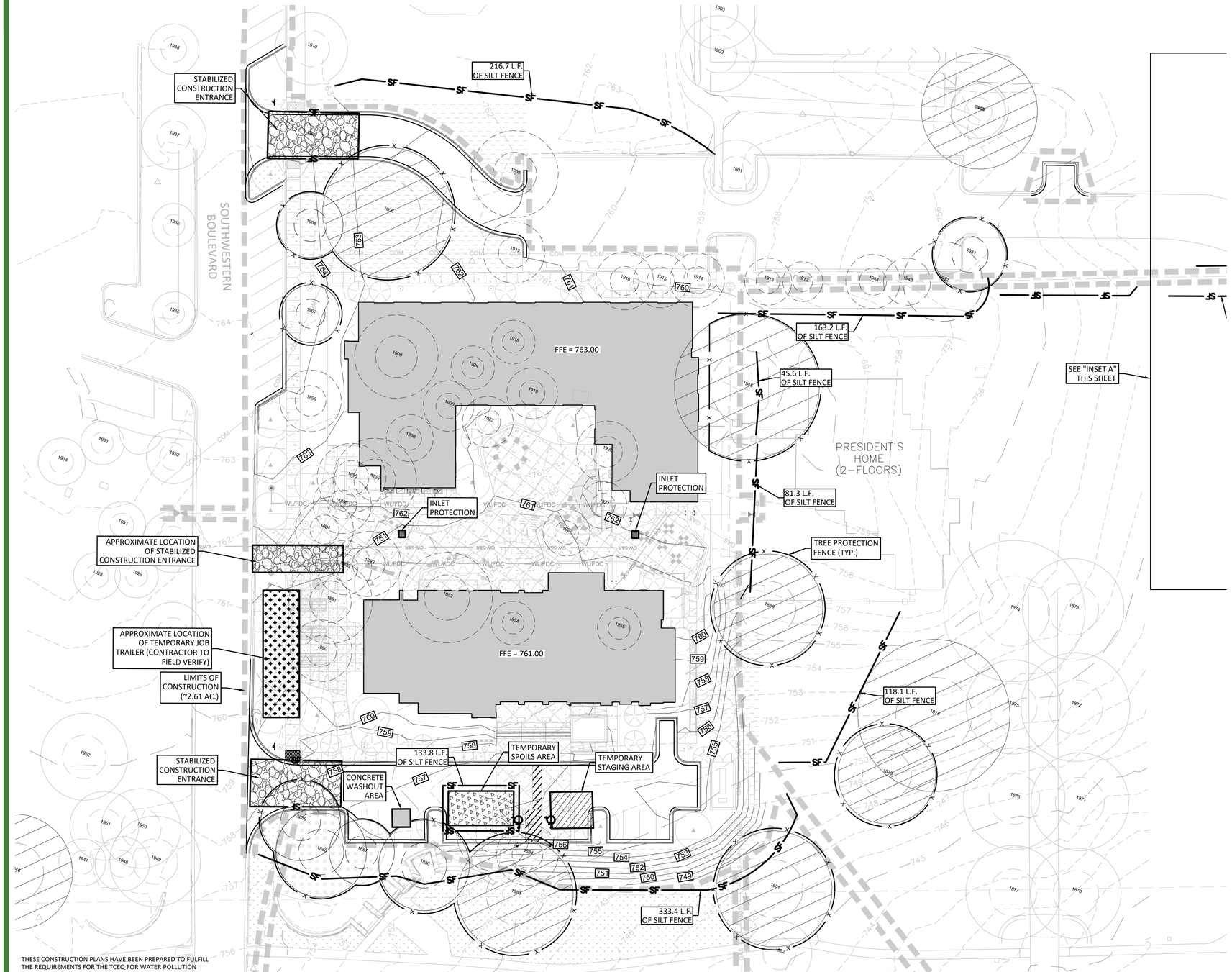
for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

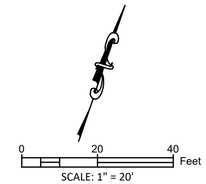
Project No: 22925

SHEET 3 of 62

File Name: P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\3 GENERAL NOTES (2 OF 2).dwg By: Adam Kish Date: 10/6/2023 4:36 PM

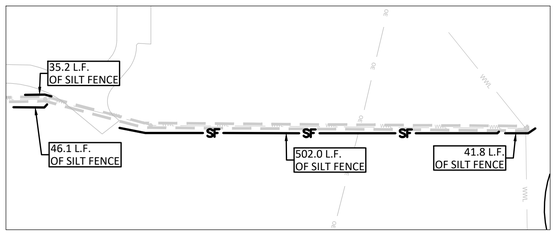
P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\3 GENERAL NOTES (2 OF 2).dwg, 10/6/2023 4:36:30 PM





LEGEND

- SF — SILT FENCE
- X — TREE PROTECTION
- LIMITS OF CONSTUCTION
- 123 — EXISTING CONTOUR
- 123 — PROPOSED CONTOUR
- PROTECTED TREE TO BE REMOVED
- HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED WITH TREE PROTECTION
- PROTECTED TREE TO BE PRESERVED WITH TREE PROTECTION
- ROCK BERM
- INLET PROTECTION



INSET A
SCALE: 1" = 100'

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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DLP, KWM — DESIGNED BY: — DATE
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CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS — DAVID L. PLATT — 115964 — LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

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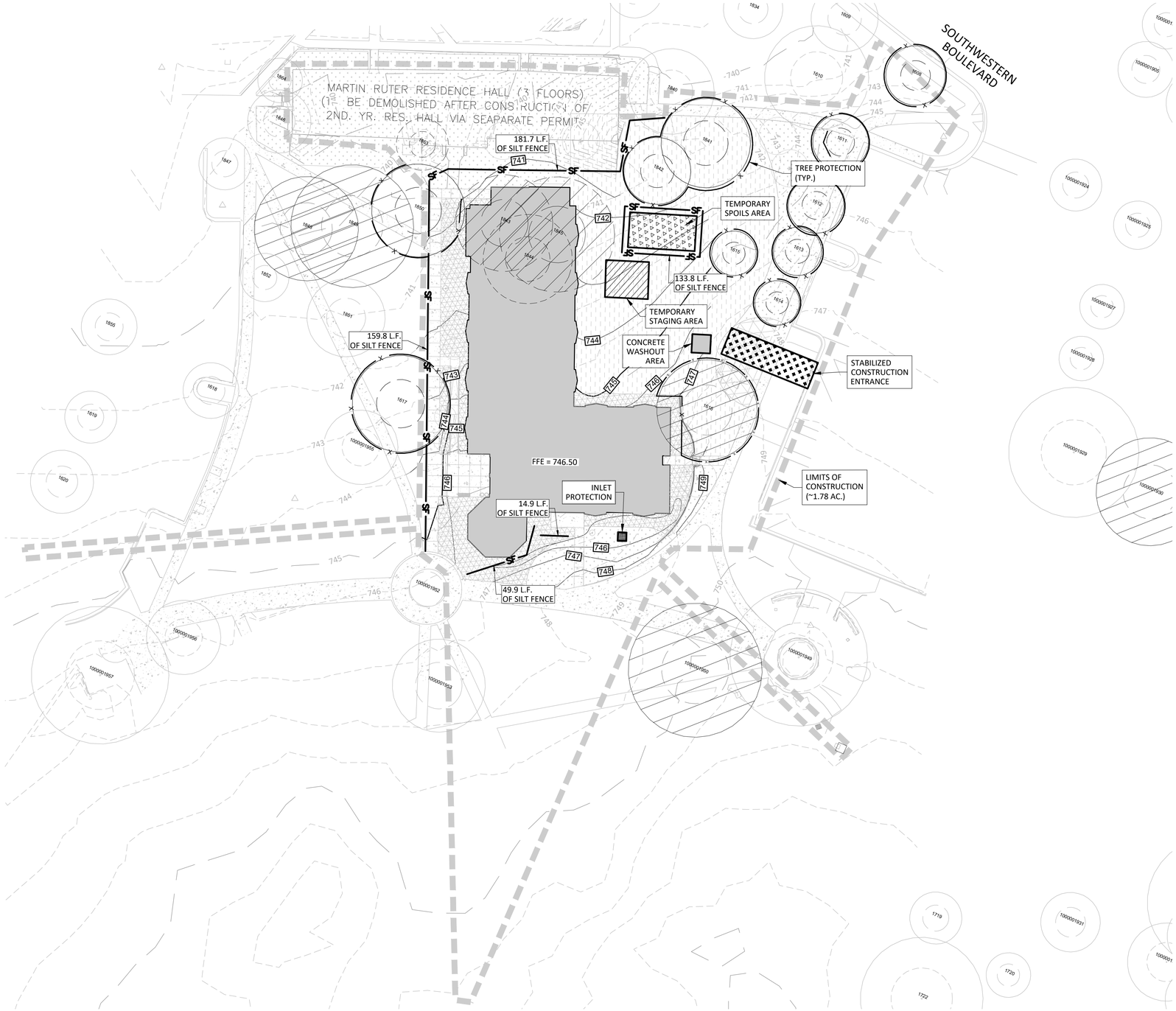
EROSION & SED. CONTROL PLAN - WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 4 of 62



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2023-50-SDP

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

NO.	REVISION	BY	DATE

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AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

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SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

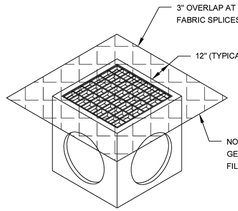
EROSION & SED. CONTROL PLAN - 2ND YR. RES. HALL

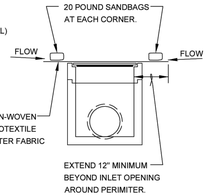
for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 5 of 62

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\5 EROSION & SEDIMENTATION CONTROL PLAN - RESIDENCE HALL.dwg, 10/6/2023 4:37:19 PM





NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.
4. AREA INLET PROTECTION MATERIAL SHALL BE TRENCHED AT LEAST A FOOT DEEP AROUND THE INLET OR AT LEAST HAVE SAND BAGS SIDE BY SIDE.

AREA INLET PROTECTION DETAIL

NOT TO SCALE

GUIDELINES FOR DESIGN AND INSTALLATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

TYPE OF STRUCTURE	REACH LENGTH	MAXIMUM DRAINAGE AREA	SLOPE
SILT FENCE	N/A	2 ACRES	0 – 10%
	200 FEET	2 ACRES	10 – 20%
	100 FEET	1 ACRE	20 – 30%
	50 FEET	1/2 ACRE	> 30%
TRIANGLE FILTER DIKE	100 FEET	1/2 ACRE	< 30% SLOPE
	50 FEET	1/4 ACRE	> 30% SLOPE
ROCK BERM *, **	500 FEET	< 5 ACRES	0 – 10%

* FOR ROCK BERM DESIGN WHERE PARAMETERS ARE OTHER THAN STATED, DRAINAGE AREA CALCULATIONS AND ROCK BERM DESIGN MUST BE SUBMITTED FOR REVIEW.

** HIGH SERVICE ROCK BERMS MAY BE REQUIRED IN AREAS OF ENVIRONMENTAL SIGNIFICANCE AS DETERMINED BY THE CITY OF GEORGETOWN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

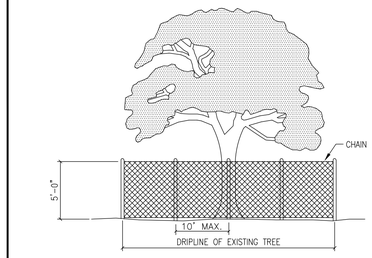
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
TEMPORARY EROSION AND SEDIMENTATION CONTROL GUIDELINES	DRAWING NAME: EC01
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB

NOTE: THIS SECTION IS INTENDED TO ASSIST THOSE PERSONS PREPARING WATER POLLUTION ABATEMENT PLANS (WPAP) OR STORM WATER POLLUTION PREVENTION PLANS (SW3P) THAT COMPLY WITH FEDERAL, STATE AND/OR LOCAL STORM WATER REGULATIONS.

1. THE CONTRACTOR TO INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, GRADING, OR EXCAVATION). CONTRACTOR TO REMOVE EROSION/SEDIMENTATION CONTROLS AT THE COMPLETION OF PROJECT AND GRASS RESTORATION.
2. ALL PROJECTS WITHIN THE RECHARGE ZONE OF THE EDWARD'S AQUIFER SHALL SUBMIT A BEST MANAGEMENT PRACTICES AND WATER POLLUTION AND ABATEMENT PLAN TO THE TNRCC FOR APPROVAL PRIOR TO ANY CONSTRUCTION.
3. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND WATER POLLUTION ABATEMENT PLAN. DEVIATIONS FROM THE APPROVED PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ALL PLANTING SHALL BE DONE BETWEEN MAY 1 AND SEPTEMBER 15 EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING. IF PLANTING IS AUTHORIZED TO BE DONE OUTSIDE THE DATES SPECIFIED, THE SEED SHALL BE PLANTED WITH THE ADDITION OF WINTER FESCUE (KENTUCKY 31) AT A RATE OF 100lb/ACRE. GRASS SHALL BE COMMON BERMUDA GRASS, HULLED, MINIMUM 82% PURE LIVE SEED. ALL GRASS SEED SHALL BE FREE FROM NOXIOUS WEED, GRADE "A" RECENT CROP, RECLEANED AND TREATED WITH APPROPRIATE FUNGICIDE AT TIME OF MIXING. SEED SHALL BE FURNISHED IN SEALED, STANDARD CONTAINERS WITH DEALER'S GUARANTEED ANALYSIS.
5. ALL DISTURBED AREAS TO BE RESTORED AS NOTED IN THE WATER POLLUTION ABATEMENT PLAN.
6. THE PLANTED AREA TO BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF FOUR (4) INCHES. THE IRRIGATION TO OCCUR AT 10-DAY INTERVALS DURING THE FIRST TWO MONTHS TO INSURE GERMINATION AND ESTABLISHMENT OF THE GRASS. RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER TO POSTPONE THE WATERING SCHEDULE ONE WEEK.
7. RESTORATION TO BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 25 SQUARE FEET EXIST.
8. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL TO BE PLACED IN ALL AREAS DISTURBED BY CONSTRUCTION.
9. THE CONTRACTOR TO HYDROMULCH OR SOD (AS SHOWN ON PLANS) ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION.
10. EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILDUP WITHIN TREE DRIPLINE.
11. TO AVOID SOIL COMPACTION, CONTRACTOR SHALL NOT ALLOW VEHICULAR TRAFFIC, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS IN THE TREE DRIPLINE AREAS.
12. WHERE A FENCE IS CLOSER THAN FOUR (4) FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF EIGHT (8) FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE FENCING.
13. TREES TO BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
14. ANY ROOT EXPOSED BY CONSTRUCTION ACTIVITY TO BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
15. CONTRACTOR TO PRUNE VEGETATION TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.). ALL FINISHED PRUNING TO BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES").
16. THE CONTRACTOR IS TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/4 INCH TO VERIFY THAT THEY HAVE NOT BEEN SIGNIFICANTLY DISTURBED. ANY ACCUMULATED SEDIMENT AFTER A SIGNIFICANT RAINFALL TO BE REMOVED AND PLACED IN THE OWNER DESIGNATED SPOIL DISPOSAL SITE. THE CONTRACTOR TO CONDUCT PERIODIC INSPECTIONS OF ALL EROSION/SEDIMENTATION CONTROLS AND TO MAKE ANY REPAIRS OR MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
17. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT IMMEDIATELY ADJACENT TO A PROTECTED TREE, ERECT THE FENCE APPROXIMATELY TWO TO FOUR FEET (2'-4') BEHIND THE AREA IN QUESTION.
18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE.
19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED TO BE REPAIRED AT OWNERS EXPENSE.
20. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES	DRAWING NAME: EC01A
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB



NOTES:

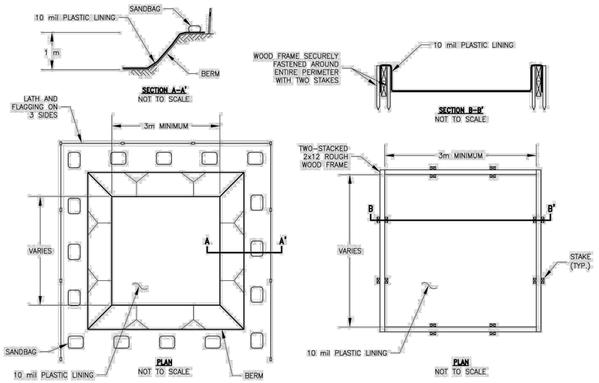
1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; WILL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6") CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
TREE PROTECTION – CHAIN LINK FENCE	DRAWING NAME: EC09
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB

Concrete Waste Management

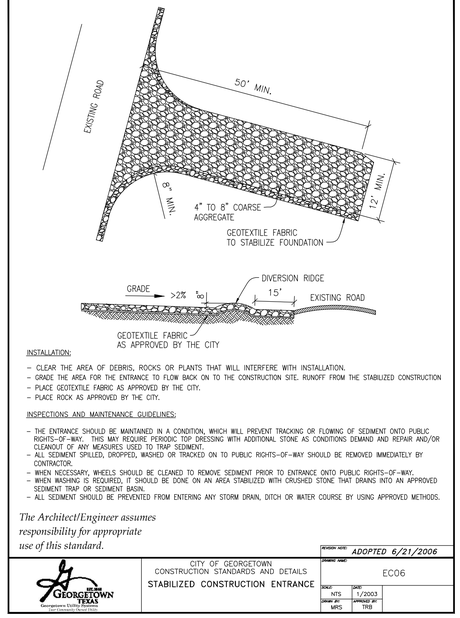
WM-8



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Caltrans Storm Water Quality Handbooks
Construction Site Best Management Practices Manual
September 1, 2004

Section 8
Concrete Waste Management **WM-8**
6 of 7

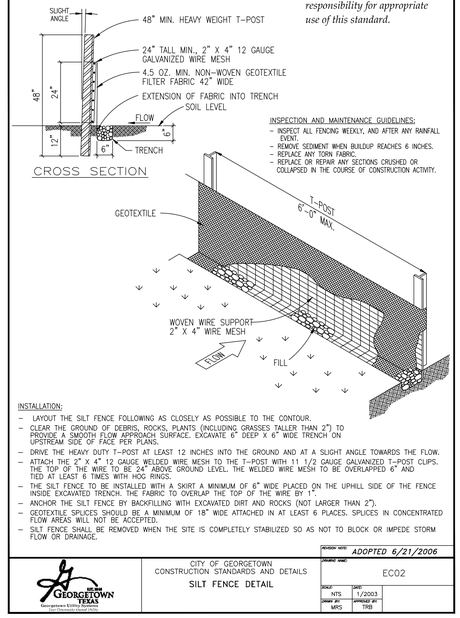


INSTALLATION:
- CLEAR THE AREA OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE STABILIZED CONSTRUCTION
- PLACE GEOTEXTILE FABRIC AS APPROVED BY THE CITY.
- PLACE ROCK AS APPROVED BY THE CITY.

INSPECTIONS AND MAINTENANCE GUIDELINES:
- THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
- WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
STABILIZED CONSTRUCTION ENTRANCE	DRAWING NAME: EC06
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB

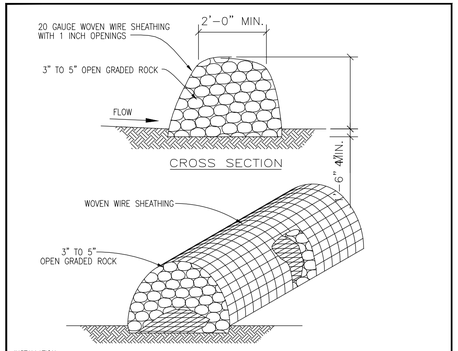


INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL EVENT.
- REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
- REPLACE ANY TORN FABRIC.
- REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY.

INSTALLATION:
- LAYOUT THE SILT FENCE FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS, PLANTS (INCLUDING GRASSES TALLER THAN 2") TO PROVIDE A SMOOTH FLOW APPROACH SURFACE. EXCAVATE 6" DEEP X 6" WIDE TRENCH ON UPSTREAM SIDE OF FACE PER PLANS.
- DRIVE THE HEAVY DUTY T-POST AT LEAST 12 INCHES INTO THE GROUND AND AT A SLIGHT ANGLE TOWARDS THE FLOW.
- ATTACH THE 2" X 4" 12 GAUGE WELDED WIRE MESH TO THE T-POST WITH 11 1/2 GAUGE GALVANIZED T-POST CLIPS. THE TOP OF THE WIRE TO BE 24" ABOVE GROUND LEVEL. THE WELDED WIRE MESH TO BE OVERLAPPED 6" AND TIED AT LEAST 6 TIMES WITH HOG RINGS.
- THE SILT FENCE TO BE INSTALLED WITH A SKIRT A MINIMUM OF 6" WIDE PLACED ON THE UPHILL SIDE OF THE FENCE INSIDE EXCAVATED TRENCH. THE FABRIC TO OVERLAP THE TOP OF THE WIRE BY 1".
- ANCHOR THE SILT FENCE BY BACKFILLING WITH EXCAVATED DIRT AND ROCKS (NOT LARGER THAN 2").
- GEOTEXTILE SPLICES SHOULD BE A MINIMUM OF 18" WIDE ATTACHED IN AT LEAST 6 PLACES. SPLICES IN CONCENTRATED FLOW AREAS WILL NOT BE ACCEPTED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
SILT FENCE DETAIL	DRAWING NAME: EC02
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB



INSTALLATION:
- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCIRCLE THE FINISHED SIZE OF THE BERM.
- PLACE THE ROCK ALONG THE CENTER OF THE WIRE TO THE DESIGNATED HEIGHT.
- WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE RETAINS IT'S SHAPE.
- SECURE WITH TIE WIRE.
- THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROX. 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL EVENT BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
- REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER.
- REMOVE ANY LOOSE WIRE SHEATHING.
- THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
- THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: ADOPTED 6/21/2006
ROCK BERM DETAIL	DRAWING NAME: EC03
	SCALE: NTS; DATE: 1/2003; DRAWN BY: MRS; APPROVED BY: TRB

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM
DESIGNED BY: DATE

AMK, KWM
DRAWN BY: DATE

CHECKED BY: DATE

APPROVED BY: DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

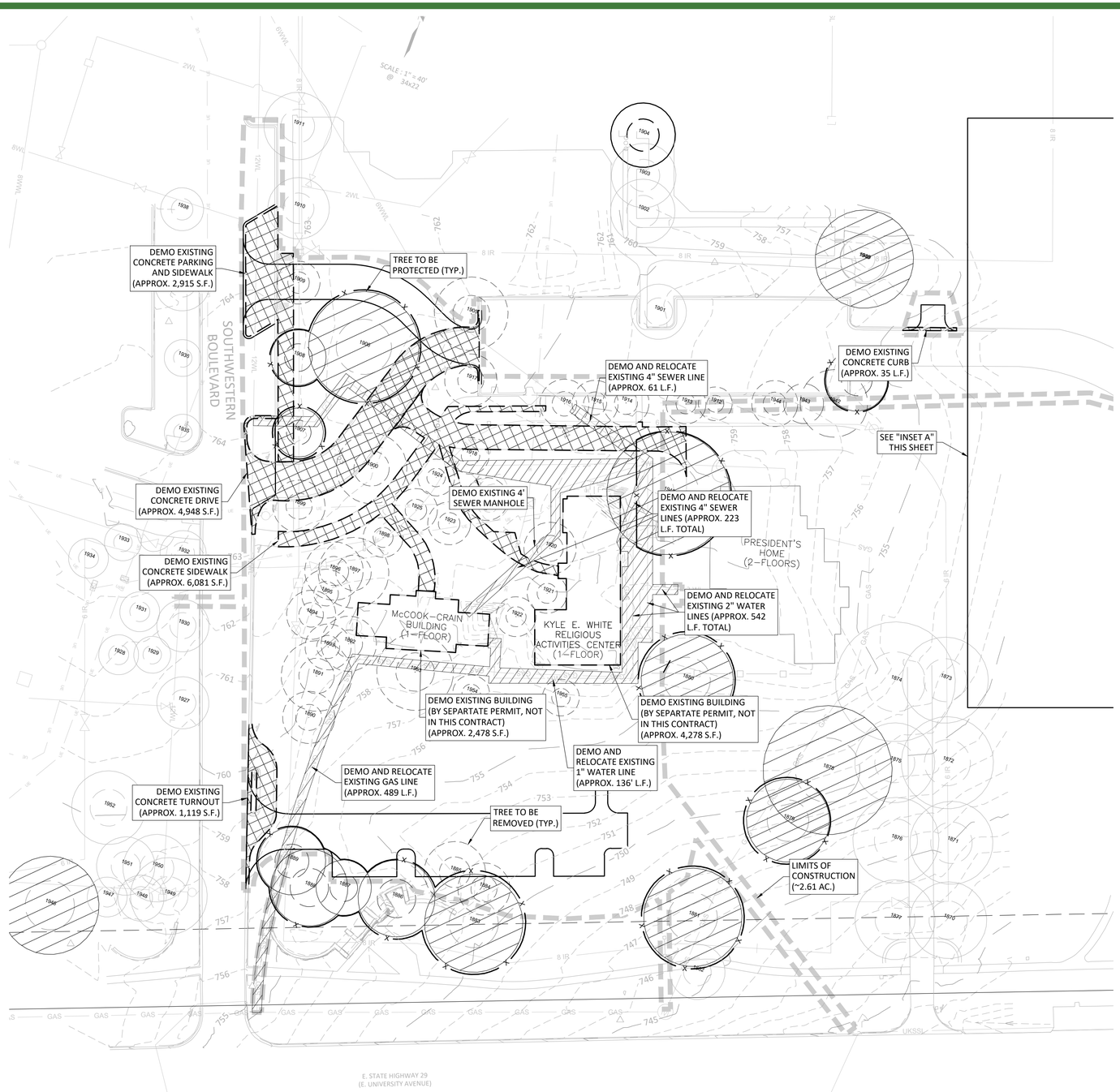
ADDRESS: 1978 S. AUSTIN AVENUE, GEORGETOWN, TX 78626
METRO: 512.930.9412
TEXAS REGISTERED ENGINEERING FIRM F-181
TBPLS FIRM No.10003700
WEB: STEGERBIZZELL.COM
SERVICES: >>ENGINEERS >>PLANNERS >>SURVEYORS

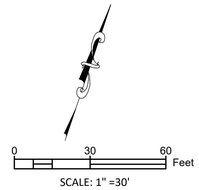
EROSION & SEDIMENTATION CONTROL DETAILS

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

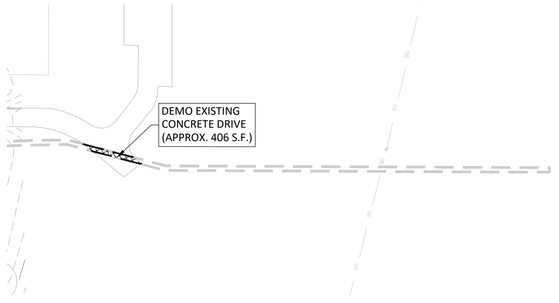
SHEET 6 of 62





LEGEND

- LIMITS OF CONSTRUCTION
- X" WL — EXISTING WATER LINE WITH SIZE
- EXISTING GATE VALVE
- X" IR — EXISTING IRRIGATION LINE WITH SIZE
- X" WWL — EXISTING WASTEWATER LINE WITH SIZE
- X" SSL — EXISTING STORM LINE WITH SIZE
- EXISTING STORM MANHOLE
- COM — EXISTING COMMUNCATION LINE
- EXISTING LIGHT POLE
- 123 — EXISTING CONTOUR
- PROTECTED TREE TO BE REMOVED
- #### — HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED WITH TREE PROTECTION
- PROTECTED TREE TO BE PRESERVED WITH TREE PROTECTION



INSET A
SCALE: 1" = 100'

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2023-50-SDP

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LICENSED
PROFESSIONAL ENGINEER
2023-10-06

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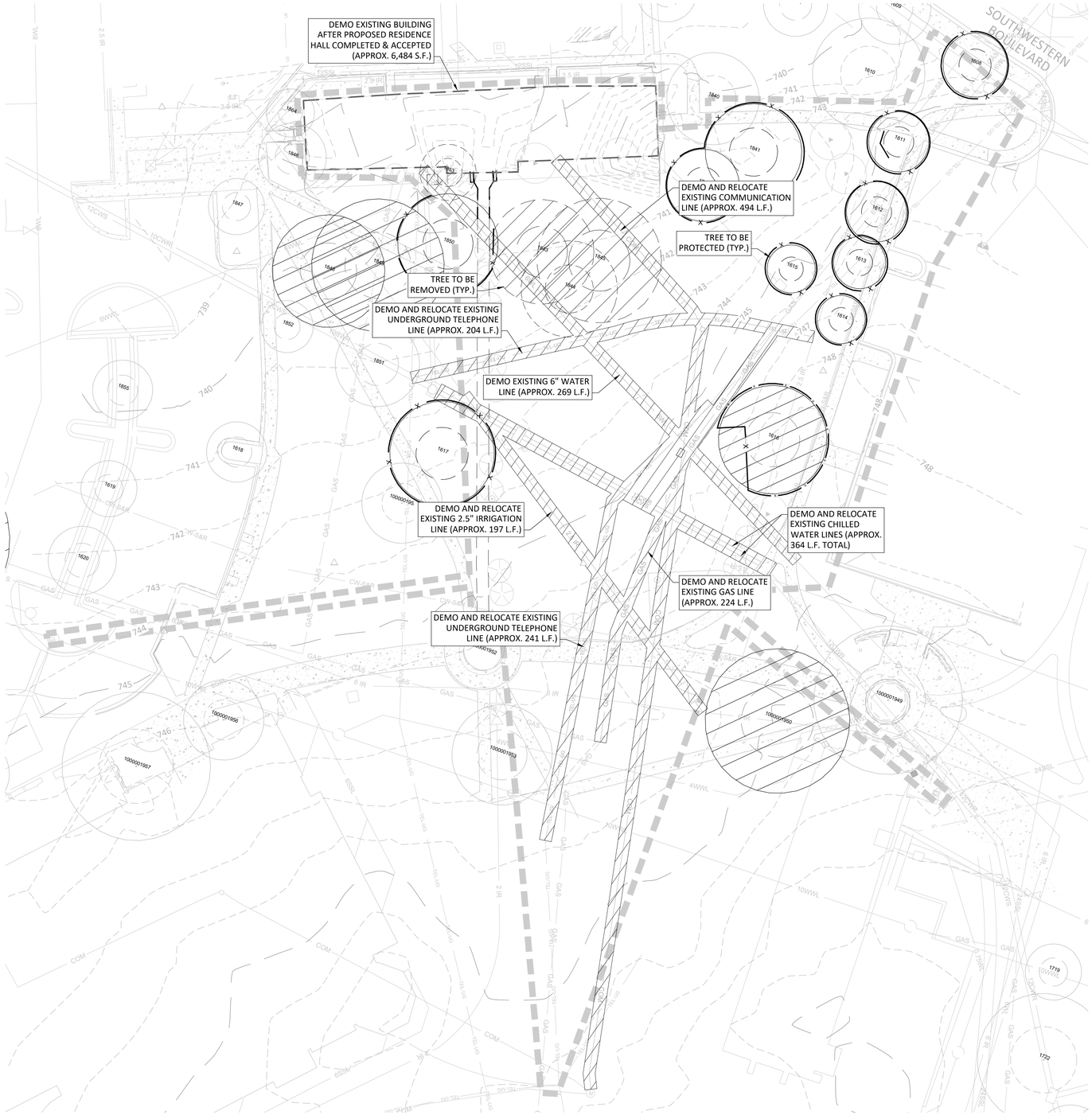
SERVICES	>>ENGINEERS >>PLANNERS >>SURVEYORS	

DEMOLITION PLAN - WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 9 *of 62*



0 30 60 Feet

SCALE: 1" =30'

LEGEND

- LIMITS OF CONSTRUCTION
- X" WL — EXISTING WATER LINE WITH SIZE
- EXISTING GATE VALVE
- X" IR — EXISTING IRRIGATION LINE WITH SIZE
- X" WWL — EXISTING WASTEWATER LINE WITH SIZE
- X" SSL — EXISTING STORM LINE WITH SIZE
- EXISTING STORM MANHOLE
- COM — EXISTING COMMUNCATION LINE
- EXISTING LIGHT POLE
- 123 — EXISTING CONTOUR
- (#####) — PROTECTED TREE TO BE REMOVED
- ##### — HERITAGE TREE TO BE REMOVED
- ##### — HERITAGE TREE TO BE PRESERVED WITH TREE PROTECTION
- (#####) — PROTECTED TREE TO BE PRESERVED WITH TREE PROTECTION

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STATE OF TEXAS — DAVID L. PLATT — 115964 — LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

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METRO 512.930.9412 | TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 | WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

DEMOLITION PLAN - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 10 of 62

SCALE: 1" = 100'

LEGEND

- LIMITS OF CONSTUCTION
- ACCESSIBLE ROUTE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- X" WWL — EXISTING SEWER LINE WITH SIZE
- WWL — PROPOSED SEWER LINE
- X" WL — EXISTING DOMESTIC OR FIRE LINE WITH SIZE
- WL — PROPOSED DOMESTIC OR FIRE LINE
- X" SSL — EXISTING STORM SEWER LINE WITH SIZE
- SD — PROPOSED STORM SEWER LINE
- COM — EXISTING COMMUNICATION LINE
- COM — PROPOSED COMMUNICATION LINE
- GAS — EXISTING GAS LINE
- GAS — PROPOSED GAS LINE
- UE — EXISTING UNDERGROUND ELECTRIC
- X" IR — EXISTING IRRIGATION LINE
- TEL-UG — EXISTING UNDERGROUND TELEPHONE LINE

DIMENSIONAL SITE PLAN NOTES:

1. All lighting fixtures shall be designed to completely conceal and fully shield, within an opaque housing, the light source from visibility from any street right-of-way. The cone of light shall not cross any adjacent property line. The illumination shall not exceed 2 foot candles at a height of three feet at the property line. Only incandescent, fluorescent, color-corrected high-pressure sodium or metal halide may be used. All vehicle or pedestrian access shall be sufficiently lighted to ensure security of property and persons.

2. All roof, wall and ground mounted mechanical equipment must be screened in accordance with Section 8 of the UDC. If roof and wall mounted equipment of any type including duct work and large vents is proposed it shall be shown on the site plan and screening identified. Screening of mechanical equipment shall result in the mechanical equipment blending in with the primary building and not appearing separate from the building and shall be screened from view of any rights-of-way or adjoining properties.

3. Per Chapter 8, the dumpster enclosures must be one (1) foot above the height of the waste container. Use protective poles in corners and at impact areas. Fence posts shall be of rust protected metal or concrete. A minimum 6" slab is required and must be sloped to drain; the enclosure must have steel framed gates with spring loaded hinges and fasteners to keep closed. Screening must be on all four sides by masonry wall or approved fence or screening with opaque gates.

SITE DATA:

LAND AREA:	704.25 AC. = 30,677,130 S.F.
LOT BUILDING COVERAGE:	0.13% (39,776 S.F./30,677,130 S.F.)
EXISTING IMPERVIOUS COVER:	9.80% (3,005,640 S.F./30,677,130 S.F.)
INCREASED IMPERVIOUS COVER:	0.16% (49,837 S.F./30,677,130 S.F.)
PROPOSED IMPERVIOUS COVER TOTAL:	9.96% (3,055,477 S.F./30,677,130 S.F.)
MAX. IMPERVIOUS COVER:	45% per ORD 2010-46
TOTAL G.F.A.:	101,086 S.F. TOTAL
BUILDING TYPES:	RESIDENCE HALLS & WELCOME CENTER

	Population 1450	Ratio (2)	PARKING SPACES Required (3)	Existing (4)	Proposed (5)	Total incl. future/ Alternate (6)
(1) Commuter Students	73	0.37	27			
(1) Living on Campus	1377	0.67	923			
Faculty/Staff	500	0.9	450			
Visitor	435	0.33	144			
Total:	2385	0.65	1550	1651	1669	1829

Notes:
1. proposed percentages of students living on campus and commuters (existing are 85% on campus, 15% commuter)
2. existing SU ratios
3. parking Required adjusted for proposed increas in proportion of students living on campus
4. Existing Parking per SU field count in September 2023
5. Proposed parking generally reflects parking gains (losses) for projects proposed over next 5 years
6. Futuer/Alternate Parking includes additional, alternate and/or event parking

* Parking Summary to be updated and submitted to the City with each project's Site Plan.

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2023-50-SDP

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STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

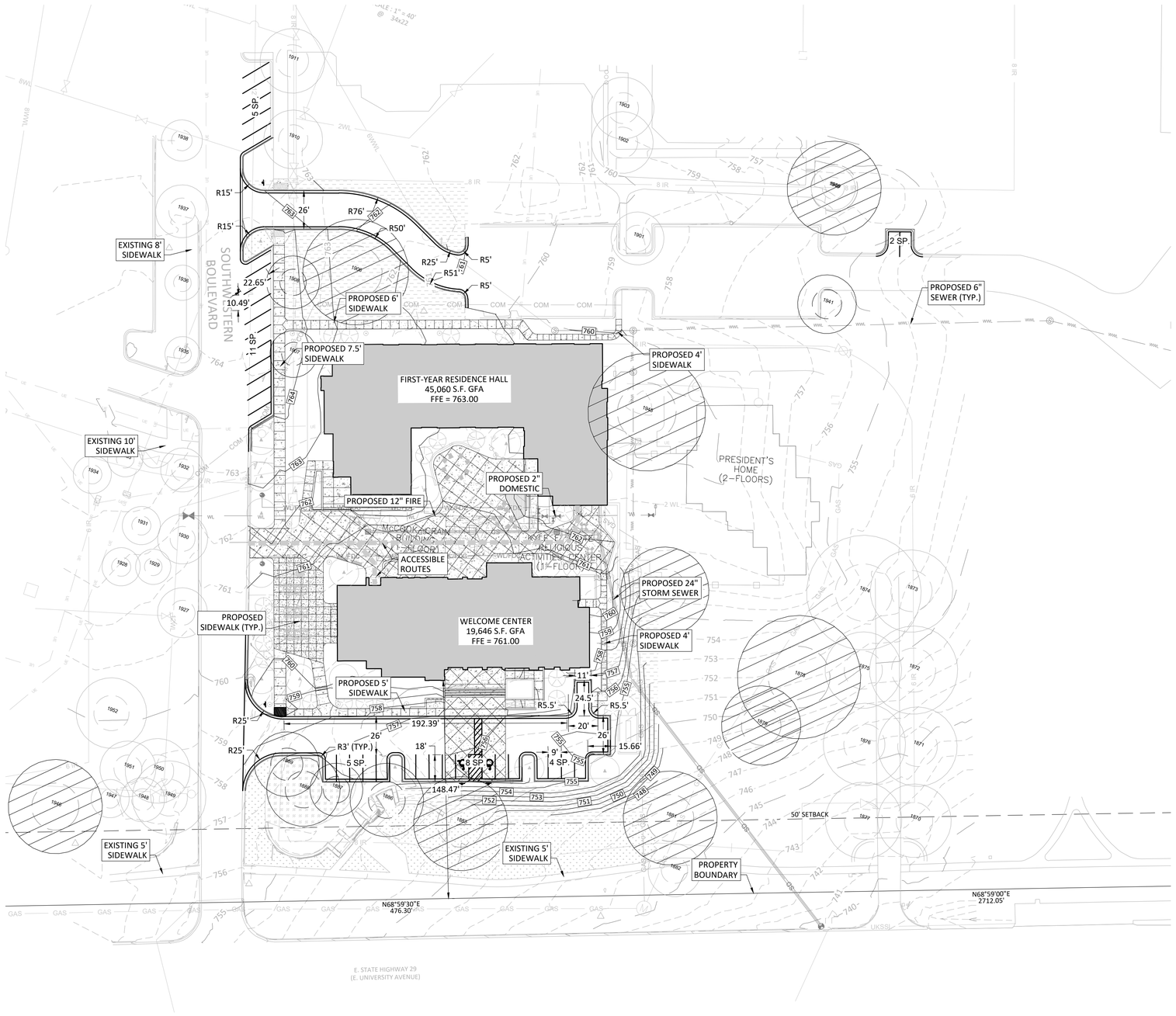
STEGER BIZZELL
ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

OVERALL DIMENSIONAL SITE PLAN

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 11 of 62



0 30 60 Feet

SCALE: 1" = 30'

LEGEND

- ACCESSIBLE ROUTE
- 123 EXISTING CONTOUR
- 123 PROPOSED CONTOUR
- X" WWL EXISTING SEWER LINE WITH SIZE
- WWL PROPOSED SEWER LINE
- X" WL EXISTING DOMESTIC OR FIRE LINE WITH SIZE
- WL PROPOSED DOMESTIC OR FIRE LINE
- X" SSL EXISTING STORM SEWER LINE WITH SIZE
- SD PROPOSED STORM SEWER LINE
- COM EXISTING COMMUNICATION LINE
- COM PROPOSED COMMUNICATION LINE
- GAS EXISTING GAS LINE
- GAS PROPOSED GAS LINE
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DIMENSIONAL SITE PLAN NOTES:

1. All lighting fixtures shall be designed to completely conceal and fully shield, within an opaque housing, the light source from visibility from any street right-of-way. The cone of light shall not cross any adjacent property line. The illumination shall not exceed 2 foot candles at a height of three feet at the property line. Only incandescent, fluorescent, color-corrected high-pressure sodium or metal halide may be used. All vehicle or pedestrian access shall be sufficiently lighted to ensure security of property and persons.
2. All roof, wall and ground mounted mechanical equipment must be screened in accordance with Section 8 of the UDC. If roof and wall mounted equipment of any type including duct work and large vents is proposed it shall be shown on the site plan and screening identified. Screening of mechanical equipment shall result in the mechanical equipment blending in with the primary building and not appearing separate from the building and shall be screened from view of any rights-of-way or adjoining properties.
3. Per Chapter 8, the dumpster enclosures must be one (1) foot above the height of the waste container. Use protective poles in corners and at impact areas. Fence posts shall be of rust protected metal or concrete. A minimum 6" slab is required and must be sloped to drain; the enclosure must have steel framed gates with spring loaded hinges and fasteners to keep closed. Screening must be on all four sides by masonry wall or approved fence or screening with opaque gates.
4. Fire apparatus access roads shall have an unobstructed vertical clearance of not lees that 13 feet 6 inches (4,115 mm)

SITE DATA:

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LOT BUILDING COVERAGE:	0.13% (39,776 S.F./30,677,130 S.F.)
EXISTING IMPERVIOUS COVER:	9.80% (3,005,640 S.F./30,677,130 S.F.)
INCREASED IMPERVIOUS COVER:	0.16% (50,243 S.F./30,677,130 S.F.)
PROPOSED IMPERVIOUS COVER TOTAL:	9.96% (3,055,477 S.F./30,677,130 S.F.)
MAX. IMPERVIOUS COVER:	45% per ORD 2010-46
TOTAL G.F.A.:	101,086 S.F. TOTAL
BUILDING TYPES:	RESIDENCE HALLS & WELCOME CENTER

	Population	Ratio (2)	PARKING SPACES Required (3)	Existing (4)	Proposed (5)	Total incl. future/ Alternate (6)
	1450					
(1) Commuter Students	73	0.37	27			
(1) Living on Campus	1377	0.67	923			
Faculty/Staff	500	0.9	450			
Visitor	435	0.33	144			
Total:	2385	0.65	1550	1651	1669	1829

Notes:
1. proposed percentages of students living on campus and commuters (existing are 85% on campus, 15% commuter)
2. existing SU ratios
3. parking Required adjusted for proposed increas in proportion of students living on campus
4. Existing Parking per SU field count in September 2023
5. Proposed parking generally reflects parking gains (losses) for projects proposed over next 5 years
6. Futuer/Alternate Parking includes additional, alternate and/or event parking

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2023-50-SDP

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AMK, KWM — DRAWN BY: — DATE
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STATE OF TEXAS · DAVID L. PLATT · 115964 · LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL
ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
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SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

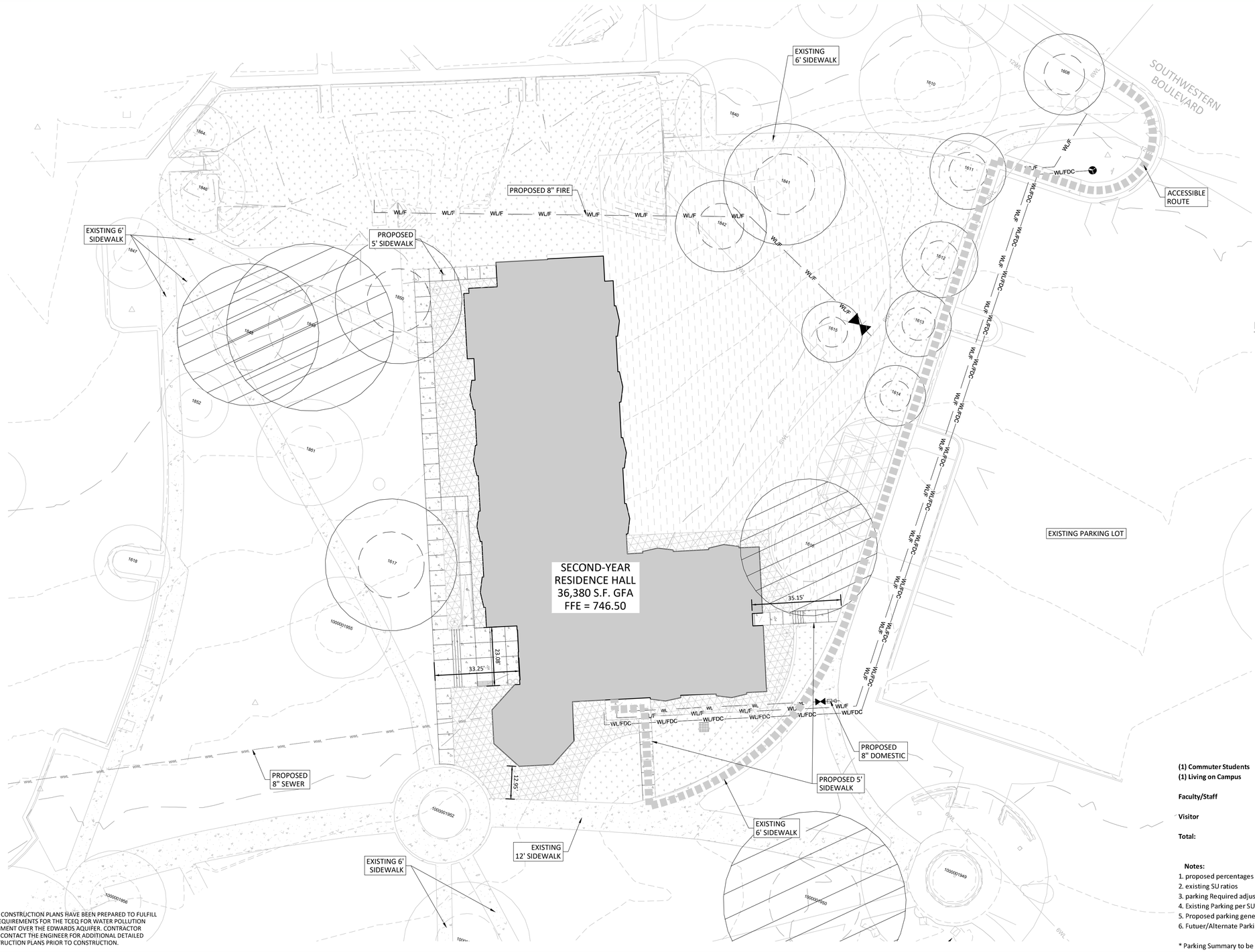
DIMENSIONAL SITE PLAN -WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 12 of 62

File Name: P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\11 DIMENSIONAL SITE PLAN - WELCOME CENTER.dwg By: Adam Kish Date: 10/6/2023 4:39 PM



0 20 40 Feet

SCALE: 1" = 20'

LEGEND

- ACCESSIBLE ROUTE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING DOMESTIC LINE WITH SIZE
- PROPOSED DOMESTIC LINE
- EXISTING SEWER LINE WITH SIZE
- PROPOSED SEWER LINE
- EXISTING FIRE LINE WITH SIZE
- PROPOSED FIRE LINE
- PROPOSED FDC LINE
- EXISTING STORM SEWER LINE WITH SIZE
- PROPOSED STORM SEWER LINE
- EXISTING COMMUNICATION LINE
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LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE | GEORGETOWN, TX 78626
METRO 512.930.9412 | TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 | WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

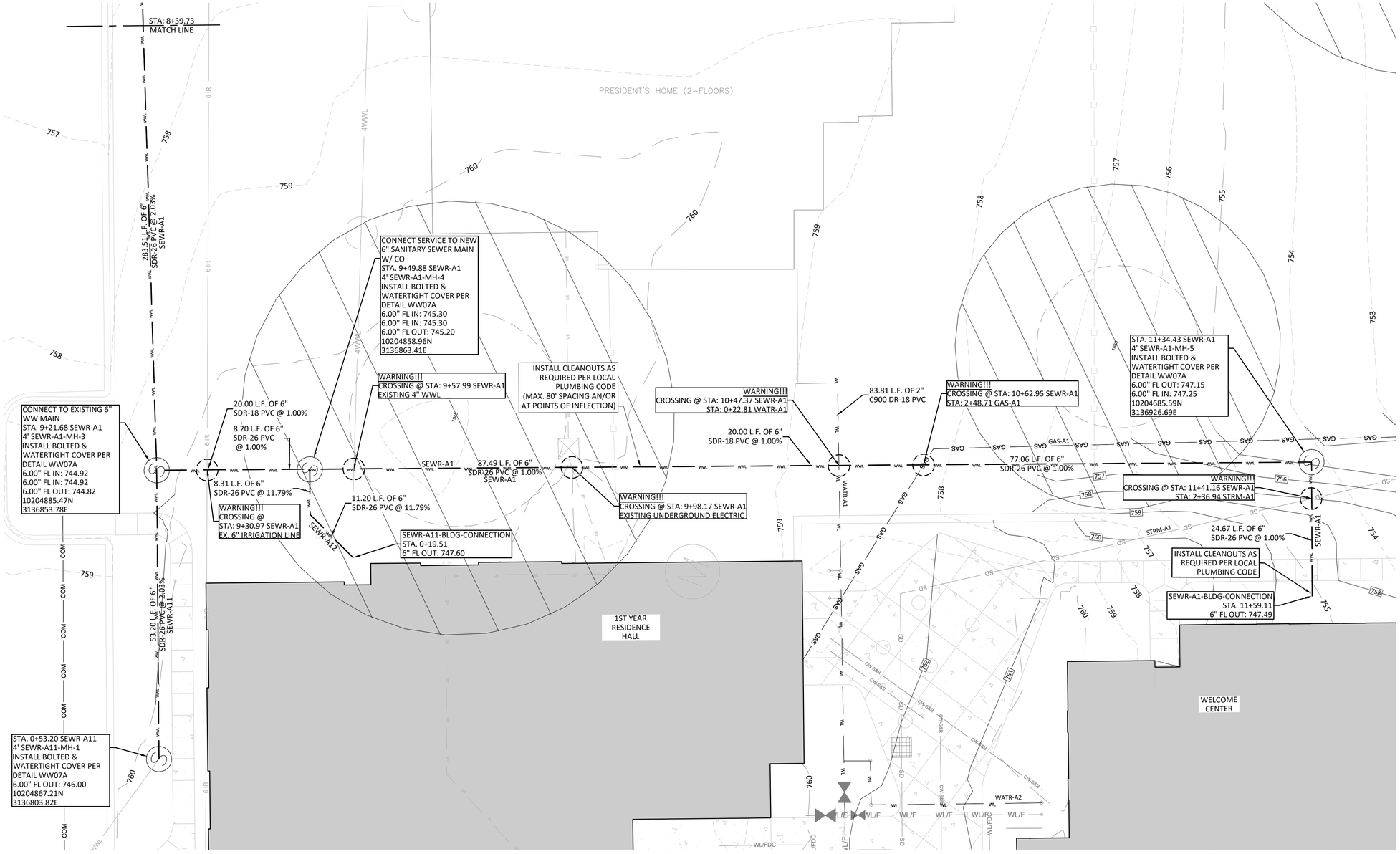
DIMENSIONAL SITE PLAN - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 13 of 62

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\12 DIMENSIONAL SITE PLAN - RESIDENCE HALL.dwg, 10/6/2023 4:39:06 PM



0 10 20 Feet

SCALE: 1" = 10'

LEGEND

123	PROPOSED CONTOUR
123	EXISTING CONTOUR
WL	PROPOSED DOMESTIC LINE
X" WL	EXISTING DOMESTIC LINE WITH SIZE
WWL	PROPOSED SEWER LINE
X" WWL	EXISTING SEWER LINE WITH SIZE
SD	PROPOSED STORM SEWER LINE
X" SSL	EXISTING STORM SEWER LINE WITH SIZE
CW-S&R	PROPOSED CHILLED WATER SERVICE & RETURN LINES
X" CWS	EXISTING CHILLED WATER SERVICE LINE WITH SIZE
X" CWR	EXISTING CHILLED WATER RETURN LINE WITH SIZE
COM	PROPOSED COMMUNICATION LINE
COM	EXISTING COMMUNICATION LINE
GAS	PROPOSED GAS LINE
GAS	EXISTING GAS LINE
WL/F	PROPOSED FIRE LINE
X" WL/F	EXISTING FIRE LINE WITH SIZE
WL/FDC	PROPOSED FIRE DEPT. CONNECTION LINE
UE	EXISTING UNDERGROUND ELECTRIC
X" IR	EXISTING IRRIGATION LINE
TEL-UG	EXISTING UNDERGROUND TELEPHONE LINE
	PROPOSED GATE VALVE
	EXISTING GATE VALVE
S	PROPOSED SEWER MANHOLE
S	EXISTING SEWER MANHOLE

NOTE:
ALL EXISTING UTILITIES SHOWN IN THIS SHEET ARE PRIVATE.

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

PRESSURE NOTE:

PRESSURE PLANE: CENTRAL - ELEV. 906.5'

MAX ELEVATION SERVED ON-SITE = 746.50' FFE + 33.00' (3RD STORY) = 779.50'
MIN ELEVATION SERVED ON-SITE = 746.50' FFE + 3.00' = 749.50'
MIN STATIC PRESSURE PROVIDED = (906.5' - 779.50') / 2.31'/PSI = 54.98 PSI
MAX STATIC PRESSURE PROVIDED = (906.5' - 749.50') / 2.31'/PSI = 67.96 PSI

2023-50-SDP

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

NO.	REVISION	BY	DATE

DLP, KWM
DESIGNED BY: DATE
AMK, KWM
DRAWN BY: DATE
CHECKED BY: DATE
APPROVED BY: DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

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UTILITY PLAN - SEWER (1 OF 2) - WELCOME CENTER & 1ST YEAR RES. H

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 28 *of 62*

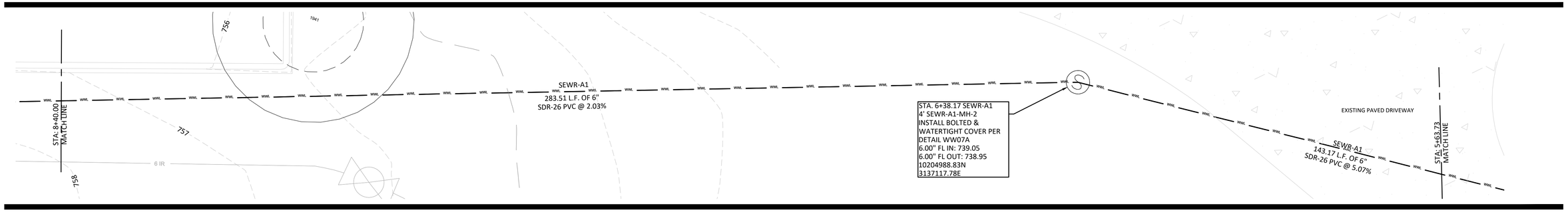
P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\28 UTILITY PLAN - SEWER (1 OF 2) - WELCOME CENTER & 1ST YEAR RES. H.dwg, 10/6/2023 4:39:33 PM

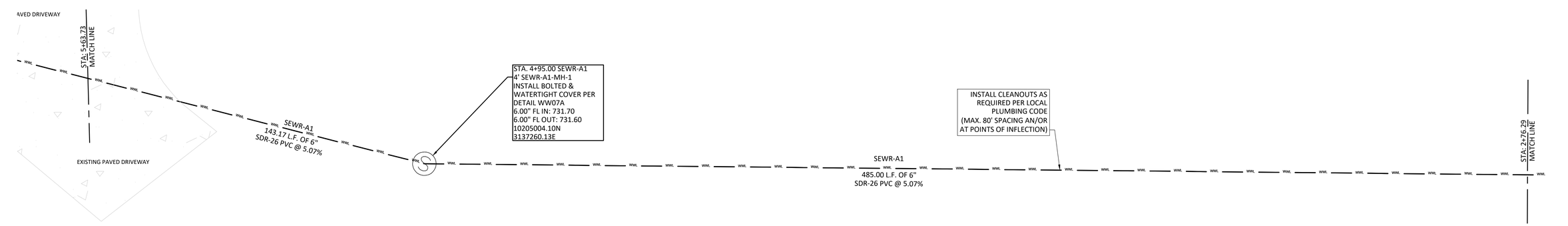
P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\29 UTILITY PLAN - SEWER (2 OF 2) - WELCOME CENTER & 1ST YEAR RES. H.dwg, 10/6/2023 4:40:07 PM

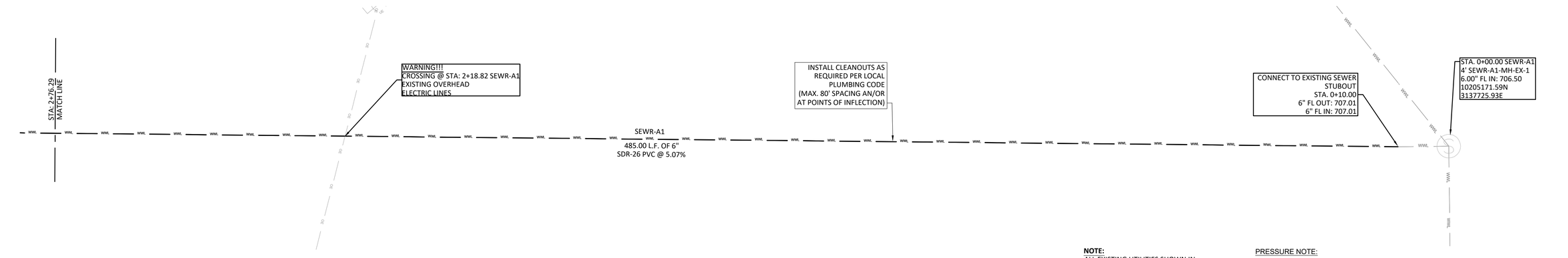
LEGEND

PROPOSED CONTOUR	EXISTING COMMUNICATION LINE
EXISTING CONTOUR	PROPOSED GAS LINE
PROPOSED DOMESTIC LINE	EXISTING GAS LINE
EXISTING DOMESTIC LINE WITH SIZE	PROPOSED FIRE LINE
PROPOSED SEWER LINE	EXISTING FIRE LINE WITH SIZE
EXISTING SEWER LINE WITH SIZE	PROPOSED FIRE DEPT. CONNECTION LINE
PROPOSED STORM SEWER LINE	EXISTING UNDERGROUND ELECTRIC
EXISTING STORM SEWER LINE WITH SIZE	EXISTING IRRIGATION LINE
PROPOSED CHILLED WATER SERVICE & RETURN LINES	EXISTING UNDERGROUND TELEPHONE LINE
EXISTING CHILLED WATER SERVICE LINE WITH SIZE	PROPOSED GATE VALVE
EXISTING CHILLED WATER RETURN LINE WITH SIZE	EXISTING GATE VALVE
PROPOSED COMMUNICATION LINE	PROPOSED SEWER MANHOLE
	EXISTING SEWER MANHOLE

0 10 20 Feet
SCALE: 1" = 10'







THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

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SDP

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STATE OF TEXAS · DAVID L. PLATT · 115964 · LICENSED PROFESSIONAL ENGINEER
2023-10-06

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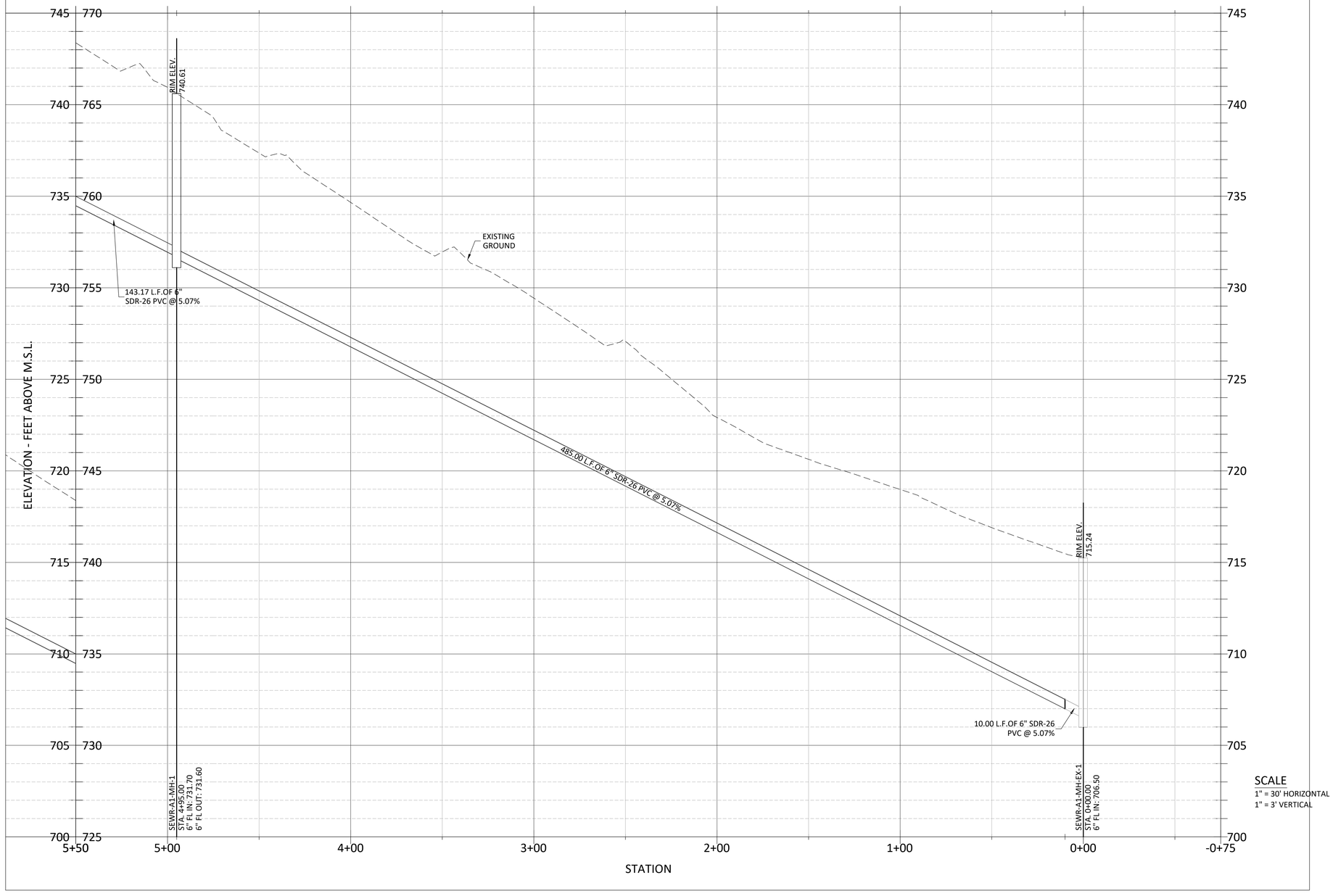
UTILITY PLAN - SEWER (2 OF 2) - WELCOME CENTER & 1ST YEAR RES. HLL (2 OF 2)

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 29 *of 62*

SEWR-A1



NOTES:
INSTALL CLEANOUTS AS REQUIRED PER LOCAL PLUMBING CODE (MAX. 80' SPACING AN/OR AT POINTS OF INFLECTION)

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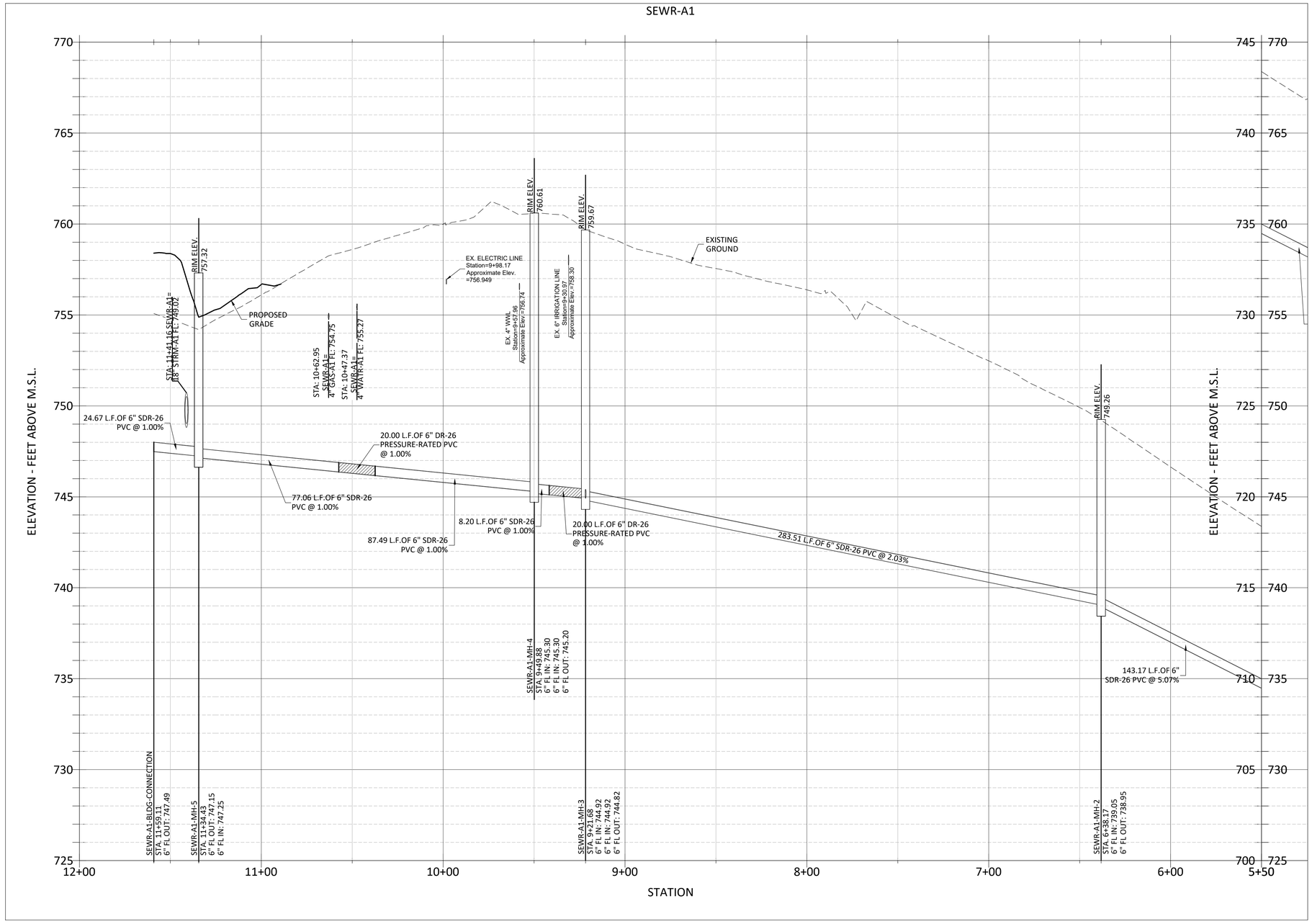
SEWR-A1 PROFILE - STA. 0+00 TO 5+50

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 30 of 62



SCALE
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1" = 3' VERTICAL

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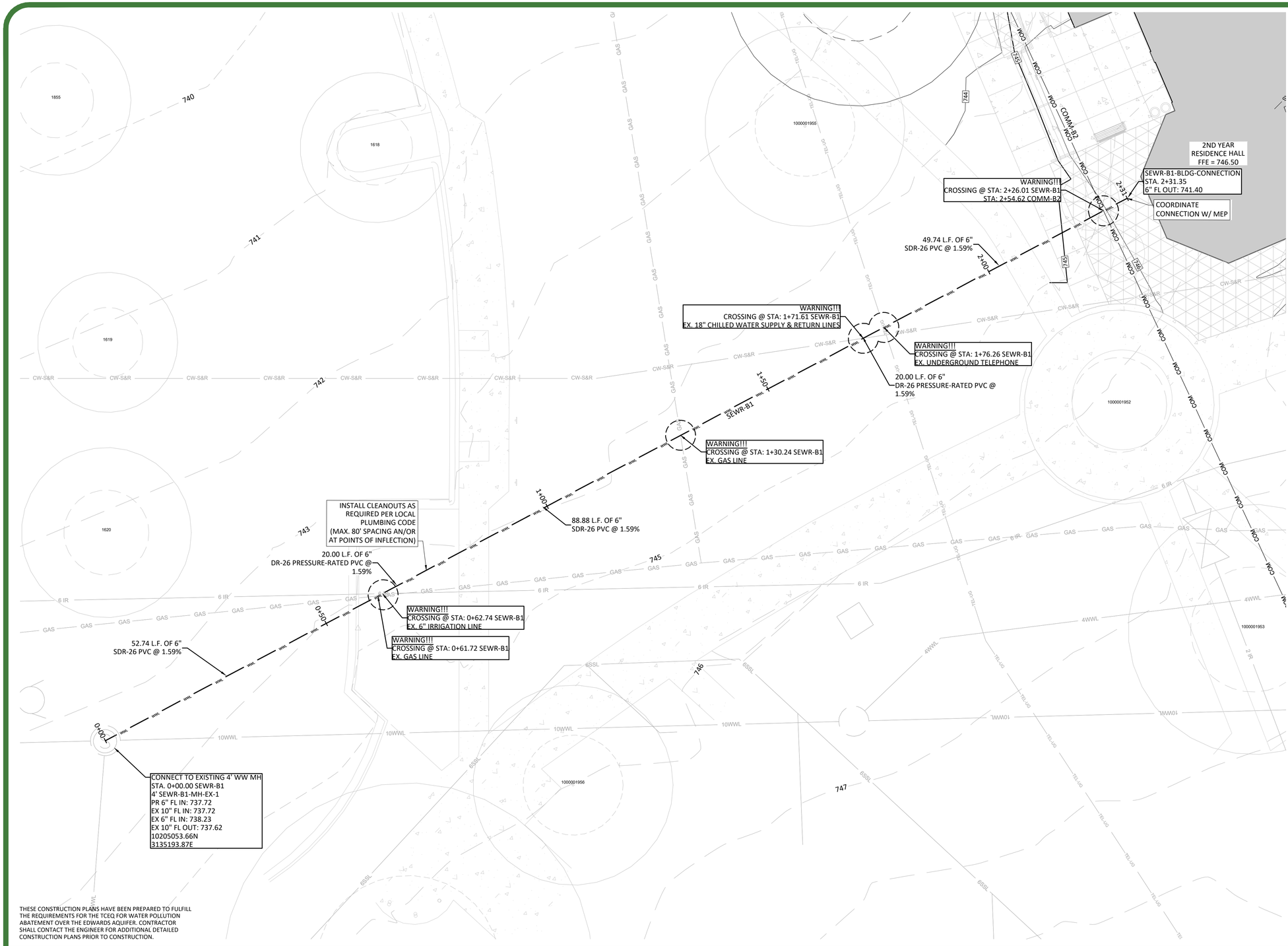
SEWR-A1 PROFILE - STA. 5+50 TO END

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 31 of 62



0 10 20 Feet

SCALE: 1" = 10'

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	EXISTING GATE VALVE
	PROPOSED SEWER MANHOLE
	EXISTING SEWER MANHOLE

NOTES:

1. ALL EXISTING UTILITIES SHOWN IN THIS SHEET ARE PRIVATE.
2. NOTE #4 OF WW DETAIL WW03 ALSO APPLIES TO EXISTING MANHOLES

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UTILITY PLAN - SEWER - 2ND YR. RES. HALL

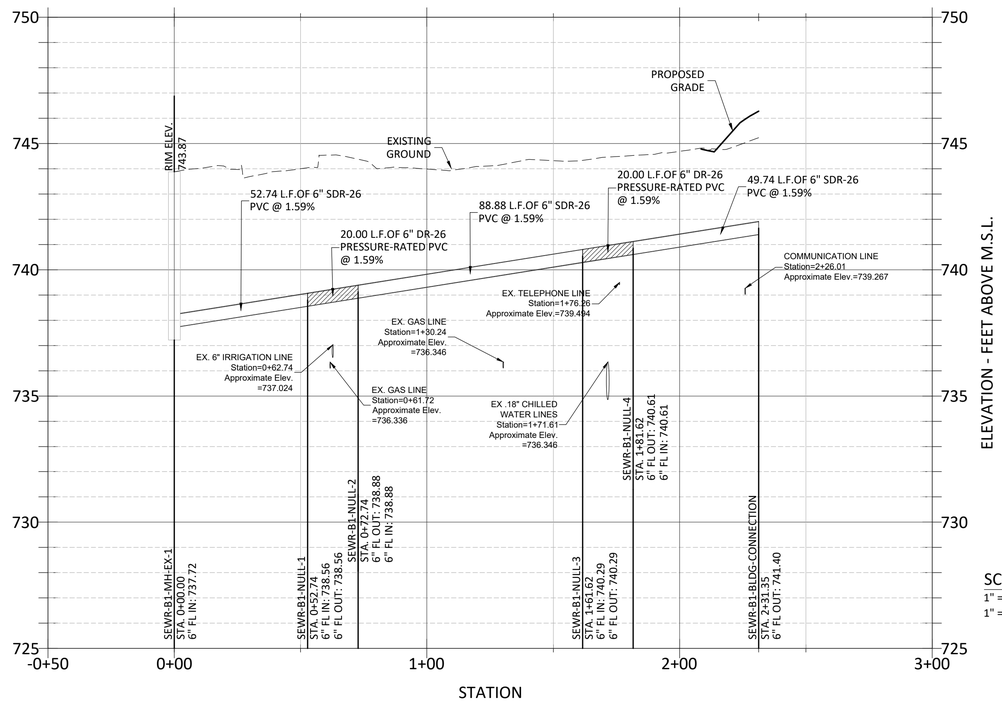
for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 34 *of 62*

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\34 UTILITY PLAN - SEWER - 2ND YR. RES. HALL.dwg, 10/6/2023 4:41:10 PM

SEWR-B1



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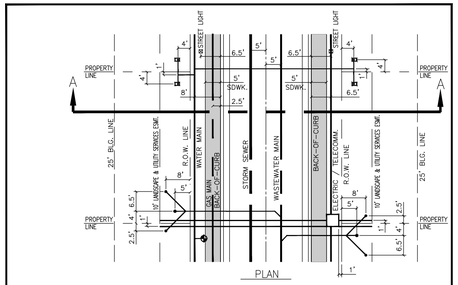
SEWR-B1 PROFILE

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 35 of 62



NOTE: WHEN CROSSING A WATER MAIN, THE ELECTRIC CONDUIT MUST BE ENCASED WITH 3,000 PSI RED CONCRETE FOR FIVE (5) FEET BOTH SIDES FROM THE CROSSING POINT.

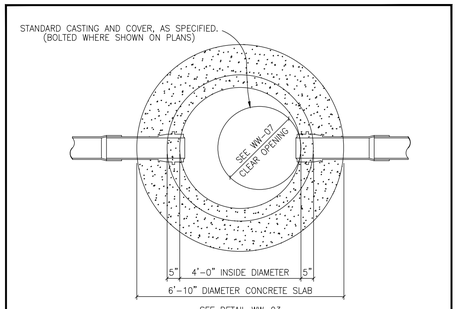
ELECTRIC CONDUIT CONCRETE ENCASEMENT DETAIL

CLASSIFICATION	ROW	B-B	PVMT.
LOCAL STREET	50'	28'	24'
RESIDENTIAL STREET	65'	37'	33'
MAJOR COLLECTOR	73'	45'	41'

MINIMUM COVER BELOW FINISH-GRADE *ALL UTILITIES UNDER ROADWAY - 36"*	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS
DRAWING NAME: WW01A
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB



SEE DETAIL WW-03

MANHOLE PLAN

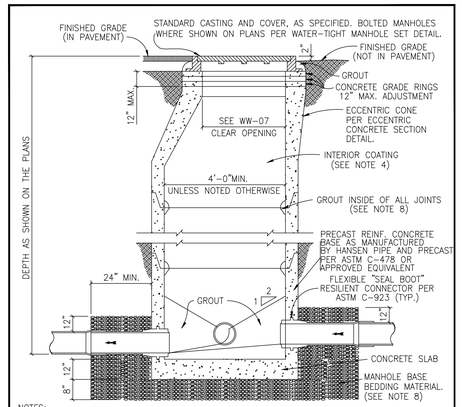
CITY OF GEORGETOWN NOTES:

MANHOLE DETAILS SHALL REFLECT THE CITY'S MINIMUM SPECIFICATIONS, AS STATED BELOW:

A. ALL MANHOLES SHALL BE 48" I.D., R.C.P., CLASS III, WITH RUBBER PROFILE GASKET – SINGLE OFF-SET JOINT CONFORMING TO ASTM C478, C433 AND C76.
B. ALL MANHOLES SHALL HAVE FRAME AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS (AS PER DETAIL # WW-07) OR APPROVED EQUIVALENT.
C. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON FRAME AND COVER.
D. ALL MANHOLES SHALL HAVE AN ECCENTRIC CONE.
E. MANHOLES MAY HAVE A FLAT LID, IF APPROVED BY CITY OF GEORGETOWN, BEING 12" THICK WITH A MINIMUM 30" OPENING, AS MANUFACTURED BY HANSEN PIPE AND PRECAST OR APPROVED EQUAL M.F.G. CONFORMING TO ASTM C478, 5000 P.S.I. CONCRETE, TRAFFIC BEARING AND WITH PROFILE GASKET – SINGLE OFF-SET JOINT CONFORMING TO ASTM C443.
F. INVERTS AND FLEXIBLE SEAL BOOTS, PER ASTM C-923, SHALL BE CAST INTO BASE SECTION.
G. MINIMUM DROP BETWEEN INVERTS SHALL BE ONE-TENTH OF A FOOT (0.1').
H. GRADE RINGS WITH AN I.D. TO MATCH FRAMES CLEAR OPENING WITH A MAXIMUM ADJUSTMENT OF 12" ARE ALLOWED.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – PLAN
DRAWING NAME: WW02
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB

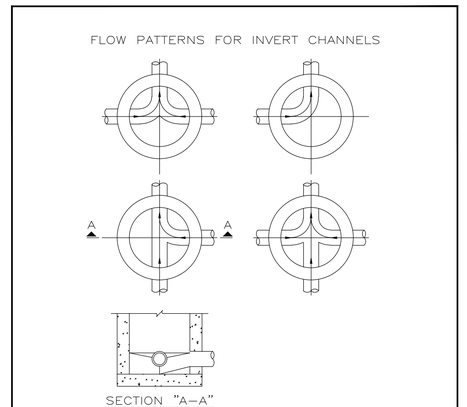


NOTES:

1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETTED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0
   SIEVE SIZE 1 1/2", % RETAINED 0-10
   SIEVE SIZE 1", % RETAINED 45-80
   SIEVE SIZE 3/4", % RETAINED 85-100
   SIEVE SIZE 3/8", % RETAINED 95-100

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – SECTION
DRAWING NAME: WW03
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB



NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
3. CHANNELS FOR FUTURE CONSTRUCTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND, AND COVERED WITH 1" OF MORTAR.
4. SLOPE MANHOLE ITSELF WITH A 1:2 SLOPE FROM MANHOLE WALL TO CHANNEL.
5. INVERT SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR 4" DEEP.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLOW PATTERNS FOR INVERT CHANNELS
DRAWING NAME: WW06
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB

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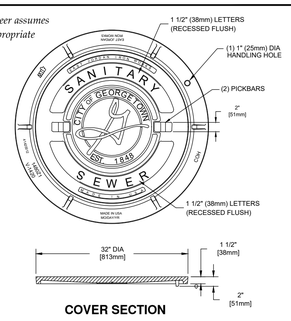
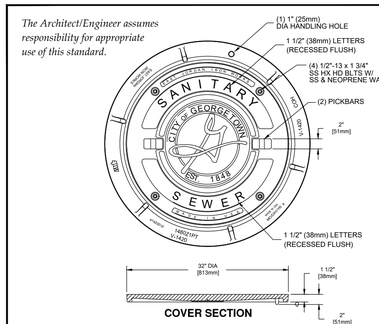


NOTES:

1. STANDARD WASTEWATER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480A V-1420/1480Z1, COVER TO BE STAMPED WITH "SANITARY SEWER".
2. STANDARD WASTEWATER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 41420012 00148390.
4. FOR BOLTED WASTEWATER MANHOLE SET REFER TO DETAIL WW07A.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD WASTEWATER MANHOLE SET
DRAWING NAME: WW07
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB

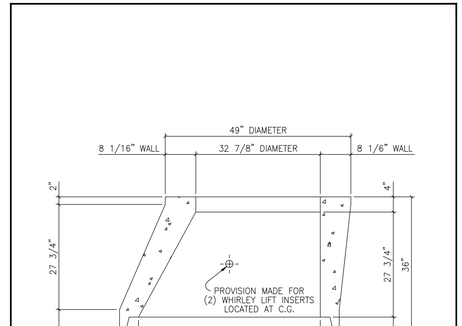
The Architect/Engineer assumes responsibility for appropriate use of this standard.



NOTES:

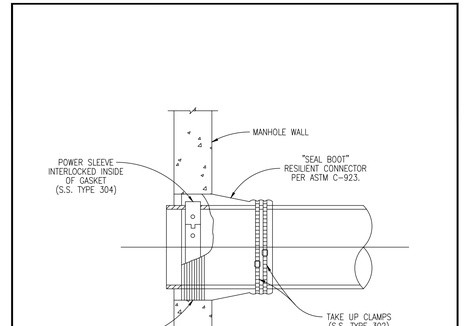
1. BOLTED WASTEWATER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480APT V-1420/1480Z1PT, COVER TO BE STAMPED WITH "SANITARY SEWER".
2. BOLTED WASTEWATER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 00148392 41420015.
4. FOR STANDARD WASTEWATER MANHOLE SET REFER TO DETAIL WW07.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
BOLTED WASTEWATER MANHOLE SET
DRAWING NAME: WW07A
SCALE: NTS DATE: 1/2006
DRAWN BY: MRS APPROVED BY: TRB



The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
48"X5" TO 33"X8"X36" TALL ECCENTRIC CONCRETE SECTION
DRAWING NAME: WW08
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB



The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLEXIBLE "SEAL BOOT" CONNECTOR
DRAWING NAME: WW10
SCALE: NTS DATE: 1/2003
DRAWN BY: MRS APPROVED BY: TRB

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

NO.	REVISION	BY	DATE

DLP, KWM
DESIGNED BY: DATE

AMK, KWM
DRAWN BY: DATE

CHECKED BY: DATE

APPROVED BY: DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

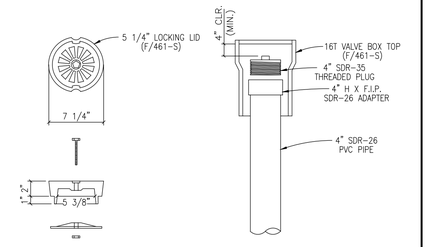
ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

WASTEWATER DETAILS (1 OF 3)

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 44 of 62

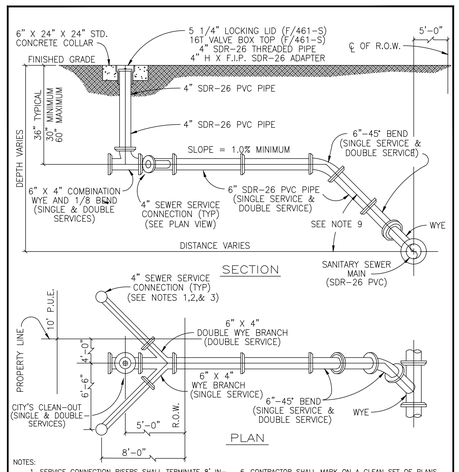


5 1/4" LOCKING LID
(F/461-S)

SEWER CLEAN-OUT
CITY OF GEORGETOWN
(RESIDENTIAL SERVICE)

The Architect/Engineer assumes responsibility for appropriate use of this standard.

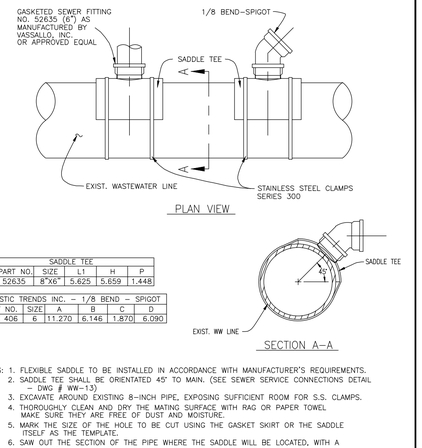
	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS SEWER CLEAN-OUT DETAIL	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW12 SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



NOTES:
1. SERVICE CONNECTION RISERS SHALL TERMINATE 8' IN-SIDE THE PROPETY LINE.
2. THE END OF EACH SERVICE CONNECTION RISER SHALL BE EXTENDED 12" ABOVE FINISH GRADE.
3. EACH SERVICE CONNECTION SHALL BE PLUGGED WATER-TIGHT WITH AN APPROVED CAP OR PLUG.
4. FOR P.V.C. INSTALLATIONS, CONNECT TO EXISTING "BELL END" AND CONNECT OPPSITE END WITH P.V.C. TO P.V.C. KNOCK ON SLEEVE.
5. SOLIDLY TAMP BACKFILL AT LEAST ONE FOOT (1'-0") ABOVE TOP OF PIPE. SERVICES UNDER PAVED AREAS SHALL BE BACKFILLED TO THE SAME SPECIFICATIONS AS SHOWN ON PAVEMENT REPLACEMENT DETAIL.
6. CONTRACTOR SHALL MARK ON A CLEAN SET OF PLANS THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE TO EACH SERVICE LATERAL AND GIVE TO ENGINEER FOR RECORD DRAWING PURPOSES.
7. ANY DEVIATION FROM THESE METHODS MUST BE APPROVED BY THE CITY OF GEORGETOWN ENGINEERING DEPARTMENT.
8. SERVICE LINE MATERIAL SHALL BE P.V.C., SDR-26.
9. SEWER SERVICE SLOPE TO BE 45° OFF CENTERLINE OF MAIN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS SEWER SERVICE CONNECTIONS	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW13 SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



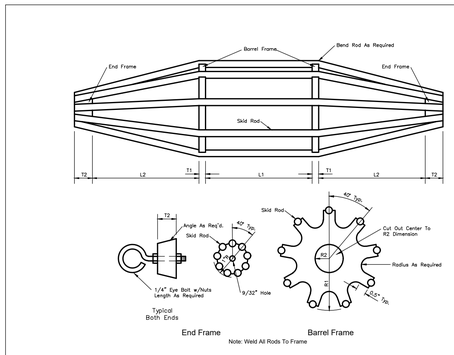
SADDLE TEE					
PART NO.	SIZE	L1	H	P	
52635	8"X6"	5.625	5.659	1.448	

PLASTIC TRENDS INC. – 1/8 BEND – SPIGOT					
PART NO.	SIZE	A	B	C	D
G 406	6	11.270	6.146	1.870	6.090

NOTES:
1. FLEXIBLE SADDLE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. SADDLE TEE SHALL BE ORIENTATED 45° TO MAIN. (SEE SEWER SERVICE CONNECTIONS DETAIL – DWG # WW-13)
3. EXCAVATE AROUND EXISTING 8-INCH PIPE, EXPOSING SUFFICIENT ROOM FOR S.S. CLAMPS.
4. THOROUGHLY CLEAN AND DRY THE MATING SURFACE WITH RAG OR PAPER TOWEL MAKE SURE THEY ARE FREE OF DUST AND MOISTURE.
5. MARK THE SIZE OF THE HOLE TO BE CUT USING THE GASKET SKIRT OR THE SADDLE ITSELF AS THE TEMPLATE.
6. SAW OUT THE SECTION OF THE PIPE WHERE THE SADDLE WILL BE LOCATED, WITH A SABER OR KEY HOLE SAW.
7. TEST TO MAKE SURE SADDLE FITS HOLE PROPERLY.
8. SERVICE PIPE SHALL NOT EXTEND MORE THAN ONE-HALF INCH INTO THE MAIN.
9. PLACE GASKET SKIRT AND SADDLE OVER OPENING AND TIGHTEN BAND CLAMPS EVENLY UNTIL SADDLE IS FIRMLY ATTACHED TO THE PIPE. APPLY PRESSURE ON THE SADDLE AGAINST THE PIPE WHILE TIGHTENING THE CLAMPS AS INDICATED ABOVE. DO NOT OVER TIGHTEN, DO NOT STRIP THREAD.
10. REPLACE THE BEDDING AND BACKFILL IN ACCORDANCE WITH THE TRENCH EMBEDMENT DETAIL.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS GASKETED SEWER FITTING FOR SEWER SERVICE CONNECTIONS TO EXISTING MAINS	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW13A SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



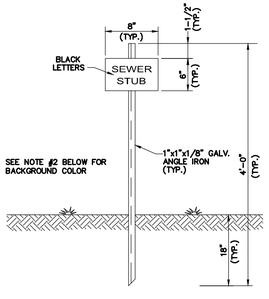
Note: Weld All Rods To Frame

Mandrel Shall Be Constructed From Metal
That Can Withstand 200 PSI Without Being Deformed.

Mandrel Dimensions
5% Deflection
For O.D. Controlled PVC Pipe
(All Dimensions In Inches)

	Size	Type	O.D. Average	Min. Wall Thickness	L1	L2	R1	R2	T1	T2	Rod Diameter	MANDREL O.D.
	6"	D3034 SDR35	6.275	0.180	4.50	6	2.81	0.75	0.375	1.0	0.375	5.62
	6"	D3034 SDR26	6.275	0.241	4.50	6	2.75	0.75	0.375	1.0	0.375	5.50
(160 PSI)	6"	D2241 DR26	6.625	0.271	4.50	6	2.89	0.75	0.375	1.0	0.375	5.71
	8"	D3034 SDR35	8.400	0.240	6.00	6	3.96	1.25	0.375	1.0	0.375	7.52
	8"	D3034 SDR26	8.400	0.323	6.00	6	3.68	1.25	0.375	1.0	0.375	7.37
(160 PSI)	8"	D2241 DR26	8.625	0.352	6.00	6	3.76	1.25	0.375	1.0	0.375	7.525
	10"	D3034 SDR35	10.500	0.300	7.50	6	4.70	1.50	0.375	1.0	0.375	9.40
	10"	D3034 SDR26	10.500	0.404	7.50	6	4.60	1.50	0.375	1.0	0.375	9.21
	12"	D3034 SDR35	12.500	0.360	9.00	6	5.60	1.75	0.375	1.0	0.375	11.20
	12"	D3034 SDR26	12.500	0.481	9.00	6	5.48	1.75	0.375	1.0	0.375	10.96
	15"	D3034 SDR35	15.300	0.437	11.25	6	6.85	2.00	0.375	1.0	0.375	13.70
	18"	F679 T-1	18.701	0.536	13.50	9	8.37	2.50	0.50	1.5	0.50	16.74
	21"	F679 T-1	22.047	0.632	15.75	9	9.87	3.00	0.50	1.5	0.50	19.74
	24"	F679 T-1	24.803	0.711	18.00	9	11.11	3.50	0.50	1.5	0.50	22.22
	27"	F679 T-1	27.953	0.801	20.25	9	12.52	4.00	0.50	1.5	0.50	25.04
	6"	CL350 D.I.	6.9	0.25	4.50	6	3.04	0.75	0.375	1.0	0.375	6.08
	8"	CL350 D.I.	9.05	0.25	6.00	6	4.06	1.25	0.375	1.0	0.375	8.12

Typical Mandrel Details
No Scale

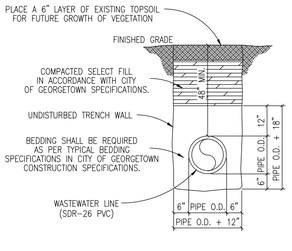


SEWER STUB MARKERS

(INSTALL AT ALL SEWER STUB-OUT ENDS AND SERVICE ENDS)

NOTES:
1) SIGNS SHALL BE CONSTRUCTED OF 20 GAUGE STEEL w/BAKED ENAMEL FINISH.
2) THE BACKGROUND COLOR FOR THE SIGNS SHALL BE WHITE.
3) THERE SHALL BE NO SEPARATE BID ITEM FOR MARKERS.

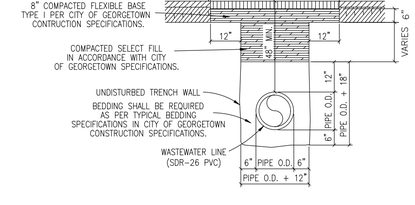
SERVICE MARKER DETAIL



TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW16 SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB

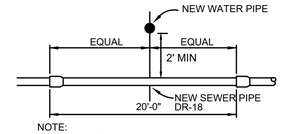


TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:
1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
2. BASE MATERIAL SHALL BE PLACED IN MULTIPLE LIFTS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY ROLLED OR TAMPED TO SPECIFIED MAXIMUM DENSITY.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
5. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
6. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW17 SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



NOTE:
WASTEWATER LINE CROSSING WATER LINE WITH LESS THAN NINE FEET OF SEPARATION SHALL HAVE A FULL JOINT OF C900 DR-18 (250 PSI) PVC PIPE CONFORMING TO ASTM D1784 MUST BE CENTERED ON THE WATER LINE. JOINTS MUST BE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE PER TAC 217.53(d)(7)(A)(iv) AND MEET ASTM D3139.

WATER-SEWER CROSSING
NTS

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

WARNING!
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NO.	REVISION	BY	DATE

DLP, KWM — DESIGNED BY: — DATE
AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

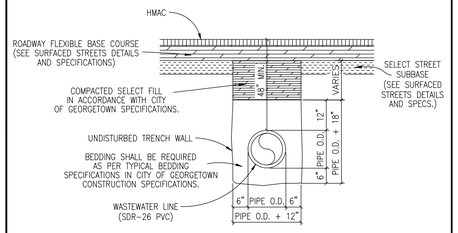
2023-50-SDP

WASTEWATER DETAILS (2 OF 3)

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 45 of 62

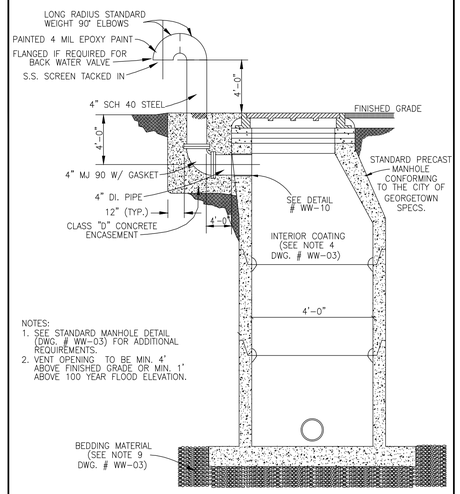


TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:
1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

The Architect/Engineer assumes responsibility for appropriate use of this standard.

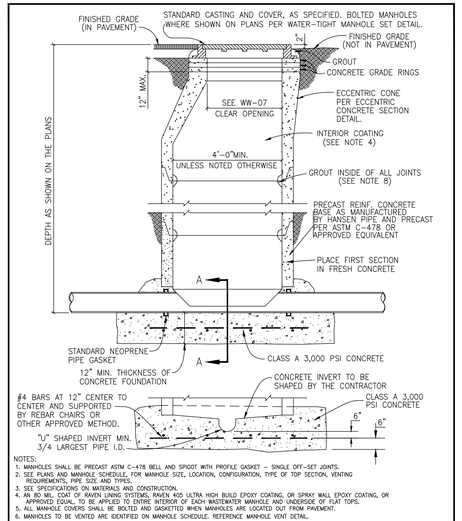
	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW18	
		SCALE: NTS DRAWN BY: MRS	DATE: 1/2003 APPROVED BY: TRB



NOTES:
1. SEE STANDARD MANHOLE DETAIL (DWG. # WW-03) FOR ADDITIONAL REQUIREMENTS.
2. VENT OPENING TO BE MIN. 4" ABOVE FINISHED GRADE OR MIN. 1' ABOVE 100 YEAR FLOOD ELEVATION.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

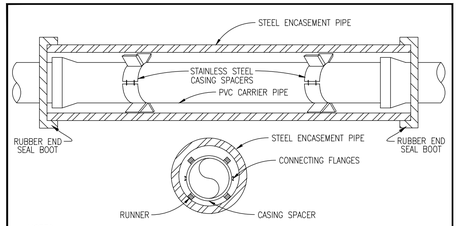
	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TYPICAL MANHOLE WITH VENT	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW19	
		SCALE: NTS DRAWN BY: MRS	DATE: 11/2003 APPROVED BY: TRB



NOTES:
1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETTED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE, REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0 SIEVE SIZE 1 1/2", % RETAINED 0-10
   SIEVE SIZE 1", % RETAINED 45-80 SIEVE SIZE 3/4", % RETAINED 85-100
   SIEVE SIZE 3/8", % RETAINED 95-100
10. ALL PVC PIPE SHALL BE REMOVED FROM INVERT.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS PRECAST MANHOLE ON CAST-IN-PLACE FOUNDATION	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: WW20	
		SCALE: NTS DRAWN BY: MRS	DATE: 1/2006 APPROVED BY: TRB



NOTES:
1. CASING SPACERS SHALL BE BOLT ON STYLE WITH A SHELL MADE IN TWO SECTIONS OF HEAVY T-304 STAINLESS STEEL. CONNECTING FLANGES SHALL BE RIBBED FOR EXTRA STRENGTH. CASING SPACERS SHALL BE MADE BY CASCADE WATERWORKS MFG. CO. OR APPROVED EQUAL.
2. CASING SPACERS SHALL HAVE RUNNERS MADE OF ULTRA HIGH MOLECULAR WEIGHT POLYMER, WITH A MINIMUM HEIGHT OF 2 INCHES.
3. DO NOT USE WEDGES BETWEEN TOP OF PVC CARRIER PIPE AND INSIDE OF CASING TO KEEP PVC FROM MOVING.
4. PRIOR TO INSERTING PVC CARRIER PIPE, ANY WATER SHOULD BE PUMPED OUT OF THE CASING PIPE SO THAT NO MORE THAN A FEW INCHES OF WATER REMAINS.
5. SPACERS WILL BE REQUIRED WITHIN AT LEAST 3 FEET FROM BOTH OPENINGS OF THE ENCASEMENT PIPE AND SPACED NO GREATER THAN 6 FEET THROUGHOUT THE ENCASEMENT PIPE.
6. ENCASEMENT PIPE SHALL BE SMOOTH STEEL 35,000 PSI YIELD STRENGTH WITH THICKNESS ACCORDING TO THE FOLLOWING TABLE:
7. WHEN CASING IS REQUIRED UNDER PAVEMENT WITHIN THE R.O.W., THE CASING SHALL EXTEND OUT TO WITHIN 4' INSIDE OF THE R.O.W. LINE, ON BOTH SIDES.
8. ALL JOINTS SHALL BE RESTRAINED ON PVC CARRIER PIPE.

PIPE SIZE–CARRIER (DIAMETER)	PIPE SIZE–CASING (DIAMETER)(MIN.)	MINIMUM PIPE THICKNESS (INCHES)	
6"	16"		
8"	18"	1/4	0.2500
10"	20"	5/16	0.3125
12" – 14"	24"	3/8	0.3750
16" – 18"	30"	7/16	0.4375
20"	36"	1/2	0.5000
24"	42"	1/2	0.5000
30"	48"	1/2	0.5000

The Architect/Engineer assumes responsibility for appropriate use of this standard.

	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS INSTALLATION OF P.V.C. PIPE THROUGH CASING	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: W14	
		SCALE: NTS DRAWN BY: MRS	DATE: 1/2003 APPROVED BY: TRB

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM — DESIGNED BY: — DATE
AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS
DAVID L. PLATT
115984
LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
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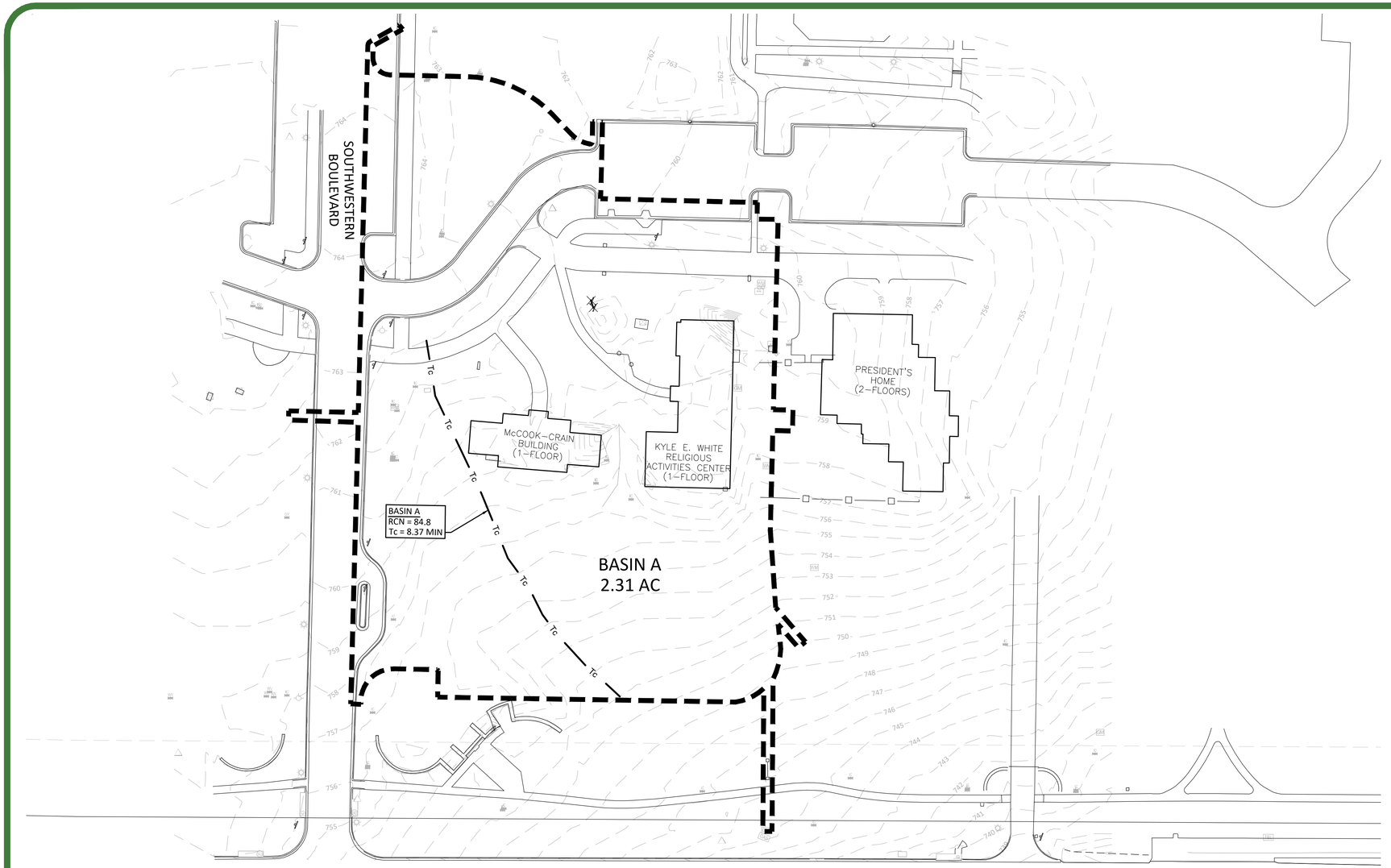
WASTEWATER DETAILS (3 OF 3)

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 46 of 62



Project: 22925 SU Simulation Run: EX 2-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 2 Yr 24 Hr
Compute Time:07Sep2023, 09:33:49 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	5.2	09Apr2020, 12:07	2.34

Project: 22925 SU Simulation Run: EX 10-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 10 Yr 24 Hr
Compute Time:07Sep2023, 09:33:47 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	10.6	09Apr2020, 12:06	4.83

Project: 22925 SU Simulation Run: EX 25-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 25 Yr 24 Hr
Compute Time:07Sep2023, 09:33:49 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	13.8	09Apr2020, 12:06	6.31

Project: 22925 SU Simulation Run: EX 100-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 100 Yr 24 Hr
Compute Time:07Sep2023, 09:33:48 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	19.1	09Apr2020, 12:06	8.81

Select RCN from Table 2-7 of DCM

									Building	Pavement	Range (Fair)	Lawn (Good)								
				Hydrologic Soil Group [%]					98	98	91	87	80	89	78					
Basin	Area [s.f.]	Area [ac.]	Area [sq. mi.]	A	B	C	D	% Check	IC-1 [s.f.]	IC-2 [s.f.]	IC-3 [s.f.]	IC-4 [s.f.]	PC-1 [s.f.]	PC-2 [s.f.]	PC-3 [s.f.]	PC-4 [s.f.]	Total IC [s.f.]	Total IC %	% Check	Composite RCN
Existing	100598	2.31	0.003608	0%	0%	0%	100%	OK	7,180	19,492	0	0	73,926	0	0	0	26672	26.51%	OK	84.8

	Storm Frequency Peak Flow [cfs]			
Basin	**2 Year**	**10 Year**	**25 Year**	**100 Year**
Existing Basin A	5.2	10.6	13.8	19.1
Proposed Basin A	6.8	12.3	15.5	20.9
Delta	1.6	1.7	1.7	1.8

Time of Concentration

	Sheet							*Shallow Concentrated - Unpaved*					*Shallow Concentrated - Paved*					*Channel/Storm Drain*							*Total*	
	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	n	P [in]	s [ft/ft]	Tt-sheet [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFu [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFp [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	Tc [min]	Tlag [min]
	763	756.6	150	0.13	4.2	0.042667	7.79	756.6	751	121	0.046	0.58	751	751	0	0.000	0.00	0	0	0	0	5	0.00	8.37	5.02

THESE CONSTRUCTION PL
THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM — DESIGNED BY: — DATE
AMK, KWM — DRAWN BY: — DATE
CHECKED BY: — DATE
APPROVED BY: — DATE

STATE OF TEXAS — DAVID L. PLATT — 115964 — LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
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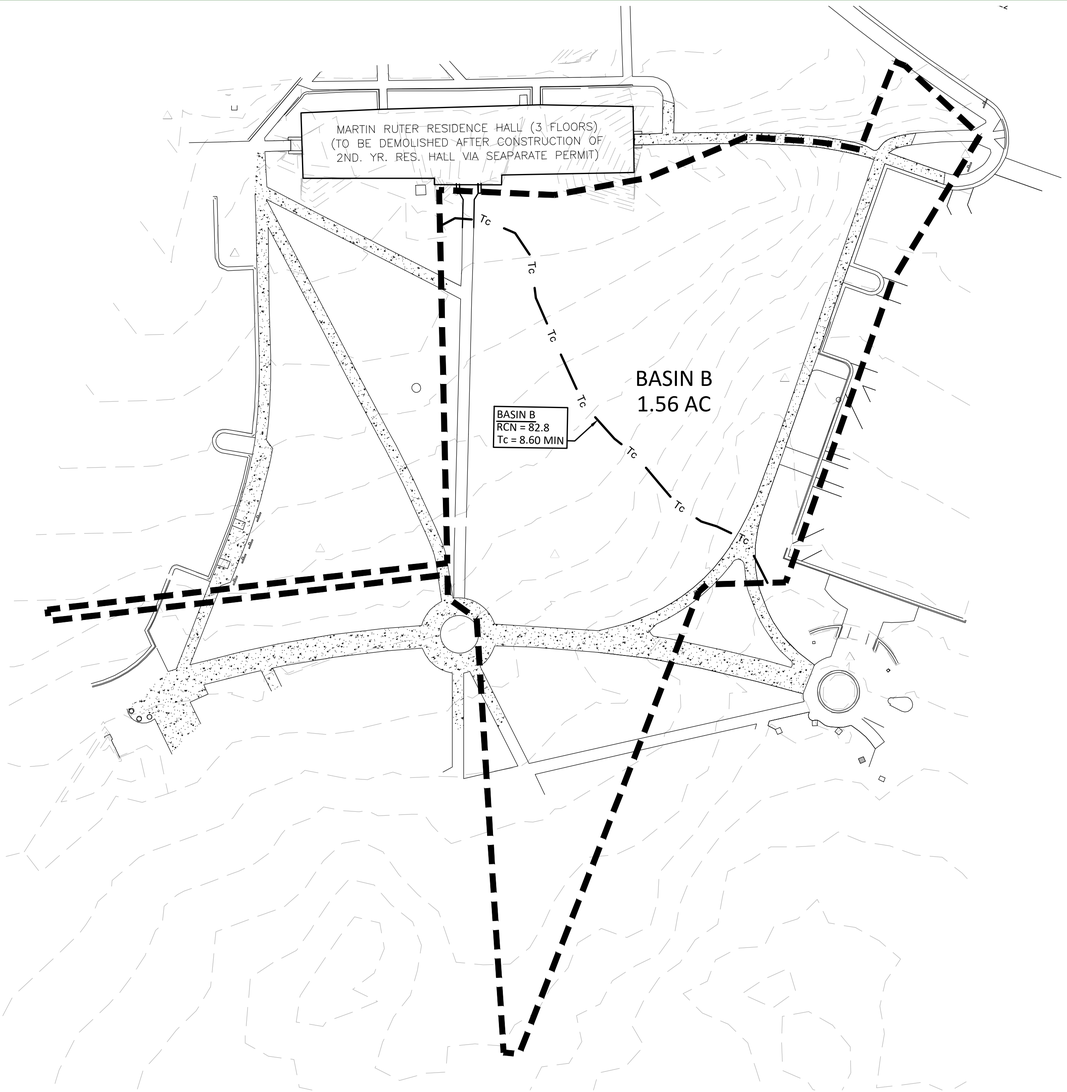
EXISTING DRAINAGE MAP - WELCOME CENTER & 1ST YR. RES. HALL

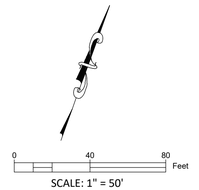
for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 47 of 62

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\47 EXISTING DRAINAGE MAP - WELCOME CENTER & 1ST YR. RES. HALL.dwg, 10/6/2023 4:33:46 PM





SCALE: 1" = 50'

Project: 22925_SU_Residence Hall Simulation Run: EX 2-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 2 Yr 24 Hr
Compute Time:08Sep2023, 10:51:09 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B	0.002441	3.1	09Apr2020, 12:07	2.05

Project: 22925_SU_Residence Hall Simulation Run: EX 10-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 10 Yr 24 Hr
Compute Time:08Sep2023, 10:51:08 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B	0.002441	6.8	09Apr2020, 12:07	4.46

Project: 22925_SU_Residence Hall Simulation Run: EX 25-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 25 Yr 24 Hr
Compute Time:08Sep2023, 10:51:10 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B	0.002441	8.9	09Apr2020, 12:07	5.92

Project: 22925_SU_Residence Hall Simulation Run: EX 100-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Existing
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 100 Yr 24 Hr
Compute Time:08Sep2023, 10:51:09 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B	0.002441	12.5	09Apr2020, 12:06	8.40

Select RCN from Table 2-7 of DCM

									Building	Pavement	Range (Fair)	Lawn (Good)							
				Hydrologic Soil Group [%]					98	98	91	87	80	80	89	78			
Basin	Area [s.f.]	Area [ac.]	Area [sq. mi.]	A	B	C	D	% Check	IC-1 [s.f.]	IC-2 [s.f.]	IC-3 [s.f.]	IC-4 [s.f.]	PC-1 [s.f.]	PC-2 [s.f.]	PC-3 [s.f.]	PC-4 [s.f.]	Total IC [s.f.]	Total IC %	% Check	Composite RCN
Existing	68048	1.56	0.002441	0%	0%	0%	100%	OK	0	10,756	0	0	57,292	0	0	0	10756	15.81%	OK	82.8

Time of Concentration

	Sheet						Shallow Concentrated - Unpaved					Shallow Concentrated - Paved				Channel/Storm Drain						Total	
	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	n	P [in]	s [ft/ft]	Tt-sheet [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFu [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFp [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	Tc [min]	Tlag [min]
	749.8	743.4	150	0.13	4.2	0.042667	7.79	743.4	740	128	0.027	0.81	740	740	0	0.000	0.00	0	0	0	0	5	0.00	8.60	5.16

	Storm Frequency Peak Flow [cfs]			
Basin	2 Year	10 Year	25 Year	100 Year
Existing Basin B	3.1	6.8	8.9	12.5
Proposed Basin B1	2	4	5.2	7.1
Proposed Basin B2	1.6	3	3.8	5.2
Delta	0.5	0.2	0.1	-0.2

THESE CONSTRUCTION P
THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM DESIGNED BY: DATE
AMK, KWM DRAWN BY: DATE
CHECKED BY: DATE
APPROVED BY: DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
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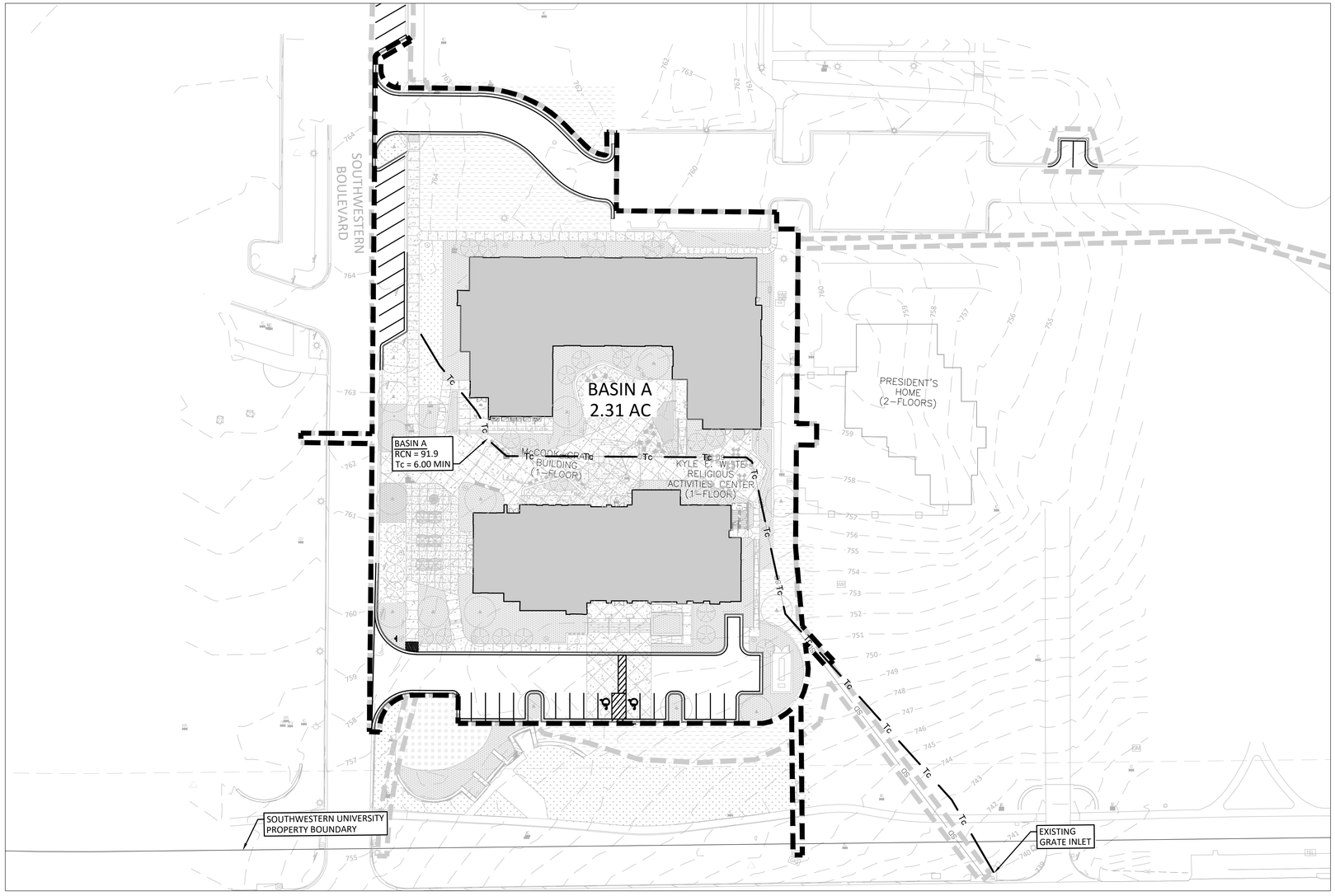
EXISTING DRAINAGE MAP - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 48 of 62

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\48 EXISTING DRAINAGE MAP - 2ND YR. RES. HALL.dwg, 10/6/2023 4:33:56 PM



0 40 80 Feet

SCALE: 1" = 40'

Project: 22925 SU Simulation Run: PR 2-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 2 Yr 24 Hr
Compute Time:07Sep2023, 09:33:51 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	6.8	09Apr2020, 12:05	3.14

Project: 22925 SU Simulation Run: PR 10-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 10 Yr 24 Hr
Compute Time:07Sep2023, 09:33:50 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	12.3	09Apr2020, 12:05	5.78

Project: 22925 SU Simulation Run: PR 25-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 25 Yr 24 Hr
Compute Time:07Sep2023, 09:33:52 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	15.5	09Apr2020, 12:05	7.31

Project: 22925 SU Simulation Run: PR 100-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 100 Yr 24 Hr
Compute Time:07Sep2023, 09:33:51 Control Specifications:24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN A	0.003608	20.9	09Apr2020, 12:05	9.86

	Storm Frequency Peak Flow [cfs]			
Basin	2 Year	10 Year	25 Year	100 Year
Existing Basin A	5.2	10.6	13.8	19.1
Proposed Basin A	6.8	12.3	15.5	20.9
Delta	1.6	1.7	1.7	1.8

Select RCN from Table 2-7 of DCM

				Hydrologic Soil Group [%]					*Building*	*Pavement*	98	91	87	80	80	89	78				
																	Lawn (Good)				
Basin	Area [s.f.]	Area [ac.]	Area [sq. mi.]	A	B	C	D	% Check	IC-1 [s.f.]	IC-2 [s.f.]	IC-3 [s.f.]	IC-4 [s.f.]	PC-1 [s.f.]	PC-2 [s.f.]	PC-3 [s.f.]	PC-4 [s.f.]	Total IC [s.f.]	Total IC %	% Check	Composite RCN
Proposed	100598	2.31	0.003608	0%	0%	0%	100%	OK	26,456	40,183	0	0	33,959	0	0	0	66639	66.24%	OK	91.9

Developed Time of Concentration

Sheet							*Shallow Concentrated - Unpaved*				*Shallow Concentrated - Paved*				*Storm Drain*					*Channel*					*Total*	
Elev-Start [ft]	Elev-Stop [ft]	L [ft]	n	P [in]	s [ft/ft]	Tt-sheet [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFu [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFp [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	Tc [min]	Tlag [min]
764	762.9	35	0.13	4.2	0.031	2.75	762.9	762.9	0	0.000	0.00	762.9	760.9	62	0.032	0.28	298	0	0	0	4.7	1.06	173	0	0	0	4.1	0.70	6.00	3.60

THESE CONSTRUCTION PLANS HA
THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM DESIGNED BY: DATE
AMK, KWM DRAWN BY: DATE
CHECKED BY: DATE
APPROVED BY: DATE

STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED
PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL
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METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700 WEB STEGERBIZZELL.COM
SERVICES >>ENGINEERS >>PLANNERS >>SURVEYORS

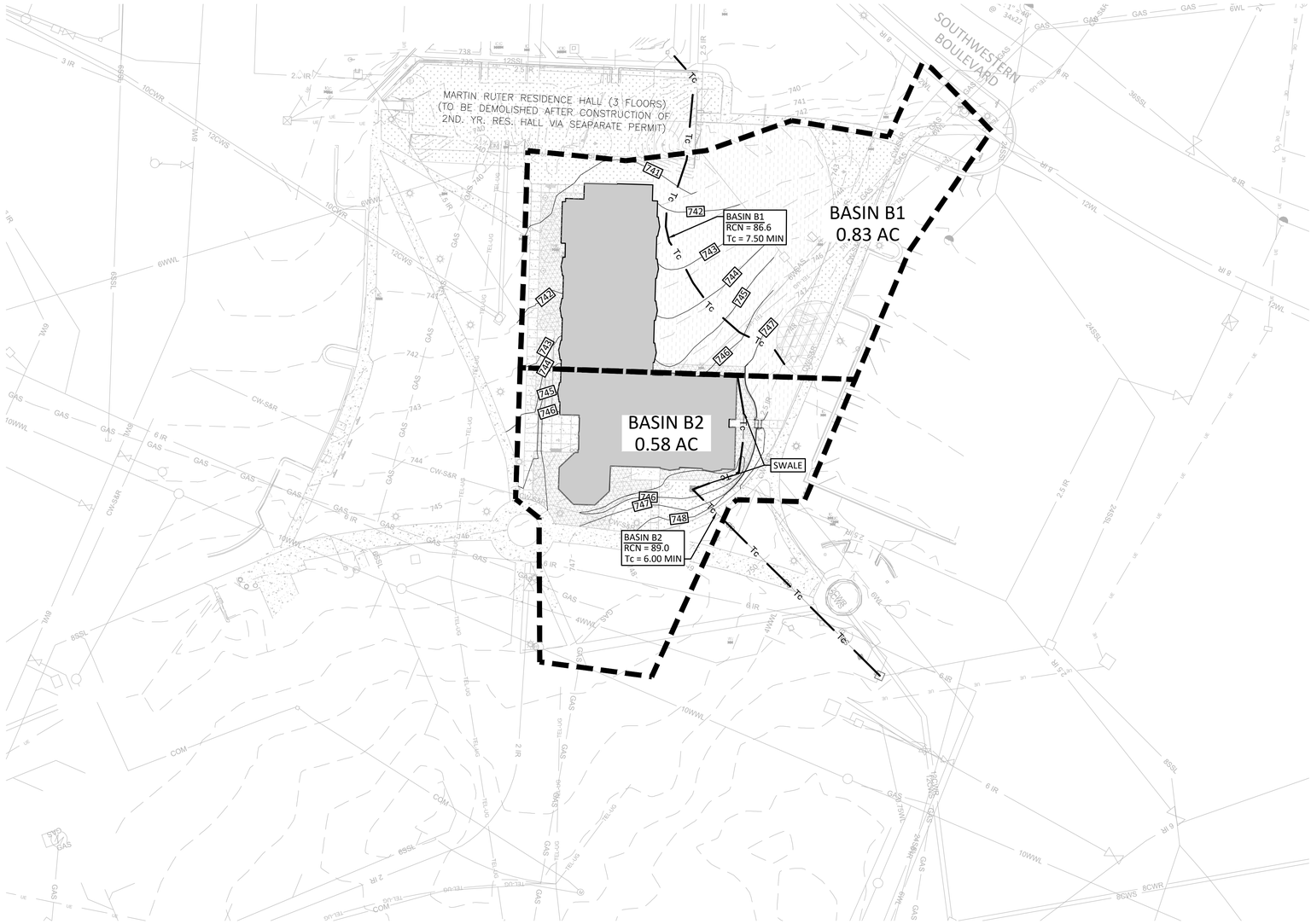
DEVELOPED DRAINAGE MAP - WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

File Name: P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\49 DEVELOPED DRAINAGE MAP - WELCOME CENTER & 1ST YR. RES. HALL.dwg By: Adam Kish Date: 10/6/2023 4:34 PM

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\49 DEVELOPED DRAINAGE MAP - WELCOME CENTER & 1ST YR. RES. HALL.dwg, 10/6/2023 4:34:15 PM



SCALE: 1" =50'

Project: 22925_SU_Residence Hall Simulation Run: PR 2-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 2 Yr 24 Hr
Compute Time: 08Sep2023, 10:51:11 Control Specifications: 24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B1	0.001292	2.0	09Apr2020, 12:06	2.59
BASIN B2	0.000906	1.6	09Apr2020, 12:05	2.87

Project: 22925_SU_Residence Hall Simulation Run: PR 10-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 10 Yr 24 Hr
Compute Time: 08Sep2023, 10:51:10 Control Specifications: 24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B1	0.001292	4.0	09Apr2020, 12:06	5.13
BASIN B2	0.000906	3.0	09Apr2020, 12:05	5.46

Project: 22925_SU_Residence Hall Simulation Run: PR 25-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 25 Yr 24 Hr
Compute Time: 08Sep2023, 10:51:12 Control Specifications: 24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B1	0.001292	5.2	09Apr2020, 12:06	6.63
BASIN B2	0.000906	3.8	09Apr2020, 12:05	6.98

Project: 22925_SU_Residence Hall Simulation Run: PR 100-YR SCS

Start of Run: 09Apr2020, 00:00 Basin Model: Proposed
End of Run: 10Apr2020, 00:00 Meteorologic Model: CoA SCS 100 Yr 24 Hr
Compute Time: 08Sep2023, 10:51:11 Control Specifications: 24 HR

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BASIN B1	0.001292	7.1	09Apr2020, 12:06	9.15
BASIN B2	0.000906	5.2	09Apr2020, 12:05	9.52

	Storm Frequency Peak Flow [cfs]			
Basin	2 Year	10 Year	25 Year	100 Year
Existing Basin B	3.1	6.8	8.9	12.5
Proposed Basin B1	2	4	5.2	7.1
Proposed Basin B2	1.6	3	3.8	5.2
Delta	0.5	0.2	0.1	-0.2

Select RCN from Table 2-7 of DCM

				Hydrologic Soil Group [%]					*Building*	*Pavement*	*Lawn (Good)*							
									98	98	91	87	80	80	89	78		
Basin	Area [s.f.]	Area [ac.]	Area [sq. mi.]	A	B	C	D	% Check	IC-1 [s.f.]	IC-2 [s.f.]	IC-3 [s.f.]	IC-4 [s.f.]	PC-1 [s.f.]	PC-2 [s.f.]	PC-3 [s.f.]	PC-4 [s.f.]	Total IC [s.f.]	Total IC %	% Check	Composite RCN
Proposed B1	36026	0.83	0.001292	0%	0%	0%	100%	OK	6,590	6,625	0	0	22,811	0	0	0	13215	36.68%	OK	86.6
Proposed B2	25259	0.58	0.000906	0%	0%	0%	100%	OK	6,730	5,862	0	0	12,667	0	0	0	12592	49.85%	OK	89.0

Developed Time of Concentration

Sheet							*Shallow Concentrated - Unpaved*					*Shallow Concentrated - Paved*					*Channel*						*Storm Drain*						*Total*	
Elev-Start [ft]	Elev-Stop [ft]	L [ft]	n	P [in]	s [ft/ft]	Tt-sheet [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFu [min]	Elev-Start [ft]	Elev-Stop [ft]	L [ft]	s [ft/ft]	Tt-SCFp [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	L [ft]	Q [cfs]	A [ft^2]	Wp [ft]	V [ft/s]	Tt-channel [min]	Tc [min]	Tlag [min]
749	740.9	150	0.13	4.2	0.054	7.09	740.9	737.7	79	0.041	0.41	737.7	737.7	0	0.000	0.00	0	0	0	0	5	0.00	0	0	0	0	5	0.00	7.50	4.50
748.7	748.5	21	0.13	4.2	0.010	2.94	748.5	748.5	0	0.000	0.00	748.5	748.5	0	0.000	0.00	68	0	0	0	2.2	0.52	164	0	0	0	3.9	0.70	6.00	3.60

THESE CONSTRUCTION PLA
THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

2023-50-SDP

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NO.	REVISION	BY	DATE

DLP, KWM DESIGNED BY: DATE
AMK, KWM DRAWN BY: DATE
CHECKED BY: DATE
APPROVED BY: DATE

STATE OF TEXAS · DAVID L. PLATT · 115964 · LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL
ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
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DEVELOPED DRAINAGE MAP - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 50 of 62

File Name: P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\50 DEVELOPED DRAINAGE MAP - 2ND YR. RES. HALL.dwg By: Adam Kish Date: 10/6/2023 4:34 PM

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LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED DOMESTIC LINE
- EXISTING DOMESTIC LINE WITH SIZE
- EXISTING SEWER LINE WITH SIZE
- PROPOSED SEWER LINE
- EXISTING FIRE LINE WITH SIZE
- PROPOSED FIRE LINE
- PROPOSED FDC LINE
- EXISTING STORM SEWER LINE WITH SIZE
- PROPOSED STORM SEWER LINE
- EXISTING COMMUNICATION LINE
- PROPOSED COMMUNICATION LINE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING IRRIGATION LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING GATE VALVE
- PROPOSED GATE VALVE
- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE

THESE CONSTRUCTION PLANS HAVE BEEN PREPARED TO FULFILL THE REQUIREMENTS FOR THE TCEQ FOR WATER POLLUTION ABATEMENT OVER THE EDWARDS AQUIFER. CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL DETAILED CONSTRUCTION PLANS PRIOR TO CONSTRUCTION.

NOTE:
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2023-50-SDP

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TBPLS FIRM No.10003700
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OVERALL STORM SEWER PLAN - WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 51 of 62

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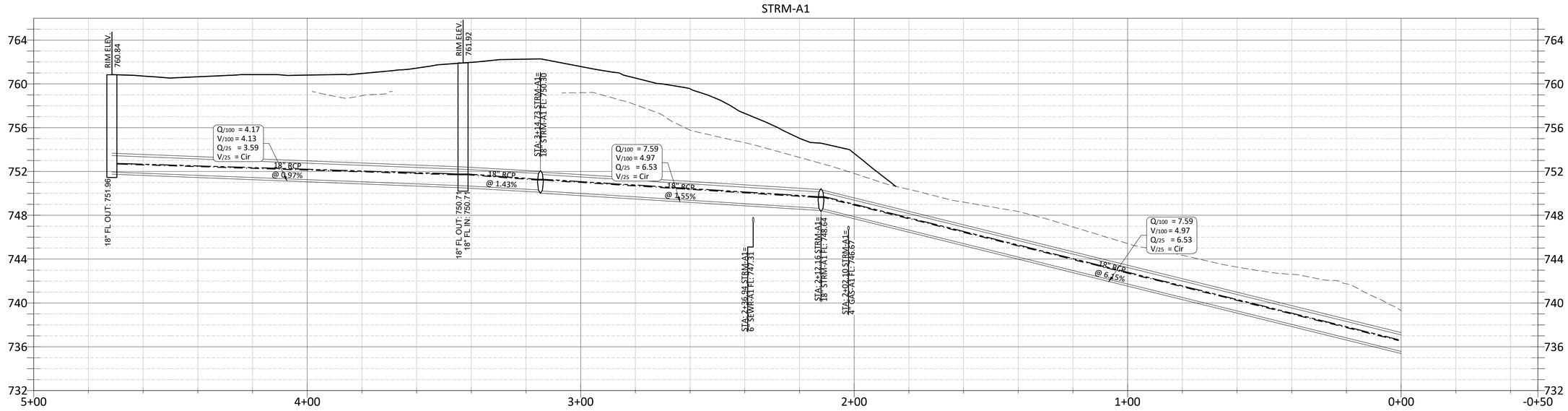

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2023-10-06

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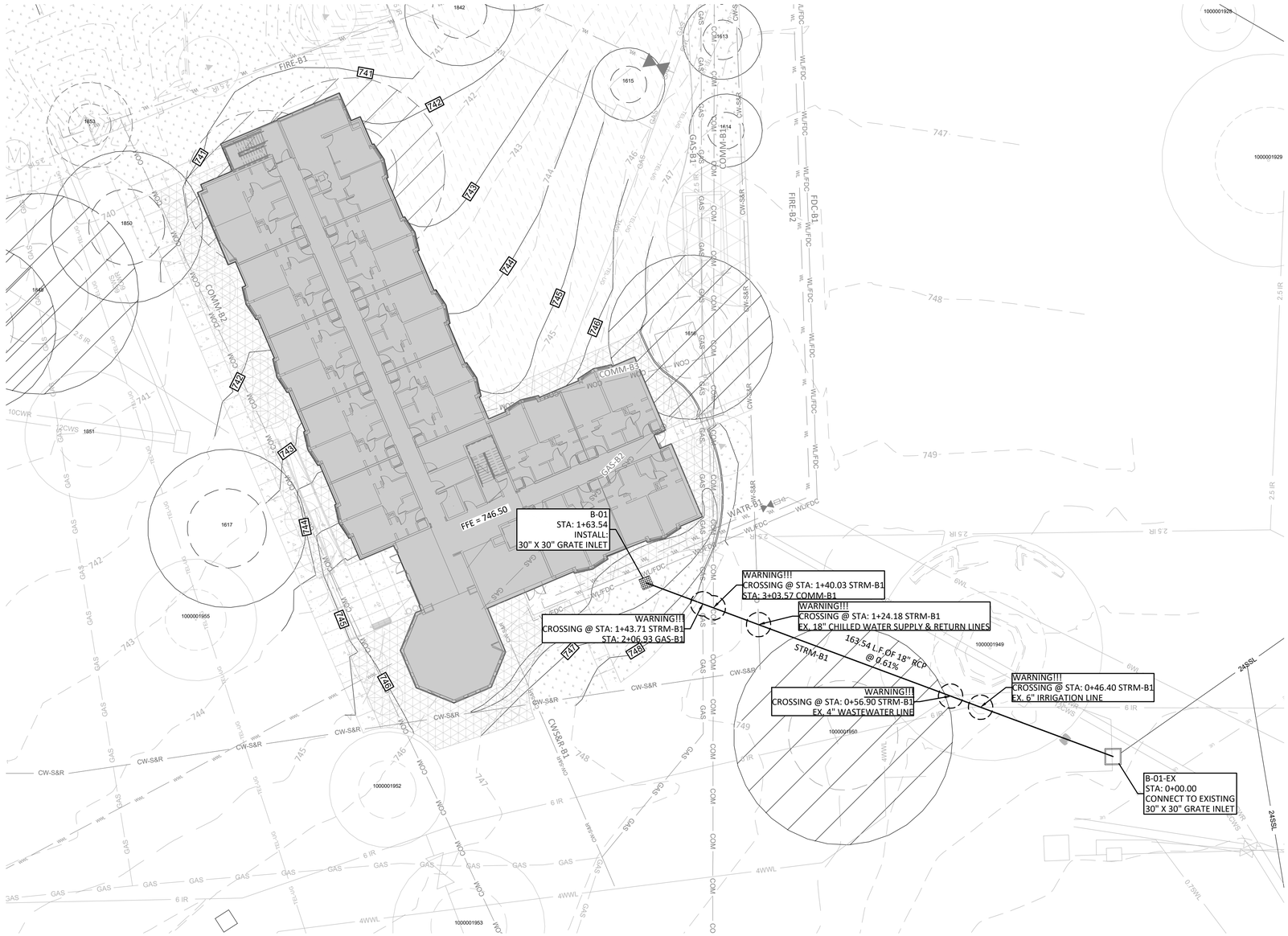
STRM-A1 PLAN & PROFILE - STA. 0+00 TO END

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 52 of 62



0 20 40 Feet

SCALE: 1" =20'

LEGEND

123	EXISTING CONTOUR
123	PROPOSED CONTOUR
WL	PROPOSED DOMESTIC LINE
CW-S&R	PROPOSED CHILLED WATER SERVICE & RETURN LINES
X" CWS	EXISTING CHILLED WATER SERVICE LINE WITH SIZE
X" CWR	EXISTING CHILLED WATER RETURN LINE WITH SIZE
X" WL	EXISTING DOMESTIC LINE WITH SIZE
X" WWL	EXISTING SEWER LINE WITH SIZE
WWL	PROPOSED SEWER LINE
X" WL/F	EXISTING FIRE LINE WITH SIZE
WL/F	PROPOSED FIRE LINE
X" SSL	EXISTING STORM SEWER LINE WITH SIZE
	PROPOSED STORM SEWER LINE
COM	EXISTING COMMUNICATION LINE
COM	PROPOSED COMMUNICATION LINE
GAS	EXISTING GAS LINE
GAS	PROPOSED GAS LINE
UE	EXISTING UNDERGROUND ELECTRIC
X" IR	EXISTING IRRIGATION LINE
TEL-UG	EXISTING UNDERGROUND TELEPHONE LINE
	PROPOSED GRATE INLET

NOTE:
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STATE OF TEXAS
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PROFESSIONAL ENGINEER
2023-10-06

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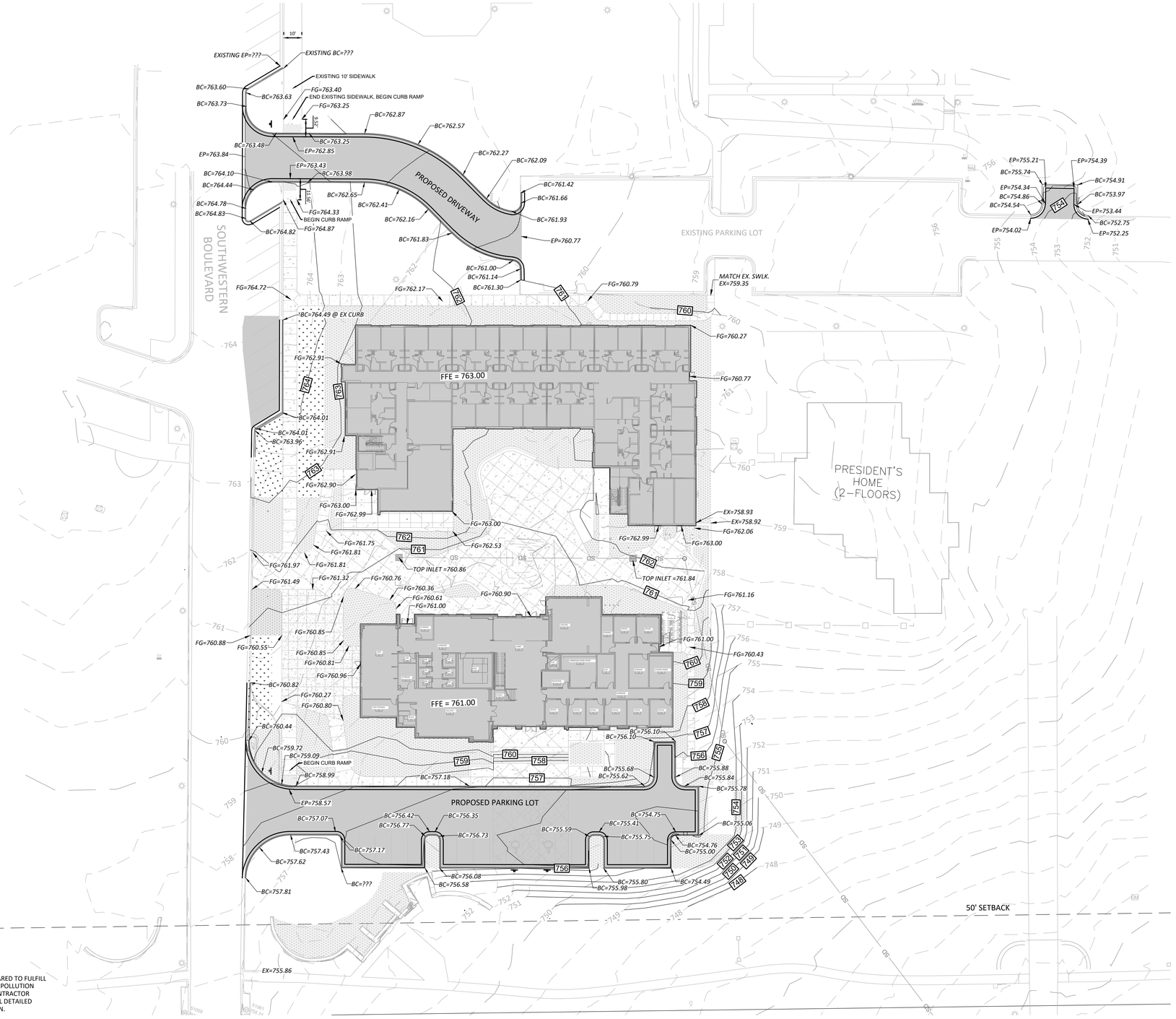
OVERALL STORM SEWER PLAN - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 53 of 62

P:\22000-22999\22925 SU New Residence Halls and Welcome Center\CAD\Plans\60 GRADING PLAN - WELCOME CENTER & 1ST YR. RES. HALL.dwg, 10/6/2023 4:42:13 PM



LEGEND

	LIMITS OF CONSTRUCTION
123	PROPOSED CONTOUR
123	EXISTING CONTOUR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
TC	TOP OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STAIRS
BS	BOTTOM OF STAIRS

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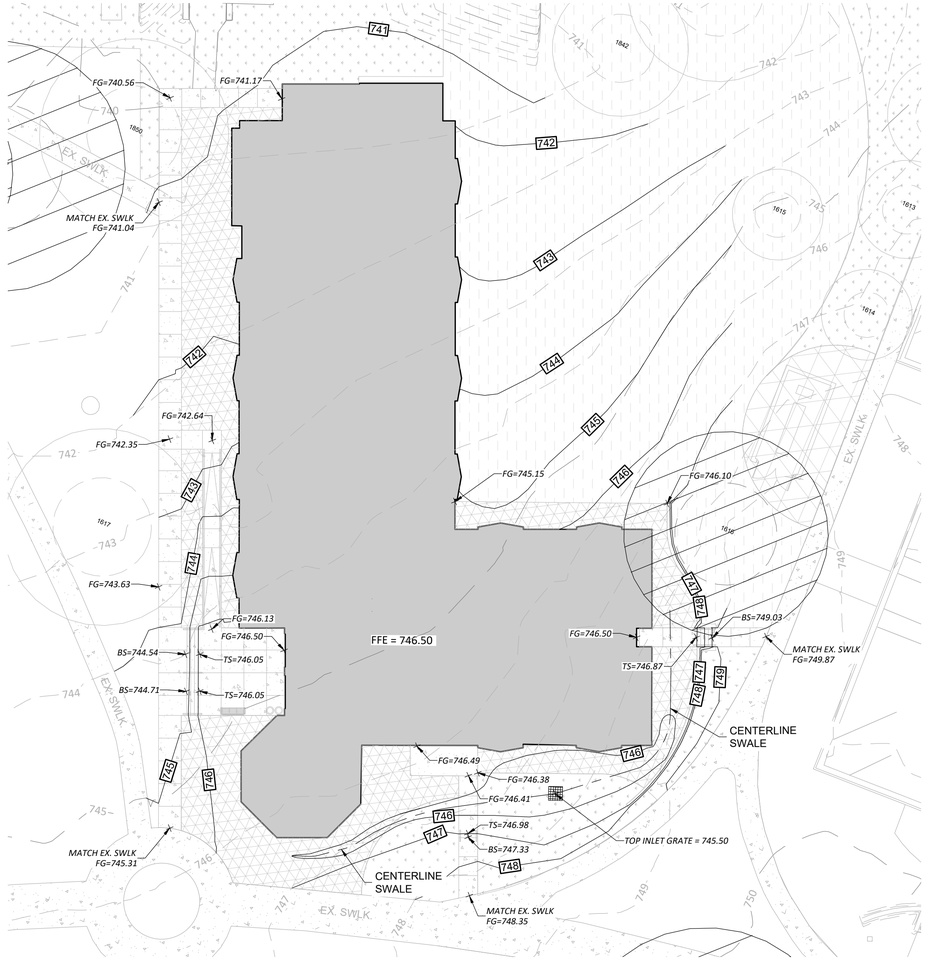
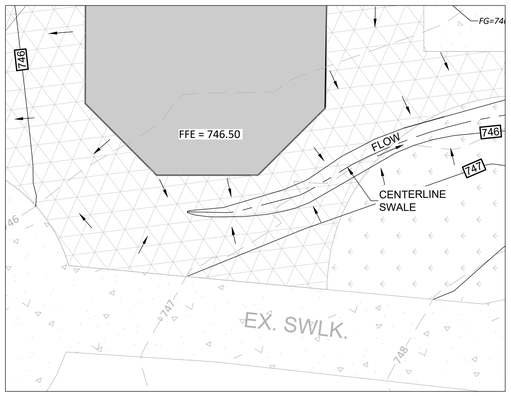
GRADING PLAN - WELCOME CENTER & 1ST YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

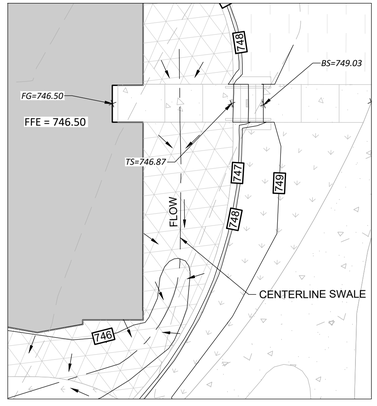
Project No: 22925

SHEET 58 of 62





0 10 20 Feet
SCALE: 1" = 10'



0 20 40 Feet
SCALE: 1" = 20'

LEGEND

	LIMITS OF CONSTRUCTION
123	PROPOSED CONTOUR
123	EXISTING CONTOUR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
BC	BACK OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STAIRS
BS	BOTTOM OF STAIRS

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STATE OF TEXAS
DAVID L. PLATT
115964
LICENSED PROFESSIONAL ENGINEER
2023-10-06

STEGER BIZZELL

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GRADING PLAN - 2ND YR. RES. HALL

for
SOUTHWESTERN UNIVERSITY
NEW RESIDENCE HALLS AND WELCOME CENTER
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Project No: 22925

SHEET 59 of 62

Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), 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.

Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center

☒ **Attachment A – SCS Engineering Design Report**. This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

31. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

    Contact Person: Rick Martinez
    Entity: Southwestern University
    Mailing Address: 1001 East University Avenue
    City, State: Georgetown, TX Zip: 78626
    Telephone: 512-863-1425 Fax: N/A
    Email Address: rickmartinez@southwestern.edu
    The appropriate regional office must be informed of any changes in this information within 30 days of the change.

32. The engineer responsible for the design of this sewage collection system is:

    Contact Person: David L. Platt, P.E.
    Texas Licensed Professional Engineer's Number: 115964
    Entity: Steger Bizzell
    Mailing Address: 1978 S. Austin Ave
    City, State: Georgetown, TX Zip: 78626
    Telephone: 512-930-9412 Fax: n/a
    Email Address: dplatt@stegerbizzell.com

Project Information

33. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

- ☐ Residential: Number of single-family lots: 0
- ☐ Multi-family: Number of residential units: _____
- ☐ Commercial
- ☐ Industrial
- ☐ Off-site system (not associated with any development)
- ☒ Other: Institutional

34. The character and volume of wastewater is shown below:

_100_% Domestic	20,860 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

Total gallons/day: 20,860

35. Existing and anticipated infiltration/inflow is 72,000 gpd. This will be addressed by: The project is all new construction with PVC pipe serving the new development.

36. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

- ☐ The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached.
- ☒ The WPAP application for this development was submitted to the TCEQ on 10/6/2023, but has not been approved.
- ☐ A WPAP application is required for an associated project, but it has not been submitted.
- ☐ There is no associated project requiring a WPAP application.

37. Pipe description:

Table 1 – Pipe Description

PIPE DIAMETER (IN)	LINEAR FEET (FT)	PIPE MATERIAL	NATIONAL STANDARD FOR PIPE MATERIAL	NATIONAL STANDARD FOR PIPE JOINTS
6	1,383	PVC SDR-26	ASTM D3034	ASTM D3212
6	80	PVC SDR-26 (Pressure-Rated)	ATSM D2241	ASTM D3212

Total Linear Feet: **1,463**

(1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
(2) Pipe Material - If PVC, state SDR value.
(3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

38. The sewage collection system will convey the wastewater to the San Gabriel Wastewater Treatment Plant. The treatment facility is:

☒ Existing
☐ Proposed

39. All components of this sewage collection system will comply with:

☒ The City of Georgetown standard specifications.
☐ Other. Specifications are attached.

40. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.

☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

41. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

42. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.

☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes**. A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.

☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

43. ☒ Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 – Manholes and Cleanouts

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
A1	28-29, 42-43	0+00.00	Manhole
A11	28-29	0+00.00	Manhole
A12	28-29	0+00.00	Manhole
B1	32, 41	0+00.00	Manhole

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*

44. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.

45. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	**Max. Manhole Spacing (feet)**
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	200

☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing**. The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and

must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

46. ☒ All manholes will be monolithic, cast-in-place concrete.

☐ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

47. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 100'.

48. ☒ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.

49. Lateral stub-outs:

☒ The location of all lateral stub-outs are shown and labeled.
☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

50. Location of existing and proposed water lines:

☒ The entire water distribution system for this project is shown and labeled.
☐ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
☐ There will be no water lines associated with this project.

51. 100-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
☐ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 – 100-Year Floodplain

Line	*Sheet*	*Station*
		to
		to

52. 5-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)

☐ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 – 5-Year Floodplain

Line	***Sheet***	***Station***
	of	to
	of	to
	of	to
	of	to

53. ☒ Legal boundaries of the site are shown.

54. ☒ The ***final plans and technical specifications*** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

55. ☒ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.

☐ There will be no water line crossings.

☐ There will be no water lines within 9 feet of proposed sewer lines.

Table 5 – Water Line Crossings

Line	***Station or Closest Point***	***Crossing or Parallel***	***Horizontal Separation Distance***	***Vertical Separation Distance***
A1	9+30.97	Crossing	N/A	Unknown
A1	10+47.37	Crossing	N/A	9.19'
B1	0+62.74	Crossing	N/A	Unknown
B1	1+71.61	Crossing	N/A	Unknown

56. Vented Manholes:

☒ **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.

☐ **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.

☐ **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.

☐ **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 – Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

57. Drop manholes:

☒ There are no drop manholes associated with this project.

☐ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 – Drop Manholes

Line	*Manhole*	*Station*	*Sheet*
N/A			

58. Sewer line stub-outs (For proposed extensions):

☐ The placement and markings of all sewer line stub-outs are shown and labeled.

☒ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

59. Lateral stub-outs (For proposed private service connections):

☒ The placement and markings of all lateral stub-outs are shown and labeled.

☐ No lateral stub-outs are to be installed during the construction of this sewage collection system.

60. Minimum flow velocity (From Appendix A)

☒ Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

61. Maximum flow velocity/slopes (From Appendix A)

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.-PU

☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 – Flows Greater Than 10 Feet per Second

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*
N/A					

62. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.

☐ Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.

☒ N/A

Administrative Information

63. ☒ The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

64. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 – Standard Details

Standard Details	***Shown on Sheet***
Lateral stub-out marking **[Required]**	45 of 62
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	44 of 62
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	45 of 62
Typical trench cross-sections **[Required]**	45 & 46 of 62
Bolted manholes **[Required]**	44 of 62
Sewer Service lateral standard details **[Required]**	45 of 62
Clean-out at end of line **[Required, if used]**	N/A
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	N/A
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	45 of 62
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	45 of 62
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	N/A

65. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.

66. ☒ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.

☒ Survey staking was completed on this date: 10/15/2022

67. ☒ 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.

68. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

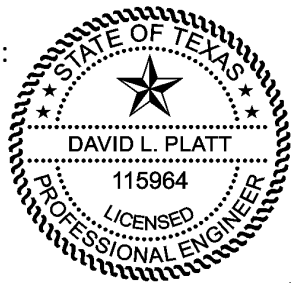
Signature

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 **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: David L. Platt, P.E.

Date: 10/6/2023

Place engineer's seal here:



Signature of Licensed Professional Engineer:

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 – Slope Velocity

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

**For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.*

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 – Manning's Formula

Where:

v = velocity (ft/sec)
n = Manning's roughness coefficient (0.013)
Rh = hydraulic radius (ft)
S = slope (ft/ft)

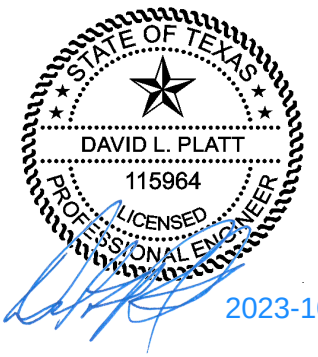
ATTACHMENT A

ENGINEERING DESIGN REPORT

FOR

SOUTHWESTERN UNIVERSITY
WELCOME CENTER & RESIDENCE HALLS
ORGANIZED SEWAGE COLLECTION SYSTEM

Job No. 22925



2023-10-06

Prepared by:

STEGER BIZZELL
F-181
1978 South Austin Ave.
Georgetown, Texas 78626

Engineering Design Report
for a
WASTEWATER COLLECTION SYSTEM
Within Southwestern University

PURPOSE

The purpose of this report is to demonstrate that the proposed wastewater collection system complies with the Texas Commission on Environmental Quality's Chapter 217 - Design Criteria for Domestic Wastewater Systems. The project includes the construction of wastewater lines to service Southwestern University's Welcome Center and Residence Halls.

Southwestern University will own and maintain the on-site sanitary sewer collection system described in this application. The San Gabriel Wastewater Treatment Plant (WWTP) will receive and treat flows from the project. The TCEQ Permit No. is WQ 0010489002 . The Permittee is the CITY OF GEORGETOWN. The plans will also be reviewed by the City of Georgetown's Development Engineer, Mr. David Munk, P.E.

PIPE DESIGN 30 TAC §217.53

Flow design basis (30 TAC §217.53(a))

Flow development for the area is based on the following:

The site will have 298 bedrooms and an estimated population of 298. The flow rate was determined using 70 gpd/person. This produces a projected average flow rate of 20,860 gpd or 14 gpm. Using a peak factor of 4, the peak flow rate was determined to be 83,440 gpd or 58 gpm.

Minimum dry weather flow would be calculated by multiplying the average flow by a minimum flow factor of 0.2 resulting in a minimum dry weather flow of 3 gpm.

Infiltration/Inflow (I/I) flows have to be considered as part of flow development. A generally accepted I/I generation rate is 1,000 gal per acre served. Therefore, the flow resulting from I/I would be as follows:

1,000 gal x 4.41 ac. = 4,410 gpd

Potential peak flow in the system would be as follows:
83,440 gpd + 4,410 gpd = 87,850 gpd

Minimum and maximum wastewater slopes for the project can be found in the table below:

Diameter [in]	Min. Slope (Plans) [%]	Min. Slope (TCEQ) [%]	Max. Slope (Plans) [%]	Max. Slope (TCEQ) [%]	Min. Vel. (Plans) [ft/s]	Max. Vel. (Plans) [ft/s]
6	1.0	0.5	11.79	12.35	2.0	9.8

Pipe full capacities for the project can be found in the table below:

Diameter [in]	Min. Slope [%]	Min. Slope Capacity [gpd]	Max. Slope [%]	Max. Slope Capacity [gpd]
6	1.0	363,629	11.79	1,248,576

Therefore, the capacity of the system as designed would be greater than the potential peak flows while exceeding the minimum pipe full velocity of 2 fps and staying within the maximum pipe full velocity of 10 fps.

Gravity pipe materials (30 TAC §217.53(b)), Joints for gravity pipe (30 TAC §217.53(c))

PIPE	LINEAR FEET	PIPE MATERIAL	NATIONAL SPECIFICATION FOR PIPE MATERIAL	NATIONAL STANDARD FOR PIPE JOINTS
6” Gravity	1,383	PVC SDR26	ASTM D3034	ASTM D3212
6” Crossing	80	PVC SDR26 (Pressure-Rated)	ASTM D2241	ASTM D3212

Separation distances (30 TAC §217.53(d))

The proposed wastewater collection system complies the with TCEQ Separation Distance requirements. The locations of any crossings or parallel lines are included in Form TCEQ-0582 Section 24. The crossing or parallel lines are also shown on Sheet 28, 29, and 32 of the construction plans. SDR-26 PVC pipe is proposed for the project. The pipe has a Pressure Class rating of 115 psi as tested under ASTM D3034. All water/wastewater crossings will use DR-26 Pipe which has a Pressure Rating of 160 psi as tested under ASTM D2241.

Building laterals and taps (30 TAC §217.53(e))

There are 6” service laterals to proposed buildings with this project.

Bores (30 TAC §217.53(f))

There are no bores proposed with this project.

Corrosion potential (30 TAC §217.53(g)), Odor control (30 TAC §217.53(h))

PVC SDR-26 meeting the requirements of ASTM D3034 for pipe and ASTM D3212 for pipe

joints are proposed for this project. The sewer pipe will handle ordinary domestic sewer.

Active geologic faults (30 TAC §217.53(i))

There are no known active geologic faults within the limits of construction.

Capacity analysis (30 TAC §217.53(j))

The existing downstream collection system consists of 10” and larger pipes. The City of Georgetown provided confirmation capacity of the downstream system was adequate during their utility evaluation process for the project.

The existing downstream collection system consists of 10”, 12", 21", 24", and 30" pipes. The existing 10” line has a minimum grade of 0.25% and a capacity of 709,945 gpd. The existing 12" line has a minimum grade of 0.20% and a line capacity of 1,032,571 gpd. The existing 21" line has a minimum grade of 0.11% and a line capacity of 3,404,722 gpd. The existing 24" line has a minimum grade of 0.08% and a line capacity of 4,145,670 gpd. The existing 30" line has a minimum grade of 0.055% and a line capacity of 6,232,899 gpd.

Structural analysis (30 TAC §217.53(k))

Structural calculations to determine allowable buckling pressure, prism load, wall crushing determinations, strain prediction calculations and calculations that quantify long term pipe deflection as required by 30 TAC §217.53(k)(2) are provided in the Engineering Design Report. A summary of the results are included below.

FOR 6" PVC SDR-26

q_a	= 33.26 psi	E_b	= 200 psi	q_p	= 13.0 psi
h	= 180"	E	= 500000 psi	γ_w	= 0.0361 pci
h_w	= 0"	I	= 0.00116	γ_s	= 120 pcf
R_w	= 1	t	= 0.241"	W_c	= 78.01 lb/in
H	= 15.00'	D	= 6"	L_l	= 0 psi
B’	= 0.40				

h_w = height of water surface above top of pipe in inches (in) (groundwater elevation)

R_w = Water buoyancy factor. If $h_w = 0$, $R_w = 1$. If $0 \leq h_w \leq h$ (groundwater elevation is between the top of the pipe and the ground surface), calculate R_w with Equation 2

H = Depth of burial in feet (ft) from ground surface to crown of pipe.

B' = Empirical coefficient of elastic support

E_b = modulus of soil reaction for the bedding material (psi)

E = modulus of elasticity of the pipe material (psi)

I = moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For solid wall pipe, I can be calculated with equation 4. If the pipe used is not solid wall pipe (for example a pipe with a ribbed cross section), the proper moment of inertia formula must be obtained from the manufacturer.

t	=	pipe structural wall thickness (in)
D	=	mean pipe diameter (in)
q_p	=	pressure applied to pipe under installed conditions (psi)
γ_w	=	0.0361 pounds per cubic inch (pci), specific weight of water
γ_s	=	specific weight of soil in pounds per cubic foot (pcf)
W_c	=	vertical soil load on the pipe per unit length in pounds per linear inch (lb/in)
L_l	=	Live load as determined in T63

USE THIS SPREADSHEET TO ASSIST COMPLETION OF TNRCC FORM 10243.
FILL IN INFORMATION IN THE YELLOW CELLS. TAB BETWEEN CELLS.

ASTM D3034 PIPE (NOT ASTM D2241)

CHOOSE PIPE SDR AND DIAMETER

SDR = 26
Dia. = 8 "
Wall = 0.323 "

Buckling Analysis

T63) Pressure due to live load

L_l = = 0

T68) Calculate allowable and predicted buckling pressure.

a) Calculate allowable buckling pressure:

$q_a = 0.4*Sqrt(32*R_W*B'*E_b*(E*I/D^3))$ Equation (1)

$R_W = 1-0.33*(h_w/h)$ Equation (2)

$B' = 1/(1+4*e^{(0.065H)})$ Equation (3)

$I = (t^3/12)*(inches^4/Linch)$ Equation (4)

q_a = allowable buckling pressure, pounds per square inch (psi)	=	33.52	psi
h = height of soil surface above top of pipe in inches (in)	=	180	"
h_w = height of water surface above top of pipe in inches (in) (groundwater elevation)	=	0	"
R_W = Water buoyancy factor. If h_w = 0, R_w = 1. If 0 < or = hw < or = h (groundwater elevation is between the top of the pipe and the ground surface), calculate Rw with Equation 2	=	1	
H = Depth of burial in feet (ft) from ground surface to crown of pipe.	=	15.00	'
B' = Empirical coefficient of elastic support	=	0.40	
E_b = modulus of soil reaction for the bedding material (psi)	=	200	psi
E = modulus of elasticity of the pipe material (psi)	=	500000	psi
I = moment of inertia of the pipe wall cross section per linear inch of pipe, inch4/lineal inch = inch3. For solid wall pipe, I can be calculated with equation 4. If the pipe used is not solid wall pipe (for example a pipe with a ribbed cross section), the proper moment of inertia formula must be obtained from the manufacture	=	0.00280819	
t = pipe structural wall thickness (in)	=	0.323	"
D = mean pipe diameter (in)	=	8	"

b) Calculate pressure applied to pipe under installed conditions:

$q_p = Y_w*h_w=R_w*(W_c/D)+L_l$ Equation (5)

W_c - $Y_s*H*(D+t)/144$ Equation (6)

q_p = pressure applied to pipe under installed conditions (psi)	=	13.00	psi
Y_w = 0.0361 pounds per cubic inch (pci), specific weight of water	=	0.0361	pcf
Y_s = specific weight of soil in pounds per cubic foot (pcf)	=	120	pcf
W_c = vertical soil load on the pipe per unit length in pounds per linear inch (lb/in)	=	104.04	lb/in
L_l = Live load as determined in T63	=	0	psi

Wall Crushing

T71) **If no concrete encased flexible pipe is proposed,** skip to T73, otherwise:

$H = (24*P_c*A)/(Y_s*D_o)$ Equation (7)

D_o = outside pipe diameter, in.	=	8.4	in.
P_c = compressive stress or hydrostatic design basis (HDB). For typical PVC pipe assume 4,000 psi. For any other pipe material the HDB must be supplied by the pipe manufacturer.	=	4000	psi
A = surface area of the pipe wall, in2/ft	=	3.876	in.2/ft
Y_s = specific weight of soil in pounds per cubic foot (pcf)	=	120	pcf
H = Depth of burial in feet (ft) from ground surface to crown of pipe.	=	369	ft
24 = conversions and coefficients	=	24	

T81) Determine Pipe Stiffness

$P_s = EI/0.149*r^3$ Equation (10)

E = modulus of elasticity of the pipe material (psi)	=	500000	psi
I = moment of inertia of the pipe wall cross section per linear inch of pipe, inch4/lineal inch = inch3. For solid wall pipe, I can be calculated with equation 4. If the pipe used is not solid wall pipe (for example a pipe with a ribbed cross section), the proper moment of inertia formula must be obtained from the manufacture			
mean pipe diameter (in)	=	0.00280819	in.
r =mean radius (in)	=	4	in.
P_s	=	147	psi

T83) Calculate P_s/SSF ratio

$P_s/SSF = P_s/0.61*zeta*E_b$ > or = 0.15 Equation (12)

P_s = Pipe stiffness (psi)	=	147	psi
E_b = modulus of soil reaction for the bedding material (psi) [from T76]	=	200	psi
zeta = 1.0, or a value calculated with the method in T79	=	1.0	
SSF = soil stiffness factor (0.061*zeta*Eb)	=	12.2	
P_s/SSF	=	12.05	

T86) Calculate and report predicted deflection.

$DeltaY/D(\%) = (K*(L_p+L_l)*100)/((0.149*P_s)+(0.061*zeta*E_b))$ Equation (13)

$L_p = (Y_s*H)/144$ Equation (14)

Delta Y/D = Predicted % vertical deflection under load	=	4.03	%
DeltaY = Change in vertical pipe diameter under load			
D = Undeflected mean pipe diameter (in)	=	8	in.
K = Bedding angle constant. Assumed to be 0.110 unless otherwise justified.	=	0.110	
Y_s = Unit weight of soil (pcf). Y_s less than 120 pcf must be justified.	=	120	pcf
H = Depth of burial (ft) from ground surface to crown of pipe.	=	15	ft.
L_p =Prism load (psi). If prism load is calculated using Marston's load formula, or other formulas less conservative than the one provided above, the load should be multiplied by a deflection lag factor DL = 1.5 to account for long-term deflection of the pipe as the bedding consolidates.	=	12.50	psi
(P_s from T82; zeta from T80; and E_b from T76)			

Minimum and maximum slopes (30 TAC §217.53(l))

The wastewater collection system contains slopes sufficient to allow a velocity when flowing full of not less than 2.0 feet per second. For 6" diameter pipe, the minimum slope is 1.00% and the maximum slope is 11.79%.

Alignment (30 TAC §217.53(m))

The proposed wastewater collection system has been designed with uniform grade between manholes. No deviations from straight alignment between manholes are proposed.

Inverted siphons or sag pipes (30 TAC §217.53(n))

There are no inverted siphons or sag pipes proposed with this project.

Bridged sections (30 TAC §217.53(o))

There are no bridged sections proposed with this project.

CRITERIA FOR LAYING PIPE 30 TAC §217.54

Pipe embedment (30 TAC §217.54(a)), Compaction (30 TAC §217.54(b))
Envelope size (30 TAC §217.54(c)), Trench width (30 TAC §217.54(d))

The project will comply with the City of Georgetown's details and specifications for pipe embedment and excavation. The detail is included in the construction plans on Sheets 44 - 46. The bedding complies with ASTM D-2321 class 1B gravel. The minimum trench width for a 6" pipe is 18". The maximum trench width for a 6" pipe is 30".

MANHOLES AND RELATED STRUCTURES 30 TAC §217.55

Pre-cast concrete manholes are proposed for this project. A detail for the manhole is included in the construction plans on Sheets 44 and 46. The manholes must meet the requirements of ASTM C-478. Manholes are proposed at the end of the sewer line and at changes in alignment. A detail for the cleanouts are included in the construction plans on Sheet 45. Details for the manhole covers and inverts are included on Sheet 44.

The manholes have been spaced to comply with Table C.2 of 30 TAC §217.55. The maximum spacing between manholes is 495'.

TRENCHLESS PIPE INSTALLATION 30 TAC §217.54

There is no Trenchless Pipe Installation proposed with this project.

TESTING REQUIREMENTS FOR INSTALLATION OF GRAVITY COLLECTION SYSTEM PIPES 30 TAC §217.57

The testing requirements for Gravity System Pipes are included in the construction plans on Sheet 3.

TESTING REQUIREMENTS FOR MANHOLES 30 TAC §217.58

The following testing requirements are taken from 30 TAC §217.58. The testing requirements are also included in the construction plans on Sheet 3.

All manholes must pass a leakage test. 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.

Hydrostatic Testing

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. To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water and maintain the test for at least one hour. A test for concrete manholes may use a 24 hour wetting period before testing to allow saturation of the concrete.

Vacuum Testing

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. No grout must be placed in horizontal joints before testing. Stub outs, manhole boots and pipe plugs must be secured to prevent movement while a vacuum is drawn. 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. 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. There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test. A test does not begin until after the vacuum pump is off. A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is a least 9.0 inches of mercury.

LIFT STATION REQUIREMENTS 30 TAC §217.54

There are no Lift Station or force mains associated with this project.

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.

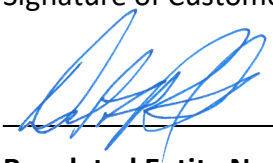
Signature

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: David Platt

Date: 10/6/2023

Signature of Customer/Agent:



Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center

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: Smith Branch.

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 Actions

Because fuels and hazardous substances will be provided by an off-site facility, no on-site containment procedures are provided for in this WPAP.

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees. The following steps will help reduce the stormwater impacts of leaks and spills:

Education

1. Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.
2. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
3. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
4. Establish a continuing education program to indoctrinate new employees.
5. Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

1. To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
2. Store hazardous materials and wastes in covered containers and protect from vandalism.
3. Place a stockpile of spill cleanup materials where it will be readily accessible.
4. Train employees in spill prevention and cleanup.
5. Designate responsible individuals to oversee and enforce control measures.
6. Spills should be covered and protected from stormwater run-on during rainfall to the extent that it doesn't compromise clean-up activities.
7. Do not bury or wash spills with water.
8. Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
9. Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
12. Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

1. Clean up leaks and spills 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. See the waste management BMPs in this section for specific information.

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:
5. Contain the spread of the spill.
6. Recover spilled materials.
7. Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can 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:

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 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.

2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, 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.
4. The services of a spills 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 Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tceq.texas.gov/response/

Vehicle and Equipment Maintenance

1. If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.
2. Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
3. Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
5. Place drip pans or absorbent materials under paving equipment when not in use.
6. Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
7. Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
8. Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
9. Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

1. If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.
2. Discourage "topping off" of fuel tanks.
3. Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

If a spill should occur, the person responsible for the spill should contact the TCEQ at (512) 339-2929 or call 911. Soil contaminated by spills that occur on-site will be removed and disposed at an approved disposal site.

Attachment B – Potential Sources of Contamination

- Hydraulic and diesel
- Portable toilet systems (Sanitary Waste)
- Trash from construction workers
- Paints, Paint Solvents, glues, concrete and other building materials
- Plant fertilizers and Pesticides
- Inadequate maintenance of temporary water pollution abatement measures
- Stock piles or spoils of materials

Attachment C – Sequence of Major Activities

The following sequence of activities is suggested. The sequence of construction will take place in one phase. The actual sequence may vary slightly depending on the contractor or weather conditions.

Welcome Center and First-Year Residence Hall

1. Construction activities will commence with the installation of the required silt fences and stabilized construction entrances. The total area disturbed by establishing temporary erosion controls is approximately 0.32 acres. **Silt fence and stabilized construction entrance (S.C.E) are the control measures.**
2. Excavation will take place where the utilities, sidewalks, parking lot, drive aisles, and buildings will be situated. Spoils of this material may be placed at a location on the project site as directed by the contractor or hauled off-site. These spoils and any other loose granular material will be enclosed by a silt fence. The total area disturbed by construction is approximately 2.63 acres. **Silt fence and S.C.E. are the control measures.**
3. Grading on the site will consist of the placement and compaction of base or select fill material under and/or around the sidewalks, parking lot, drive aisles, and buildings. The portion of the site that is subject to grading is approximately 2.63 acres. **Silt fence, inlet protection and S.C.E. are the control measures.**
4. The installation and relocation of the utilities and storm sewer will disturb a portion of the site. Proposed utility improvements include gas feeds, data fibers, and an extension of an existing wastewater collection system and water lines. Relocation of various underground water, gas, and sewer lines will also take place. There is a proposed storm sewer system as well. The total area disturbed by construction is approximately 0.63 acres. **Silt fence, inlet protection, rock berms, and S.C.E. are the control measures.**
5. Subsequent to the construction of the driveways, parking, etc. disturbed areas will be hydro-mulched or seeded. Approximately 0.88 acres. **Silt fence and inlet protection are the control measures.**
6. Temporary sediment and erosion controls will be removed after the project is completed.

Second-Year Residence Hall

1. Construction activities will commence with the installation of the required silt fences and stabilized construction entrance. The total area disturbed by establishing temporary erosion controls is approximately 0.08 acres. **Silt fence and stabilized construction entrance (S.C.E) are the control measures.**
2. Excavation will take place where the utilities, sidewalks, and building will be situated. Spoils of this material may be placed at a location on the project site as directed by the contractor or hauled off-site. These spoils and any other loose granular material will be enclosed by a silt

fence. The total area disturbed by construction is approximately 1.78 acres. **Silt fence and S.C.E. are the control measures.**

3. Grading on the site will consist of the placement and compaction of base or select fill material under and/or around the sidewalks and buildings. The portion of the site that is subject to grading is approximately 1.78 acres. **Silt fence, inlet protection and S.C.E. are the control measures.**

4. The installation and relocation of the utilities and storm sewer will disturb a portion of the site. Proposed utility improvements include gas feeds, data fibers, and an extension of an existing wastewater collection system and water lines. Relocation of various underground water and gas lines will also take place. There is an extension of an existing storm sewer system as well. The total area disturbed by construction is approximately 0.66 acres. **Silt fence, inlet protection, and S.C.E. are the control measures.**

5. Subsequent to the construction of the driveways, parking, etc. disturbed areas will be hydro-mulched or seeded. Approximately 1.08 acres. **Silt fence and inlet protection are the control measures.**

6. Temporary sediment and erosion controls will be removed after the project is completed.

Attachment D – Temporary Best Management Practices and Measures

The following sequence of activities is suggested. The actual sequence may vary slightly depending on the contractor or weather conditions.

Welcome Center and First-Year Residence Hall

1. Construction activities will commence with the installation of the required silt fences and stabilized construction entrances. **Silt fences and a stabilized construction entrance are the control measures.**
2. Excavation will take place where the utilities, sidewalks, parking lot, drive aisles, and buildings will be situated. Spoils of this material may be placed at a location on the project site as directed by the contractor or hauled off-site. These spoils and any other loose granular material will be enclosed by a silt fence. The total area disturbed by construction is approximately 2.63 acres. **Silt fence and a stabilized construction entrance are the control measures.**
3. Grading on the site will consist of the placement and compaction of base or select fill material under and/or around the sidewalks, parking lot, drive aisles, and buildings. The portion of the site that is subject to grading is approximately 2.63 acres. **Silt fence and a stabilized construction entrance are the control measures.**
4. Grading will be followed by the installation and relocation of underground utilities and storm sewer as required. **Silt fence, inlet protection, rock berms, and a stabilized construction entrance are the control measures.**
5. The pavement concrete will be poured at finished grade. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
6. A concrete washout area will be provided as defined on the site plan.
7. After the building has been installed, fine grading around the site will be completed. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
8. A security chain link fence will then be installed. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
9. Disturbed areas will be hydro-mulched or seeded. **Silt fences and inlet protection are the control measures.**

Second-Year Residence Hall

1. Construction activities will commence with the installation of the required silt fences and a stabilized construction entrance. **Silt fences and a stabilized construction entrance are the control measures.**
2. Excavation will take place where the utilities, sidewalks, and building will be situated. Spoils of this material may be placed at a location on the project site as directed by the contractor or hauled off-site. These spoils and any other loose granular material will be enclosed by a silt fence. The total area disturbed by construction is approximately 1.78 acres. **Silt fence and a stabilized construction entrance are the control measures.**
3. Grading on the site will consist of the placement and compaction of base or select fill material under and/or around the sidewalks and building. The portion of the site that is subject to

grading is approximately 1.78 acres. **Silt fence and a stabilized construction entrance are the control measures.**

4. Grading will be followed by the installation and relocation of underground utilities and storm sewer as required. **Silt fence, inlet protection, and a stabilized construction entrance are the control measures.**
5. The pavement concrete will be poured at finished grade. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
6. A concrete washout area will be provided as defined on the site plan.
7. After the building has been installed, fine grading around the site will be completed. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
8. A security chain link fence will then be installed. **Silt fences, inlet protection, and a stabilized construction entrance are the control measures.**
9. Disturbed areas will be hydro-mulched or seeded. **Silt fences and inlet protection are the control measures.**

Most surface runoff originating upgradient or on site will be contained within the proposed silt fence. The silt fence will trap most pollutants and prevent them from entering off-site surface streams, sensitive features or the aquifer. There is limited off-site runoff as the upgradient runoff is diverted by existing roads with ditches or existing natural drainage channels. The stabilized construction entrance will reduce the amount of sediment leaving the site. The inlet protection will prevent the storm drainage system from getting clogged and reduce the amount of sediment leaving the site. The rock berms will trap sediment from leaving the site. These temporary BMPs will trap most pollutants and prevent them from entering off-site surface streams, sensitive features, or the aquifer.

Attachment F – Structural Practices

No structural practices will be utilized to divert flows away from exposed soils or to store flows. Silt fences, inlet protection, rock berms, and a stabilized construction entrance will be used to limit the runoff discharge of sediments from exposed areas on the site during construction.

Attachment G – Drainage Area Map

Please see the existing and developed drainage maps on sheets 47-50 from the “Site Plan” attachment in the “Water Pollution Abatement Plan Application” section.

The maximum common drainage area is 2.63 acres for the welcome center and first-year residence hall site. The entire 2.63 acres of this area will be disturbed. The maximum common drainage area is 1.78 acres for the second-year residence hall site. The entire 1.78 acres of this area will be disturbed.

Attachment I – Inspection and Maintenance for BMPs

Silt Fence

1. Inspect all fences weekly and after any rainfall.
2. Remove sediment when buildup reaches 6 inches, or install a second line of fencing parallel to the old fence.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Concrete Washout

1. Inspection should be made weekly and after each rainfall by the responsible party.
2. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
3. The berm/temporary pit should be reshaped as needed during inspection.
4. The berm/temporary pit should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
5. The washout should be left in place until construction has been completed.
6. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the Concrete Washout should be revegetated.
7. The concrete from the washout should be removed from the site in an appropriate manner.

Rock Berm

1. Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
2. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
3. Repair any loose wire sheathing.
4. The berm should be reshaped as needed during inspection.
5. The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
6. The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

Temporary Construction Entrance/Exit

1. The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
2. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
5. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

Inlet Protection

1. Inspection should be made weekly and after each rainfall. Check inlet protection for damage. Repair should be made promptly as needed by the contractor
2. Trash and other debris should be removed after each rainfall.
3. Accumulated silt should be removed.
4. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.
5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation.

Construction Staging Area

1. Inspection should be made weekly of the staging area to ensure all temporary BMPs are installed and functioning. Verify that any materials stored in the staging area are not exposed to stormwater runoff.
2. If the staging area is paved, the area is to be swept on a regular basis to keep dust down.

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.

For on-site washout:

- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.

- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

The following sample forms should be utilized to document the inspection and maintenance of the proposed temporary BMPs as described above. This form shall be kept on site with the WPAP until the project is completed. A report documenting the Temporary BMPs maintenance activities, sediment removal and modifications to the sedimentation and erosion controls is required. Steger Bizzell is responsible for maintaining this log.

<u>Temporary BMP Log</u>

Date	Date of Last Inspection	Inspection Performed By	Title	Company	Status of BMP(s)	Corrective Action Required (if any)	Date Corrective Action Completed

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

Vehicular traffic should be limited to areas of the project site where construction will take place. The contractor should endeavor to preserve existing vegetation as much as practicable to reduce erosion and lower the cost associated with stabilization. **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.**

All disturbed areas shall be stabilized as described below.

Except as provided for below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

A. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.
B. Where construction activity on a portion of the site has temporarily ceased, and earth-disturbing activities will be resumed with 21 days, temporary stabilization measures do not have to be initiated on that portion of the site.
C. In areas experiencing drought, where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Stabilization measures as described as follows:

All disturbed grass areas should be planted in drought resistant species normally grown as permanent lawns, such as Zoysia, Bermuda and Buffalo. Grass areas may be sodded, plugged, sprigged or seeded except that solid sod shall be used in swales or other areas subject to erosion. All planted areas shall be provided with a readily available water supply and watered as necessary to ensure continuous healthy growth and development. Maintenance shall include the replacement of all dead plant material if that material was used to meet the requirements of this section.

Permanent 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)(C), (D)(Ii), (E), and (5), 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.

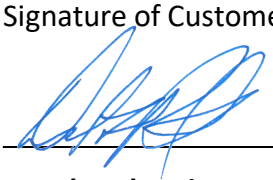
Signature

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 **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: David Platt

Date: 10/6/2023

Signature of Customer/Agent:



Regulated Entity Name: Southwestern University New Residence Halls and Welcome Center

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. ☐ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   ☒ N/A

2. ☐ 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

3. ☐ 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

4. 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.

5. 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 A - 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.

6. ☒ **Attachment B - 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.

7. ☒ **Attachment C - 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.

8. ☐ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☒ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☐ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☐ Design calculations (TSS removal calculations)
☐ TCEQ construction notes
☐ All geologic features
☐ All proposed structural BMP(s) plans and specifications

☒ N/A

11. ☐ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☐ Signed by the owner or responsible party
    ☐ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☐ A discussion of record keeping procedures

    ☒ N/A

12. ☐ **Attachment H - 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

13. ☐ **Attachment I -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 results in water quality degradation.

    ☒ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☒ 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.

    ☐ N/A

15. ☒ 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.

    ☐ N/A

Attachment A – 20% or Less Impervious Cover Waiver

The proposed project site is composed of two separate sites that total 4.41 Ac. Both of the project sites are located within a 704.25 Ac. property owned by Southwestern University who are proposing the development of a new welcome center as well as two new residence halls. One of the sites is going to include a welcome center and a first-year residence hall along with associated parking, drive aisles, sidewalks, and utilities and will have a construction area of 2.63 Ac. total. The other site will include a second-year residence hall along with associated sidewalks and utilities and will have a construction area of 1.78 Ac. total. Both sites have been previously developed and will be demolished prior to construction. A legal description of the property is 704.25 acres of land, situated in the Antonio Flores Survey, Abstract No. 235 and the William Addison Survey, Abstract No. 21, in Williamson County, Texas.

The existing Southwestern University property contains 69 Ac., or 9.80%, of impervious cover. Prior to construction, approximately 0.66 Ac. of the existing impervious cover will be demolished. The proposed development includes 1.81 Ac. of impervious cover, meaning that the total impervious cover on Southwestern Universities property after construction will equal 70.15 Ac., or 9.96%.

This project will not increase the impervious cover beyond 20% of the site. This application is a request for a 20% or Less Impervious Cover Waiver due to the 9.96% maximum impervious cover. A geologic assessment is included with this submittal and was performed on July 6, 2023.

Attachment B – BMPs for Upgradient Stormwater

The site is over 700 acres and is near the top of the watershed which minimizes upgradient runoff. In addition, the site will provide less than 20% impervious cover as the permanent BMP.

Attachment C – BMPs for On-site Stormwater

The site is 704.25 acres and will have a total of 70.15 acres of impervious cover (9.96%) after the additional development proposed with this plan. Thus, the site will provide less than 20% impervious cover as the permanent BMP (as previously approved with other Southwestern University projects).

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

I Lenora C. Chapman,
Print Name

Vice President for Finance and Administration,
Title - Owner/President/Other

of Southwestern University,
Corporation/Partnership/Entity Name

have authorized David Platt et al.
Print Name of Agent/Engineer

of Steger Bizzell
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:

Lenora C. Chapman
Applicant's Signature

10/4/2023
Date

THE STATE OF Texas §

County of Williamson §

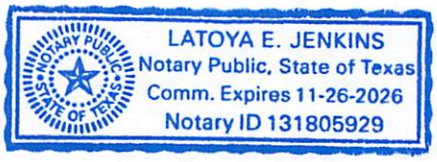
BEFORE ME, the undersigned authority, on this day personally appeared Lenora C. Chapman known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 4th day of October, 2023.

Latoya E. Jenkins
NOTARY PUBLIC

Latoya E. Jenkins
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11-26-2026



Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity:
Southwestern University New Residence Halls and Welcome Center
Regulated Entity Location: 1001 E. University Avenue, Georgetown, TX 78626
Name of Customer: Southwestern University
Contact Person: Rick Martinez Phone: 512-863-1425
Customer Reference Number (if issued): CN 600787329
Regulated Entity Reference Number (if issued): RN 103065421

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	4.41 Acres	$ 4,000.00
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	1,463 L.F.	$ 731.50
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: 10/6/2023

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

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

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 600787329		**RN 103065421**

SECTION II: Customer Information

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

☐ 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:*

Southwestern University

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0033266101	17412337960	741233796	N/A

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: Institution

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

15. Mailing Address:							
1001 E. University Avenue							
City	Georgetown	**State**	TX	**ZIP**	78626	**ZIP + 4**	N/A

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
N/A	rickmartinez@southwestern.edu

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(512) 863-1425		( ) -

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.)*

Southwestern University New Residence Halls and Welcome Center

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	1001 E. University Avenue							
	City	Georgetown	**State**	TX	**ZIP**	78626	**ZIP + 4**	0
24. County	Williamson							

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

25. Description to Physical Location:	Project is comprised of 2 separate sites. The first site is located to the northeast of the intersection at SH-29 and Southwestern Boulevard. The second site is located to the southwest of the intersection at Southwestern Boulevard and Service Road.

26. Nearest City	**State**	**Nearest ZIP Code**
Georgetown	TX	78626

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:	30.63479		**28. Longitude (W) In Decimal:**	-97.66146	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	38	3.875	-97	39	41.26

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)
8221	N/A	611310	N/A

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

Institution

34. Mailing Address:	**1001 E. University Avenue**							
	City	**Georgetown**	**State**	**TX**	**ZIP**	**78626**	**ZIP + 4**	**0**

35. E-Mail Address:	**rickmartinez@southwestern.edu**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 863-1425		( ) -

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
		11-00020402		
☐ 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:
	WQ 0010489002			

SECTION IV: Preparer Information

40. Name:	David Platt	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 930-9412		**(** N/A **)** -	dplatt@stegerbizzell.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:	Steger Bizzell	**Job Title:**	Project Manager
Name *(In Print):*	David Platt	**Phone:**	**(** 512 **)** 930- **9412**
Signature:		**Date:**	10/6/2023