WATER POLLUTION ABATEMENT PLAN (WPAP)

&

ORGANIZED SEWAGE COLLECTION SYSTEM PLAN (SCS)

FOR

APPLEGATE CIRCLE

10 APPLEGATE CIRCLE

ROUND ROCK, TEXAS 78665

Prepared for:

SUNRISE LBG, LLC

David Lehmann

300 Pinnacle Drive

Georgetown, Texas 78626

Prepared by:

WAELTZ & PRETE, INC.

Antonio A. Prete, P.E.

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FIRM TX. REG. #F-10308

July 2024
Job No. 135-002

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

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

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Applegate Circle						**2. Regulated Entity No.:**			
3. Customer Name: Sunrise LBG, LLC						**4. Customer No.:**			
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):**			2.53
9. Application Fee:	$4,753		**10. Permanent BMP(s):**					Batch Detention Pond	
11. SCS (Linear Ft.):	1,506		**12. AST/UST (No. Tanks):**					n/a	
13. County:	Williamson		**14. Watershed:**					Brushy Creek	

Application Distribution

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

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	_ √ _
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.
Antonio A. Prete, P.E.
Print Name of ~~Customer~~/Authorized Agent
Signature of ~~Customer~~/Authorized Agent — Date: 07/12/2024

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.

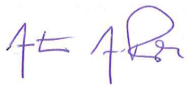
Signature

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: Antonio A. Prete, P.E.

Date: 07/12/2024

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Applegate Circle
2. County: Williamson
3. Stream Basin: Chandler Branch - Brushy Creek
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: David Lehmann
   Entity: Sunrise LBG, LLC
   Mailing Address: 300 Pinnacle Drive
   City, State: Round rock, Texas Zip: 78626
   Telephone: (916) 2200-2876 FAX: _____
   Email Address: mini92truckin@gmail.com

8. Agent/Representative (If any):

   Contact Person: Antonio A. Prete. P.E.
   Entity: Waeltz & Prete, Inc
   Mailing Address: 211 N. A.W. Grimes Blvd.
   City, State: Round Rock, Texas Zip: 78665
   Telephone: (512) 505-8953 FAX: _____
   Email Address: tony@w-pinc.com

9. Project Location:

   ☐ The project site is located inside the city limits of _____.
   ☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Round Rock.
   ☐ 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.

    Located approximately 900 feet East of the intersection of Sunrise Road & Applegate Circle along the North side of Applegate Circle.

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: Survey stacking completed.

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: _____

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.

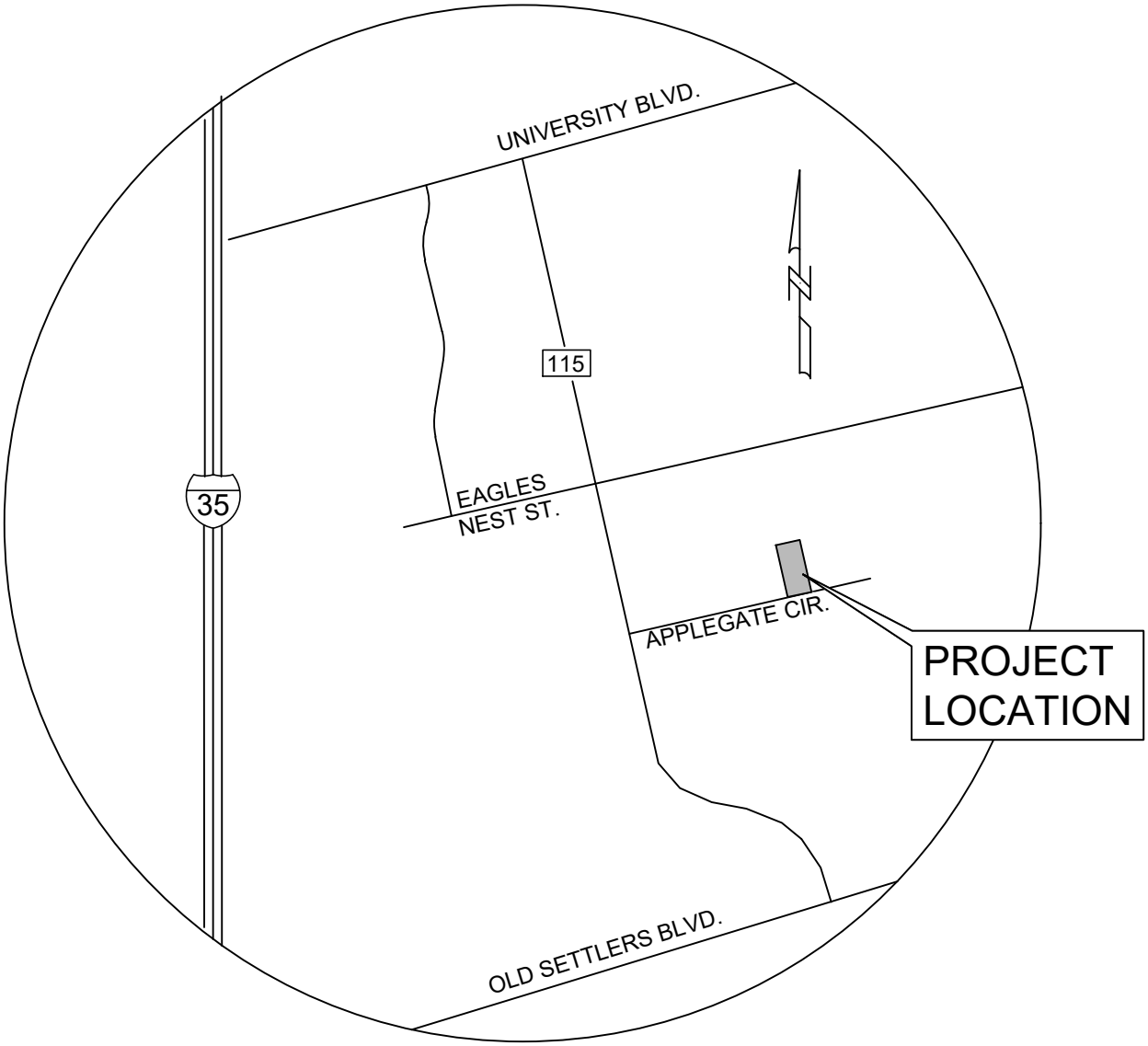
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

☐ 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.

ATTACHMENT “A” – ROAD MAP



LOCATION MAP
NTS

ATTACHMENT "A"
ROAD MAP
APPLEGATE
CIRCLE

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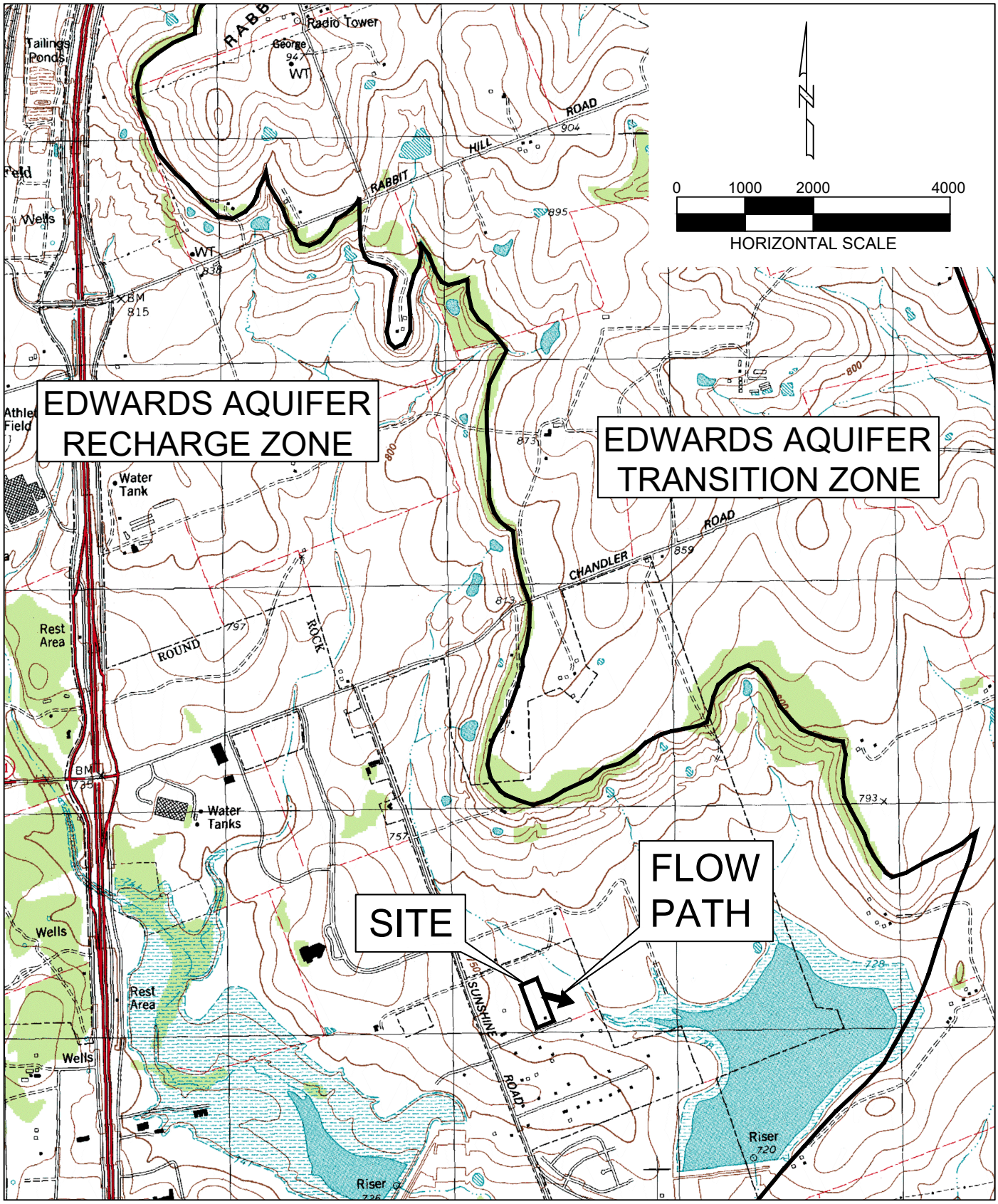
FIRM TX. REG. #F-10308

ATTACHMENT “B” – USGS/EDWARDS RECHARGE ZONE MAP



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USGS - 7 1/2 MIN.
EDWARDS RECHARGE ZONE MAP
APPLEGATE CIRCLE
ROUND ROCK, TX

ATTACHMENT "C" – PROJECT DESCRIPTION

We are submitting a Water Pollution Abatement Plan (WPAP) and an Organized Sewage Collection System Plan (SCS) for a 2.53 acre tract of land located at 10 Applegate Circle Round Rock, Texas 78665. The site is located within the City of Round Rock's Extra-Territorial Jurisdiction (ETJ) and has been previously developed. The site lies within the Edward's Aquifer Recharge Zone. Therefore, Water Quality Best Management Practices (BMP's) are required for this development.

The existing site includes a single-family residential home with garages, patios, sidewalks, driveways, outdoor sheds, and an existing well. The existing well is to be removed following all TCEQ regulations. The 2.53 acre site has a total existing impervious cover of 0.26 acres (10.27%).

The proposed development will be constructed in 2 phases:

The first phase of development will include all improvements shown in the Subdivision Improvement Plans (SIP) for Applegate Circle. Most of the improvements will occur offsite. These improvements will consist of extending an 8" public wastewater main and an 8" public water main to the site, roadway ditch improvements along the North side of Applegate circle that will include grading, driveway reconstruction and culvert extension. No increase in impervious cover Is proposed with the subdivision improvement plans.

The second phase of development will include all improvements shown in the Site Development Plan (SDP) for Applegate Circle. This phase will consist of constructing two warehouse style buildings, water & wastewater services, a storm sewer system with a Batch Detention Pond, paving & grading. The 2.53 acre site will contain a total of 1.87 acres (73.91%) of impervious cover. This is a total net increase of 1.61 acres of impervious cover Therefore, a total of 1,401 lbs. of 80% TSS removal is required. The required 80% TSS will be treated on-site by the proposed Batch Detention Pond.

The Batch Detention Pond is located at the southeast corner of the site. It will treat storm water runoff from WQ-1 totaling 1.99 acres with 1.79 acres (89.95%) of impervious cover. WQ-2 depicts the remaining 0.08 acres of impervious cover located on-site. It is a mixture of proposed and existing impervious cover. The entire 0.08 acres has been accounted in the overall TSS calculations and will be accounted for by overtreatment. The Batch Detention Pond will have the capacity to remove a total of 1,807 lbs. of TSS which satisfies the required 80% TSS removal. The design of the Batch Detention Pond follows the TCEQ "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices" design criteria.

The proposed Organized Sewage Collection System (SCS) is shown in both the (SIP) and (SDP) plans for Applegate Circle. An exhibit showing the (SCS) in its totality has been included with this submittal. In summary the (SCS) will include approximately:

Subdivision Improvement Plans (SIP)

+/- 1,320.40 LF of 8” PVC SDR ASTM D3034 & D2241
+/- 20.00 LF of 6” PVC SDR ASTM D3034

Site Development Plans (SDP)

+/- 165.60 LF of 6” PVC SDR ASTM D3034 & D2241

The total length of the (SCS) is 1,506 LF. The wastewater improvements for the overall development will include two stubs to the proposed buildings and a stub for future connection to the West along the North side of Applegate Circle. Furthermore, multiple wastewater manholes are proposed within the limits of the 100 year FEMA floodplain. The (SCS) will be constructed in accordance with all TCEQ requirements and regulations.

All referenced TSS removal calculations are attached directly behind this page. Construction plans and exhibits are being submitted in conjunction with the Water Pollution Abatement Plan (WPAP) and Organized Sewage Collection Plan (SCS).

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12Jul24

OVERALL BATCH DETENTION TSS REMOVAL CALCULATIONS

(In Accordance with TCEQ Regulations : RG-348)

Required Load Reduction (L_M)- Total Project Area:

Eq 3.2 $L_m = 28.9 (A_N * P)$

County =			Williamson	
P	=	Average Annual Precipitation	32.0	[in]
$A_{tot-prj}$	=	Total project area included in the plan	2.53	[ac]
A_{pre}	=	Predevelopment impervious area	0.26	[ac]
A_{post}	=	Postdevelopment impervious area	1.87	[ac]
A_N	=	Area of the net increase of impervious area	1.61	[ac]
IC_{pre}	=	Fraction of impervious cover (Pre Development)	10.28	[%]
IC_{post}	=	Fraction of impervious cover (Post Development)	73.91	[%]
L_M	=	Req'd TSS removal (***80%*** of Increase)	**1,401**	**[lbs]**

Load Removed by BMP (L_R):

Eq 3.8 $L_R = (\text{BMP Eff}) * P (A_I*34.6 + A_P*0.54)$

$A_{tot-sub}$	=	Total area treated in the BMP subbasin	1.99	[ac]
A_I	=	Impervious area proposed in BMP subbasin	1.79	[ac]
A_p	=	Pervious area remainaing in the BMP subbasin	0.20	[ac]
IC	=	Impervious cover (Post Development)	89.95	[%]
BMP Type =			**Batch Detention**	
BMP Eff	=	BMP TSS Removal Efficiency	0.91	
L_R	=	TSS Load Removed From Subbasin by BMP	**1,807**	**[lbs]**

Fraction of Annual Runoff to Treat the subbasin (F):

Eq 3.9 $F = L_M / \Sigma L_R$

Desired L_M	=	Req'd TSS removal (80% of Increase typical)	1,401	[lbs]
L_R	=	Load removed from *each* BMP	1,807	[lbs]
F	=	Fraction of the Annual Rainfall treated by BMP	**0.78**	

Water Quality Volume Required (WQV_{req}):

Eq 3.10 $WQV = d * Rv * A$

Eq 3.11 $R_v = 1.72(IC)^3 - 1.97(IC)^2 + 1.23(IC) + .02$

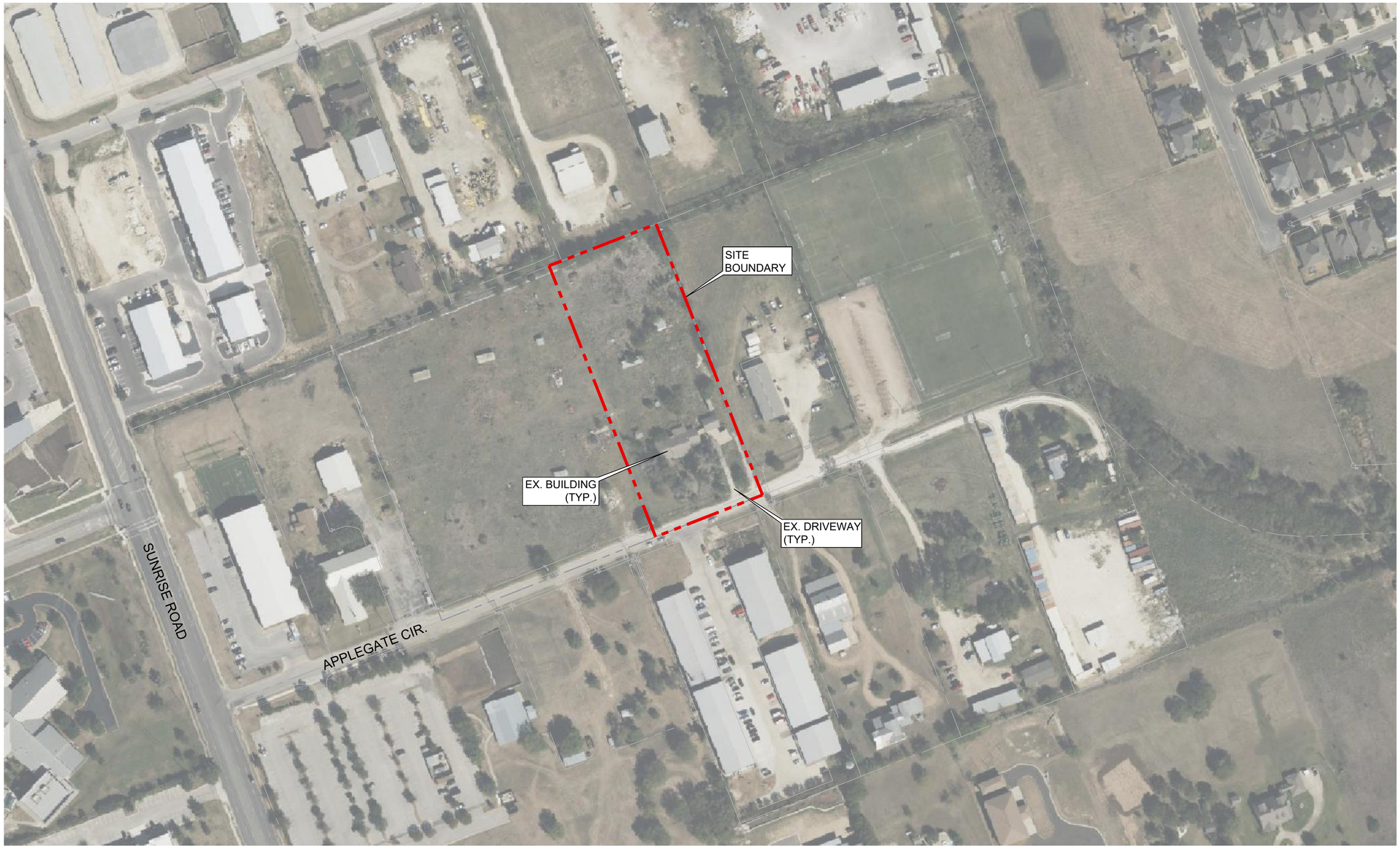
$WQV_{req} = WQV + S$

F	=	Fraction of the Annual Rainfall treated by BMP	0.78	
d	=	Rainfall Depth required to capture	1.00	[in]
A	=	Portion of Site contributing to BMP	1.99	[ac]
IC	=	Fraction of Impervious Cover	0.90	
R_v	=	Runoff Coefficient	0.78	
WQV	=	Water quality volume	5,665	[ft^3]
S	=	20% Increase for Sediment Storage	1,133	[ft^3]
WQV_{req}	=	Water quality volume required (With 20% increase)	**6,798**	**[ft^3]**

GEOLOGIC ASSESSMENT

A Geologic Assessment was not prepared for this submittal. The site has been previously developed and a recent on the ground topographic survey was conducted. No critical environmental features were identified in the area. Furthermore, Appendix B of the TCEQ RG-348B "*Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer and Related Karst Features that May Be Habitat for Karst Dwelling Invertebrates"* shows the site is located within Zone 3 and 4. Per the document these zone areas are "largely non-cavernous" and "do not contain endangered karst invertebrates." Therefore, we are requesting an exception for a Geologic Assessment with this application.

Supporting exhibits have been prepared and included directly behind this page.



0 50 100 200
HORIZONTAL SCALE

APPLEGATE CIRCLE
TCEQ EXHIBIT

SITE ADDRESS:
10 APPLEGATE CIRCLE ROUND ROCK, TEXAS 78665

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Zone 3: Areas that probably do not contain endangered karst dwelling species or their habitat, and

Zone 4: Areas, largely non-cavernous, that do not contain endangered karst invertebrates.

The location of these zones is presented in Figure 2-4. Geographic Information System (GIS) Shape files for Karst Zones are available at <www.fws.gov/ifw2es/austintexas/>. Together, Zones 1 and 2 comprise about 55,000 acres in Travis County and about 100,000 acres in Williamson County.

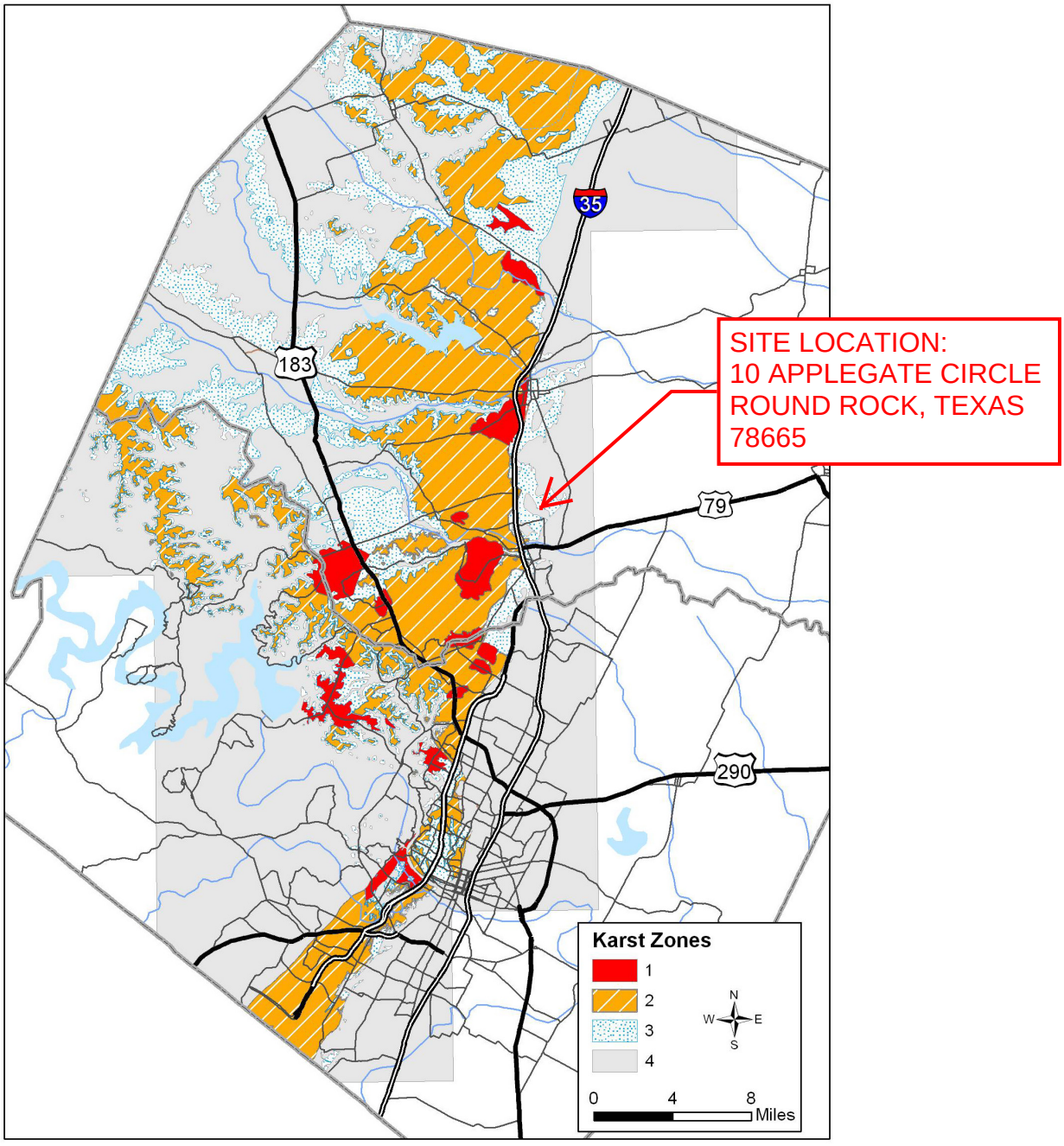


Figure 2-4. Karst Zones in Travis and Williamson Counties (USFWS, 1992)

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.

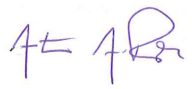
Signature

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: Antonio A. Prete, P.E.

Date: 07/12/2024

Signature of Customer/Agent:



Regulated Entity Name: Applegate Circle

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property):2.53

3. Estimated projected population:+/- 42

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	46,975	÷ 43,560 =	1.08
Parking	34,350	÷ 43,560 =	0.79
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover	81,325	÷ 43,560 =	1.87

Total Impervious Cover 1.87 **÷ Total Acreage** 2.53 **X 100 =** 73.91**% 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	16,546Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day

TOTAL gallons/day 16,546

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 Brushy Creek Regional 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" = VARIES'.

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): _____

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 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☒ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §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 WATER QUALITY

Factors that could affect the quality of surface and ground water are the parking and use of motor vehicles on site. This includes the emission of certain hydrocarbon based substances as well as the tracking of silt. In addition, the maintenance of lawn or landscape areas could also affect the quality of surface and ground water through runoff of chemical fertilizers or pesticides.

ATTACHMENT “B”

VOLUME AND CHARACTER OF STORMWATER

It is expected that the character of surface and ground water run-off would be consistent with the development of a commercial site; analysis has been completed incorporating the ultimate development of the property, which will include commercial buildings, restaurants, and an automotive repair shop. Constituents would include hydrocarbon based product residues, silt, pesticides, and chemicals resulting from vehicular emissions and landscape maintenance.

The expected volume of run-off was based on the Rational method. This was calculated using "C" factors, which are based on impervious cover and the nature of surfaces over which run-off water flows. These calculations are presented in the attachment directly behind this page and in the attached construction plans.

The stormwater quality for the site was determined using “Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices”. The results from these calculations are presented directly behind this page.

APPLEGATE CIRCLE - SITE DEVELOPMENT PLANS

EXISTING CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
EX-1	2.40	5.0	10	0.34	0.40	0.44	0.51	6.24	9.13	11.00	14.20	5.09	8.76	11.62	17.38

PROPOSED CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
DA-1	0.52	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	2.43	3.94	5.03	7.16
DA-2	0.42	5.0	95	0.73	0.81	0.86	0.94	6.24	9.13	11.00	14.20	1.91	3.11	3.97	5.61
DA-3	0.34	5.0	80	0.70	0.78	0.83	0.92	6.24	9.13	11.00	14.20	1.49	2.42	3.10	4.44
DA-4	0.29	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	1.36	2.20	2.81	3.99
DA-5	0.26	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	1.22	1.97	2.52	3.58
DA-6	0.16	5.0	0	0.29	0.35	0.39	0.46	6.24	9.13	11.00	14.20	0.29	0.51	0.69	1.05
DA-7	0.35	5.0	25	0.41	0.47	0.51	0.59	6.24	9.13	11.00	14.20	0.90	1.50	1.96	2.93
												9.59	15.65	20.08	28.76

12Jul24

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

APPLEGATE CIRCLE - SUBDIVISION IMPROVEMENT PLANS

PROPOSED CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
DA-1	8.40	30.0	15	0.36	0.42	0.46	0.54	2.93	4.25	5.11	6.51	8.86	14.99	19.75	29.53
DA-2	2.40	10.0	10	0.34	0.40	0.44	0.51	4.97	7.30	8.84	11.40	4.06	7.01	9.34	13.95
DA-3	2.30	10.0	15	0.36	0.42	0.46	0.54	4.97	7.30	8.84	11.40	4.12	7.05	9.35	14.16
DA-4	4.24	20.0	15	0.36	0.42	0.46	0.54	3.63	5.27	6.34	8.10	5.54	9.38	12.37	18.55

12Jul24

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ROUND ROCK, TX. 78665
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FIRM TX. REG. #F-10308

ATTACHMENT “C”

SUITABILITY LETTER FROM AUTHORIZED AGENT

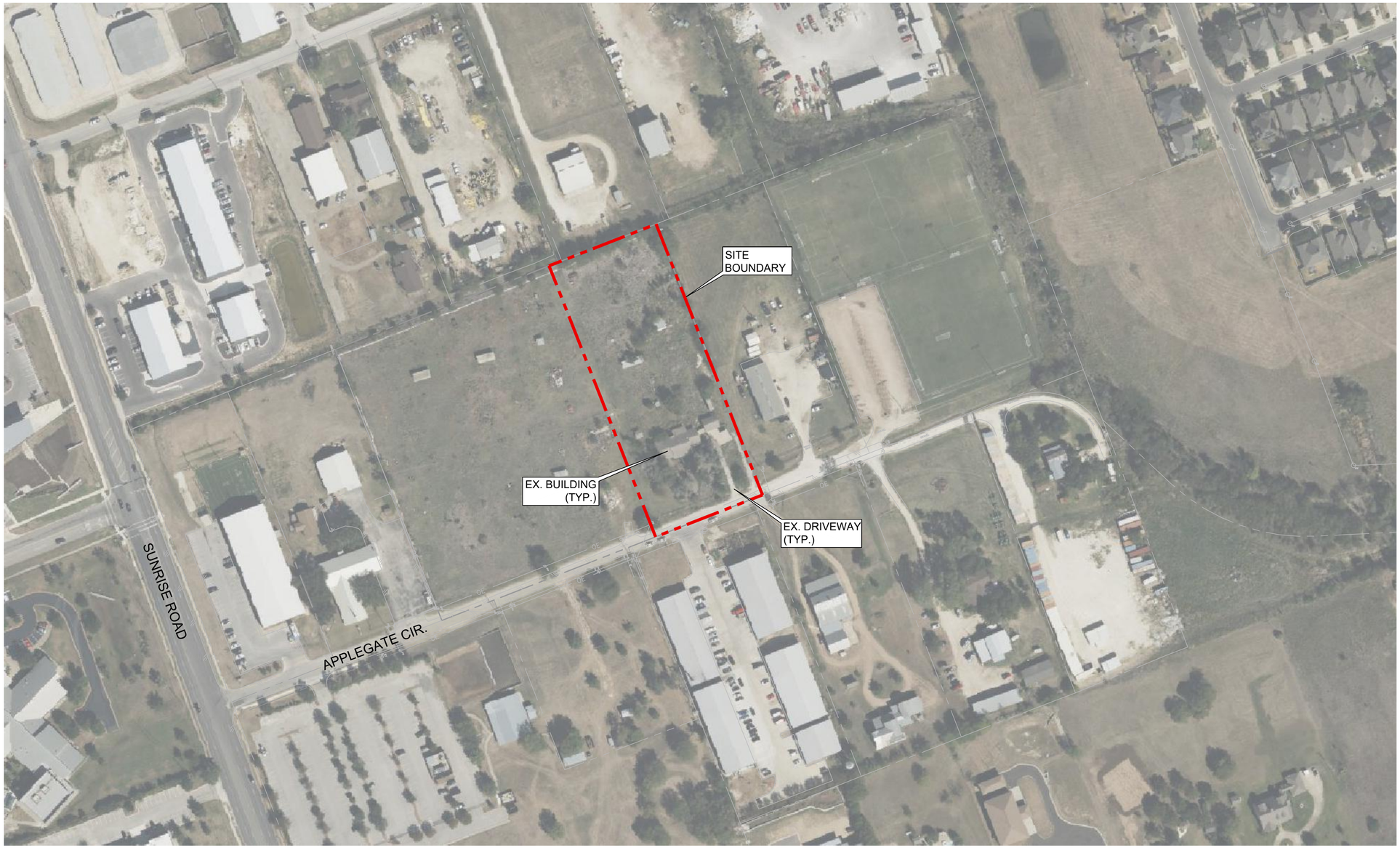
There are no On-Site Sewage Facilities proposed for this project.

ATTACHMENT “D”

EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

A Geologic Assessment was not prepared for this submittal. The site has been previously developed and a recent on the ground topographic survey was conducted. No critical environmental features were identified in the area. Furthermore, Appendix B of the TCEQ RG-348B “*Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer and Related Karst Features that May Be Habitat for Karst Dwelling Invertebrates”* shows the site is located within Zone 3 and 4. Per the document these zone areas are “largely non-cavernous” and “do not contain endangered karst invertebrates.” Therefore, we are requesting an exception for a Geologic Assessment with this application.

Supporting exhibits have been prepared and included directly behind this page.



0 50 100 200
HORIZONTAL SCALE

APPLEGATE CIRCLE
TCEQ EXHIBIT

SITE ADDRESS:
10 APPLEGATE CIRCLE ROUND ROCK, TEXAS 78665

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
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FIRM TX. REG. #F-10308

Zone 3: Areas that probably do not contain endangered karst dwelling species or their habitat, and

Zone 4: Areas, largely non-cavernous, that do not contain endangered karst invertebrates.

The location of these zones is presented in Figure 2-4. Geographic Information System (GIS) Shape files for Karst Zones are available at <www.fws.gov/ifw2es/austintexas/>. Together, Zones 1 and 2 comprise about 55,000 acres in Travis County and about 100,000 acres in Williamson County.

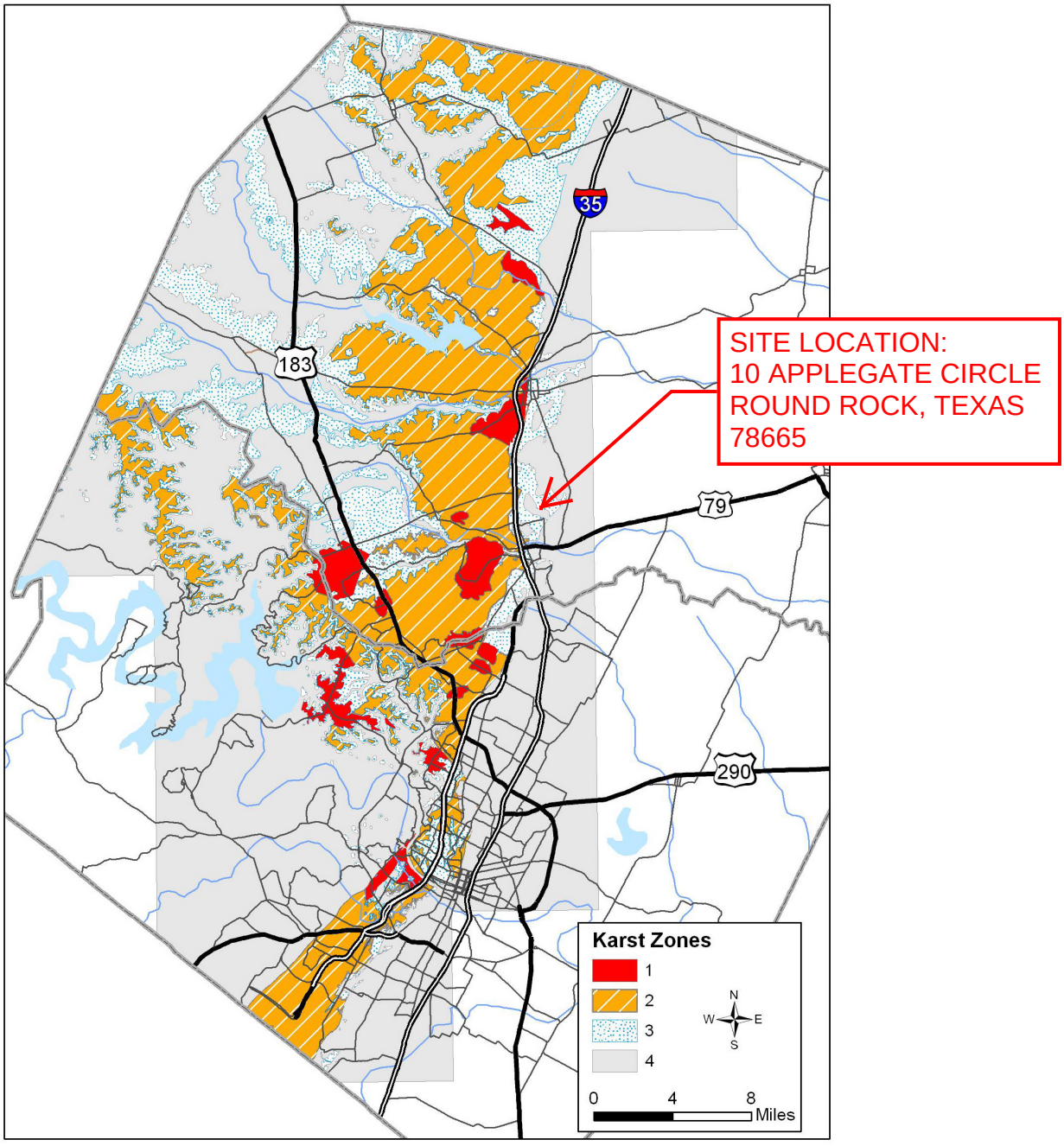


Figure 2-4. Karst Zones in Travis and Williamson Counties (USFWS, 1992)

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: Antonio A. Prete, P.E.

Date: 07/12/2024

Signature of Customer/Agent:

Regulated Entity Name: Applegate Circle

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: Gasoline

   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: Chandler Brnch - Brushy Creek

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

1.4.16 Spill Prevention and Control

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, 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 runon 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 revisions 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.tnrcc.state.tx.us/enforcement/emergency_response.html

ATTACHMENT “B”

POTENTIAL SOURCES OF CONTAMINATION

Potential sources of contamination from this site include hydrocarbon residue, emissions from vehicles, asphaltic products used for paved surfaces, and tracking of silt onto paved surfaces by construction equipment.

ATTACHMENT "C"

SEQUENCE OF MAJOR ACTIVITIES

Activity	**Area**
Install Erosion Controls	± 4.81 ac (Limits of Construction)
Clearing / Grubbing	± 4.81 ac (Limits of Construction)
Fill / Excavation (Grading)	± 4.81 ac (Limits of Construction)
Utility Installation	± 1.00 ac
Paving / Infrastructure	± 2.50 ac
Revegetation	± 4.81ac (Limits of Construction)

NOTE: There are no common drainage areas containing more than 10 acres of disturb area.

ATTACHMENT “D”

TEMPORARY BEST MANAGEMENT PRACTICES & MEASURES

The TBMP’s are to be installed prior to any site activities and will be in place for all sequenced activities. This includes the placement of temporary silt fencing and rock berms on the down gradient side of the site to prevent any silted run-off to water surfaces and to prevent any erosion or disturbance to vegetation.

Post construction of improvements and prior to project acceptance, the limits of disturbance shall be revegetated.

ATTACHMENT “E”

REQUEST TO TEMPORARILY SEAL A FEATURE

A request to temporarily seal a feature is not being made.

ATTACHMENT “F”

STRUCTURAL PRACTICES

Silt fencing, inlet protection, & rock berms will be placed on the down gradient side of any exposed soils in order to limit the discharge of silt and pollutants from exposed areas of the site.

ATTACHMENT “G”

DRAINAGE AREA MAP

A drainage area map has been included as part of the construction plans, which has been submitted with this Water Pollution Abatement Plan (WPAP) & Organized Sewage Collection System (SCS).

ATTACHMENT “H”

TEMPORARY SEDIMENT POND(S) PLANS & CALCULATIONS

There are no common drainage areas containing more than 10 acres of disturb area. Therefore, a temporary sediment pond is not required for this project

ATTACHMENT "I"

INSPECTION & MAINTENANCE FOR BMPs

SILT FENCES, ROCK BERMS, & INLET PROTECTION:

Weekly: Accumulated silt shall be removed when it reaches a depth of 6 inches. Silt shall be disposed of in an approved site and in such a manner as to not contribute to additional siltation. Repair and replace any damaged section resulting from construction activity or other cases.

After Rainfall: Fences shall be checked for structural damage from stormwater flows immediately after a significant (≥ 0.5 inch) rainfall as soon as ground conditions make fences accessible (usually within 24 hours). Should there be prolonged rainfall, inspections should be conducted without vehicles and temporary repairs made until equipment can be brought in without major surface damage. Remove accumulated silt when depth reaches 6 inches and dispose of as indicated in Weekly maintenance.

Adjust fence configuration if necessary after rainfall event to accommodate conditions defined by stormwater flows.

STABILIZED CONSTRUCTION ENTRANCE:

Weekly: The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public roadways. If necessary, top dress with additional stone and repair and/or cleanout any measures used to trap sediment.

After Rainfall: Immediately after a significant rainfall (≥ 0.5 inch), as soon as ground conditions make stabilized construction entrance accessible (usually within 24 hours), the same inspection and maintenance procedures for the weekly requirements shall be performed.

CONCRETE TRUCK WASHOUT:

Daily: The washout lining and sidewalls shall be inspected for damages and leaks. Repair and replace any damages resulting from construction activity or other cases. Ensure the washout area does not exceed 75% capacity. If 75% capacity is exceeded, the wash water should be vacuumed off or allowed to evaporate to avoid overflows. Once the remaining cementitious solids have hardened, they shall be removed and recycled.

Before Rainfall: Prior to a heavy rainfall, the washout's liquid level should be lowered or the washout area should be covered.

After Rainfall: Immediately after a significant rainfall (≥ 0.5 inch), as soon as ground conditions are accessible (usually within 24 hours), the same inspection and maintenance procedures for the daily requirements shall be performed.

RECORD KEEPING:

Project superintendent shall have a log for entering site inspections for both weekly and rainfall events. Results of inspections including damage and recommended repairs shall be noted, along with inspection personnel data and date of remedial action taken.

ATTACHMENT “J”

SCHEDULE OF INTERIM & PERMANENT SOIL STABLIZATION PRACTICES

Interim soil stabilization shall be instituted whenever an area has been disturbed and there is a lapse of twenty-one consecutive days when no construction activities have occurred on that location or if any area is not scheduled for final construction activities to occur later than twenty-one days after last disturbance.

Post final grading, permanent soil stabilization shall occur at the first practical opportunity after the completion of construction activities in an area (Within fourteen days). Records must be kept as to when each soil stabilization measure was instituted in each area.

Reference erosion & sedimentation notes and details in the construction plans.

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.

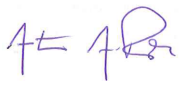
Signature

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: Antonio A. Prete, P.E.

Date: 07/12/2024

Signature of Customer/Agent



Regulated Entity Name: Applegate Circle

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

This project is not seeking an impervious cover waiver.

ATTACHMENT “B” –

BMPs FOR UPGRADIENT STORMWATER

There is no storm water originating up gradient that is running through the proposed project.

ATTACHMENT "C" –

BMPs FOR ON-SITE STORMWATER

Storm water from this project will be treated by the following Best Management Practice (BMP).

The Batch Detention Pond is located at the southeast corner of the site. It will treat storm water runoff from WQ-1 totaling 1.99 acres with 1.79 acres (89.95%) of impervious cover. WQ-2 depicts the remaining 0.08 acres of impervious cover located on-site. It is a mixture of proposed and existing impervious cover. The entire 0.08 acres has been accounted in the overall TSS calculations and will be accounted for by overtreatment. The Batch Detention Pond will have the capacity to remove a total of 1,807 lbs. of TSS which satisfies the required 80% TSS removal. The design of the Batch Detention Pond follows the TCEQ "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices" design criteria.

All referenced TSS removal calculations are attached directly behind this page. Construction plans and exhibits are being submitted in conjunction with the Water Pollution Abatement Plan (WPAP) and Organized Sewage Collection Plan (SCS)..

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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ROUND ROCK, TX. 78665
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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER

12Jul24

OVERALL BATCH DETENTION TSS REMOVAL CALCULATIONS

(In Accordance with TCEQ Regulations : RG-348)

Required Load Reduction (L_M)- Total Project Area:

Eq 3.2 $L_m = 28.9 (A_N * P)$

County =			Williamson	
P	=	Average Annual Precipitation	32.0	[in]
$A_{tot-prj}$	=	Total project area included in the plan	2.53	[ac]
A_{pre}	=	Predevelopment impervious area	0.26	[ac]
A_{post}	=	Postdevelopment impervious area	1.87	[ac]
A_N	=	Area of the net increase of impervious area	1.61	[ac]
IC_{pre}	=	Fraction of impervious cover (Pre Development)	10.28	[%]
IC_{post}	=	Fraction of impervious cover (Post Development)	73.91	[%]
L_M	=	Req'd TSS removal (***80%*** of Increase)	**1,401**	**[lbs]**

Load Removed by BMP (L_R):

Eq 3.8 $L_R = (\text{BMP Eff}) * P (A_I*34.6 + A_P*0.54)$

$A_{tot-sub}$	=	Total area treated in the BMP subbasin	1.99	[ac]
A_I	=	Impervious area proposed in BMP subbasin	1.79	[ac]
A_p	=	Pervious area remainaing in the BMP subbasin	0.20	[ac]
IC	=	Impervious cover (Post Development)	89.95	[%]
BMP Type =			**Batch Detention**	
BMP Eff	=	BMP TSS Removal Efficiency	0.91	
L_R	=	TSS Load Removed From Subbasin by BMP	**1,807**	**[lbs]**

Fraction of Annual Runoff to Treat the subbasin (F):

Eq 3.9 $F = L_M / \Sigma L_R$

Desired L_M	=	Req'd TSS removal (80% of Increase typical)	1,401	[lbs]
L_R	=	Load removed from *each* BMP	1,807	[lbs]
F	=	Fraction of the Annual Rainfall treated by BMP	**0.78**	

Water Quality Volume Required (WQV_{req}):

Eq 3.10 $WQV = d * Rv * A$

Eq 3.11 $R_v = 1.72(IC)^3 - 1.97(IC)^2 + 1.23(IC) + .02$

$WQV_{req} = WQV + S$

F	=	Fraction of the Annual Rainfall treated by BMP	0.78	
d	=	Rainfall Depth required to capture	1.00	[in]
A	=	Portion of Site contributing to BMP	1.99	[ac]
IC	=	Fraction of Impervious Cover	0.90	
R_v	=	Runoff Coefficient	0.78	
WQV	=	Water quality volume	5,665	[ft^3]
S	=	20% Increase for Sediment Storage	1,133	[ft^3]
WQV_{req}	=	Water quality volume required (With 20% increase)	**6,798**	**[ft^3]**

ATTACHMENT “D” –

BMPs FOR SURFACE STREAMS

There is no surface water, groundwater, or stormwater originating upgradient from the site that runs across the site. All upgradient stormwater is directed around the site.

ATTACHMENT “E” –

REQUEST TO SEAL FEATURES

We are not requesting to seal a feature.

ATTACHMENT “F” –

CONSTRUCTION PLANS

The constructions plans have been attached as part of this submittal. The design calculations, treatment summary, and specifications for the proposed Batch Detention Pond are attached directly behind this page.

Special Specification 7130
Batch Detention Pond

1. Description

Furnish, install, test, and make fully operational a Batch Detention Pond Control System as specified below or an engineer approved equal with appurtenances included hereafter at designated locations as shown on the plans. Approved equal equipment shall provide the same functionality and monitoring functions as the equipment specified below. Ensure the equipment, design, and construction use the latest available techniques with a minimum number of different parts, subassemblies, circuits, cards, and modules to maximize standardization and commonality.

For each solar power system located at each project site submit electrical load calculations, structural load calculations, drawings, and details. Include the structural connection details for solar panels, control panel, and battery enclosure to poles. Structural calculations shall be sealed by a licensed structural engineer in the state of Texas. Provide equipment data sheets, details, and specifications.

2. Materials

Provide all materials necessary for the installation of a Detention Pond Control System. Provide materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following items:

- Item 416, “Drilled Shaft Foundation"
- Item 421, "Hydraulic Cement Concrete"
- Item 440, “Reinforcement for Concrete“
- Item 442, "Metal for Structures“
- Item 445, "Galvanizing“
- Item 449, “Anchor Bolts“
- Item 465, “Junction Boxes, Manholes and Inlets”
- Item 618 “Conduit“
- Item 620, "Electrical Conductors“
- Item 624, “Ground Boxes“
- Item 687, “Pedestal Pole Assemblies“

3. Equipment

Provide labor, equipment and materials to employ solar-generated, battery-backed power for the assigned field equipment specified in the plans, or as directed. Install all equipment, including batteries and solar charge controller, in a suitably sized enclosure or enclosures.

Size the enclosure to house the solar controller, batteries, and lightning protection equipment. Furnish a solar powered system that supplies and maintains 100% continuous and intermittent electrical loads for up to 24 hr. per day with autonomy of 3.6 days. Provide system as described in the plans, and generally consisting of the following:

- Photovoltaic (PV) modules with mounts or racks, and mounting brackets for affixing the modules to a pole as shown on the plans. Two year manufacturer's material and workmanship and twelve year 90% minimum power output warranties. Provide adjustable tilt mounts that can be repositioned to an appropriate angle to maximize seasonal solar radiation.
- 12 VDC sealed, valve-regulated, absorbed glass mat (AGM), maintenance-free batteries
- One toggle-type power switch or overcurrent protection device for emergency shutoff, and external conduit, wiring cable and conductors (as recommended by the supplier) between the following:
  - Photovoltaic module to controller panel
  - Battery interconnect and batteries to controller panel, and wiring between components in cabinet.

Pre-set the equipment, optimize photovoltaic module direction, and configure hardware components to allow automatic operation. Furnish and install a fully operational assembly with all cabling and terminations matched to support the selected components. Use the component sizing chart, Table 1 shown below to size the individual components (PV modules, batteries, etc.) based on the planned electrical load and days autonomy:

	COUNT	VDC	UNIT POWER (W)	HOURS PER DAY	TOTAL POWER (W-hr)
In-Situ, Inc. LevelTROLL 500 (Measuring)	1	12	0.048	0.0003	0.0000144
In-Situ, Inc. LevelTROLL 500 (Sleep Mode)	1	12	0.00216	23.9997	0.052
ISCO Signature Base Meter	1	12	1.628	24	39.072
Remote Hand Station	1	24	0.72	24	17.280
Control Valve	1	24	360	.025	9.000
				TOTAL	**65.404**

Table 1 Solar Power System Component Load Requirements

3.1. **PV Modules**. Supply and install the appropriate number and size of PV modules needed to meet the minimum power requirements shown in Table 1 or as required by the plans. Use photo voltaic USA (PVUSA) test conditions (PTC) ratings.

Supply industrial grade, mono-crystalline or poly-crystalline type solar modules. Consumer grade modules are not acceptable. Ensure that the PV modules meet the following minimum requirements:

- Minimum output voltage of 12 VDC.
- Minimum area efficiency rating of 9.4%.
- Include an ultraviolet (UV) resistant, Ingress Protection (IP) 65 rated junction box providing wire termination for 8-14 AWG wiring with the PV module.
- Hail impact resistance up to 1 in. diameter at 50 mi. per hr.
- UL 1703 listing.

Ensure PV modules, regardless of wattage size, shares common mounting holes for mounting so that a single mounting structure will accommodate the entire module line.

PV modules may be wired in "strings" of panels wired in series, which are then wired in parallel to other strings. Ensure that the open circuit voltage of any single string of PV modules does not exceed 127 V.

Construct PV modules with a tempered glass surface and an industrial grade anodized aluminum frame that completely surrounds and seals the module laminate. Ensure construction is consistent with the demands of installation near humid salt air environments.

Design and construct the photovoltaic module mounting assembly of galvanized steel (ASTM A-153 Class A) or aluminum. The mounting assembly must be of adequate design and strength to provide a means of securely attaching the PV module frame to a pole. Provide a mounting assembly capable of 360° horizontal orientation with a means of locking the bracket at an inscribed angular position about the pole. Ensure the mounting assembly is designed and installed to prevent module re-positioning during 110 mph wind conditions.

Label all PV modules with open-circuit voltage, operating (maximum power) voltage, maximum permissible voltage, operating (maximum power) current, short-circuit current, and maximum power.

Provide a warning label on all DC junction boxes warning that the active parts inside the boxes are fed by a PV array and may still be energized after isolation.

Mark each PV system disconnect as such. NEC 690.13(B).

3.2. **Solar Control Panel.** This panel shall contain the solar controller equipment, batteries, and block (plug) valve controls within the same or multiple enclosures. The enclosure or enclosures shall be pole-mounted, NEMA 3R, lockable, and 304 stainless steel construction. Provide a double flanged cabinet door opening. Provide cabinet with a Corbin style #2 lock with a keyhole cover as an integral part of the door and 2 keys. Provide cabinet with provisions to hold the door open at approximately 90º and 120º positions.

Provide louvers on each side of the cabinet to allow adequate cooling of the electronic components and to prevent the accumulation of gases. Provide screen vents that prevent entry of insects.

Provide an aluminum back panel in the lower compartment with a thickness of 0.125 in. Size the back panel to provide adequate space for the control electronics and terminal strips. Equip the cabinet with at least two shelves of a minimum thickness of 0.125 in, with a 1 in. x 3 in. cutout in the back of the shelves for cable run. Ensure that the shelves are capable of supporting design battery weight. Provide a rubber mat installed on each shelf that supports the batteries and two 1/8 in. drain holes located in the bottom of the cabinet at opposite corners. Provide a minimum of 2 in. of separation from the top of the battery posts to the bottom of the next shelf. Equip the cabinet with all necessary mounting equipment and hardware. Configure the cabinet for pole mounting using two aluminum "U" channel mounting brackets with stainless steel reinforcing plates on the inside of the cabinet. Include a 0.25 in. aluminum reinforcing plate mounted in the bottom of the cabinet. The supplier shall be Amerseco Solar as provided by C.C. Lynch & Associates, Inc., 1-800-333-2252, or engineer approved equal.

Solar Controller. The solar controller shall be capable of providing continuous 24 VDC power to the control valve and 12 VDC power to the LevelTROLL and Signature Base Station for the worst anticipated available daylight. The Controller shall be capable of operating in temperatures ranging from -40^{o}C to 60^{o}C and a humidity of 5% to 95% non-condensing. The Controller shall be a complete turn-key packaged system integrated by a single provider. The Controller supplier shall be regularly engaged in fabricating controllers of this type for a minimum of 5 years. The Contractor shall provide a list of Controller supplier(s) for approval. For calculating the daylight availability, the system design shall be based on the central Texas area with a useful minimum daily solar exposure of 4.19 hours.

3.3. **Batteries**. Provide maintenance free, spill proof, AGM batteries with the following minimum characteristics:

- 12 VDC,
- 80% allowable depth of discharge (DOD),

- rated for a minimum of 2,000 recharge cycles, and
- capacity rated at 77ºF, 100 hr. discharge rate.

Supply appropriate number of batteries to ensure the minimum total amp-hours meets or exceeds the value in Table 1, as described in the plans, when wired in series. Label, with a UV resistant system, the battery bank with maximum operating voltage, equalization voltage, and polarity.

Arrange the system components so that all battery terminals are guarded and adequate working space is provided per (NEC) 690.71(B)(2) and (NEC)480.9.

Install current-limiting fuses on battery output circuits per (NEC) 690.71(C).

Provide overcurrent protection for the battery circuit conductors in conformance with (NEC) 690.9(A) and (NEC) 240.

Use battery interconnections with #4 AWG or larger flexible cables that are listed for hard-service use and are moisture resistant

3.4. **Control Valve Motor Operator Controller**. The control valve motor operator controller shall include timing and logic functions to control the basin plug valve based on sensing the presence of water in a pipe with an In-Situ, Inc. LevelTROLL 500 pressure transducer**.** The controller shall operate at 12VDC and shall include three wires that are internally connected to isolated relay contacts rated for 30 amps wired as a common, normally open, and normally closed. The controller shall poll the pressure transducer via MODBUS or SDI-12 at user selectable intervals and shall close the relay when water has been detected above a threshold for 12 hours. The pressure transducer shall be in "sleep mode" when not being polled in order to conserve power. The controller display shall be capable of a keypress timeout function in order to conserve power. The relay shall be opened when the water level detected by the pressure transducer drops below the threshold. The controller shall be capable of logging data internally which can be retrieved by USB thumb drive, laptop, cell modem, or Ethernet modem. The controller shall be model Teledyne ISCO Signature Base Station with a TIENet 304 Contact Output Card, and SPA 999 30 Amp alarm contacts. The pressure transducer shall be an In-Situ, Inc. LevelTROLL 500 (5 PSIG)). The LevelTROLL 500 shall be supplied with an NPT adapter and ISCO RuggedCable. Refer to plans for RuggedCable lengths.

The basin plug valve controls shall include the controls for the plug valve and the pressure transducer to detect water in the pipe. These controls shall contain, but not necessarily limited to, the control valve motor operator controller, relay box, terminal blocks, and control valve remote hand station. Configure controller to operate as diagrammed on the drawings.

3.5. **Remote Hand Station:** Provide a Remote Hand Station (RHS) to locally control the basin plug valve from solar control panel. The RHS shall be suitable for remote connection to an electric actuator up to 100m (330ft) distance, include local control facilities, a backlit LCD display and terminals for communication highway connection to the host actuator housed within a self-contained, double-sealed enclosure.

In order to maintain the integrity of the enclosure, setting of the actuator torque levels, position limits and configuration of the indication contacts etc. shall be carried out without the removal of any covers via a Bluetooth® wireless interface. Sufficient commissioning tools shall be provided with the actuators and must meet the enclosure protection and certification levels of the actuator and remote hand station. Commissioning tools shall not form an integral part of the actuator and must be removable for secure storage / authorized release. In addition, provision shall be made for the protection of configured actuator settings by a means independent of access to the commissioning tool. Provision shall be made to disable Bluetooth® communications or only allow a Bluetooth® connection initiated by an Infra-Red command for maximum security.

The RHS shall be suitable for indoor and outdoor use. The unit shall be capable of functioning in an ambient temperature ranging from -50°C (-58°F) to 70°C (158°F), up to 100% relative humidity. Actuators for

hazardous area applications shall meet the area classification, gas group and surface temperature requirements specified in data sheet.

RHS enclosure shall be O-ring sealed, watertight to IP66/IP68 7m for 72hrs, NEMA 4, 6. The internal electrical elements of the actuator shall be protected from ingress of moisture and dust when the terminal cover is removed for site for cabling, the terminal compartment having the same ingress protection rating as the actuator with the terminal cover removed. The RHS enclosure shall allow for temporary site storage without the need for electrical supply connection. All external fasteners shall be plated stainless steel. The use of un-plated stainless steel or steel fasteners is not permitted.

The RHS shall incorporate local controls for Open, Close and Stop and a Local/Stop/Remote mode selector switch lockable in any one of the following three positions: local control only, stop (no electrical operation), remote control plus local stop only. It shall be possible to select maintained or non-maintained local control. The local controls shall be arranged so that the direction of valve travel can be reversed without the necessity of stopping the actuator. Provision should be made to enable control arbitration between the RHS and the connected actuator. The local controls and display shall be rotatable through increments of 90 degrees to suit mounting orientation and access.

Power for the RHS shall be provided from the actuator and shall run in the same cable as the interconnecting communication. Independent power is not acceptable. Communication between the RHS and actuator should be based on a high-speed CAN bus technology.

The RHS display shall include a dedicated numeric/symbol digital position indicator displaying valve position from fully open to fully close in 0.1% increments. Valve closed and open positions shall be indicated by symbols showing valve position in relation to the pipework to ensure that valve status is clearly interpreted. With power connected, the display shall be backlit to enhance contrast at all ambient light levels and shall be legible from a distance of at least 5m (16ft). Red, green, and yellow LEDs corresponding to open, closed and intermediate valve positions shall be included on the RHS display when power is switched on. The yellow LED should also be fully programmable for on/off, blinker and fault indication. The RHS display shall include a fully configurable dot-matrix display element with a minimum pixel resolution of 168 x 132 to display operational, alarm, configuration and graphical datalogger information. The text display shall be selectable between English and other languages such as: Spanish, German, French, and Italian. Provision shall be made to upload a different language without removal of any covers or using specialized tools not provided as standard with the actuator. Datalogger graphical displays should as a minimum be able to display log and trend graphs on the local LCD for the following:

- Torque versus Position
- Number of Starts versus Position
- Number of starts per hour
- Average temperature

The display shall be capable of indicating 4 different home-screens of the following configuration:

- Position and status
- Position and torque (analogue)
- Position and torque (digital)
- Position and demand (positioning)

Provision shall be made for the addition of an optional environmental cover to protect the display from high levels of UV radiation or abrasive materials.

The local controls and display shall be rotatable through increments of 90 degrees to suit valve and actuator orientation. A vandal-proof cover should be available to prevent un-authorized operation and to protect the LCD and window from damage.

Facilities shall be provided for monitoring actuator operation and availability directly from the RHS. Actuator datalogger information shall be accessed via non-intrusive Bluetooth® communication via the RHS and data displayed on the LCD. Sufficient standard intrinsically safe tools shall be provided for downloading datalogger and actuator configuration files from the actuators and subsequent uploading to a PC. The actuator manufacturer shall supply PC software to enable datalogger files to be viewed and analyzed

A terminal compartment shall be provided to enable interconnecting cables to be terminated without the removal of the main electronics cover. The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal. All wiring supplied as part of the RHS to be contained within the main enclosure for physical and environmental protection.

A durable anodized aluminum nameplate shall be affixed to the RHS housing and contain all relevant serial and approval information.

3.6. **Future Cellular Modem and Antenna.** Provide provisions in solar control panel system for a future cellar modem The Modem shall be FCC approved and approved for CDMA networks such as Verizon. The modem shall be integral to the Teledyne ISCO Signature Base Station.

3.7. **End User Interface.** Provide provisions to allow for future offsite access and control of the Signature Base Station, at a minimum it shall be capable of remote access through cellular modem for online editing, email messaging via SMTP for statuses and alarms, remote monitoring and programming, and read/write data table access. In addition, the Signature Base Station shall have a MODBUS RS-485 output using ASCII or RTU transmission coding.

3.8. **Batch Detention Outlet Structure.** An outlet structure with duel hatch entry hatch for access shall be furnished and installed. The structure shall contain, but not necessarily limited to, 6" motor operated eccentric plug valve, 6" manual eccentric plug valve, connectors, pipe supports, pressure transducer, piping, conduit and a NEMA 4X junction box.

3.9. **Perforated Riser Column and Outlet Pipe with Trash Rack.** A perforated riser column shall be connected to an outlet pipe and installed with a trash rack as shown in the plans.

3.10. **Vertical Sediment Depth Marker.** A PVC pipe with wing channel post as shown in plans.

3.11. **Grounding.**

Ungrounded Systems. Include disconnects, overcurrent protection, and ground-fault protection. Provide equipment that is listed for use with ungrounded systems per NEC 690.35.

Module Grounding Connectivity. Provide module connections such that removal of a module does not interrupt a grounded conductor to another PV source circuit per NEC 620.4***9***).

Ground-Fault Protection. Provide ground fault protection for grounded arrays per NEC 690.5.

PV System Grounding. Provide one grounded DC conductor for two-wire PV systems operating above 50 V per NEC 690.41.

Single Point. Provide DC grounding at a single point on the PV output circuit per NEC 690.42.

Equipment Grounding. Ground non-current-carrying metal components, including module frames, mounting structures, equipment, conduit, and boxes per NEC 690.43.

Equipment Grounding Conductors. Route equipment conductors with PV circuit conductors per NEC 690.43.

Equipment Grounding Conductor Size. If the array has ground fault protection, size the grounding conductor according to NEC 250.122. If not, size the grounding conductor to handle at least twice the derated circuit conductor ampacity per NEC 690.45.

Grounding Electrode Systems. Ground the AC system according to NEC 250.50 through 250.60. Ground the DC system according to NEC 250.166 through 250.169, and NEC 690.47.

Common Grounding. If the system includes both AC and DC systems, bond the grounding electrodes together. Size the bonding conductor for the larger of the AC and DC requirements per NEC 690.47(C).

3.12. **Disconnects**. Provide disconnects to disconnect equipment (batteries, solar controllers, etc.) from all ungrounded conductors of all power sources per NEC 690.15.

For fuses that are energized from both directions, provide disconnects to independently disconnect the fuse from all sources of power.

Provide disconnects to open all ungrounded conductors which are readily accessible, externally operated, have ON/OFF indications, and have appropriate interrupt ratings. Manually operated switches and circuit breakers are allowed to fulfill these requirements per NEC 690.17.

4. Construction

4.1. **Installation.** Provide equipment that utilizes the latest available techniques for design and construction with a minimum number of parts, subassemblies, and modules to maximize standardization and commonality.

4.2. **System Configuration.** Configure and fully integrate the equipment to provide a fully operational system.

4.3. **General.** Furnish and install all materials, including support, calibration and test equipment, to ensure an operating and functional solar power system. Install power and data cables, power grounding and lightning suppression systems. Prior to beginning installation, inspect each site to verify suitability of the design for installation, grounding and lightning protection. Provide written documentation to the Engineer for approval prior to installation.

4.4. Configure and setup the solar power system to assure connection and electric power delivery to the field equipment as indicated in the plans. Locate and mount all equipment as detailed in the plans and as directed by the Engineer.

4.5. **Wiring.** Provide wiring that meets the requirements of the NEC. Provide wires that are cut to proper length before assembly. Provide cable slacks to facilitate removal and replacement of assemblies, panels, and modules. It is not acceptable to “double-back” wire to take up slack. Lace wires neatly with nylon lacing or plastic straps. Secure cables with clamps. Provide service loops at connections.

4.6. Size all conductors for a de-rated ampacity of at least 125% of the maximum currents calculated. De-rating factors include high ambient temperatures and number of conductors run together within a conduit or cable, per NEC 690.8(B), 310.15(B) and 310.16. Single-conductor cables in sizes 16 AWG and 18 AWG are permitted for module interconnections if they meet the ampacity requirements.

4.7. Protect all conductors operating at more than 30 V and installed in readily accessible locations with conduit, per NEC 690.31(A).

Provide conductors rated for 194ºF (90ºC) and wet service per NEC 690.31(B).

Run PV source- and output-circuit conductors separately from conductors of other systems per NEC 690.31(B).

Color code all wiring. Mark grounded conductors white or gray. Use green, green/yellow or bare grounding conductors, per NEC 310.12.

Provide strain relief or conduit on all conductors per NEC 300.4.

4.8. **Pole**s. Mount all PV units and cabinets on poles as shown on plans Provide poles as shown on plans for the height specified. Coordinate location of PV system pole with location of batch outlet structure. Ensure poles are located a maximum of 100m (330ft) from batch outlet structure.

4.9. **Testing.** Perform testing in accordance with, Special Specification 6005, “Testing, Training, Documentation, Final Acceptance, and Warranty. Test the system at the factory and in the field to assure proper function operation.

ATTACHMENT "G" –

INSPECTION, MAINTENANCE, REPAIR, & RETROFIT PLAN

Maintenance Plan and Schedule for Best Management Practices (Batch Detention)

Batch Detention:

Inspections: Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.

Mowing: The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

Litter & Debris Removal: Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed.

Erosion control: The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.

Nuisance Control: Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

Structural Repairs & Replacement:

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

Sediment Removal: A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.

Logic Controller: The Logic Controller should be inspected as part of the twice yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset.

Record Keeping: During construction the project superintendent shall have a log for entering site inspections for all regular and rainfall events. Results of inspections, including damage and any recommended remedial action, shall be noted along with inspection personnel data and date of completion of any action. The log shall be made available for review by TCEQ, if requested. "Proper" disposal of accumulated silt shall be accomplished following TCEQ and Local Authority guidelines and specifications.

Responsible Party for Maintenance: David Lehmann
Sunrise LBG, LLC
300 Pinnacle Dr.
Georgetown, Texas 78626

Signature of Responsible Party: _____

Printed Name of Responsible Party: David P. Lehmann

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER

12Jul24

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

ATTACHMENT “H” –

PILOT-SCALE FIELD TESTING PLAN

Not applicable for this project. The BMP was designed using the “Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs".

ATTACHMENT “I” –

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

No surface streams are located on this project.

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: Applegate Circle

1. ☒ **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

2. 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: David Lehmann
   Entity: Sunrise LBG. LLC
   Mailing Address: 300 Pinnacle Drive
   City, State: Georgetow, Texas Zip: 78626
   Telephone: (916) 220-2876 Fax: _____
   Email Address: mini92truckin@gmail.com
   The appropriate regional office must be informed of any changes in this information within 30 days of the change.

3. The engineer responsible for the design of this sewage collection system is:

   Contact Person: Antonio A. Prete, P.E.
   Texas Licensed Professional Engineer's Number: 93759
   Entity: Waeltz & Prete, Inc.
   Mailing Address: 211 N. A.W. Grimes Blvd.
   City, State:Round Rock, Texas Zip: 78665
   Telephone:(512) 505-8953 Fax:_____
   Email Address:tony@w-pinc.com

Project Information

4. 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: _____
   ☐ Multi-family: Number of residential units: _____
   ☒ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

100% Domestic	16,546 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 16,546

6. Existing and anticipated infiltration/inflow is 16,546 gallons/day. This will be addressed by: New pipe and manholes that meet the TCEQ's Regulations.

7. 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 in conjunction with this application , 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.

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8" WWL 'A' (SIP)	1,320.60	PVC - SDR 26	ASTM D-3034, D-2241
6" WWL 'B' (SIP)	20.00	PVC - SDR 26	ASTM D-3034
6" WWL 'A' (SDP)	165.40	PVC - SDR 26	ASTM D-3034, D-2241

Total Linear Feet: 1,506

(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.

9. The sewage collection system will convey the wastewater to the Brushy Creek Regional Wastewater (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

10. All components of this sewage collection system will comply with:

   ☒ The City of City of Round Rock standard specifications.
   ☐ Other. Specifications are attached.

11. ☒ 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

12. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

13. ☒ 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

14. ☒ 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?*
WWL 'A' (SIP)	12 (SIP) Of All	1+00.00	Manhole
WWL 'A' (SIP)	12 (SIP) Of All	3+93.56	Manhole
WWL 'A' (SIP)	12 (SIP) Of All	6+32.96	Manhole
WWL 'A' (SIP)	12 (SIP) Of All	6+72.81	Manhole
WWL 'A' (SIP)	13 (SIP) Of All	10+42.80	Manhole
WWL 'A' (SIP)	13 (SIP) Of All	14+20.69	Manhole
WWL 'A' (SDP)	10 (SDP) Of All	2+65.40	Manhole

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
	Of		
	Of		
	Of		

15. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.

16. ☒ 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	2000

☐ **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.

17. ☐ 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.

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

Site Plan Scale: 1" = Varies'.

19. ☒ 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.

20. 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.

21. 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.

22. 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*
WWL 'A' (SIP)	12 (SIP) of All	1+00.00 to 8-75.00
	of	to
	of	to
	of	to

23. 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

24. ☒ Legal boundaries of the site are shown.

25. ☒ 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.

26. ☒ 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*
WWL 'A' (SIP)	13+23.00	Crossing	n/a	4' - 0"
WWL 'A' (SIP)	13+92.29	Crossing	n/a	4' - 6"

27. 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*

Line	*Manhole*	*Station*	*Sheet*

28. 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*
WWL 'A' (SIP)	Drop Manhole	1+00.00	12 (SIP)

29. 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.

30. 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.

31. 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.

32. 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.
☐ **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*

33. 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

34. ☒ 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.

35. ☒ 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]**	28 (SIP) of All
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	27 (SIP) of All
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	28 (SIP) of All
Typical trench cross-sections **[Required]**	27 (SIP) of All
Bolted manholes **[Required]**	27 (SIP) of All
Sewer Service lateral standard details **[Required]**	28 (SIP) of All
Clean-out at end of line **[Required, if used]**	N/A of N/A
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	N/A of N/A
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	28 (SIP) of All
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	28 (SIP) of All

Standard Details	*Shown on Sheet*
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	28 (SIP) of All

36. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.

37. ☒ 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: _____

38. ☒ 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.

39. ☒ 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: Antonio A. Prete, P.E.

Date: 07/12/2024

Place engineer's seal here:

12Jul24

Signature of Licensed Professional Engineer:

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

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: SCS Engineering Design Report

Applegate Circle

12Jul24

Prepared by:

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Project Description:

This wastewater design report is for the support of Applegate Circle Subdivision Improvement & Site Development Plans. The proposed SCS will be partially constructed with the Subdivision Improvement plans and then completed with the construction of the Site Development Plans. The total length of the (SCS) is 1,506 LF. The wastewater improvements for the overall development will include two stubs to the proposed buildings and a stub for future connection to the West along the North side of Applegate Circle. Furthermore, multiple wastewater manholes are proposed within the limits of the 100 year FEMA floodplain. The (SCS) will be constructed in accordance with all TCEQ requirements and regulations.

TCEQ Chapter 217.53:

(a)
The design flows were calculated utilizing design criteria specified by the City of Round Rock. An average wastewater flow per residential connection or living unit equivalent (LUE) of 285 gallons (80.0 gallons per person per day and 3.5 persons per LUE), a minimum peaking factor of 4.0, and an infiltration rate of 750 gallons per day per acre was used in the flow calculations. This criteria is typical the domestic characteristics of the expected flow.

Building [ID]	Land Area [ac]	Land Use	Unit	LUE's/Unit	LUE	Population [people]	ADWF [gpm]	PDWF [gpm]	I&I [gpm]	PWWF [gpm}
A + B	2.53	Office - Warehosue	46,975	4,000	12.1	42	2.35	10.16	1.32	11.48

Equations: ADWF (F) = (X gallons/person/day x No. of LUEs x 3.5 person)/1440
PDWF = $\{[18+ (0.0206 \times F)^{0.5}] / [4 + (0.0206 \times F)^{0.5}]\} \times F$
I&I = (750gpd/ac x Area)
PWWF = PDWF + I&I

(b)
The proposed wastewater lines are 6-inch and 8-inch PVC SDR 26 which meets ASTM D 3034 or D 2241 specifications. The slope varies throughout the alignment from a minimum slope of ±0.40% to a maximum slope of ±1.00%. The type of flow is domestic, and the pipe selection is based on the City of Round Rock's specification & TCEQ's requirements.

(c)
The pipe joints will also be PVC SDR 26 with a rubber gasket bell configuration meeting ASTM D3212, F1336, and F610.

(d)
The system pipes and manholes are no closer than nine feet laterally from domestic water lines and no closer than one foot vertically at any transverse crossing. Wastewater lines that cross a public water line (within nine feet), above or below, will be constructed of PVC SDR 26 ASTM D2241 (150 psi), one joint of wastewater line will be

centered at the crossing.

(e)
Lateral connections will utilize pre-manufactured fittings made of SDR 26 PVC meeting the same ASTM standards.

(f)
There are no bores proposed on this site.

(g)
PVC pipe is unaffected by fluids and gases generated by domestic wastewater flow. In addition, PVC is unaffected by corrosive soils.

(h)
We do not anticipate odor control to be problematic and no different than any other newly constructed collection system using PVC gasketed joints that are buried.

(i)
There are no geologic faults identified.

(j)
As stated above the lines minimum slope is 0.40% and a maximum slope of 1.00%.

6-inch line:
The hydraulic capacity (determined by Manning's Equation) for an 6-inch line at 0.40% slope at full flow capacity is 238.32 gpm with a velocity of 2.70 feet per second. The hydraulic capacity (determined by Manning's Equation) for an 6-inch line at 1.00% slope at full flow capacity is 390.90 gpm with a velocity of .43 feet per second.

8-inch line:
The hydraulic capacity (determined by Manning's Equation) for an 8-inch line at 0.40% slope at full flow capacity is 341.09 gpm with a velocity of 2.19 feet per second. The hydraulic capacity (determined by Manning's Equation) for an 8-inch line at 1.00% slope at full flow capacity is 543.09 gpm with a velocity of 3.46 feet per second.

The proposed wastewater system has total PWWF of 11.48 gpm, which is well under the line's capacity and no surcharges are expected.

The system's design requirements as outlined by the City of Round Rock are within the design parameters outlined in Figure: 30 TAC 217.32(a)(3), Table B.1 and the expected organic loading is characteristic of domestic loading.

(k)
(1) The design life of PVC pipe is widely accepted within the industry to be in excess of 100 years.
(2)(3) Pipe Stiffness Calculations: ***Reference attached spread sheet for 6" and 8" Flexible Pipe Design.***

(l)
See slope and velocity discussion above which assumed a Manning's n = 0.013.

(m)
The alignments of pipe are shown in the construction plans and have uniform grades between manholes, straight alignments with no curvature, and no pipe deflections.

(n)
There are no inverted siphons or sag pipes.

(o)
There are no bridged sections of pipe.

TCEQ Chapter 217.54:

(a)
Pipe embedment shall be as specified by the City of Round Rock Specifications and shall be Class I or II. If trenching encounters significant fractures, fault zones, caves or solution cavities, all trenching will cease within 50 feet of the feature and a geologist will be contacted. Specific feature closure details are part of the construction plans to be used once the geologist has contacted TCEQ and permission has been granted to seal the feature.

(b)
Compaction shall meet the City of Round Rock Specifications.

(c)(d)
The envelop size and trench width is depicted by a standard City of Round Rock detail found in the construction plans and meets TCEQ criteria.

TCEQ Chapter 217.55:

(a)
Manholes have been placed at points of alignment, grade, and size change, and at all pipe intersections.

(b)
All future extensions if proposed will include pipe stub outs with watertight plugs.

(c)
Cleanouts placed at the end of a line will include watertight plugs.

(d)
All installations will be in accordance with the City of Round Rock specifications and meet all TCEQ requirements.

(e)
All manholes in this project will be either monolithically poured or prefabricated constructed to withstand all anticipated loads.

(f)
All adjustment rings utilized will follow the City of Round rock specifications and meet all TCEQ requirements.

(g)
The spacing distance for manholes complies with the TCEQ requirements.

(h)
N/A

(i)
There are no manholes located in a stream bed.

(j)
All manholes are a standard 4’ in diameter.

(k)
Manholes, covers and bases shall meet all TCEQ criteria in this section, see details in construction plans.

(l)
The inclusion of steps is prohibited.

(m)
The inclusion of steps is prohibited.

(n)
N/A

(o)
All cleanouts used have a diameter equal to the connecting system.

TCEQ Chapter 217.57 and 217.58:

All testing required in these chapters shall be performed to the specifications listed within these chapters, see Organized Sewage Collection System General Construction Notes in the construction plans.

TCEQ Chapters 217.56 and 217.59 – 217.71 do not apply to this project.

Flexible 6" PVC (SDR-26) Pipe Design

Live Load Analysis: 30 TAC 217.53(k)(2)(A)

T62 For the purposes of this application, the minimum depth of burial for gravity sanitary sewer pipe, from the ground surface to the crown of the pipe (H) is 2 feet. Does the submitted design comply with this minimum H?

Yes

T63 If all pipe proposed for this project will be installed at a burial depth of greater than or equal to 3.0 feet and the pipe will not be subjected to live loads greater than 18 kip axle, assume that the pressure due to live load L_1=0 and skip to T68. If a value of H greater than or equal to 2 feet and less than 3 feet is proposed for any portions of the gravity sanitary sewer pipeline or if the pipe will be subjected to live loads greater than 18 kip axle, calculations which quantify what the L_1 on the pipe will be must be provided:

Live Load = **0** [psi]

T64 Indicate minimum H: 3 [ft]

T65 Indicate maximum anticipated L_1 as determined in T63: 0 [psi]

T66 Are all proposed flexible pipe materials capable of supporting this L_1? **Yes**

T67 Indicate source of maximum L_1: **Uni-Bell's "Handbook of PVC Pipe" (H20 Load at 2.5' of cover)**

Buckling Analysis: 30 TAC 217.53(k)(2)(B)

T68 Calculate allowable and predicted buckling pressure. Predicted and allowable buckling pressures must be calculated for each size of pipe and type of flexible pipe material. For the purposes of this application form, the buckling analysis must be performed using the method outlined below. The method of calculating allowable buckling pressure provided below is only valid for lines which are installed at depths of 2 ft < H <80 ft.

q_a =	Allowable buckling pressure, (psi)			
R_w =	Water buoyancy factor. If h_w = 0, R_w = 1. If 0 < h_w < h (groundwater elevation is between the top of the pipe and the ground surface), calculate Rw with Equation 2.			
B' =	Empirical coefficient of elastic support			
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.			
h =	Height of soil surface above the top of pipe	=	96	[in]
H =	Depth of burial from ground surface to crown of pipe	=	8	[ft]
h_w =	Height of water surface above top of pipe in inches (groundwater el.), =	=	0	[in]
E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
E =	Modulus of elasticity of the pipe material	=	500,000	[psi]
t =	Pipe structural wall thickness	=	0.241	[in]
D =	Mean pipe diameter	=	6	[in]

a) Calculate allowable bucking pressure as follows:

(1)	**$q_a = 0.4 * [32 * R_w * B' * E_b * (E * I / D^3)]^{0.5}$**	**=**	**53.5**	**[psi]**
(2)	**$R_w = 1 - 0.33 * (h_w / h)$ =**	**=**	**1.00**	
(3)	**$B' = 1 / (1+4 * e^{-0.65H})$**	**=**	**0.30**	
(4)	**$I = (t^3 / 12)$**	**=**	**1.166E-03**	**[in^4/in]**

b) Calculate pressure applied to pipe under installed conditions

q_p =	pressure applied to pipe under installed conditions (psi)			
W_c =	vertical soil load on the pipe per unit length in pounds per linear inch (lb/in)			
γ_w =	0.0361 pounds per cubic inch (pci), specific weight of water			
γ_s =	specific weight of soil	=	120	[pcf]
L_1 =	live load as determined in T63	=	0	[psi]

(5)	**$q_p = \gamma_w * h_w + R_w * (W_c / D) + L_1$**	**=**	**7.78**	
(6)	**$W_c = \gamma_s * H * (D + 1) / 144$ =**	**=**	**46.67**	

T69 Report q_a and q_p for each pipe diameter proposed and for each type of pipe material proposed:

Pipe Diameter: 6 [in] Pipe Material: PVC

q_a: **53.5** **[psi]** **q_p:** **7.8** **[psi]**

T70 If $q_a > q_p$, specified pipe is acceptable for the proposed installation. If $q_a < q_p$, the wall thickness of the pipe must be increased and/or a pipe with a larger modulus of elasticity (E) must be used. Make the appropriate modifications and repeat the buckling analysis, showing that for the upgraded pipe, qa > qp. Does all the pipe proposed for this project meet these requirements?

Yes

Wall Crushing: 30 TAC 217.53 (k)(2)(D)

T71 If no concrete encased flexible pipe is proposed for the submitted project, skip to T73. If any flexible pipe will be installed in rigid encasement (e.g. concrete), calculate the maximum depth that the pipe can be buried before wall crushing (or failure by ring compression) will occur using the method outlined below. It should be noted that cement stabilized sand or soil is not considered a rigid encasement for purposes of TCEQ review.

N/A

H =	Depth of burial in feet (ft) from ground surface to crown of pipe	=		
D_o =	Outside pipe diameter	=	0	[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.	=	4,000	[psi]
A =	Surface area of the pipe wall	=	0.0	[in^2/ft]
24 =	Conversions and coefficients			

(7)	**$H = (24 * P_c * A) / (\gamma s * D_o)$ =**	**=**	**N/A**	**[ft]**

T72 Will all pipe installations proposed for this project have an H less than or equal to the maximum allowable H calculated in T71 and greater than or equal to 2 feet? Report maximum allowable H, (Ha), and the maximum H which is proposed, (Hp), for each proposed pipe diameter and each type of flexible pipe material.

H_a: **N/A** **H_p:** **N/A**

Installation Temperature Effects:

T73 If flexible pipe will be installed under favorable ambient temperature conditions, skip to T74. If flexible pipe will be installed under very high or low ambient temperature conditions, please indicate provisions for handling which will protect the pipe and ensure an adequate installation:

Location in submittal:

Plan Sheet: N/A Specifications page: N/A Item No.: N/A

Tensile Strength:

T74 The project specifications need to indicate minimum allowable tensile strength in psi for each flexible pipe material. If PVC pipe is proposed, specify cell class:

Pipe Material: PVC Tensile Strength: 7,000 psi Cell Class (PVC only): 12454-B

Location in submittal:

Plan Sheet: C3 (SIP & SDP) Specifications page: N/A Item No.: N/A

Strain:

T75 Are the conditions of this installation such that strain-related failure will not be a problem? If any proposed flexible pipe material is considered to be susceptible to strain-related failure at less than 5% long-term deflection provide analysis for predicted strain due to hoop stress and bending strain. If strain-related failure will not be a problem for the pipe installation proposed in this project, skip to T76.

No

Deflection Analysis: 30 TAC 217.53(k)(2)(F)

T76 Indicate E_b (modulus of soil reaction for the bedding material) in psi. If E_b is greater than 750 psi, justification must be provided. = 700 [psi]

How was E_b determined or estimated?

A value of 700 psi is widely used when the sidefill is compacted to within 90% proctor density. This percentage is specified for the pipe embedment on this project, using Class I or II soils.

T77 Indicate E'_n (modulus of soil reaction for the in-situ soil): = 1000 [psi]

How was E'_n determined or estimated? **Uni-Bell Handbook of PVC Pipe, 3rd Edition-Table 7.3**

T78 Based on T76 and T77, above, calculate the ratio of bedding modulus to soil modulus:

E_b/E'_n = **0.70** If $E_b/E'_n < 1.25$, assume zeta = 1.0

If this ratio is greater than 1.25, a zeta factor must be calculated by completing T79 and T80, where zeta is a factor which corrects for the effect of in-situ soil on pipe stability. If the ratio of bedding modulus to soil modulus is less than or equal to 1.25, assume zeta = 1.0 and skip to T80.

T79 Where native soil is significantly weaker than bedding material, or where predicted deflection approaches 5%, the effect of native soil must be quantified using Leonhardt's Zeta factor. Zeta must be determined for each diameter of pipe and corresponding trench width. estimated graphically or calculated directly. If zeta is estimated graphically, identify the source forZeta may be tables, figures, etc.... (including page numbers and table numbers or figure numbers for each source) which were used to estimate zeta. To calculate zeta directly use the formulas in T79(b), below. The calculations which are done to determine the zeta factors for the different pipe diameters must be included with this submittal.

(a) Sources: N/A

(b) Calculations:

f =	Pipe/trench width coefficient	=		
b =	Trench width	=	18	[in]
d_a =	Pipe diameter	=	6	[in]
E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
E'_n =	Modulus of soil reaction for the in-situ soil	=	1000	[psi]

(8) zeta = 1.44 / (f + (1.44 - f) * (E_b /E'_n) = = N/A

(9) f = (b / d_a -1) / [1.154 + 0.444 * (b / d_a-1)] = N/A

T80 For each size of pipe, report zeta factor determined in T78 or T79:

Pipe Diameter [in]: 6 Trench Width [in]: 18 Zeta: 1.0

T81 Determine pipe stiffness (P_s) in psi. P_s can be determined either by parallel plate test at 5% deflection, based on manufacturer's data or national reference standards; or, calculated using either equation 10 or equation 11. As an example, the minimum pipe stiffness at 5% deflection for PVC pipe less than 15 inches in diameter meeting ASTM D 3034, is 46 psi for SDR-35 and 115 psi SDR 26. If equation 11 is used, the ring stiffness constant (RSC) is provided by the pipe manufacturer. Show calculations, or provide proper references, for each size of pipe and for each flexible pipe material.

E =	Modulus of elasticity of the pipe material	=	500,000	[psi]
I =	Moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For a solid 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.	=	1.17E-03	[in^4/in]
D =	mean pipe diameter	=	6	[in]
r =	mean radius	=	3	[in]
RSC =	Ring Stiffness Constant	=	0	

(10) P_s = (E * I) / (0.149 * r^3) = 145.0 [psi]

or

(11) P_s = 0.80 * RSC * (8.337 / D) = N/A [psi]

T82 Report P_s, for each pipe size and each type of flexible pipe material as determined in T81.

Pipe Diameter [in]: 6 Pipe Material: PVC $P_{s\ [psi]}$: 145

T83 Because the terms in the denominator of the modified Iowa formula (Equation 13) are added, it is theoretically possible to have zero pipe stiffness (Ps =0) and still predict flexible pipe deflections less than 5%. In order to ensure that the stiffness being provided to the installation has a reasonable contribution from pipe stiffness, and does not rely solely on the stiffness provided by the soil stiffness factor (SSF), the ratio of Ps/SSF must be calculated. If Ps/SSF < 0.15, T81 and T82 must be repeated such that a higher stiffness pipe is chosen for each portion of the project where Ps/SSF < 0.15. The Ps/SSF ratio(s) must then be recalculated for the new higher stiffness pipe. This process must be repeated until Ps/SSF > 0.15 exists for all proposed pipe sizes and for all types of flexible pipe materials.

P_s =	Pipe stiffness	=	145.0	[psi]

E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
zeta =	1.0, or a value calculated with the method in T79	=	1.0	
SSF =	Soil stiffness factor (0.061 * *zeta* * E_b)	=	42.7	[psi]

(12) $\frac{P_s}{SSF} = \frac{P_s}{0.061 * zeta * E_b} > 0.15$ = **3.40**

T84 Indicate the final values calculated for Ps/SSF for each diameter of pipe and each pipe material:

Pipe Diameter [in]: 6 Pipe Material: PVC P_s/SSF = **3.40**

T85 Do all proposed pipe sizes and flexible pipe materials have a pipe stiffness to soil stiffness factor ratio of greater than or equal to 0.15?

Yes

T86 Calculate and report predicted deflection. Predicted deflection must be calculated for each size of pipe and type of flexible pipe material. For the purposes of this application form, predicted deflection must be calculated using the method outlined below. Show calculations and report calculated maximum deflection for each size of pipe and type of flexible pipe material. Maximum allowable deflection in installed lines is 5%, as determined by the deflection analysis and verified by a mandrel test conforming to T89. Some conservatism should be employed in determining allowable predicted deflections. This conservatism is necessary to allow for variability in the quality of installation.

ΔY/D (%) =	Predicted % vertical deflection under load.			
ΔY =	Change in vertical pipe diameter under load			
D =	Undeflected mean pipe diameter (in) =	=	6	[in]
K =	Bedding angle constant. Assumed to be 0.110 unless otherwise justified	=	0.110	
γs =	Unit weight of soil (pcf). γs less than 120 pcf must be justified =	=	120	[pcf]
H =	Depth of burial (ft) from ground surface to crown of pipe	=	8	[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 DI = 1.5 to account for long-term deflection of the pipe as the bedding consolidates			

(13) $\Delta Y/D\ (\%) = \frac{K * (L_p + L_1) * 100}{(0.149 * P_s) + (0.061 * zeta * E_b)}$ = **1.1** **[%]**

(14) $L_p = (\gamma s * H) / 144$ = **6.7** **[psi]**

- If the predicted %ΔY/D for any proposed pipe size or material is over 5%, the proposed flexible pipe design cannot be approved by the TCEQ. Appropriate design modifications must be made and the analysis must be repeated until a deflection of less than or equal to 5% is predicted.

- If a zeta value of 1.0 was assumed as a result of T78, and the predicted deflection for any size or type of pipe is determined to be between 4% and 5%, the deflection analysis must be repeated. Repeat the deflection analysis by performing all the same calculations. The difference will be that instead of using an assumed zeta factor of 1.0, the zeta factor must be calculated as outlined in T79. If the predicted deflection is determined to be above 5% after the deflection analysis is repeated, this flexible pipe design cannot be approved by the TCEQ. Appropriate design modifications must be made and the analysis must be repeated until a deflection of less than or equal to 5% is predicted.

- If the predicted deflection, for a particular pipe, using the deflection analysis method detailed above, is less than or equal to 4%, and a zeta factor of 1.0 was assumed as a result of T78, that particular pipe is assumed to comply with the TCEQ's requirements for deflection analysis and can therefore be approved.

- If the predicted deflection, for a particular pipe, using the deflection analysis method detailed above, is between 4% and 5%, and the zeta factor which was used in the analysis was determined using the method in T79, that particular pipe is assumed to comply with the TCEQ's requirements for deflection analysis and can therefore be approved.

Pipe Diameter [in]	Type of Pipe Material	P_s [psi]	Zeta Factor Assumed or Calculated	Eb [psi]	% Deflection
6	PVC	145.0	1.0	700	1.1

T88 Do all pipes proposed for this project have a maximum predicted deflection of 5.0%? **Yes**

Flexible 8" PVC (SDR-26) Pipe Design

Live Load Analysis: 30 TAC 217.53(k)(2)(A)

T62 For the purposes of this application, the minimum depth of burial for gravity sanitary sewer pipe, from the ground surface to the crown of the pipe (H) is 2 feet. Does the submitted design complywith this minimum H?

Yes

T63 If all pipe proposed for this project will be installed at a burial depth of greater than or equal to 3.0 feet and the pipe will not be subjected to live loads greater than 18 kip axle, assume that the pressure dueto live load L_1=0 and skip to T68. If a value of H greater than or equal to 2 feet and less than 3 feet is proposed for any portions of the gravity sanitary sewer pipeline or if the pipe will be subjected to live loads greater than 18 kip axle, calculations which quantify what the L_1 on the pipe will be must be provided:

Live Load = **0** [psi]

T64 Indicate minimum H: 3 [ft]

T65 Indicate maximum anticipated L_1 as determined in T63: 0 [psi]

T66 Are all proposed flexible pipe materials capable of supporting this L_1? **Yes**

T67 Indicate source of maximum L_1: **Uni-Bell's "Handbook of PVC Pipe" (H20 Load at 2.5' of cover)**

Buckling Analysis: 30 TAC 217.53(k)(2)(B)

T68 Calculate allowable and predicted buckling pressure. Predicted and allowable buckling pressures must be calculated for each size of pipe and type of flexible pipe material. For the purposes of this application form, the buckling analysis must be performed using the method outlined below. The method of calculating allowable buckling pressure provided below is only valid for lines which are installed at depths of 2 ft < H <80 ft.

q_a =	Allowable buckling pressure, (psi)			
R_w =	Water buoyancy factor. If h_w = 0, R_w = 1. If 0 < h_w < h (groundwater elevation is between the top of the pipe and the ground surface), calculate Rw with Equation 2.			
B' =	Empirical coefficient of elastic support			
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.			
h =	Height of soil surface above the top of pipe	=	120	[in]
H =	Depth of burial from ground surface to crown of pipe	=	108	[ft]
h_w =	Height of water surface above top of pipe in inches (groundwater el.), =	=	0	[in]
E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
E =	Modulus of elasticity of the pipe material	=	500,000	[psi]
t =	Pipe structural wall thickness	=	0.323	[in]
D =	Mean pipe diameter	=	8	[in]

a) Calculate allowable bucking pressure as follows:

(1)	**$q_a = 0.4 * [32 * R_w * B' * E_b * (E * I / D^3)]^{0.5}$**	**=**	**99.0**	**[psi]**
(2)	**$R_w = 1 - 0.33 * (h_w / h)$ =**	**=**	**1.00**	
(3)	**$B' = 1 / (1+4 * e^{-0.65H})$**	**=**	**1.00**	
(4)	**$I = (t^3 / 12)$**	**=**	**2.808E-03**	**[in^4/in]**

b) Calculate pressure applied to pipe under installed conditions

q_p =	pressure applied to pipe under installed conditions (psi)			
W_c =	vertical soil load on the pipe per unit length in pounds per linear inch (lb/in)			
γ_w =	0.0361 pounds per cubic inch (pci), specific weight of water			
γ_s =	specific weight of soil	=	120	[pcf]
L_1 =	live load as determined in T63	=	0	[psi]

(5)	**$q_p = \gamma_w * h_w + R_w * (W_c / D) + L_1$**	**=**	**101.25**	
(6)	**$W_c = \gamma_s * H * (D + 1) / 144$ =**	**=**	**810.00**	

T69 Report q_a and q_p for each pipe diameter proposed and for each type of pipe material proposed:

Pipe Diameter: 8 [in] Pipe Material: PVC

q_a: **99.0** **[psi]** **q_p:** **101.3** **[psi]**

T70 If $q_a > q_p$, specified pipe is acceptable for the proposed installation. If $q_a < q_p$, the wall thickness of the pipe must be increased and/or a pipe with a larger modulus of elasticity (E) must be used. Make the appropriate modifications and repeat the buckling analysis, showing that for the upgraded pipe, qa > qp. Does all the pipe proposed for this project meet these requirements?

Yes

Wall Crushing: 30 TAC 217.53 (k)(2)(D)

T71 If no concrete encased flexible pipe is proposed for the submitted project, skip to T73. If any flexible pipe will be installed in rigid encasement (e.g. concrete), calculate the maximum depth that the pipe can be buried before wall crushing (or failure by ring compression) will occur using the method outlined below. It should be noted that cement stabilized sand or soil is not considered a rigid encasement for purposes of TCEQ review.

N/A

H =	Depth of burial in feet (ft) from ground surface to crown of pipe	=		
D_o =	Outside pipe diameter	=	0	[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.	=	4,000	[psi]
A =	Surface area of the pipe wall	=	0.0	[in^2/ft]
24 =	Conversions and coefficients			

(7)	**$H = (24 * P_c * A) / (\gamma s * D_o)$ =**	**=**	**N/A**	**[ft]**

T72 Will all pipe installations proposed for this project have an H less than or equal to the maximum allowable H calculated in T71 and greater than or equal to 2 feet? Report maximum allowable H, (Ha), and the maximum H which is proposed, (Hp), for each proposed pipe diameter and each type of flexible pipe material.

H_a: **N/A** **H_p:** **N/A**

Installation Temperature Effects:

T73 If flexible pipe will be installed under favorable ambient temperature conditions, skip to T74. If flexible pipe will be installed under very high or low ambient temperature conditions, please indicate provisions for handling which will protect the pipe and ensure an adequate installation:

Location in submittal:

Plan Sheet: N/A Specifications page: N/A Item No.: N/A

Tensile Strength:

T74 The project specifications need to indicate minimum allowable tensile strength in psi for each flexible pipe material. If PVC pipe is proposed, specify cell class:

Pipe Material: PVC Tensile Strength: 7,000 psi Cell Class (PVC only): 12454-B

Location in submittal:

Plan Sheet: C3 (SIP & SDP) Specifications page: N/A Item No.: N/A

Strain:

T75 Are the conditions of this installation such that strain-related failure will not be a problem? If any proposed flexible pipe material is considered to be susceptible to strain-related failure at less than 5% long-term deflection provide analysis for predicted strain due to hoop stress and bending strain. If strain-related failure will not be a problem for the pipe installation proposed in this project, skip to T76.

No

Deflection Analysis: 30 TAC 217.53(k)(2)(F)

T76 Indicate E_b (modulus of soil reaction for the bedding material) in psi. If E_b is greater than 750 psi, justification must be provided. = 700 [psi]

How was E_b determined or estimated?

A value of 700 psi is widely used when the sidefill is compacted to within 90% proctor density. This percentage is specified for the pipe embedment on this project, using Class I or II soils.

T77 Indicate E'_n (modulus of soil reaction for the in-situ soil): = 1000 [psi]

How was E'_n determined or estimated? **Uni-Bell Handbook of PVC Pipe, 3rd Edition-Table 7.3**

T78 Based on T76 and T77, above, calculate the ratio of bedding modulus to soil modulus:

E_b/E'_n = **0.70** If $E_b/E'_n < 1.25$, assume zeta = 1.0

If this ratio is greater than 1.25, a zeta factor must be calculated by completing T79 and T80, where zeta is a factor which corrects for the effect of in-situ soil on pipe stability. If the ratio of bedding modulus to soil modulus is less than or equal to 1.25, assume zeta = 1.0 and skip to T80.

T79 Where native soil is significantly weaker than bedding material, or where predicted deflection approaches 5%, the effect of native soil must be quantified using Leonhardt's Zeta factor. Zeta must be determined for each diameter of pipe and corresponding trench width. estimated graphically or calculated directly. If zeta is estimated graphically, identify the source forZeta may be tables, figures, etc.... (including page numbers and table numbers or figure numbers for each source) which were used to estimate zeta. To calculate zeta directly use the formulas in T79(b), below. The calculations which are done to determine the zeta factors for the different pipe diameters must be included with this submittal.

(a) Sources: N/A

(b) Calculations:

f =	Pipe/trench width coefficient	=		
b =	Trench width	=	18	[in]
d_a =	Pipe diameter	=	8	[in]
E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
E'_n =	Modulus of soil reaction for the in-situ soil	=	1000	[psi]

(8) zeta = 1.44 / (f + (1.44 - f) * (E_b /E'_n) = = N/A

(9) f = (b / d_a -1) / [1.154 + 0.444 * (b / d_a-1)] = N/A

T80 For each size of pipe, report zeta factor determined in T78 or T79:

Pipe Diameter [in]: 8 Trench Width [in]: 18 Zeta: 1.0

T81 Determine pipe stiffness (P_s) in psi. P_s can be determined either by parallel plate test at 5% deflection, based on manufacturer's data or national reference standards; or, calculated using either equation 10 or equation 11. As an example, the minimum pipe stiffness at 5% deflection for PVC pipe less than 15 inches in diameter meeting ASTM D 3034, is 46 psi for SDR-35 and 115 psi SDR 26. If equation 11 is used, the ring stiffness constant (RSC) is provided by the pipe manufacturer. Show calculations, or provide proper references, for each size of pipe and for each flexible pipe material.

E =	Modulus of elasticity of the pipe material	=	500,000	[psi]
I =	Moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For a solid 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.	=	2.81E-03	[in^4/in]
D =	mean pipe diameter	=	8	[in]
r =	mean radius	=	4	[in]
RSC =	Ring Stiffness Constant	=	0	

(10) P_s = (E * I) / (0.149 * r^3) = 147.2 [psi]

or

(11) P_s = 0.80 * RSC * (8.337 / D) = N/A [psi]

T82 Report P_s, for each pipe size and each type of flexible pipe material as determined in T81.

Pipe Diameter [in]: 8 Pipe Material: PVC $P_{s\ [psi]}$: 147

T83 Because the terms in the denominator of the modified Iowa formula (Equation 13) are added, it is theoretically possible to have zero pipe stiffness (Ps =0) and still predict flexible pipe deflections less than 5%. In order to ensure that the stiffness being provided to the installation has a reasonable contribution from pipe stiffness, and does not rely solely on the stiffness provided by the soil stiffness factor (SSF), the ratio of Ps/SSF must be calculated. If Ps/SSF < 0.15, T81 and T82 must be repeated such that a higher stiffness pipe is chosen for each portion of the project where Ps/SSF < 0.15. The Ps/SSF ratio(s) must then be recalculated for the new higher stiffness pipe. This process must be repeated until Ps/SSF > 0.15 exists for all proposed pipe sizes and for all types of flexible pipe materials.

P_s =	Pipe stiffness	=	147.2	[psi]

E_b =	Modulus of soil reaction for the bedding material	=	700	[psi]
zeta =	1.0, or a value calculated with the method in T79	=	1.0	
SSF =	Soil stiffness factor (0.061 * *zeta* * E_b)	=	42.7	[psi]

(12) $\frac{P_s}{SSF} = \frac{P_s}{0.061 * zeta * E_b} > 0.15$ = **3.45**

T84 Indicate the final values calculated for Ps/SSF for each diameter of pipe and each pipe material:

Pipe Diameter [in]: 8 Pipe Material: PVC P_s/SSF = **3.45**

T85 Do all proposed pipe sizes and flexible pipe materials have a pipe stiffness to soil stiffness factor ratio of greater than or equal to 0.15?

Yes

T86 Calculate and report predicted deflection. Predicted deflection must be calculated for each size of pipe and type of flexible pipe material. For the purposes of this application form, predicted deflection must be calculated using the method outlined below. Show calculations and report calculated maximum deflection for each size of pipe and type of flexible pipe material. Maximum allowable deflection in installed lines is 5%, as determined by the deflection analysis and verified by a mandrel test conforming to T89. Some conservatism should be employed in determining allowable predicted deflections. This conservatism is necessary to allow for variability in the quality of installation.

ΔY/D (%) =	Predicted % vertical deflection under load.			
ΔY =	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	
γs =	Unit weight of soil (pcf). γs less than 120 pcf must be justified =	=	120	[pcf]
H =	Depth of burial (ft) from ground surface to crown of pipe	=	108	[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 DI = 1.5 to account for long-term deflection of the pipe as the bedding consolidates			

(13) $\Delta Y/D\ (\%) = \frac{K * (L_p + L_1) * 100}{(0.149 * P_s) + (0.061 * zeta * E_b)}$ = **15.3** **[%]**

(14) $L_p = (\gamma s * H) / 144$ = **90.0** **[psi]**

- If the predicted %ΔY/D for any proposed pipe size or material is over 5%, the proposed flexible pipe design cannot be approved by the TCEQ. Appropriate design modifications must be made and the analysis must be repeated until a deflection of less than or equal to 5% is predicted.

- If a zeta value of 1.0 was assumed as a result of T78, and the predicted deflection for any size or type of pipe is determined to be between 4% and 5%, the deflection analysis must be repeated. Repeat the deflection analysis by performing all the same calculations. The difference will be that instead of using an assumed zeta factor of 1.0, the zeta factor must be calculated as outlined in T79. If the predicted deflection is determined to be above 5% after the deflection analysis is repeated, this flexible pipe design cannot be approved by the TCEQ. Appropriate design modifications must be made and the analysis must be repeated until a deflection of less than or equal to 5% is predicted.

- If the predicted deflection, for a particular pipe, using the deflection analysis method detailed above, is less than or equal to 4%, and a zeta factor of 1.0 was assumed as a result of T78, that particular pipe is assumed to comply with the TCEQ's requirements for deflection analysis and can therefore be approved.

- If the predicted deflection, for a particular pipe, using the deflection analysis method detailed above, is between 4% and 5%, and the zeta factor which was used in the analysis was determined using the method in T79, that particular pipe is assumed to comply with the TCEQ's requirements for deflection analysis and can therefore be approved.

Pipe Diameter [in]	Type of Pipe Material	P_s [psi]	Zeta Factor Assumed or Calculated	Eb [psi]	% Deflection
8	PVC	147.2	1.0	700	15.3

T88 Do all pipes proposed for this project have a maximum predicted deflection of 5.0%? **Yes**

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

I David Lehmann,
Print Name

Owner
Title - Owner/President/Other

of Sunrise LBG, LLC,
Corporation/Partnership/Entity Name

have authorized Antonio A. Prete, P.E.
Print Name of Agent/Engineer

of Waeltz & Prete, Inc.
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

7.9.2024
Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared DAVID LEHMANN 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 9th day of July, 2024

NOTARY PUBLIC

JACOB R WOYTEK
MY COMMISSION EXPIRES
August 10, 2025
NOTARY ID: 13326121-8

Jacob R. Woytek
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10 August 2025

Owner Authorization Form

for Required Signature for submitting and signing an application for an Edwards Aquifer Protection Plan (Plan) and conducting regulated activities in accordance with an approved Plan.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Relating to the Edwards Aquifer Rules of
Title 30 of the Texas Administrative Code
(30 TAC), Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, John A. Buckler, Jr. of Lonestar Soccer Club of Austin, Inc.
Land Owner Name (Individual) / Firm (applicable to Legal Entities)

am the Owner of Record or Title Holder of the property located at:

Round Rock Glenn, Lot 4B, Acres 5.11
(Legal description of the property referenced in the application)

and being duly authorized under 30 TAC § 213.4(c)(2) and § 213.4(d)(1) or § 213.23(c)(2) and § 213.23(d) to submit and sign an application for a Plan, do hereby authorize:

Sunrise LBG, LLC
(Applicant Name / Plan Holder (Legal Entity or Individual))

to conduct:

Construction of a wastewater system, minor grading, and roadway improvements (if applicable).
(Description of the proposed regulated activities)

on the property described above or at:

Round Rock Glenn, Lot 4B, Acres 5.11
(If applicable to a precise location for the authorized regulated activities)

Land Owner Acknowledgement

I, John A. Buckler, Jr. of Lonestar Soccer Club of Austin, Inc.
Land Owner Name (Individual) / Firm (applicable to Legal Entities)

understand that while Sunrise LBG, LLC
Applicant Name / Plan Holder (Legal Entity or Individual)

is responsible for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation,

I, John A. Buckler, Jr. of Lonestar Soccer Club of Austin, Inc.
Land Owner Name (Individual) Firm (applicable to Legal Entities)

as Owner of Record or Title Holder of the property described above, I am ultimately responsible for ensuring that compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan, through all phases of Plan implementation, is achieved even if the responsibility for compliance and the right to possess and control of the property referenced in the application has been contractually assumed by another legal entity.

I, JOHN A. BUCKLER, JR. of Lonestar Soccer Club of Austin, Inc.
Land Owner Name (Individual) Firm (applicable to Legal Entities)

further understand that any failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under 30 TAC § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Land Owner Signature

13 Aug 2024
Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared 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 13 day of AUGUST 2024

NOTARY PUBLIC

EMILY SIMINGTON
Notary Public, State of Texas
My Comm. Exp. 03-23-2026
ID No. 13366047-5

Emily Simington
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 03/23/2026

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, David Lehmann of Sunrise LBG, LLC
Applicant Name (Individual) Firm (applicable to Legal Entities)

acknowledge that Lonestar Soccer Club of Austin, Inc.
Land Owner Name (Legal Entity or Individual)

has provided Sunrise LBG, LLC
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer Protection Plan (Plan).

I understand that Sunrise LBG, LLC
Applicant Name (Legal Entity or Individual)

is responsible, contractually or not, for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation. I further understand that failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature

8.20.24
Date

THE STATE OF § Tx

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 20 day of Aug 2024

JF
NOTARY PUBLIC

JULIETTE A FERRUFINO
Notary ID #134653123
My Commission Expires
November 20, 2027

Juliette Ferrufino
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/20/27

Owner Authorization Form

for Required Signature for submitting and signing an application for an Edwards Aquifer Protection Plan (Plan) and conducting regulated activities in accordance with an approved Plan.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Relating to the Edwards Aquifer Rules of
Title 30 of the Texas Administrative Code
(30 TAC), Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Barry Lee Adair of -----
Land Owner Name (Individual) Firm (applicable to Legal Entities)

am the Owner of Record or Title Holder of the property located at:

Round Rock Glenn, Lot 5BB, Acres 2.531
(Legal description of the property referenced in the application)

and being duly authorized under 30 TAC § 213.4(c)(2) and § 213.4(d)(1) or § 213.23(c)(2) and § 213.23(d) to submit and sign an application for a Plan, do hereby authorize:

Sunrise LBG, LLC
(Applicant Name / Plan Holder (Legal Entity or Individual))

to conduct:

Construction of a wastewater system, minor grading, and roadway improvements (if applicable).
(Description of the proposed regulated activities)

on the property described above or at:

Round Rock Glenn, Lot 5BB, Acres 2.531
(If applicable to a precise location for the authorized regulated activities)

Land Owner Acknowledgement

I, Barry Lee Adair of -----
Land Owner Name (Individual) Firm (applicable to Legal Entities)

understand that while Sunrise LBG, LLC
Applicant Name / Plan Holder (Legal Entity or Individual)

is responsible for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation,

I, Barry Lee Adair of -----

Land Owner Name (Individual) Firm (applicable to Legal Entities)

as Owner of Record or Title Holder of the property described above, I am ultimately responsible for ensuring that compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan, through all phases of Plan implementation, is achieved even if the responsibility for compliance and the right to possess and control of the property referenced in the application has been contractually assumed by another legal entity.

I, Barry Lee Adair of -----

Land Owner Name (Individual) Firm (applicable to Legal Entities)

further understand that any failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under 30 TAC § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Land Owner Signature

8/22/2024

Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared 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 22 day of August, 2024

MARHARYTA S. KUZNIATSOVA
Notary Public, State of Texas
Comm. Expires 01-08-2025
Notary ID 132857817

NOTARY PUBLIC

Marharyta S Kuzniatsova

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 01/08/2025

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, David Lehmann (Applicant Name (Individual)) of Sunrise LBG, LLC (Firm (applicable to Legal Entities))

acknowledge that Barry Lee Adair (Land Owner Name (Legal Entity or Individual))

has provided Sunrise LBG, LLC (Applicant Name (Legal Entity or Individual))

with the right to possess and control the property referenced in the Edwards Aquifer Protection Plan (Plan).

I understand that Sunrise LBG, LLC (Applicant Name (Legal Entity or Individual))

is responsible, contractually or not, for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation. I further understand that failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature

8-22-24
Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared 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 22 day of August 2024

NOTARY PUBLIC

ASHLEY GASKINS
Notary ID #134061245
My Commission Expires
November 11, 2026

Ashley Gaskins
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11-11-2026

Owner Authorization Form

for Required Signature for submitting and signing an application for an Edwards Aquifer Protection Plan (Plan) and conducting regulated activities in accordance with an approved Plan.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Relating to the Edwards Aquifer Rules of
Title 30 of the Texas Administrative Code
(30 TAC), Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Niaz Butt of AHMADIYYA MOVEMENT IN ISLAM INC USA
Land Owner Name (Individual) / Firm (applicable to Legal Entities)

am the Owner of Record or Title Holder of the property located at:

AW0029 AW0029 Anderson N.B. Survey, Acres 11.657
(Legal description of the property referenced in the application)

and being duly authorized under 30 TAC § 213.4(c)(2) and § 213.4(d)(1) or § 213.23(c)(2) and § 213.23(d) to submit and sign an application for a Plan, do hereby authorize:

Sunrise LBG, LLC
(Applicant Name / Plan Holder (Legal Entity or Individual))

to conduct:

Construction of a wastewater system, minor grading, and roadway improvements (if applicable).
(Description of the proposed regulated activities)

on the property described above or at:

AW0029 AW0029 Anderson N.B. Survey, Acres 11.657
(If applicable to a precise location for the authorized regulated activities)

Land Owner Acknowledgement

I, Niaz Butt of AHMADIYYA MOVEMENT IN ISLAM INC USA
Land Owner Name (Individual) / Firm (applicable to Legal Entities)

understand that while Sunrise LBG, LLC
Applicant Name / Plan Holder (Legal Entity or Individual)

is responsible for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation,

I, Niaz Butt of AHMADIYYA MOVEMENT IN ISLAM INC USA

Land Owner Name (Individual) Firm (applicable to Legal Entities)

as Owner of Record or Title Holder of the property described above, I am ultimately responsible for ensuring that compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan, through all phases of Plan implementation, is achieved even if the responsibility for compliance and the right to possess and control of the property referenced in the application has been contractually assumed by another legal entity.

I, Niaz Butt of AHMADIYYA MOVEMENT IN ISLAM INC USA

Land Owner Name (Individual) Firm (applicable to Legal Entities)

further understand that any failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under 30 TAC § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Land Owner Signature

8/29/24
Date

THE STATE OF § Pennsylvania

County of § Montgomery

BEFORE ME, the undersigned authority, on this day personally appeared 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 29th day of August

Commonwealth of Pennsylvania-Notary Seal
Annastasia Quill, Notary Public
Montgomery County
My Commission Expires May 17, 2025
Commission Number 1394822

NOTARY PUBLIC

Annastasia Quill
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: May 17th 2025

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

Applicant Acknowledgement

I, David Lehmann of Sunrise LBG, LLC

Applicant Name (Individual) — Firm (applicable to Legal Entities)

acknowledge that AHMADIYYA MOVEMENT IN ISLAM INC USA

Land Owner Name (Legal Entity or Individual)

has provided Sunrise LBG, LLC

Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer Protection Plan (Plan).

I understand that Sunrise LBG, LLC

Applicant Name (Legal Entity or Individual)

is responsible, contractually or not, for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation. I further understand that failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature

8-28-2024

Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared 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 28 day of August 2024

NOTARY PUBLIC

ASHLEY GASKINS
Notary ID #134061245
My Commission Expires
November 11, 2026

Ashley Gaskins

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11-11-2026

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Applegate Circle
Regulated Entity Location: 10 Applegate Circle - Round Rock, Texas 78665
Name of Customer: Sunrise LBG, LLC
Contact Person: David Lehmann Phone: (916) 220-2876
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ 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	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	2.53 Acres	$ 4,000.00
Sewage Collection System	1,506 L.F.	$ 753.00
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: 07/12/2024

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

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ 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		RN

SECTION II: Customer Information

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

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

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

Sunrise LBG, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0803552335	32073495783		

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

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

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☐ No

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

☒ Owner ☐ Operator ☐ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address: 1329 RED STAG PL ROUND ROCK, TX 78665-1359

City	State	ZIP	ZIP + 4
Georgetown	TX	78626	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	mini92truckin@gmail.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(916) 220-2876		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☒ 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 Agency 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.)*

Applegate Circle

23. Street Address of the Regulated Entity: *(No PO Boxes)*	10 Applegate Circle							
	City	Round Rock	**State**	TX	**ZIP**	78665	**ZIP + 4**	
24. County	Williamson							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approx. 900' Northeast of the intersection of Sunrise Road & Applegate Circle on the north side of Applegate Circle.

26. Nearest City	**State**	**Nearest ZIP Code**
Round Rock	Tx	78665

27. Latitude (N) In Decimal:	30.548078		**28. Longitude (W) In Decimal:**	-97.671598	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	32	53	97	40	17

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)

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

34. Mailing Address:	**300 Pinnacle Drive**							
	City	**Goergetown**	**State**	**TX**	**ZIP**	**78626**	**ZIP + 4**	

35. E-Mail Address:	**mini92truckin@gmail.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(916) 220-2876		**( ) -**

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

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

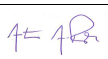
SECTION IV: Preparer Information

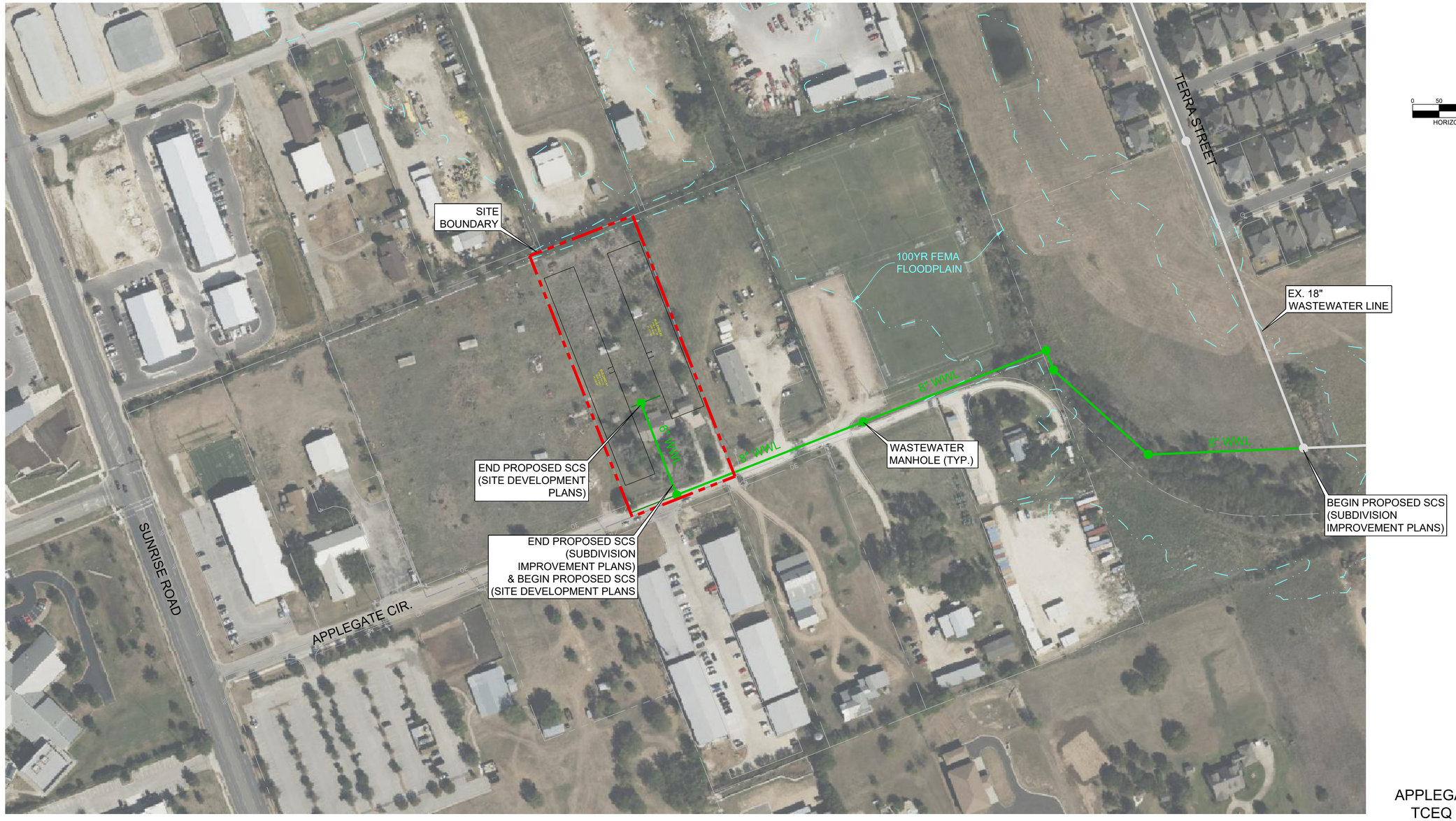
40. Name:	Antonio A. Prete, P.E.	**41. Title:**	President

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 505-8953		( ) -	tony@w-pinc.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:	Waeltz & Prete, Inc.	**Job Title:**	Presiddent
Name*(In Print)* **:**	Antonio A. Prete, P.E.	**Phone:**	(512) 505-8953
Signature:		**Date:**	07/12/2024



0 50 100 200
HORIZONTAL SCALE

APPLEGATE CIRCLE TCEQ OVERALL SCS EXHIBIT

SITE ADDRESS:
10 APPLEGATE CIRCLE ROUND ROCK, TEXAS 78665

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

SUBDIVISION IMPROVEMENT PLANS AND SITE DEVELOPMENT PLANS FOR:

APPLEGATE CIRCLE

10 APPLEGATE CIRCLE
ROUND ROCK, TEXAS 78665

JULY, 2024

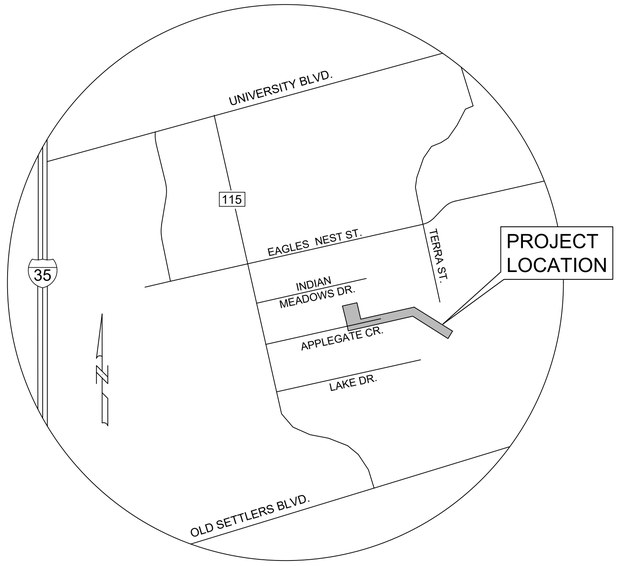
DESIGN PROFESSIONALS:

CIVIL ENGINEER / APPLICANT:

ANTONIO A. PRETE, P.E.
WAELTZ & PRETE, INC.
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TEXAS 78665
PH: (512) 505-8953

SHEET INDEX

PLAN SET	DESCRIPTION
S-1	APPLEGATE CIRCLE - SUBDIVISION IMPROVEMENT PLANS
S-2	APPLEGATE CIRCLE - SITE DEVELOPMENT PLANS



LOCATION MAP
NTS

NOTES:

1. THESE PLANS ARE NOT TO BE CONSIDERED FINAL FOR CONSTRUCTION UNTIL ACCEPTED BY THE CITY. CHANGES MAY BE REQUIRED PRIOR TO APPROVAL.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. A PORTION OF THIS SITE IS WITHIN THE FEMA 1% ANNUAL CHANCE FLOODPLAIN, PER PANEL NUMBER 48491C0491F, DATED DECEMBER 20, 2019.

Texas 811
know what's **below.**
Call before you dig.

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER

ANTONIO A. PRETE, P.E.
STATE OF TEXAS #93759

12.5.24
DATE

JOB NO.: 135-002

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF ROUND ROCK MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

SITE DATA:

ZONING DISTRICT:	ETJ
PROPOSED LAND USE:	LI - WAREHOUSE
TOTAL LOC:	4.81 AC.
TOTAL SITE AREA:	2.53 AC.
TOTAL SITE IMPERVIOUS COVER:	1.87 AC. (73.91%)

OWNER:

DAVID LEHMANN
SUNRISE LBG, LLC
300 PINNACLE DRIVE
GEORGETOWN, TEXAS 78626
PH: (916) 220-2876

ENGINEER:

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

REVISIONS:

No.	Date	Revision	ACC.	DATE

SUBDIVISION IMPROVEMENT PLANS FOR:

APPLEGATE CIRCLE

WEST ONE-HALF ,TRACT 5-B
ROUND ROCK GLEN (2.532 AC.)
(UNRECORDED SUBDIVISION)

10 APPLEGATE CIRCLE
ROUND ROCK, TEXAS 78665

JULY, 2024
CITY OF ROUND ROCK PROJECT NO. SIP _____-_____

DESIGN PROFESSIONALS:

CIVIL ENGINEER / APPLICANT:

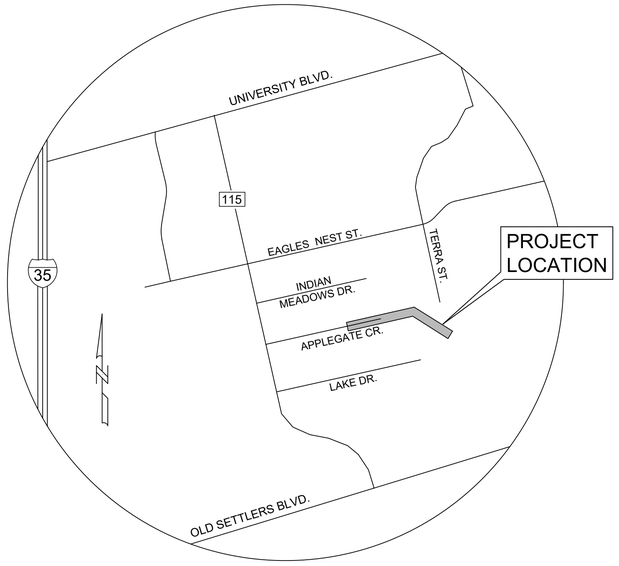
ANTONIO A. PRETE, P.E.
WAELTZ & PRETE, INC.
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TEXAS 78665
PH: (512) 505-8953

IMPERVIOUS COVER

	EXISTING	PROPOSED
PUBLIC SIDEWALK, STREETS, CURB & GUTTER	-----	-----
BUILDING FOOTPRINT (WITHIN LIMITS OF LOT ONLY)	-----	-----
PARKING, PRIVATE SIDEWALK (WITHIN LIMITS OF LOT ONLY)	-----	-----
TOTAL	-----	-----
TOTAL AREA OF DISTURBANCE (LOC)	-----	101,875 SF (2.34 AC.)

SUBMITTAL DATE TRACKING TABLE:

SUBMITTAL TYPE	DATE SUBMITTED	DATE RETURNED
PRE-SUBMITTAL MEETING	19 DEC 2023	-----
SUBMITTAL #1	17 MAY 2024	



LOCATION MAP
NTS

Texas 811
know what's **below.**
Call before you dig.

NOTES:

1. THESE PLANS ARE NOT TO BE CONSIDERED FINAL FOR CONSTRUCTION UNTIL ACCEPTED BY THE CITY. CHANGES MAY BE REQUIRED PRIOR TO APPROVAL.
2. A PORTION OF THIS SITE IS WITHIN THE FEMA 1% ANNUAL CHANCE FLOODPLAIN, PER PANEL NUMBER 48491C0491F, DATED DECEMBER 20, 2019.

SHEET INDEX

STATE OF TEXAS

COUNTY OF WILLIAMSON

I, ANTONIO A. PRETE, P.E., DO HEREBY CERTIFY THAT THE PUBLIC WORKS AND DRAINAGE IMPROVEMENTS DESCRIBED HEREIN HAVE BEEN DESIGNED IN COMPLIANCE WITH THE SUBDIVISION AND BUILDING REGULATION ORDINANCES AND STORMWATER DRAINAGE POLICY ADOPTED BY THE CITY OF ROUND ROCK, TEXAS.

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER

12/4/24

ANTONIO A. PRETE, P.E. — DATE
STATE OF TEXAS #93759

JOB NO.: 135-002

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF ROUND ROCK MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

REVIEWED FOR COMPLIANCE WITH COUNTY REQUIREMENTS:

_____
WILLIAMSON COUNTY, TEXAS — DATE

SWPPP PERMIT # _____
RECORDED PLAT DOC # _____
WPAP DOC # _____ APPROVED: _____

OWNER:

DAVID LEHMANN
SUNRISE LBG, LLC
300 PINNACLE DRIVE
GEORGETOWN, TEXAS 78626
PH: (916) 220-2876

ENGINEER:

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

REVISIONS:

No.	Date	Revision	ACC.	DATE

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

City of Round Rock Standard Construction Notes
Dated May 05, 2006

GENERAL NOTES:

1. All construction shall be in accordance with the City of Round Rock Standard Specifications Manual.

2. Any existing utilities, pavement, curbs, sidewalks, structures, trees, etc., not planned for destruction or removal that are damaged or removed shall be repaired or replaced at his expense.

3. The Contractor shall verify all depths and locations of existing utilities prior to any construction. Any discrepancies with the construction plans found in the field shall be brought immediately to the attention of the Engineer who shall be responsible for revising the plans are appropriate.

4. Manhole frames, covers, valves, cleanouts, etc. shall be raised to finished grade prior to final paving construction.

5. The Contractor shall give the City of Round Rock 48 hours notice before beginning each phase of construction. Telephone (512)218-7043 (Development Services Office).

6. All areas disturbed or exposed during construction shall be revegetated in accordance with the plans and specifications. Revegetation of all disturbed or exposed areas shall consist of sodding or seeding, at the Contractor's option. However, the type of revegetation must equal or exceed the type of vegetation present before construction.

7. Prior to any construction, the Engineer shall convene a preconstruction conference between the City of Round Rock, himself, the Contractor, other utility companies, any affected parties and any other entity the City or Engineer may require.

8. The Contractor and the Engineer shall keep accurate records of all construction that deviates from the plans. The Engineer shall furnish the City of Round Rock accurate "As-Built" drawings following completion of all construction. These "As-Built" drawings shall meet with the satisfaction of the Engineering and Development Services Department prior to final acceptance.

9. The Round Rock City Council shall not be petitioned for acceptance until all necessary easement documents have been signed and recorded.

10. When construction is being carried out within easements, the Contractor shall confine his work to within the permanent and any temporary easements. Prior to final acceptance, the Contractor shall be responsible for removing all trash and debris within the permanent and temporary easements. Clean-up shall be to the satisfaction of the City Engineer.

11. Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities.

12. Available benchmarks (City of Round Rock Datum) that may be utilized for the construction of this project are described as follows:
(See Sheet C-4)

TRENCH SAFETY NOTES:

1 In accordance with the Laws of the State of Texas and the U. S. Occupational Safety and Health Administration regulations, all trenches over 5 feet in depth in either hard and compact or soft and unstable soil shall be sloped, shored, sheeted, braced or otherwise supported. Furthermore, all trenches less than 5 feet in depth shall also be effectively protected when hazardous ground movement may be expected. Trench safety systems to be utilized for this project will be provided by the contractor.

2 In accordance with the U. S. Occupational Safety and Health Administration regulations, when persons are in trenches 4-feet deep or more, adequate means of exit, such as a ladder or steps, must be provided and located so as to require no more than 25 feet of lateral travel.

3 If trench safety system details were not provided in the plans because trenches were anticipated to be less than 5 feet in depth and during construction it is found that trenches are in fact 5 feet or more in depth or trenches less than 5 feet in depth are in an area where hazardous ground movement is expected, all construction shall cease, the trenched area shall be barricaded and the Engineer notified immediately. Construction shall not resume until appropriate trench safety system details, as designed by a professional engineer, are retained and copies submitted to the City of Round Rock.

STREET AND DRAINAGE NOTES:

1. All testing shall be done by an independent laboratory at the Owner's expense. Any retesting shall be paid for by the Contractor. A City inspector shall be present during all tests. Testing shall be coordinated with the City inspector and he shall be given a minimum of 24 hours notice prior to any testing. Telephone (512)218-3241 (Inspections).

2. Backfill behind the curb shall be compacted to obtain a minimum of 95% maximum density to within 3" of top of curb. Material used shall be primarily granular with no rocks larger than 6" in the greatest dimension. The remaining 3" shall be clean topsoil free from all clods and suitable for sustaining plant life.

3. Depth of cover for all crossings under pavement including gas, electric, telephone, cable tv, water services, etc., shall be a minimum of 30" below subgrade.

4. Street rights-of-way shall be graded at a slope of 1/4" per foot toward the curb unless otherwise indicated. However, in no case shall the width of right-of-way at 1/4" per foot slope be less than 10 feet unless a specific request for an alternate grading scheme is made to and accepted by the City of Round Rock Engineering and Development Services Department.

5. Barricades built to City of Round Rock standards shall be constructed on all dead-end streets and as necessary during construction to maintain job and public safety.

6. All R.C.P. shall be minimum class III.

7. The subgrade material for the streets shown herein was tested by: N/A

   And the paving sections designed in accordance with the current City of Round Rock design criteria. The paving sections are to be constructed as follows: (See Sheet C-19)

   The Geotechnical Engineer shall inspect the subgrade for compliance with the design assumptions made during preparation of the Soils Report. Any adjustments that are required shall be made through revision of the construction plans.

8. Where PI's are over 20, subgrades must be stabilized utilizing a method acceptable to the City Engineer. The Geotechnical Engineer shall recommend an appropriate subgrade stabilization if sulfates are determined to be present.

9. All weather driving surface capable of supporting 75,000 lbs fire apparatus shall be in place prior to delivery and on site storage of combustibles.

WATER AND WASTEWATER NOTES:

1. Pipe material for water mains shall be PVC (AWWA C-900, min. class 200), or Ductile Iron (AWWA C-100, min. class 200). Water services (2" or less) shall be polyethylene tubing (black, 200 psi, DR 9).

2. Pipe material for pressure wastewater mains shall be PVC (AWWA C-900, min. class 150), SDR 26 Higher Pressure Rated or Ductile Iron (AWWA C-100, min. class 200). Pipe material for gravity wastewater mains shall be PVC (ASTM D2241 or D3034, max. DR-26), Ductile Iron (AWWA C-100, min. class 200).

3. Unless otherwise accepted by the City Engineer, depth of cover for all lines out of the pavement shall be 42" min., and depth of cover for all lines under pavement shall be a min. of 30" below subgrade.

4. All fire hydrant leads shall be ductile iron pipe (AWWA C-100, min. class 200).

5. All iron pipe and fittings shall be wrapped with minimum 8-mil polyethylene and sealed with duct tape or equal accepted by the City Engineer.

6. The Contractor shall contact the City Inspector at (512)218-3241 to coordinate utility tie-ins and notify him at least 48 hours prior to connecting to existing lines.

7. All manholes shall be concrete with cast iron ring and cover. All manholes located outside of the pavement shall have bolted covers. Tapping of fiberglass manholes shall not be allowed.

8. The Contractor must obtain a bulk water permit or purchase and install a water meter for all water used during construction. A copy of this permit must be carried at all times by all who use water.

9. Line flushing or any activity using a large quantity of water must be scheduled with the city inspector, telephone (512)218-3241.

10. The Contractor, at his expense, shall perform sterilization of all potable water lines constructed and shall provide all equipment (including test gauges), supplies (including concentrated chlorine disinfecting material), and necessary labor required for the sterilization procedure. The sterilization procedure shall be monitored by City of Round Rock personnel. Water samples will be collected by the City of Round Rock to verify each treated line has attained an initial chlorine concentration of 50 ppm. Where means of flushing is necessary, the Contractor, at his expense, shall provide flushing devices and remove said devices prior to final acceptance by the City of Round Rock.

11. Sampling taps shall be brought up to 3 feet above grade and shall be easily accessible for City personnel. At the Contractor's request, and in his presence, samples for bacteriological testing will be collected by the City of Round Rock not less than 24 hours after the treated line has been flushed of the concentrated chlorine solution and charged with water approved by the City. The Contractor shall supply a check or money order, payable to the City of Round Rock, to cover the fee charged for testing each water sample. City of Round Rock fee amounts may be obtained by calling the Development Services Office at (512)218-7043.

12. The Contractor, at his expense, shall perform quality testing for all wastewater pipe installed and pressure pipe hydrostatic testing of all water lines constructed and shall provide all equipment (including pumps and gauges), supplies and labor necessary to perform the tests. Quality and pressure testing shall be monitored by City of Round Rock personnel.

13. The Contractor shall coordinate testing with the City of Inspector and provide no less than 24 hours notice prior to performing sterilization, quality testing or pressure testing.

14. The Contractor shall not open or close any valves unless authorized by the City of Round Rock.

15. All valve boxes and covers shall be cast iron.

16. All water service, wastewater service and valve locations shall be appropriately marked as follows:

water service	"W" on top of curb
wastewater service	"S" on top of curb
valve	"V" on face of curb

Tools for marking the curb shall be provided by the Contractor. Other appropriate means of marking service and valve locations shall be provided in areas without curbs. Such means of marking shall be as specified by the Engineer and accepted by the City of Round Rock.

17. Contact City of Round Rock Development Services Office at (512)218-7043 for assistance in obtaining existing water and wastewater locations.

18. The Williamson County Fire Marshal's Office shall be notified 48 hours prior to testing of any building sprinkler piping in order that the Fire Department may monitor such testing.

19. Sand, as described in Specification item 510 pipe, shall not be used as bedding for water and wastewater lines. Acceptable bedding materials are pipe bedding stone, pea gravel and in lieu of sand, a naturally occurring or manufactured stone material conforming to ASTM C33 for stone quality and meeting the following gradation specification:

Sieve Size	Percent Retained By Weight
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

20. The Contractor is hereby notified that connecting to, shutting down, or terminating existing utility lines may have to occur at off-peak hours. Such hours are usually outside normal working hours and possibly between 12 a.m. and 6 a.m.

21. All wastewater construction shall be in accordance with the Texas Commission on Environmental Quality (TCEQ) Regulations, 30 TAC Chapter 213 and 317, as applicable. Whenever TCEQ and City of Round Rock Specifications conflict, the more stringent shall apply.

TRAFFIC MARKING NOTES:

1. Any methods, street markings and signage necessary for warning motorists, warning pedestrians or diverting traffic during construction shall conform to the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest edition.

2. All pavement markings, markers, paint, traffic buttons, traffic controls and signs shall be installed in accordance with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges and, the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest editions.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. Erosion control measures, site work and restoration work shall be in accordance with the City of Round Rock Erosion and Sedimentation Control Ordinance.

2. All slopes shall be sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.

3. Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Such installation shall be regularly inspected by the City of Round Rock for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.

4. All temporary erosion control measures shall not be removed until final inspection and approval of the project by the Engineer. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove each structure as approved by the Engineer.

5. All mud, dirt, rocks, debris, etc., spilled, tracked or otherwise deposited on existing paved streets, drives and areas used by the public shall be cleaned up immediately.

6. All disturbed areas shall be revegetated.

ABBREVIATIONS:

BOT = BOTTOM
CL = CLASS
CNC = TOP OF CONCRETE
DET = DETENTION
D/S = DOWNSPOUT
DI = DUCTILE IRON
ESMT = EASEMENT
EX = EXISTING
FG = FINISHED GROUND
FH = FIRE HYDRANT
FL = FLOWLINE
FPS = FEET PER SECOND
FLG = FLANGE
GB = GRADE BREAK
GV = GATE VALVE
HPT = HIGHPOINT
LOC = LIMITS OF CONSTRUCTION
LPT = LOW POINT
MH = MANHOLE
MJ = MECHANICAL JOINT
NG = NATURAL GROUND
PAV = TOP OF PAVEMENT
PDWF = PEAK DRY WEATHER FLOW
PWWF = PEAK WET WEATHER FLOW
PROP = PROPOSED
PVC = POLYVINYL CHLORIDE
REF = REFERENCE
RS = RESILIENT SEAT
SCH = SCHEDULE
SF = SILT FENCE
SLAB = TOP OF SLAB
SS = STORM SEWER
SSL = STORM SEWER LINE
SW = TOP OF SIDEWALK
TC = TOP OF CURB
TG = TOP OF GRATE
TOF = TOP OF FOOTING
TOI = TOP OF INLET
TOW = TOP OF WALL
TP = TREE PROTECTION
TR = TOP OF MANHOLE RIM
TYP = TYPICAL
WL = WATER LINE
WQ = WATER QUALITY
WSE = WATER SURFACE ELEVATION
WTR = WATER
WWL = WASTEWATER LINE
WWMH = WASTEWATER MANHOLE

Williamson County Fire Marshal's Office Notes:

1. Prior to construction above the slab, provide an all-weather drive surface that is engineered to withstand 75,000 lbs. 2018 IFC §503 and D102.1

2. Prior to construction above the slab, the required fire flow will need to be on-site. 2018 IFC §507

3. Underground fire riser lines will need to be installed by a contractor with an RME-U License through Texas Fire Marshal's Office. 28 TAC §34.711

4. Underground fire riser lines (including Remote FDC) will need to pass the following inspections by Williamson County Fire Marshal's Office:

   a. Visual, to include but not limited to bedding, water tape, and thrust blocks.
   b. Hydrostatic
   c. Flushing

5. Once all underground fire riser line (including Remote FDC) inspections have passed the contractor will need to provide a Contractor's Materials & Test Certificate for Underground Piping Form to our office and he property owner.

LEGEND

REBAR WITH CAP FOUND	BARB-WIRE FENCE
FIRE HYDRANT	CHAIN-LINK FENCE
WATER METER	EDGE OF PAVEMENT
WATER VALVE	GAS LINE
WASTEWATER MANHOLE	UNDERGROUND ELEC.
SIGN	UNDERGROUND TELE.
TREE	WATER LINE
POWER POLE	WASTEWATER LINE
LIGHT POLE	WOOD FENCE
SPRLINKLER CONTROL VALVE	EASEMENT
BENCHMARK	PROPERTY LINE

BM #1

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

NOTE SHEET (1 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-2

Texas Commission on Environmental Quality
Organized Sewage Collection System
General Construction Notes

TCEQ-0596 (Rev. July 15, 2015)

1. This Organized Sewage Collection System (SCS) must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules and any local government standard specifications.

2. All contractors conducting regulated activities associated with this proposed regulated project must be provided with copies of the SCS 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. A written notice of construction must be submitted to the presiding 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.

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. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. These controls must remain in place until the disturbed areas have been permanently stabilized.

6. 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 TCEQ 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 and 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.

7. 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 6 inches.

8. 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.

9. 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 sheets C-10 to C-14.

   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.

10. 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).

11. 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: N/A _____.

12. If pipe flexure is proposed, the following method of preventing deflection of the joint must be used: N/A _____.

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

13. New sewage collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the extensions. Such stub outs must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new stub-outs must be constructed sufficiently to extend beyond the end of the street pavement. All stub-outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle and in accordance with accepted plumbing techniques.

    If no stub-out is present an alternate method of joining laterals is shown in the detail on sheet C-28. (For potential future laterals).

    The private service lateral stub-outs must be installed as shown on the plan and profile sheets on sheets C-10 through C-14 and marked after backfilling as shown in the detail on sheet C-28.

14. Trenching, bedding and backfill must conform with 30 TAC §217.54. The bedding and backfill for flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II or III. Rigid pipe bedding must comply with the requirements of ASTM C 12 (ANSI A 106.2) classes A, B or C.

15. Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E).

16. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be:

(a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:

(1) *Low Pressure Air Test.*

A 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.

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.

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

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

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds
K = 0.000419 X D X L, but not less than 1.0
D = average inside pipe diameter in inches
L = length of line of same size being tested, in feet
Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface

(C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following Table C.3:

Pipe Diameter *(inches)*	Minimum Time *(seconds)*	Maximum Length for Minimum Time *(feet)*	Time for Longer Length *(seconds/foot)*
6	340	398	0.8550
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

(D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.

(E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure.

(F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.

(G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.

(2) *Infiltration/Exfiltration Test.*

(A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole.

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

(C) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch diameter per mile of pipe per 24 hours at a minimum test head of two feet above the crown of a pipe at an upstream manhole, or at least two feet above existing groundwater level, whichever is greater.

(D) For construction within a 25-year flood plain, the infiltration or exfiltration must not exceed 10 gallons per inch diameter per mile of pipe per 24 hours at the same minimum test head as in subparagraph (C) of this paragraph.

(E) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall undertake remedial action in order to reduce the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action.

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

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

(A) Mandrel Sizing.

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 STMs, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.

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.

All dimensions must meet the appropriate standard.

(B) Mandrel Design.

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

A mandrel must have nine or more odd number of runners or legs.

A barrel section length must equal at least 75% of the inside diameter of a pipe.

Each size mandrel must use a separate proving ring.

(C) Method Options.

An adjustable or flexible mandrel is prohibited.

A test may not use television inspection as a substitute for a deflection test.

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.

(1) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection.

(2) A deflection test method must be accurate to within plus or minus 0.2% deflection.

(3) An owner shall not conduct a deflection test until at least 30 days after the final backfill.

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

(5) If a pipe section fails a deflection test, an owner shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.

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

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.

(3) Hydrostatic Testing.

(A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.

(B) To perform a hydrostatic exfiltration test, an owner shall seal 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.

(C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.

(2) Vacuum Testing.

(A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.

(B) No grout must be placed in horizontal joints before testing.

(C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.

(D) An owner shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.

(E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's recommendations.

(F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.

(G) A test does not begin until after the vacuum pump is off.

(H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

18. All private service laterals must be inspected and certified in accordance with 30 TAC §213.5(c)(3)(I). After installation of and, prior to covering and connecting a private service lateral to an existing organized sewage collection system, a Texas Licensed Professional Engineer, Texas Registered Sanitarian, or appropriate city inspector must visually inspect the private service lateral and the connection to the sewage collection system, and certify that it is constructed in conformity with the applicable provisions of this section. The owner of the collection system must maintain such certifications for five years and forward copies to the appropriate regional office upon request. Connections may only be made to an approved sewage collection system.

Austin Regional Office
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Phone (512) 339-2929
Fax (512) 339-3795

San Antonio Regional Office
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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.

Texas Commission on Environmental Quality
Water Pollution Abatement Plan

TCEQ-0592 (Rev. 7/15/15)

General Construction Notes:

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 TCEQ-0592 (Rev. July 15, 2015) Page 2 of 2 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.

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FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

NOTE SHEET (2 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-3

NOTES:

1. DISTANCES ARE SURFACE DISTANCES.
2. COORDINATES ARE SURFACE VALUES WITH BEARING BASIS: NAD-83, TEXAS CENTRAL (4203), STATE PLANE SYSTEM. COORDINATES FOR THIS FILE SURFACE BASED ON A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00011. BASED ON THE TEXAS STATE PLAN COORDINATE SYSTEM, NAD83.
3. SURVEY WAS PROVIDED BY DIAMOND SURVEYING, INC. ALL RESPONSIBILITY FOR THE ACCURACY OF THIS SURVEY REMAINS WITH THE SURVEYOR WHO PREPARED IT. IN USING THIS SURVEY, THE ENGINEER MUST RELY UPON THE ACCURACY OF THE WORK PROVIDED BY THE SURVEYOR.
4. CONTRACTOR'S SURVEYOR SHALL LEVEL/ TRAVERSE THROUGH THE BENCHMARKS/ TRAVERSE POINTS NOTED ON THIS PLAN TO VERIFY VERTICAL/ HORIZONTAL DATUM.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

BENCHMARK:

BM #104:
PK NAIL SET IN SOUTH SIDE OF CONCRETE SIDEWALK ON THE SOUTH SIDE OF APPLEGATE CIRCLE, APPROXIMATELY 140' EAST OF SUNRISE ROAD.

ELEVATION = 746.02'
VERTICAL DATUM = NAVD-88 (GEOID 2012A)
N = 10173828.82
E = 3134008.16

BM #105:
PK NAIL SET IN SOUTHWEST CORNER OF A CONCRETE CULVERT WITH 18" CMP ON THE SOUTH SIDE OF APPLEGATE CIRCLE, APPROXIMATELY 900' EAST OF SUNRISE ROAD.

ELEVATION = 738.61
VERTICAL DATUM = NAVD-88 (GEOID 2012A)
N = 10174072.70
E = 3134634.35

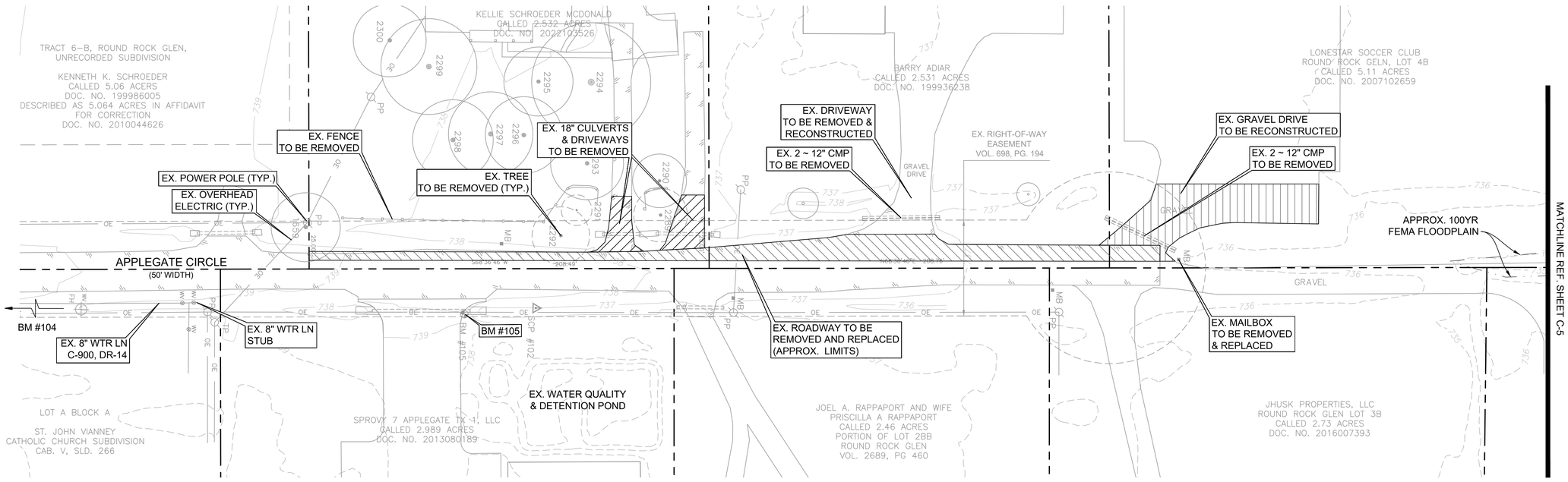
LEGEND:

TREE TO REMAIN

TREE TO BE REMOVED

0 15 30 60
HORIZONTAL SCALE

Texas 811
know what's below.
Call before you dig.



CAUTION:
OVERHEAD ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:
SUNRISE LBG, LLC

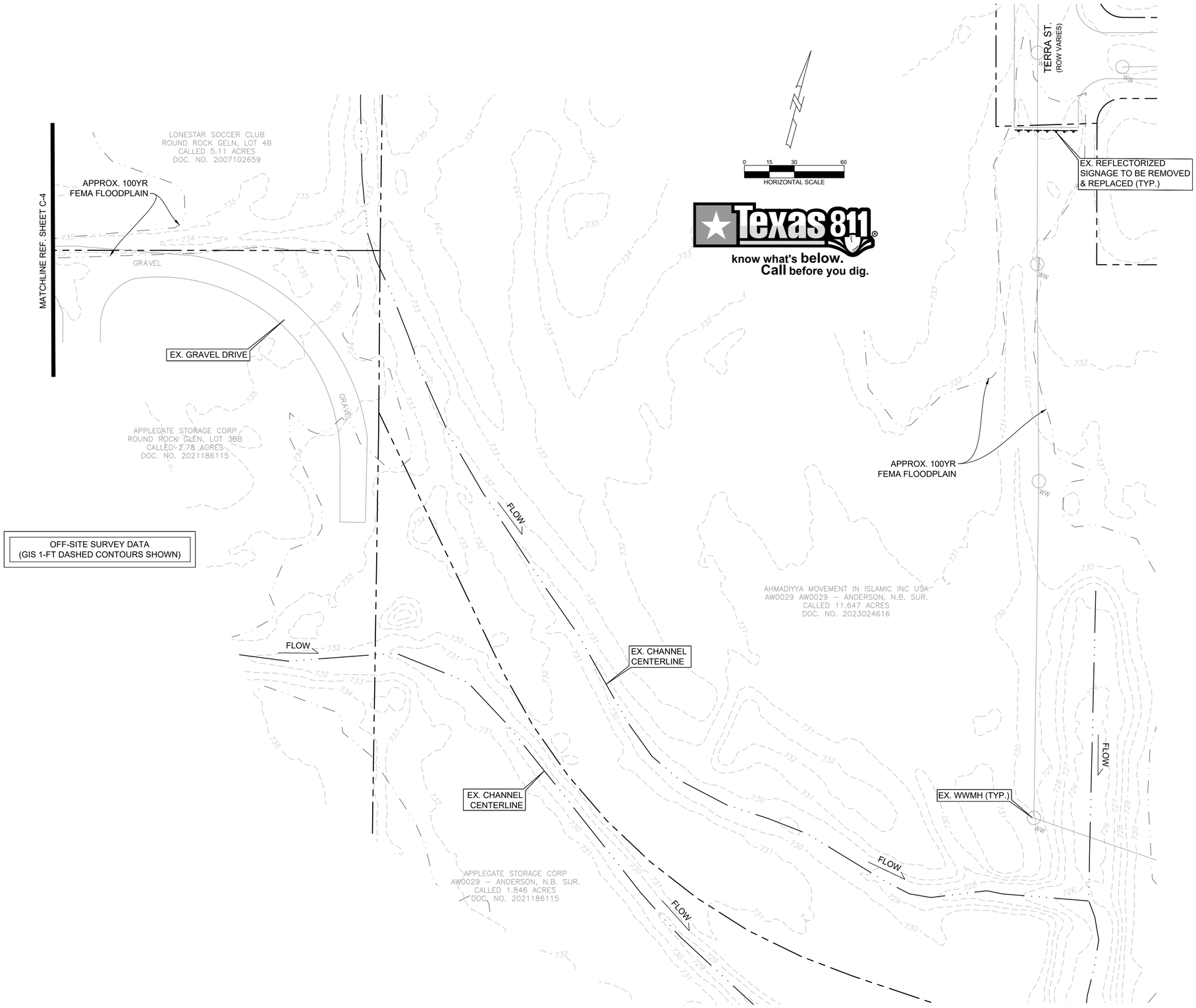
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOM'D
REVISIONS
DATE
No.

SHEET TITLE:
EXISTING CONDITIONS & DEMOLITION PLAN (1 OF 2)

WP PROJECT NO.:
135-002

SHEET NO.:
C-4



OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

Texas 811
know what's below.
Call before you dig.

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CIVIL ENGINEERS
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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JUL 24

PROJECT:

APPLEGATE CIRCLE
SUBDIVISION
IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

EXISTING
CONDITIONS &
DEMOLITION PLAN
(2 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-5

TREE LIST

TAG#	SIZE	TYPE	COMMENTS
1526	23"	HACKBERRY	3 BOLES: 13",11",9"
1527	17"	HACKBERRY	2 BOLES: 12",9"
1659	18"	HACKBERRY	2 BOLES: 12",11"
2289	14"	PECAN	
2290	14"	ASH	3 BOLES: 8",7",4"
2291	8"	PECAN	
2292	15"	MULBERRY	2 BOLES: 10",9"
2293	19"	MULBERRY	
2294	31"	ASH	
2295	18"	ASH	
2296	20"	ASH	
2297	22"	ASH	
2298	21"	ASH	
2299	25"	ASH	
2300	19"	ASH	
2301	22"	ASH	2 BOLES: 15",13"
2607	8"	HACKBERRY	
2608	17"	HACKBERRY	4 BOLES: 8",7",6",5"
2609	12"	HACKBERRY	3 BOLES: 7",6",4"
2610	10"	HACKBERRY	
2612	12"	HACKBERRY	2 BOLES: 8",8"
2624	26"	HACKBERRY	
2626	11"	HACKBERRY	3 BOLES: 7",6",2"
2627	9"	HACKBERRY	
2628	13"	HACKBERRY	
2629	11"	HACKBERRY	
2630	8"	HACKBERRY	
2631	8"	HACKBERRY	
2632	8"	HACKBERRY	
2633	10"	HACKBERRY	
2634	11"	HACKBERRY	2 BOLES: 8",5"
2635	9"	HACKBERRY	
2636	8"	HACKBERRY	
2637	8"	HACKBERRY	
2749	10"	HACKBERRY	3 BOLES: 5",5",4"
2750	13"	HACKBERRY	
2751	11"	HACKBERRY	2 BOLES: 9",4"
2752	9"	HACKBERRY	
2753	7"	HACKBERRY	
2754	7"	HACKBERRY	
2763	19"	ASH	

NOTES:

1. ANY DIRT, MUD, DEBRIS, ETC., SPILLED TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES, AND AREAS USED BY THE PUBLIC, SHALL BE IMMEDIATELY CLEANED UP.
2. THE CONTRACTOR MAY SUBMIT AN ALTERNATE PLAN FOR THE LOCATION OF THE STAGING & SPOILS AREA AND/OR THE CONCRETE TRUCK WASH OUT AREA.
3. ALL DISTURBED AREAS SHALL BE REVEGETATED.
4. POST THE INSTALLATION OF PROPOSED INLETS, INLET PROTECTION SHALL BE INSTALLED AS SOON AS PRACTICABLE
5. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY, MAINTAIN, REVISE, AND UPDATE THE PROJECT STORM WATER PREVENTION POLLUTION PLAN (SWPPP), AS REQUIRED IN ACCORDANCE WITH THE GENERAL PERMIT TXR 150000.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

LEGEND

- SILT FENCE — SF —
- LIMITS OF CONSTRUCTION — LOC —
- ROCK BERM
- STABILIZED CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- TREE TO REMAIN
- TREE TO BE REMOVED

0 15 30 60
HORIZONTAL SCALE

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know what's below.
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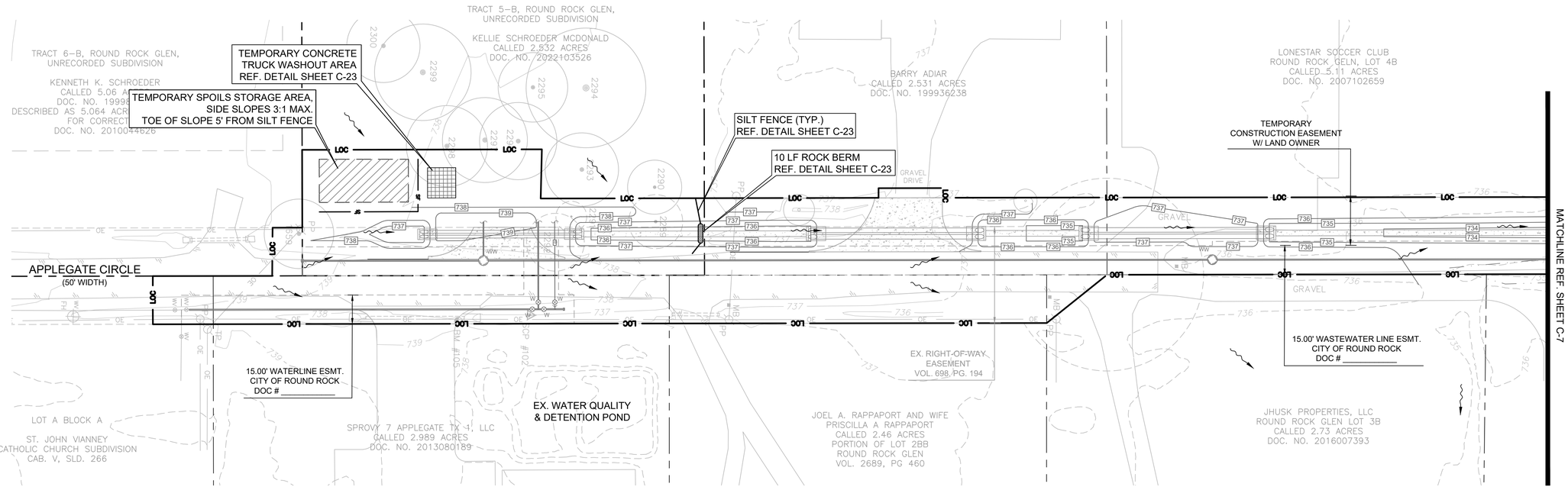


WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:
SUNRISE LBG, LLC

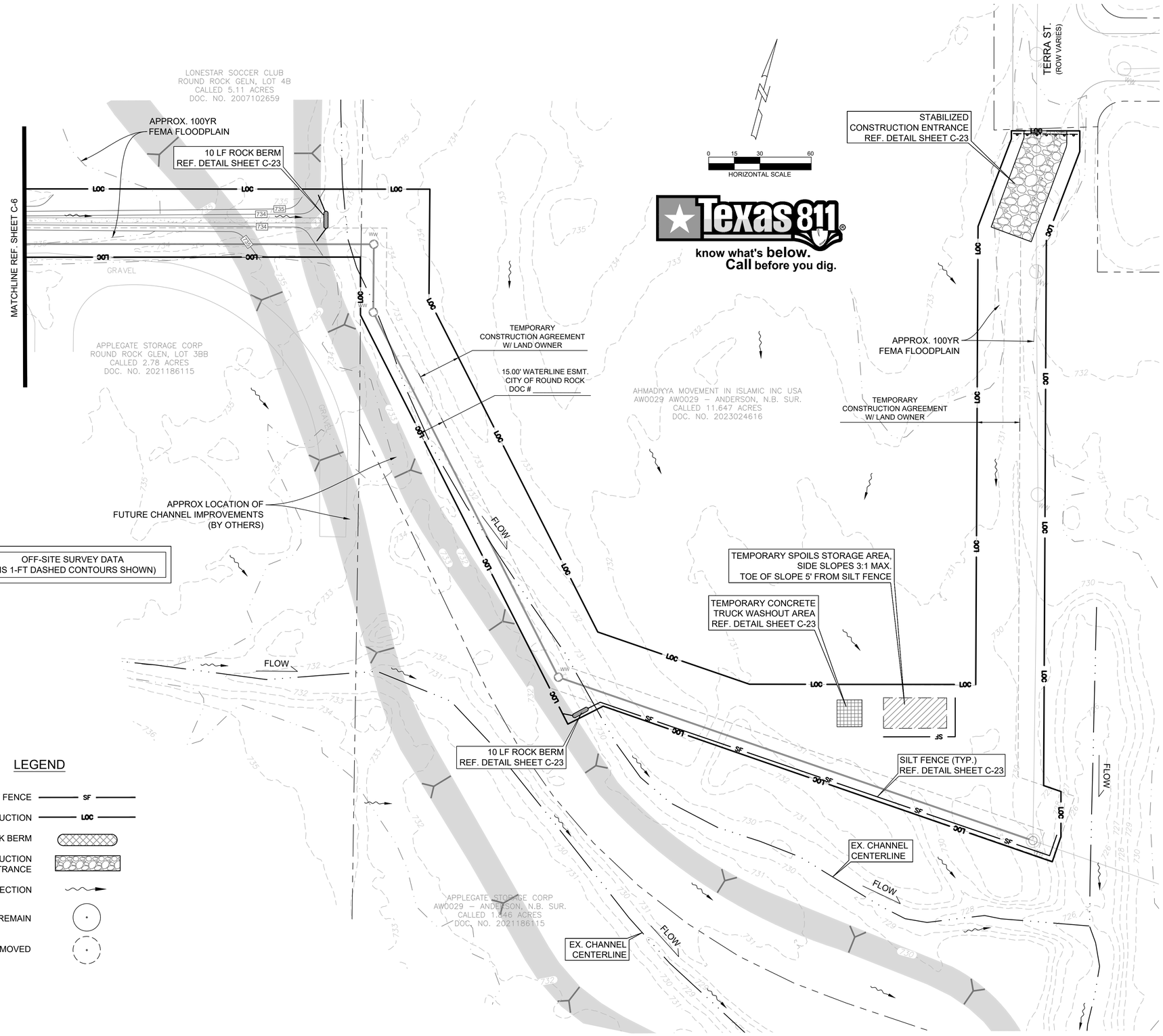
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:
EROSION/ SEDIMENTATION CONTROL PLAN (1 OF 2)

WP PROJECT NO.:
135-002

SHEET NO.:
C-6



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ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7/12/24

PROJECT:

APPLEGATE CIRCLE
SUBDIVISION
IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

EROSION/
SEDIMENTATION
CONTROL PLAN
(2 OF 2)

WP PROJECT NO.:

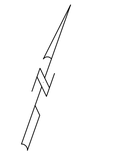
135-002

SHEET NO.:

C-7

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. REFER TO MEP PLAN FOR SERVICE CONNECTIONS TO UTILITY PROVIDERS: GAS / ELECTRIC / TELEPHONE / ETC.
4. STUB WATER & WASTEWATER SERVICE LINES 5' FROM BLDG. REFER TO MEP PLAN FOR CONTINUATION.
5. WHERE A SEWER CROSSES 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. CENTER 1 JOINT OF WASTEWATER LINE ON CROSSING.
6. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF ROUND ROCK.
7. TRENCH SAFETY SYSTEMS SHALL BE REQUIRED FOR TRENCHES EXCEEDING 5' DEPTH. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS.
8. ADJUST ALL MANHOLE COVERS, VALVE BOXES, AND CASTINGS TO FINISH GRADE.
9. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANTS.
10. RESTRAIN ALL 6" & 8" PIPE FITTINGS, VALVES, ETC. RESTRAINT LENGTHS SHALL BE 30 LF FORWARD AND BACKWARDS OF THE FITTING, VALVE, ETC. USE MEGALUG OR APPROVED EQUAL.
11. ALL FITTINGS SHALL HAVE THRUST BLOCKING.
12. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.



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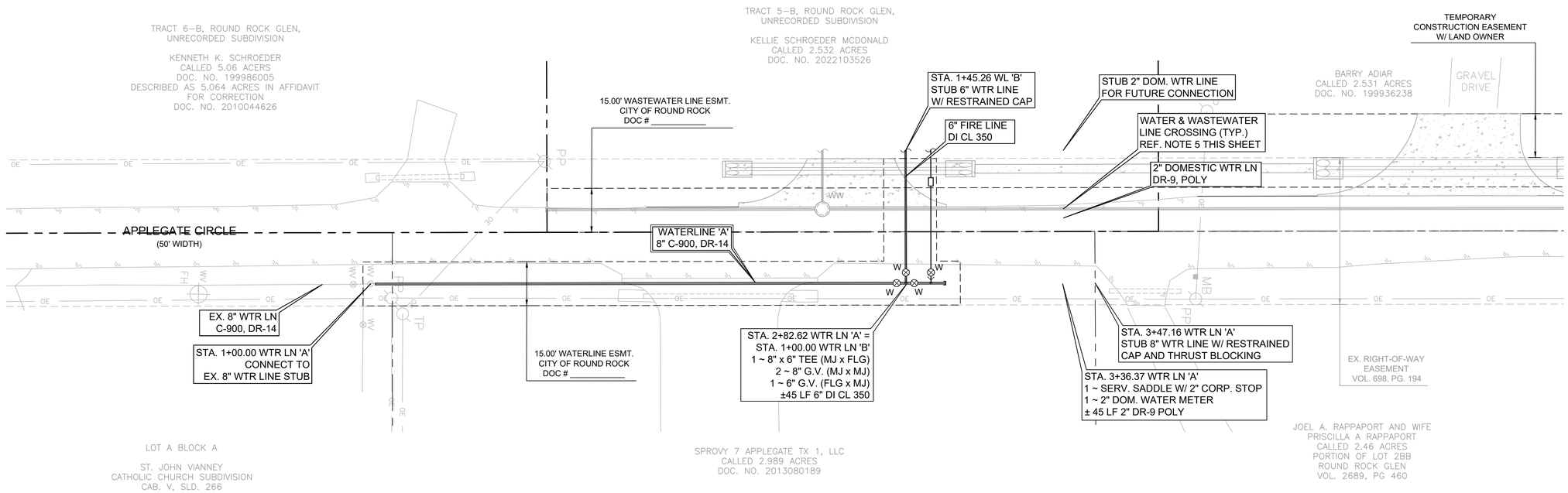

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

WATER PLAN

WP PROJECT NO.:

135-002

SHEET NO.:

C-8

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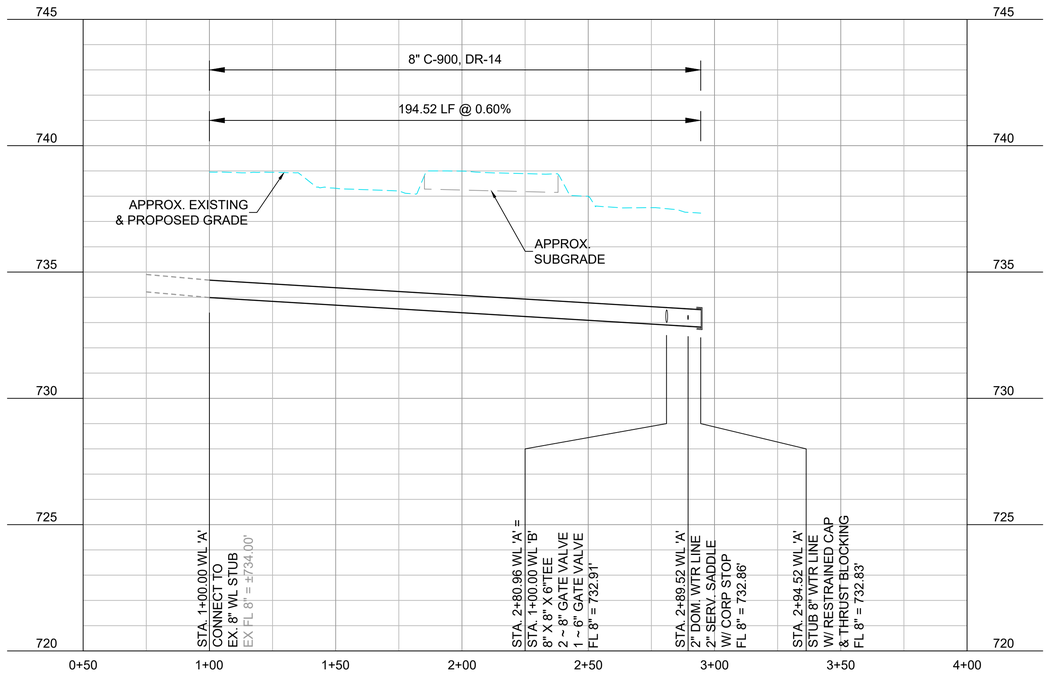
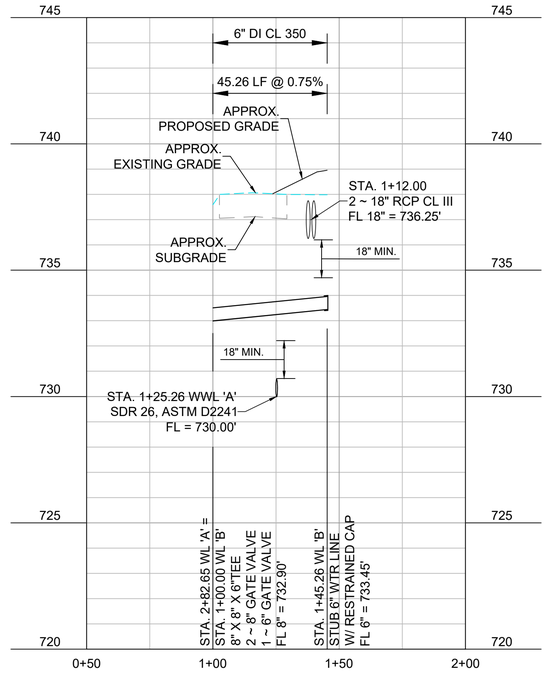


WASTEWATER LINE 'A' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.



WASTEWATER LINE 'B' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
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FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

WATER PROFILE

WP PROJECT NO.:

135-002

SHEET NO.:

C-9

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
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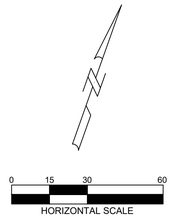
4. ADJUST ALL EXISTING MANHOLE COVERS, VALVE BOXES, AND CASTINGS TO FINISH GRADE.
5. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANTS.
6. WHERE A SEWER CROSSES A WATERLINE, ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATERLINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. CENTER 1 JOINT OF WATER LINE AND WASTEWATER LINE ON CROSSING.
7. ALL MANHOLES SHALL BE COATED PER CITY OF ROUND ROCK SPECIFICATIONS & VACUUM TESTED TO ENSURE INTEGRITY.
8. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.



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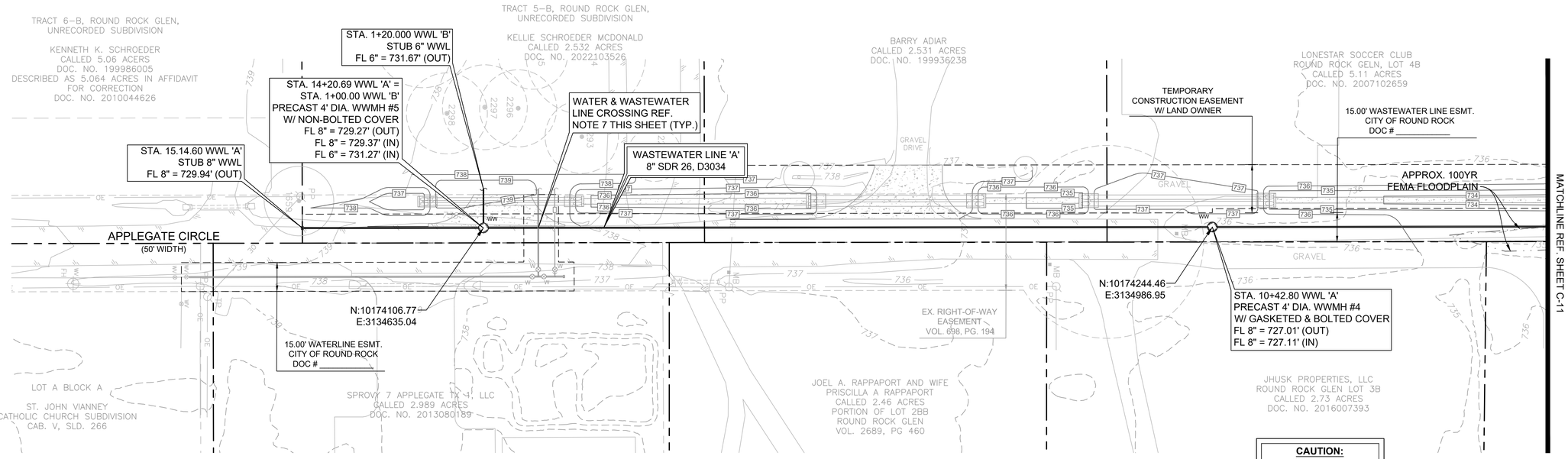

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FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

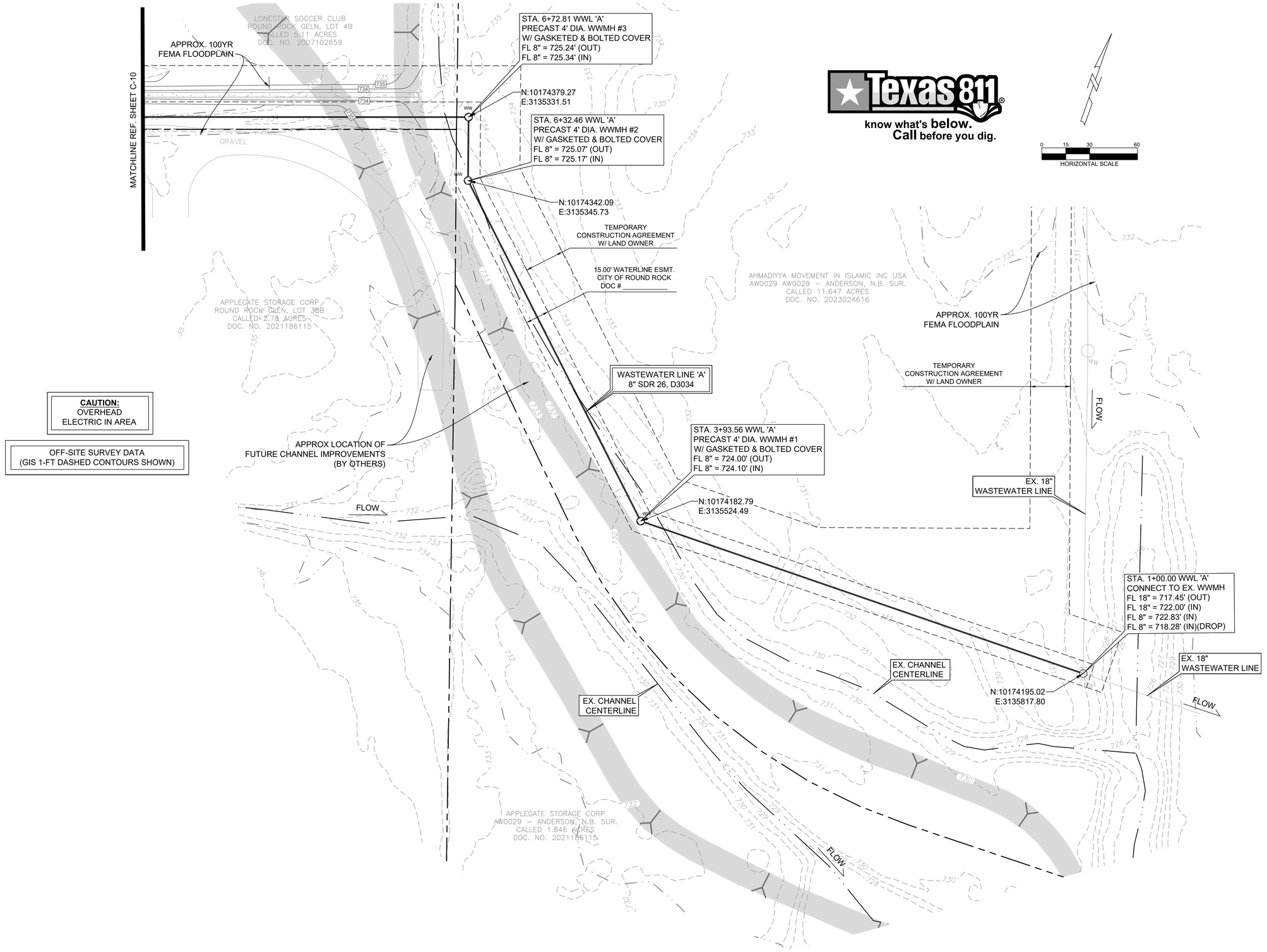
WASTEWATER PLAN (1 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-10



CAUTION:
OVERHEAD
ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12/6/24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

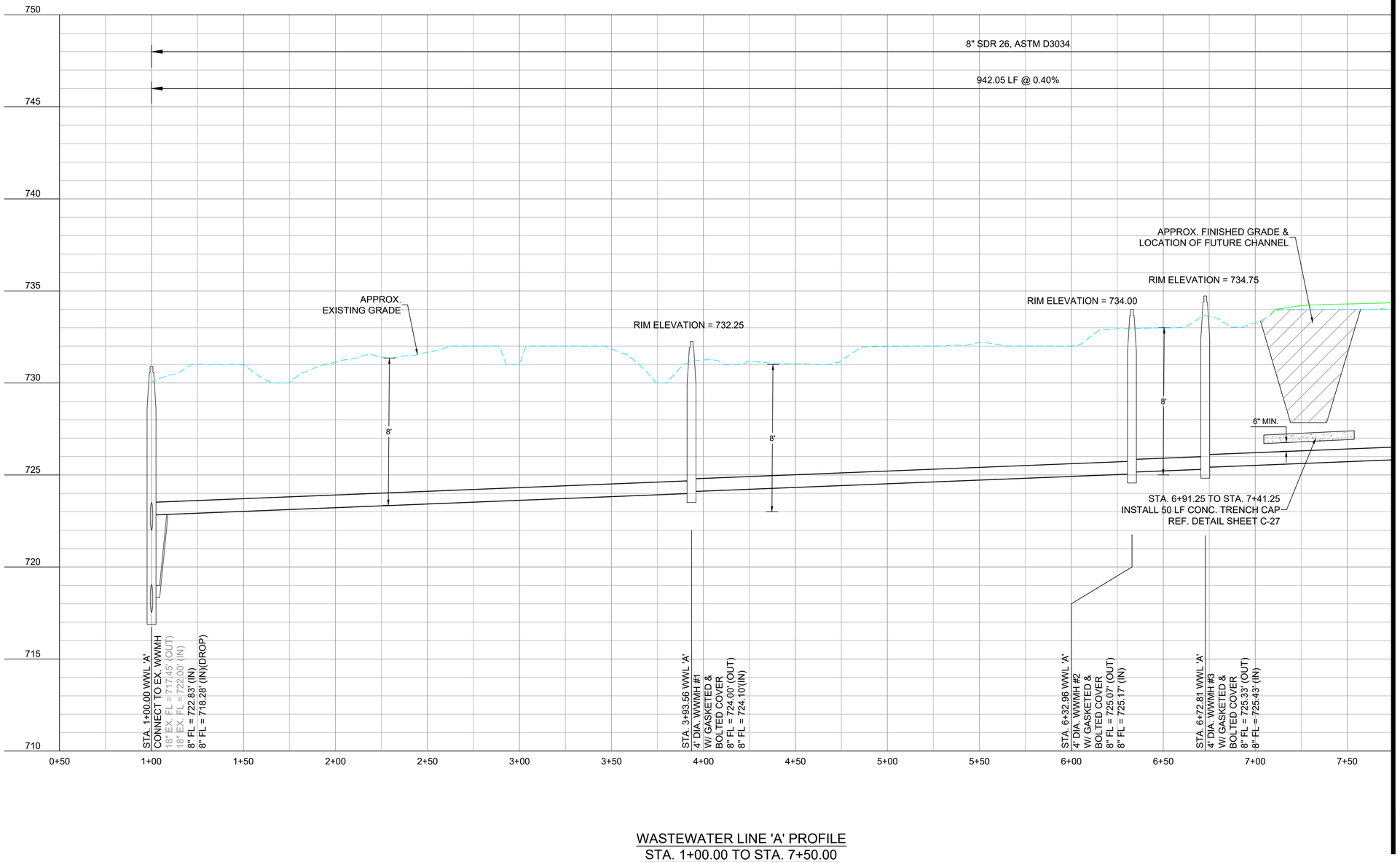
WASTEWATER PLAN (2 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-11



WASTEWATER LINE 'A' PROFILE
STA. 1+00.00 TO STA. 7+50.00
SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

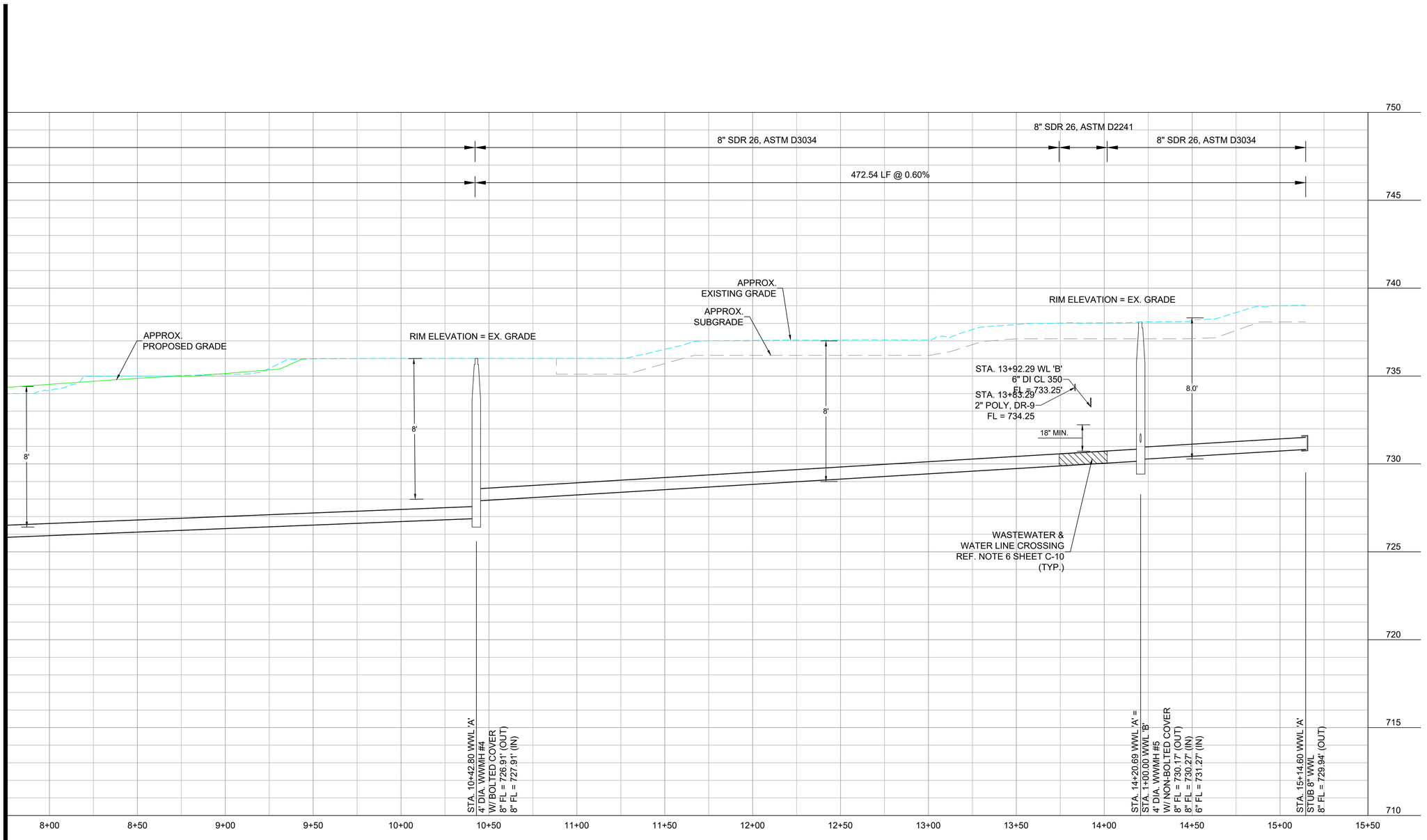
WASTEWATER PROFILE (1 OF 3)

WP PROJECT NO.:

135-002

SHEET NO.:

C-12



MATCHLINE REF. SHEET C-12

WASTEWATER LINE 'A' PROFILE
STA. 7+50.00 TO END

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

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STATE OF TEXAS
ANTONIO A. PRETE
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12 JULY 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

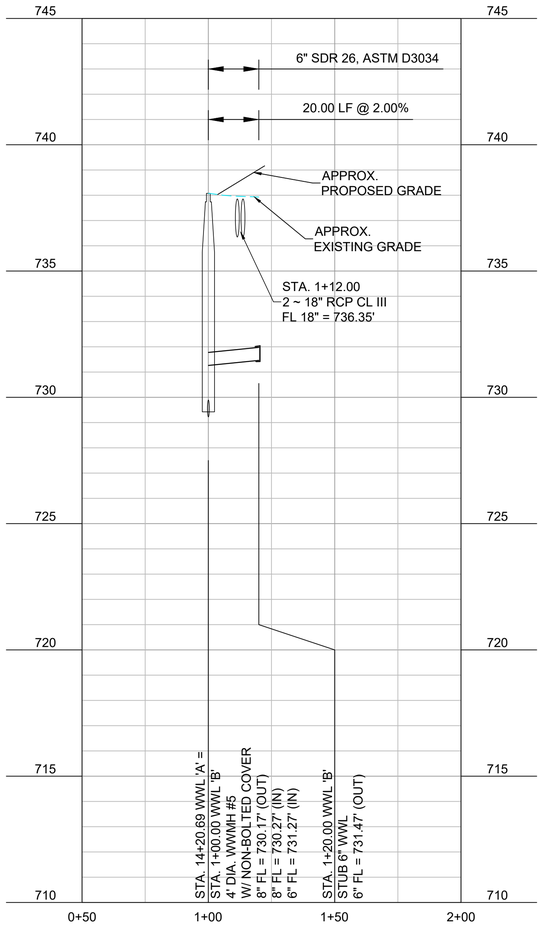
WASTEWATER PROFILE (2 OF 3)

WP PROJECT NO.:

135-002

SHEET NO.:

C-13



WASTEWATER LINE 'B' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

WASTEWATER PROFILE (3 OF 3)

WP PROJECT NO.:

135-002

SHEET NO.:

C-14

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
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3. POST THE INSTALLATION OF DRAINAGE INLETS, INLET PROTECTION SHALL BE INSTALLED AS SOON AS PRACTICAL, INLET PROTECTION SHALL REMAIN IN PLACE UNTIL VEGETATION HAS BEEN ESTABLISHED.
4. REFERENCE SHEET C-16 THROUGH C-18 FOR CULVERT PROFILES AND CALCULATIONS.
5. ALL STORM SEWER BENDS AND WYES SHALL BE PREFABRICATED.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

0 10 20 40
HORIZONTAL SCALE

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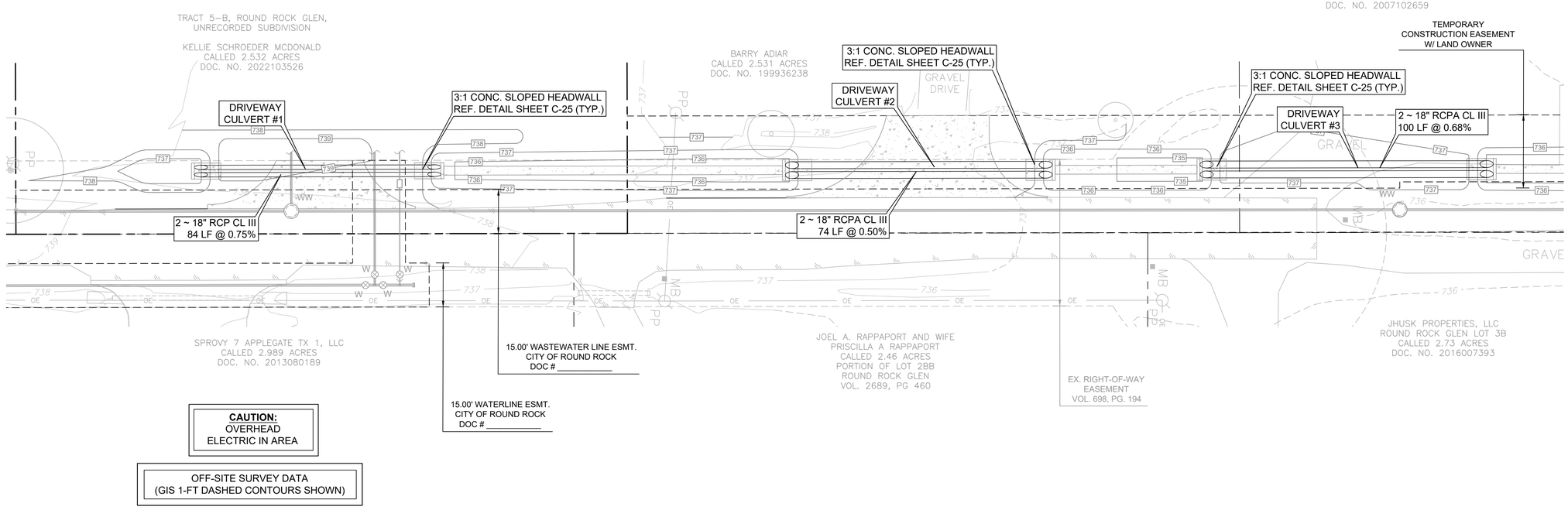

CAUTION:
OVERHEAD
ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

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PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

No.	DATE	REVISIONS
		RECOMD

SHEET TITLE:

STORM SEWER PLAN

WP PROJECT NO.:

135-002

SHEET NO.:

C-15

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NOTES:

1. CULVERT DESIGNED FOR THE ATLAS-14 10YR STORM EVENT.

CULVERT ID: CULVERT #1

* ANALYSIS - HY-8 (VER 7.5)
* ATLAS-14 UTILIZED

SITE DATA:

INLET STATION:	100.00 FT
INLET ELEVATION:	736.70 FT
OUTLET STATION:	184.00 FT
OUTLET ELEVATION:	736.02 FT
NUMBER OF BARRELS:	2

OVERTOPPING PROFILE:

ROADWAY SURFACE: PAVED
IRREGULAR OVERTOPPING CROSS-SECTION COORDINATES:

COORD	STA.	ELEV.
1	0.00	738.75
2	12.50	739.00
3	25.00	739.00

CULVERT DATA:

BARREL SHAPE:	CIRCULAR
BARREL DIAM.:	1.5 FT
BARREL MATERIAL:	CONCRETE
BARREL MANNINGS'S N:	0.013
INLET TYPE:	CONVENTIONAL
INLET EDGE CONDITION:	MITTERED TO CONFORM TO SLOPE
INLET DEPRESSION:	NONE

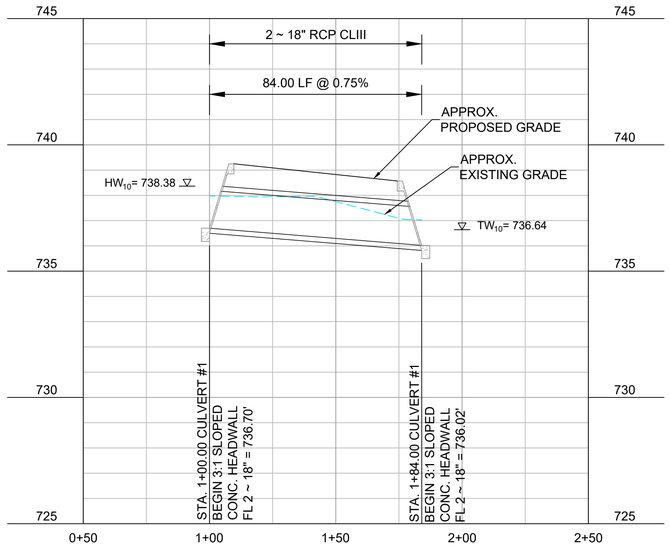
TAILWATER CHANNEL DATA:

TAILWATER CHANNEL OPTION:	TRAPIZOIDAL
BOTTOM WIDTH:	6 FT
SIDE SLOPE:	3:1
CHANNEL SLOPE:	0.0040 FT/FT
CHANNEL MANNING'S N:	0.02
CHANNEL INVERT ELEVATION:	736.02 FT

EVENT (YR)	FLOW (CFS)	WATER SURFACE ELEVATION (FT)	DEPTH (FT)	VELOCITY (FT/S)	SHEAR (PSF)	FROUDE NUMBER
-	0.00	736.02	0.00	0.00	0.00	
-	2.95	736.27	0.25	1.74	0.06	
-	5.91	736.40	0.38	2.20	0.09	
2	8.86	736.50	0.48	2.51	0.12	
-	11.81	736.58	0.56	2.76	0.14	
-	14.77	736.65	0.63	2.96	0.16	
10	14.99	736.66	0.64	2.97	0.16	
-	20.67	736.78	0.76	3.28	0.19	
-	23.62	736.84	0.82	3.41	0.20	
-	26.58	736.89	0.87	3.54	0.22	
100	29.53	736.94	0.92	3.65	0.23	

CULVERT SUMMARY TABLE:

EVENT (YR)	TOTAL DISCHARGE (CFS)	CULVERT DISCHARGE (CFS)	HEADWATER ELEVATION (FT)	INLET CONTROL DEPTH (FT)	OUTLET CONTROL DEPTH (FT)	FLOW TYPE	NORMAL DEPTH (FT)	CRITICAL DEPTH (FT)	OUTLET DEPTH (FT)	TAILWATER DEPTH (FT)	OUTLET VELOCITY (FT/S)	TAILWATER VELOCITY (FT/S)
-	0.00	0.00	736.55	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
-	2.95	2.95	737.21	0.66	0.0*	1-S2n	0.40	0.45	0.40	0.25	3.80	1.73
-	5.91	5.91	737.51	0.96	0.16	1-S2n	0.57	0.65	0.57	0.38	4.61	2.20
2	8.86	8.86	737.76	1.21	0.49	1-S2n	0.72	0.81	0.72	0.47	5.12	2.51
-	11.81	11.81	738.03	1.48	0.86	1-S2n	0.86	0.93	0.86	0.56	5.48	2.76
-	14.77	14.77	738.35	1.80	1.29	5-S2n	1.00	1.05	1.00	0.63	5.74	2.96
10	14.99	14.99	738.38	1.83	0.01	5-S2n	1.01	1.06	1.04	0.64	5.58	2.97
-	20.67	19.30	738.98	2.43	2.23	7-M2c	1.50	1.20	1.20	0.76	6.38	3.28
-	23.62	19.83	739.07	2.52	2.28	7-M2c	1.50	1.21	1.21	0.82	6.48	3.41
-	26.58	20.19	739.13	2.58	2.32	7-M2c	1.50	1.22	1.22	0.87	6.54	3.54
100	29.53	20.50	739.18	2.63	2.36	7-M2c	1.50	1.23	1.23	0.92	6.60	3.65



DRIVEWAY CULERT #1
SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
July 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS
		RECOM'D

SHEET TITLE:

DRIVEWAY CULVERT #1

WP PROJECT NO.:

135-002

SHEET NO.:

C-16

CULVERT ID: CULVERT #2

* ANALYSIS - HY-8 (VER 7.5)
* ATLAS-14 UTILIZED

SITE DATA:

INLET STATION:	100.00 FT
INLET ELEVATION:	735.48 FT
OUTLET STATION:	174.00 FT
OUTLET ELEVATION:	735.11 FT
NUMBER OF BARRELS:	2

CULVERT DATA:

BARREL SHAPE:	CIRCULAR-ARCH
BARREL SPAN.:	28.5 IN
BARREL RISE:	18 IN
BARREL MATERIAL:	CONCRETE
BARREL MANNINGS'S N:	0.013
INLET TYPE:	CONVENTIONAL
INLET EDGE CONDITION:	SQUARE EDGE
INLET DEPRESSION:	NONE

OVERTOPPING PROFILE:

ROADWAY SURFACE: PAVED

IRREGULAR OVERTOPPING CROSS-SECTION COORDINATES:

COORD	STA.	ELEV.
1	0.00	737.25
2	12.50	737.75
3	25.00	737.75

TAILWATER CHANNEL DATA:

TAILWATER CHANNEL OPTION:	TRAPIZOIDAL
BOTTOM WIDTH:	6 FT
SIDE SLOPE:	3:1
CHANNEL SLOPE:	0.0040 FT/FT
CHANNEL MANNING'S N:	0.02
CHANNEL INVERT ELEVATION:	735.11 FT

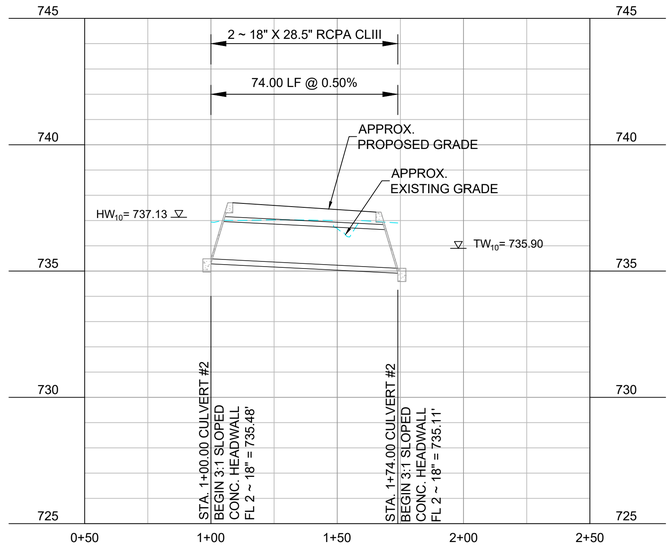
EVENT (YR)	FLOW (CFS)	WATER SURFACE ELEVATION (FT)	DEPTH (FT)	VELOCITY (FT/S)	SHEAR (PSF)	FROUDE NUMBER
-	0.00	735.11	0.00	0.00	0.00	
-	4.35	735.43	0.32	1.98	0.08	
-	8.70	735.58	0.47	2.50	0.12	
-	13.04	735.70	0.59	2.85	0.15	
2	17.39	735.80	0.69	3.11	0.17	
-	21.74	735.89	0.78	3.33	0.20	
10	22.00	735.90	0.79	3.34	0.20	
-	30.44	736.05	0.94	3.68	0.23	
-	34.78	736.12	1.01	3.83	0.25	
-	39.13	736.18	1.07	3.96	0.27	
100	43.48	736.24	1.13	4.08	0.28	

CULVERT SUMMARY TABLE:

EVENT (YR)	TOTAL DISCHARGE (CFS)	CULVERT DISCHARGE (CFS)	HEADWATER ELEVATION (FT)	INLET CONTROL DEPTH (FT)	OUTLET CONTROL DEPTH (FT)	FLOW TYPE	NORMAL DEPTH (FT)	CRITICAL DEPTH (FT)	OUTLET DEPTH (FT)	TAILWATER DEPTH (FT)	OUTLET VELOCITY (FT/S)	TAILWATER VELOCITY (FT/S)
-	0.00	0.00	735.48	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
-	4.35	4.35	736.01	0.53	0.03	1-S2n	0.35	0.37	0.35	0.32	3.30	1.98
-	8.70	8.70	736.27	0.79	0.28	1-S2n	0.51	0.55	0.51	0.47	4.13	2.50
-	13.04	13.04	736.53	1.05	0.54	1-S2n	0.66	0.70	0.66	0.59	4.66	2.85
2	17.39	17.39	736.79	1.31	0.83	1-S2n	0.80	0.81	0.80	0.69	5.03	3.11
-	21.74	21.74	737.12	1.59	1.64	7-M2c	0.95	0.93	0.93	0.78	5.56	3.33
10	22.00	22.00	737.13	1.61	1.65	7-M2c	0.96	0.93	0.93	0.79	5.59	3.34
-	30.44	30.44	737.70	2.22~	2.11	7-M2c	1.50	1.12	1.12	0.94	6.55	3.68
-	34.78	30.76	737.73	2.25~	2.13	7-M2c	1.50	1.13	1.13	1.01	6.59	3.83
-	39.13	31.83	737.82	2.34~	2.21	7-M2c	1.50	1.15	1.15	1.07	6.71	3.96
100	43.48	32.66	737.88	2.40~	2.28	7-M2c	1.50	1.16	1.16	1.13	6.81	4.08

NOTES:

1. CULVERT DESIGNED FOR THE ATLAS-14 10YR STORM EVENT.



DRIVEWAY CULERT #2

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7 July 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOM'D
REVISIONS
DATE
No.

SHEET TITLE:

DRIVEWAY CULVERT #2

WP PROJECT NO.:

135-002

SHEET NO.:

C-17

CULVERT ID: CULVERT #2

* ANALYSIS - HY-8 (VER 7.5)
* ATLAS-14 UTILIZED

SITE DATA:

INLET STATION:	100.00 FT
INLET ELEVATION:	734.23 FT
OUTLET STATION:	200.00 FT
OUTLET ELEVATION:	734.91 FT
NUMBER OF BARRELS:	2

CULVERT DATA:

BARREL SHAPE:	CIRCULAR-ARCH
BARREL SPAN.:	28.5 IN
BARREL RISE.:	18 IN
BARREL MATERIAL:	CONCRETE
BARREL MANNINGS'S N:	0.013
INLET TYPE:	CONVENTIONAL
INLET EDGE CONDITION:	SQUARE EDGE
INLET DEPRESSION:	NONE

OVERTOPPING PROFILE:

ROADWAY SURFACE: PAVED

IRREGULAR OVERTOPPING CROSS-SECTION COORDINATES:

COORD	STA.	ELEV.
1	0.00	737.00
2	12.50	737.10
3	25.00	737.00

TAILWATER CHANNEL DATA:

TAILWATER CHANNEL OPTION:	TRAPIZOIDAL
BOTTOM WIDTH:	6 FT
SIDE SLOPE:	3:1
CHANNEL SLOPE:	0.0040 FT/FT
CHANNEL MANNING'S N:	0.02
CHANNEL INVERT ELEVATION:	734.23 FT

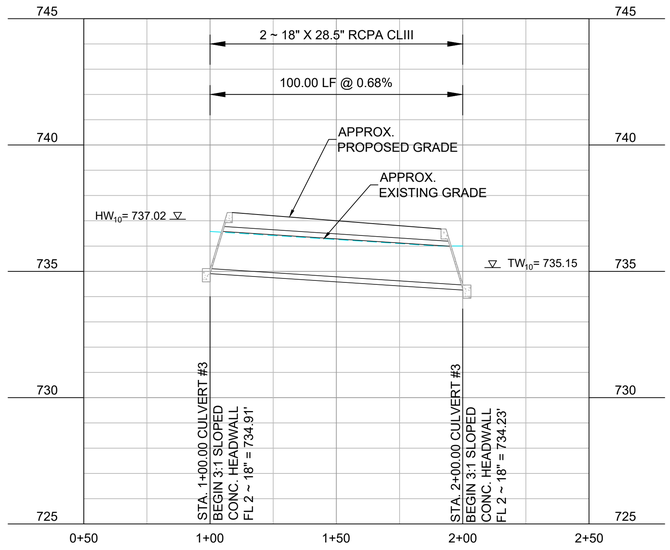
EVENT (YR)	FLOW (CFS)	WATER SURFACE ELEVATION (FT)	DEPTH (FT)	VELOCITY (FT/S)	SHEAR (PSF)	FROUDE NUMBER
-	0.00	734.23	0.00	0.00	0.00	
-	5.76	734.60	0.37	2.18	0.09	
-	11.53	734.78	0.55	2.74	0.14	
2	17.29	734.92	0.69	3.11	0.17	
-	23.06	735.04	0.81	3.39	0.20	
-	28.82	735.14	0.91	3.62	0.23	
10	29.05	735.15	0.92	3.63	0.23	
-	40.35	735.32	1.09	3.99	0.27	
-	46.11	735.40	1.17	4.15	0.29	
-	51.88	735.47	1.24	4.29	0.31	
100	57.64	735.54	1.31	4.42	0.33	

CULVERT SUMMARY TABLE:

EVENT (YR)	TOTAL DISCHARGE (CFS)	CULVERT DISCHARGE (CFS)	HEADWATER ELEVATION (FT)	INLET CONTROL DEPTH (FT)	OUTLET CONTROL DEPTH (FT)	FLOW TYPE	NORMAL DEPTH (FT)	CRITICAL DEPTH (FT)	OUTLET DEPTH (FT)	TAILWATER DEPTH (FT)	OUTLET VELOCITY (FT/S)	TAILWATER VELOCITY (FT/S)
-	0.00	0.00	734.91	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
-	5.76	5.76	735.53	0.62	0.0*	1-S2n	0.38	0.44	0.38	0.37	4.01	2.18
-	11.53	11.53	735.87	0.96	0.16	1-S2n	0.55	0.65	0.55	0.55	5.01	2.74
2	17.29	17.29	736.22	1.31	0.57	1-S2n	0.72	0.81	0.72	0.69	5.63	3.11
-	23.06	23.06	736.59	1.68	1.06	5-S2n	0.88	0.96	0.88	0.81	6.05	3.39
-	28.82	28.82	737.01	2.10	1.62	5-S2n	1.07	1.09	1.07	0.91	6.29	3.62
10	29.05	29.05	737.02	2.11	0.24	5-S2n	1.08	1.09	1.08	0.92	6.30	3.63
-	40.35	32.23	737.28	2.37~	2.19	7-M2c	1.50	1.15	1.15	1.09	6.76	3.99
-	46.11	33.21	737.36	2.45~	2.25	7-M2c	1.50	1.17	1.17	1.17	6.88	4.15
-	51.88	34.07	737.43	2.52~	2.31	3-M2t	1.50	1.19	1.24	1.24	6.75	4.29
100	57.64	34.84	737.50	2.59~	2.38	3-M2t	1.50	1.20	1.31	1.31	6.64	4.42

NOTES:

1. CULVERT DESIGNED FOR THE ATLAS-14 10YR STORM EVENT.



DRIVEWAY CULERT #3
SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

DRIVEWAY CULVERT #3

WP PROJECT NO.:

135-002

SHEET NO.:

C-18

K:\CAD\135-002 Applegate Circle\4 CAD\PLANS\SR\135-002 STORM.dwg 7/12/2024 11:30:11 AM JRW To PDF.pc3

NOTES:

1. CONCRETE PAVING SHALL HAVE TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS AT INTERVALS NOT EXCEEDING 12.5 FEET. DEPTH OF JOINTS SHALL BE AT LEAST 1/4 OF THE SLAB THICKNESS. THE JOINTS MUST BE SAW CUT AS SOON AS THE CONCRETE HAS HARDENED AND WILL NOT REAR OR RAVEL WHEN CUT, WITHIN 6-12 HOURS OF PLACEMENT.

2. SUPPORT REINFORCEMENT STEEL WITH CHAIRS OF PRECAST CONCRETE BLOCKS ABOUT 1 INCH BELOW THE BOTTOM OF THE PLANNED CONTRACTION JOINTS.

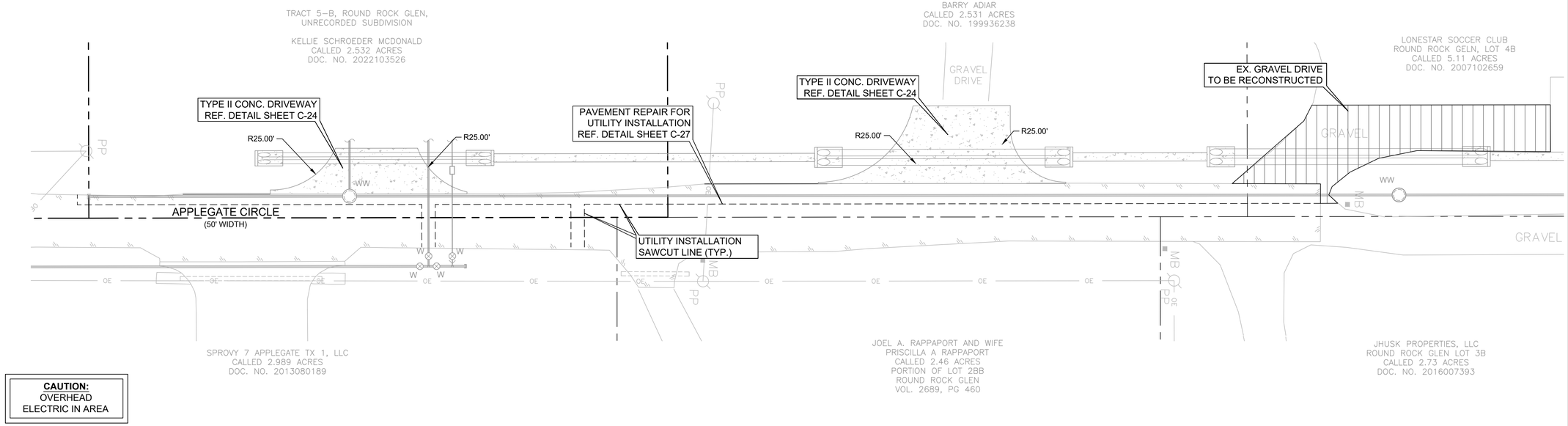
3. PROVIDE LOAD TRANSFER AT THE INTERFACE BETWEEN AREAS OF CONCRETE PLACED AT DIFFERENT TIMES USING TIED AND KEYED CONSTRUCTION JOINTS. PLACE CONSTRUCTION JOINT AT PLANNED CONTRACTION JOINT LOCATIONS.

4. ALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH CORR SPECIFICATION ITEM 360.

5. STAGE PAVEMENT CONSTRUCTION SUCH THAT CONSTRUCTION TRAFFIC, INCLUDING CONCRETE TRUCKS, DO NOT TRAVEL ON NEWLY PLACED CONCRETE PAVEMENT UNTIL THE CONCRETE ACHIEVES AT LEAST 75% OF THE DESIGN STRENGTH, USUALLY 7 DAYS.

6. FIRE ACCESS ALL WEATHER SURFACE (CONCRETE OR ASHPALT) IS REQUIRED FOR FIRE APPARTUS ACCESS ROADS BEFORE GOING VERTICAL WITH OR BRINGING CONBUSTIBLE MATERIALS TO THE CONSTRUCTION SITE. MUST SUPPORT 75,000 POUNDS. HYDRANTS AT THE CONSTRUCTION SITE SHALL BE IN SERVICE.

7. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.



CAUTION:
OVERHEAD
ELECTRIC IN AREA

0 10 20 40
HORIZONTAL SCALE

Texas 811
know what's **below.**
Call before you dig.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

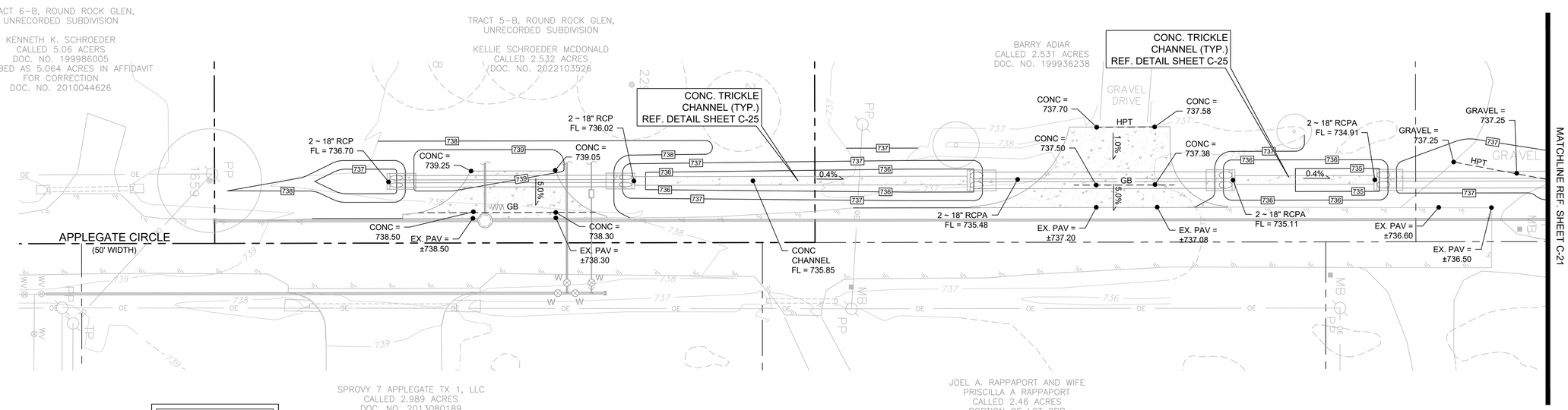
PAVING, SIGNAGE, & STRIPING PLAN

WP PROJECT NO.:

135-002

SHEET NO.:

C-19



CAUTION:
OVERHEAD
ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

0 10 20 40
HORIZONTAL SCALE

Texas 811
know what's **below.**
Call before you dig.

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CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

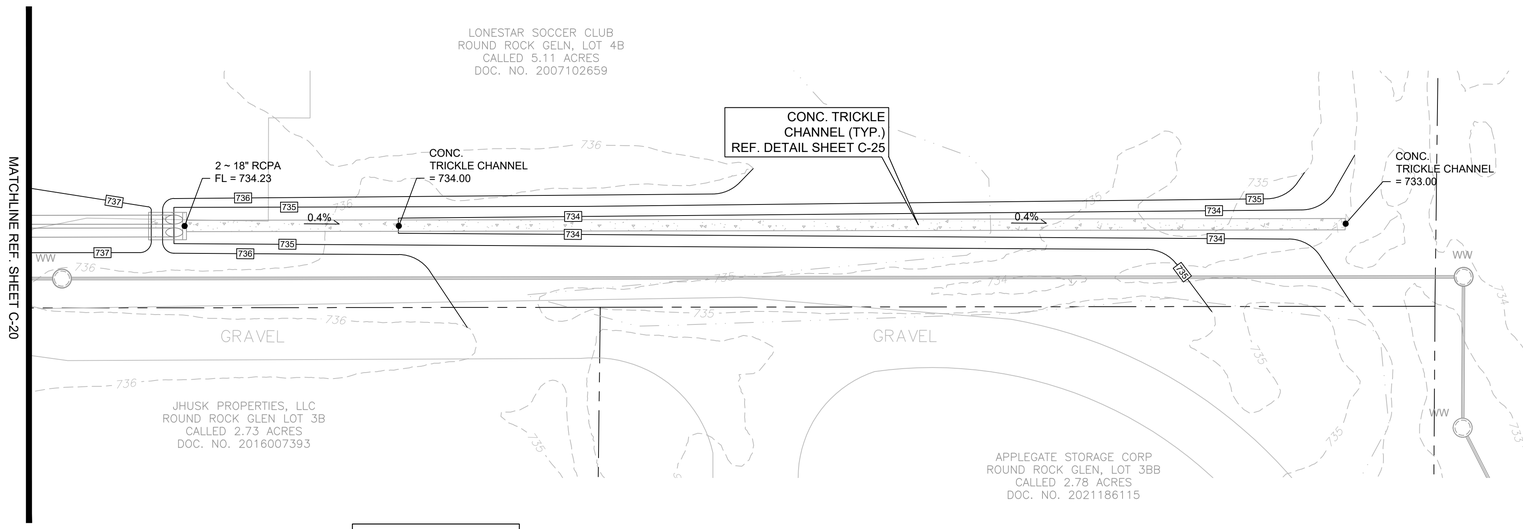
GRADING PLAN
(1 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-20



CAUTION:
OVERHEAD
ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

0 10 20 40
HORIZONTAL SCALE

Texas 811
know what's **below.**
Call before you dig.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE
SUBDIVISION
IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

GRADING PLAN
(2 OF 2)

WP PROJECT NO.:

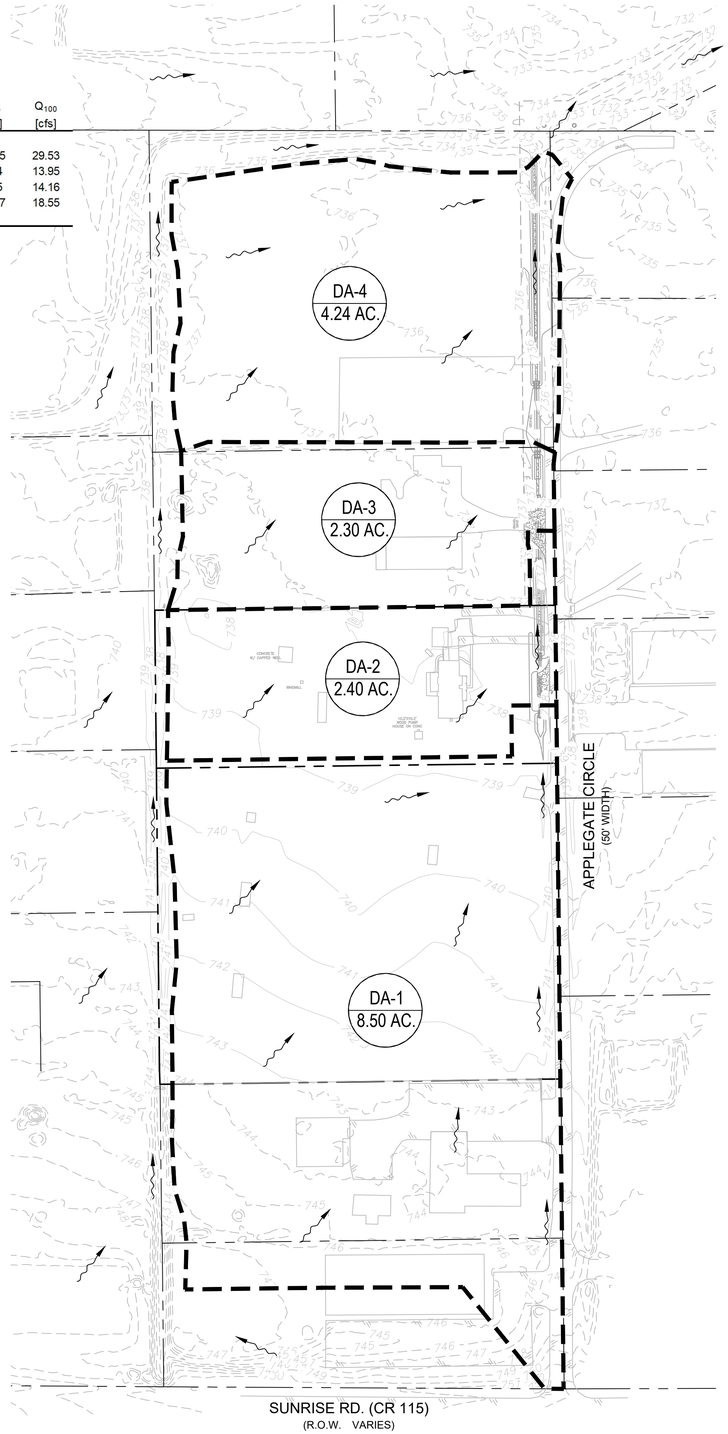
135-002

SHEET NO.:

C-21

PROPOSED CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
DA-1	8.40	30.0	15	0.36	0.42	0.46	0.54	2.93	4.25	5.11	6.51	8.86	14.99	19.75	29.53
DA-2	2.40	10.0	10	0.34	0.40	0.44	0.51	4.97	7.30	8.84	11.40	4.06	7.01	9.34	13.95
DA-3	2.30	10.0	15	0.36	0.42	0.46	0.54	4.97	7.30	8.84	11.40	4.12	7.05	9.35	14.16
DA-4	4.24	20.0	15	0.36	0.42	0.46	0.54	3.63	5.27	6.34	8.10	5.54	9.38	12.37	18.55



0 15 30 60
HORIZONTAL SCALE

LEGEND

DRAINAGE BOUNDARY

FLOW DIRECTION

NOTE:

1. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

OFF-SITE SURVEY DATA
(GIS 1-FT DASHED CONTOURS SHOWN)

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

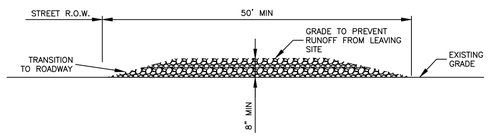
DRAINAGE AREA MAP

WP PROJECT NO.:

135-002

SHEET NO.:

C-22



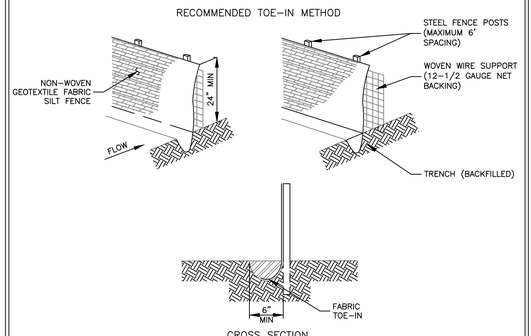
CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" – 8" OPEN GRADED ROCK.
2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.
6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)	CITY OF ROUND ROCK STABILIZED CONSTRUCTION ENTRANCE DETAIL	DRAWING NO: EC-09 ROUND ROCK, TEXAS PUBLIC WORKS DEPARTMENT

STABILIZED CONSTRUCTION ENTRANCE
NTS



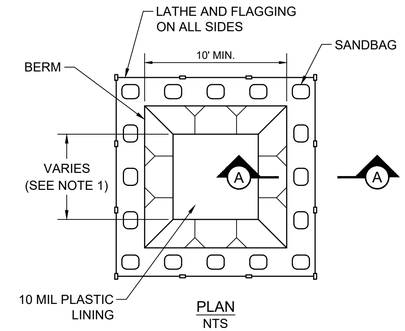
CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)	CITY OF ROUND ROCK SILT FENCE DETAIL	DRAWING NO: EC-10 ROUND ROCK, TEXAS PUBLIC WORKS DEPARTMENT

SILT FENCE
NTS



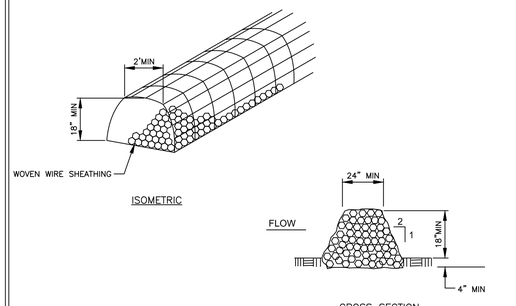
INSTALLATION NOTES:

1. 10' MIN. OR AS REQUIRED TO CONTAIN WASTE CONCRETE.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
4. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER EVERY STORM EVENT.

TEMPORARY CONCRETE TRUCK WASHOUT AREA
NTS



NOTES:

1. USE ONLY OPEN GRADED ROCK (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/ OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH OF 6", THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)	CITY OF ROUND ROCK ROCK BERM DETAIL	DRAWING NO: EC-12 ROUND ROCK, TEXAS PUBLIC WORKS DEPARTMENT

ROCK BERM
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

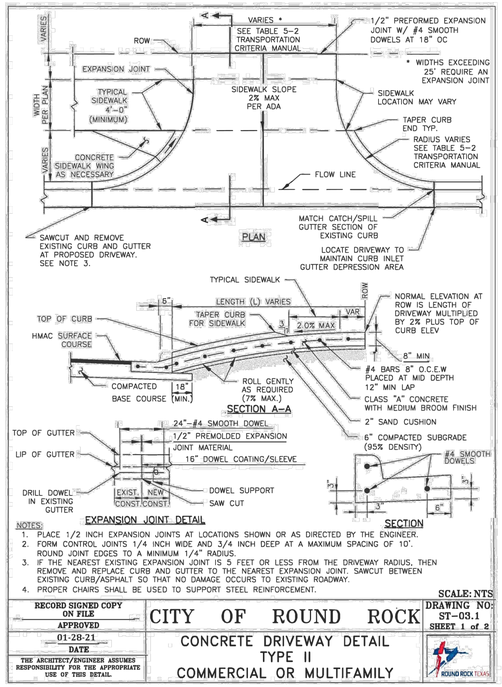
ESC DETAILS

WP PROJECT NO.:

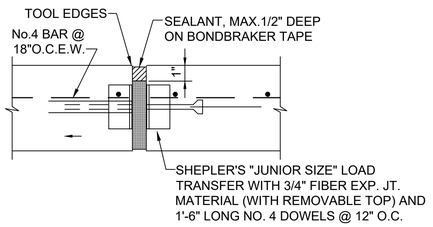
135-002

SHEET NO.:

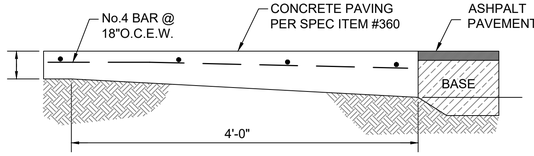
C-23



DRIVEWAY DETAIL
NTS

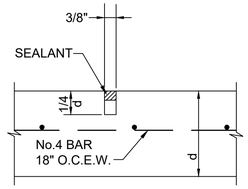


PAVING EXPANSION JOINT

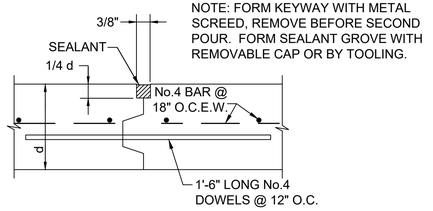


ASPHALT/CONCRETE TRANSITION

RIGID PAVEMENT DETAILS
NTS

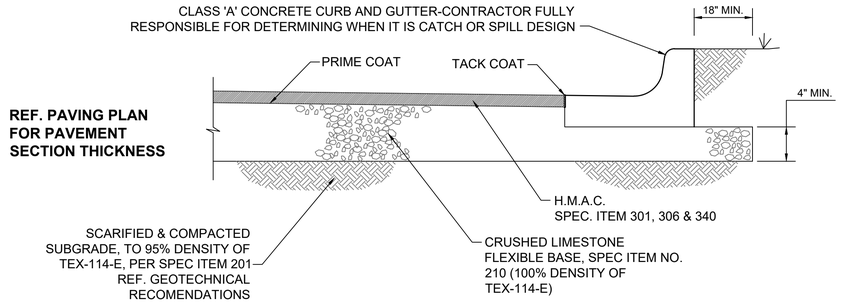


PAVING CONTROL JOINT



PAVING CONSTRUCTION JOINT

REF. PAVING PLAN FOR PAVEMENT SECTION THICKNESS



TYPICAL SECTION

FLEXIBLE PAVEMENT DETAILS
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

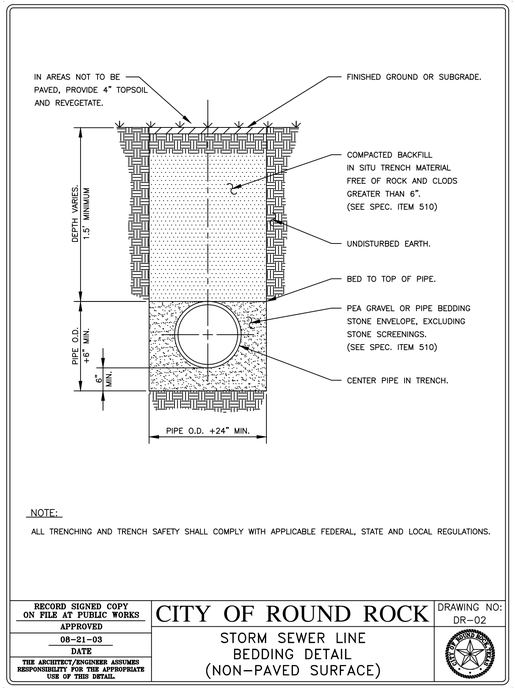
SITE DETAILS

WP PROJECT NO.:

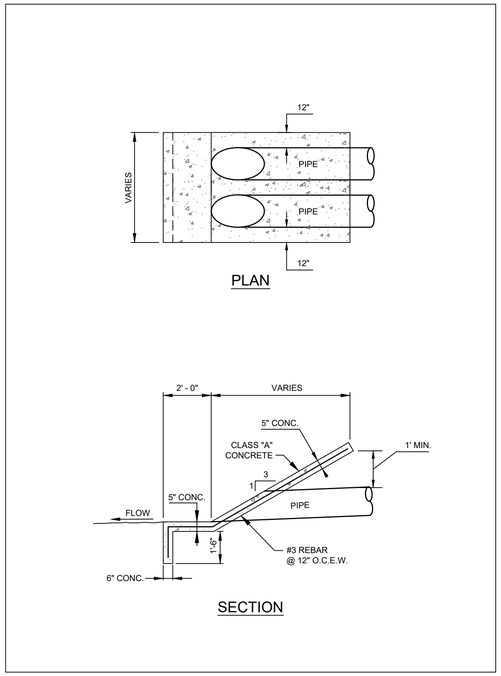
135-002

SHEET NO.:

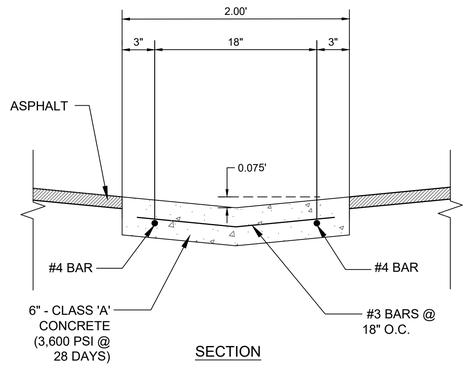
C-24



STORM SEWER LINE BEDDING DETAIL
NTS



DOUBLE PIPE 3:1 CONCRETE SLOPED HEADWALL
NTS



1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 10'-0'.
3. EXPANSION JOINTS AS PER STANDARD ASTM D-1752.
4. EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0".

CONCRETE TRICKLE CHANNEL
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

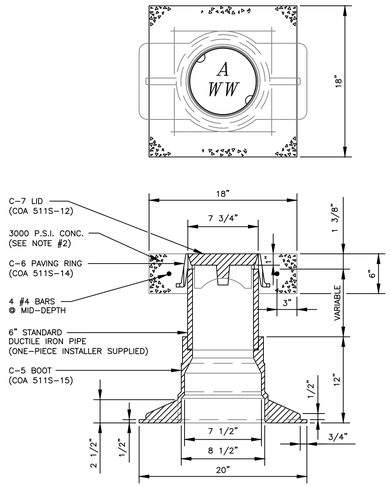
STORM DETAILS

WP PROJECT NO.:

135-002

SHEET NO.:

C-25

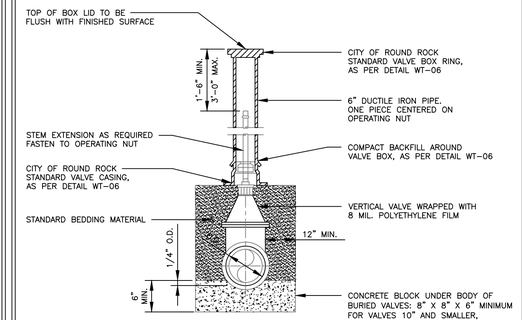


NOTES:

1. NUMBERED CASTINGS STANDARDS SHOWN IN PARENTHESES ARE REFERENCES TO THE CITY OF AUSTIN STANDARDS CRITERIA MANUAL.
2. DELETE CONCRETE AND REBAR WHEN VALVE IS WITHIN PAVED STREET.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-06
APPROVED 03-01-18 DATE	VALVE BOX ASSEMBLY DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

VALVE BOX ASSEMBLY
NTS

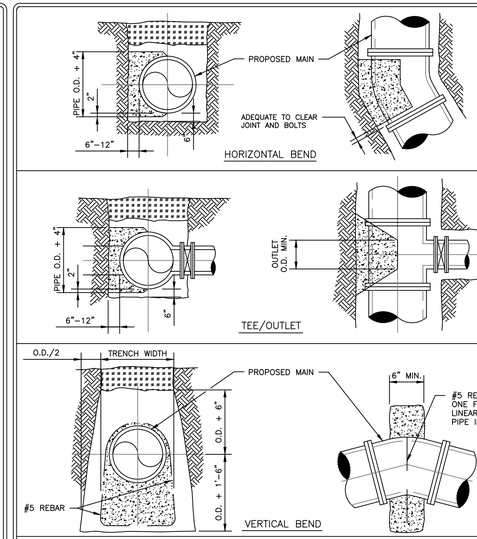


NOTES:

1. ALL VALVES AND VALVE CANS SHALL BE ACCESSIBLE FOR OPERATION ONCE THE NEW WATERLINE IS PUT INTO SERVICE. BURYING LINE VALVES IS PROHIBITED.
2. ALL VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED "V" ON FACE OF CURB.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-11
APPROVED 03-01-18 DATE	VERTICAL VALVE INSTALLATION DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

VERTICAL VALVE INSTALLATION
NTS



THRUST BLOCK DESIGN AS FOLLOWS:

A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50% SURGE ALLOWANCE

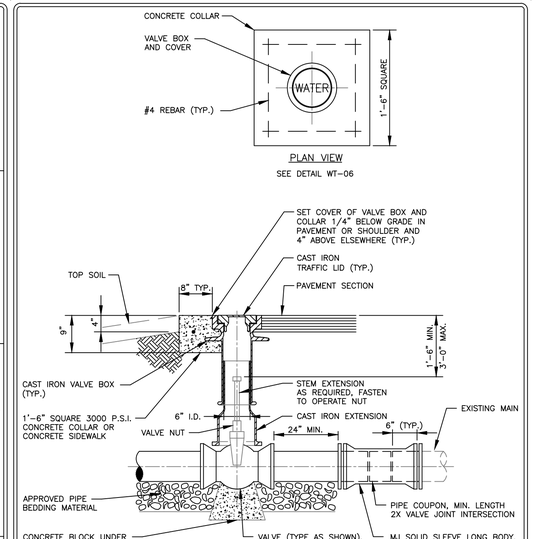
B. MAXIMUM SOIL BEARING:

SOIL TYPE	PRESSURE
LIMESTONE	4000 LBS./SQ. FT.
UNDISTURBED SOIL, CALICHE	2000 LBS./SQ. FT.
LOOSE OR SPONGY SOIL	1500 LBS./SQ. FT.

C. ALL PIPE & FITTING TO BE WRAPPED WITH 40 PLASTIC MIL.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-25
APPROVED 03-01-18 DATE	THRUST BLOCK DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

THRUST BLOCK
NTS



RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-22
APPROVED 03-01-18 DATE	GATE VALVE DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

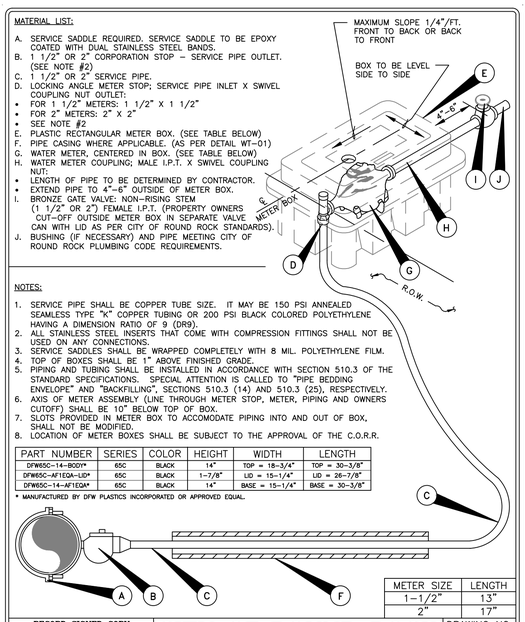
GATE VALVE
NTS

MATERIAL LIST:

A. SERVICE SADDLE REQUIRED. SERVICE SADDLE TO BE EPOXY COATED WITH DUAL STAINLESS STEEL BANDS.
B. 1 1/2" OR 2" CORPORATION STOP – SERVICE PIPE OUTLET. (SEE NOTE #2)
C. 1 1/2" OR 2" SERVICE PIPE.
D. LOCKING ANGLE METER STOP; SERVICE PIPE INLET X SWIVEL COUPLING NUT OUTLET:
- FOR 1 1/2" METERS: 1 1/2" X 1 1/2"
- FOR 2" METERS: 2" X 2"
- SEE NOTE #2

E. PLASTIC RECTANGULAR METER BOX. (SEE TABLE BELOW)
F. PIPE CASING WHERE APPLICABLE. (AS PER DETAIL WT-01)
G. WATER METER, CENTERED IN BOX. (SEE TABLE BELOW)
H. WATER METER COUPLING; MALE I.P.T. X SWIVEL COUPLING NUT;
- LENGTH OF PIPE TO BE DETERMINED BY CONTRACTOR.
- EXTEND PIPE TO 4"-6" OUTSIDE OF METER BOX.

I. BRONZE GATE VALVE; NON-RISING STEM (1 1/2" OR 2") FEMALE I.P.T. (PROPERTY OWNERS CUT-OFF OUTSIDE METER BOX IN SEPARATE VALVE CAN WITH LID AS PER CITY OF ROUND ROCK STANDARDS).
J. BUSHING (IF NECESSARY) AND PIPE MEETING CITY OF ROUND ROCK PLUMBING CODE REQUIREMENTS.



NOTES:

1. SERVICE PIPE SHALL BE COPPER TUBE SIZE. IT MAY BE 150 PSI ANNEALED SEAMLESS TYPE "K" COPPER TUBING OR 200 PSI BLACK COLORED POLYETHYLENE HAVING A DIMENSION RATIO OF 9 (DR9).
2. ALL STAINLESS STEEL INSERTS THAT COME WITH COMPRESSION FITTINGS SHALL NOT BE USED ON ANY CONNECTIONS.
3. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
4. TOP OF BOXES SHALL BE 1" ABOVE FINISHED GRADE.
5. PIPING AND TUBING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 510.3 OF THE STANDARD SPECIFICATIONS. SPECIAL ATTENTION IS CALLED TO "PIPE BEDDING ENVELOPE" AND "BACKFILLING", SECTIONS 510.3 (14) AND 510.3 (25), RESPECTIVELY.
6. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, PIPING AND OWNERS CUTOFF) SHALL BE 10" BELOW TOP OF BOX.
7. SLOTS PROVIDED IN METER BOX TO ACCOMODATE PIPING INTO AND OUT OF BOX, SHALL NOT BE MODIFIED.
8. LOCATION OF METER BOXES SHALL BE SUBJECT TO THE APPROVAL OF THE C.O.R.R.

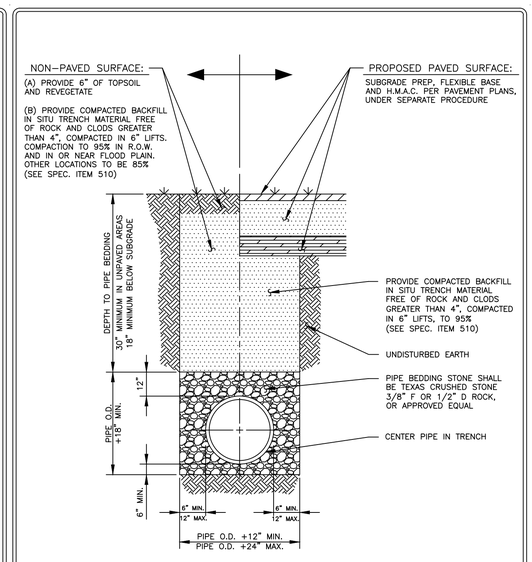
PART NUMBER	SERIES	COLOR	HEIGHT	WIDTH	LENGTH
DFW65C-14-BODY*	65C	BLACK	14"	TOP = 18-3/4"	TOP = 30-3/8"
DFW65C-AF1EQA-LID*	65C	BLACK	1-7/8"	LID = 15-1/4"	LID = 26-7/8"
DFW65C-14-AF1EQA*	65C	BLACK	14"	BASE = 15-1/4"	BASE = 30-3/8"

* MANUFACTURED BY DFW PLASTICS INCORPORATED OR APPROVED EQUAL.

METER SIZE	LENGTH
1-1/2"	13"
2"	17"

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-03
APPROVED 03-01-18 DATE	SINGLE 1-1/2" OR 2" WATER METER DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

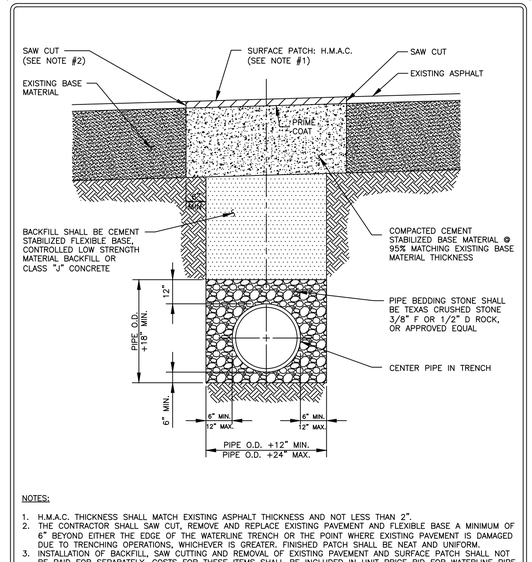
WATER METER
NTS



NOTE:

1. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-08
APPROVED 03-01-18 DATE	WATERLINE BEDDING AND SURFACE REPAIR DETAIL (NON-PAVED & PROPOSED PAVED SURFACE)	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTES:

1. H.M.A.C. THICKNESS SHALL MATCH EXISTING ASPHALT THICKNESS AND NOT LESS THAN 2".
2. THE CONTRACTOR SHALL SAW CUT, REMOVE AND REPLACE EXISTING PAVEMENT AND FLEXIBLE BASE A MINIMUM OF 6" BEYOND EITHER THE EDGE OF THE WATERLINE TRENCH OR THE POINT WHERE EXISTING PAVEMENT IS DAMAGED DUE TO TRENCHING OPERATIONS, WHICHEVER IS GREATER. FINISHED PATCH SHALL BE NEAT AND UNIFORM.
3. INSTALLATION OF BACKFILL, SAW CUTTING AND REMOVAL OF EXISTING PAVEMENT AND SURFACE PATCH SHALL NOT BE PAID FOR SEPARATELY. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN UNIT PRICE BID FOR WATERLINE PIPE.
4. THE CONTRACTOR SHALL PROVIDE STEEL PLATES TO SPAN THE TRENCH AS NECESSARY OR TO ALLOW BACKFILL TO CURE. SUCH PLATES SHALL BE SUITABLE FOR VEHICLE PASSAGE OVER THE TRENCH AND SHALL BE SATISFACTORILY ANCHORED IN PLACE. COSTS FOR THIS ITEM SHALL BE INCLUDED IN UNIT PRICE BID FOR WATERLINE PIPE.
5. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-07
APPROVED 03-01-18 DATE	WATERLINE BEDDING AND SURFACE REPAIR DETAIL (EXISTING PAVED SURFACE)	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

WATERLINE BEDDING AND SURFACE REPAIR
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
4-12-24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

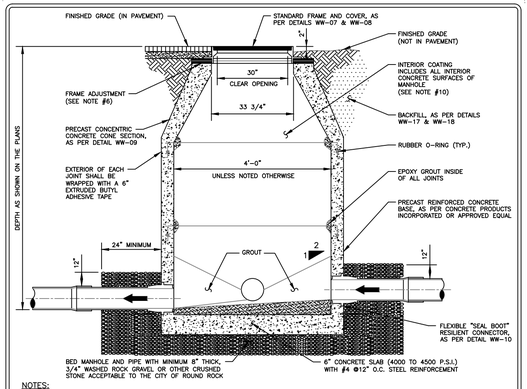
WATER DETAILS

WP PROJECT NO.:

135-002

SHEET NO.:

C-26

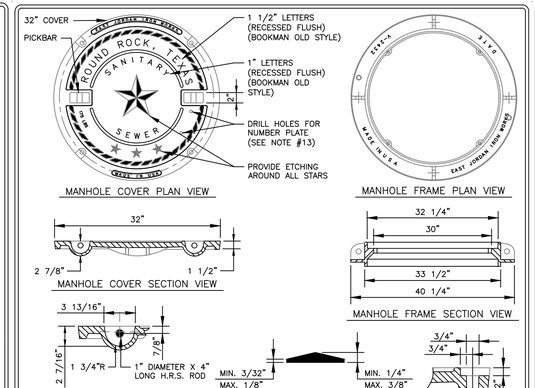


NOTES:

1. IF DROP IS SIX INCHES (6") TO TWO FEET (2'-0"), CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED INVERT TO EXTEND UNDER THE DROP CONNECTION.
2. SEE CONSTRUCTION PLANS FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZES AND TYPES.
3. MANHOLES SHALL BE PRECAST A.S.T.M. C478 BELL AND SPIGOT WITH "O" RING JOINTS.
4. MANHOLES TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR H20 TRAFFIC LOADING.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED, WHEN MANHOLES ARE LOCATED OUTSIDE OF PAVEMENT.
6. FRAME ADJUSTMENT HEIGHT SHALL CONSIST OF FIVE INCHES (5") MINIMUM TO EIGHTEEN INCHES (18") MAXIMUM. GRADE RINGS SHALL BE GROUTED WITH A NON-SHRINK GROUT INSIDE AND OUTSIDE. HDPE GRADE RINGS, MAY NOT BE USED.
7. FOR MANHOLES TO BE VENTED, SEE DETAILS WW-05 AND WW-06.
8. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO THE FLOW STREAM. ALL P.V.C. PIPE SHALL BE REMOVED FROM INVERT.
9. BASE SECTION SHALL BE DESIGNED FOR H20 LOADING, PLUS EARTH LOAD AT 130 PCF.
10. ENTIRE INTERIOR CONCRETE SURFACES OF WASTEWATER MANHOLES TO BE COATED WITH RAVEN 405, SPRAYWALL, OR APPROVED EQUAL, (WITH A UNIFORM THICKNESS OF 124 MILS AND A MINIMUM THICKNESS OF 100 MILS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST). FOR REHABILITATING MANHOLES 1/2" MINIMUM THICKNESS CALCIUM ALUMINATE CEMENTITIOUS COATING AND OTHER INTERIOR SURFACES MAY BE COATED IF RECOMMENDED BY COATING MANUFACTURER. (IN LIEU OF INTERIOR COATINGS NEW PRECAST MANHOLES CONTAINING CONSHIELD WILL BE ACCEPTED PROVIDING THE MANUFACTURER STENCILS "CONSHIELD" ON THE INSIDE AND OUTSIDE OF ALL MANHOLE SECTIONS.)

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-01
APPROVED 03-01-18 DATE	PRECAST CONCRETE WASTEWATER MANHOLE DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

PRECAST WASTEWATER MANHOLE
NTS

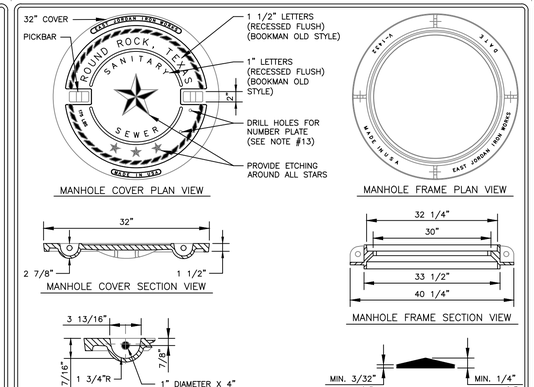


NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER: V-2432-3 (PRODUCT NUMBER: 42432033), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER: V-2432 (PRODUCT NUMBER: 42432010), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-2432 (PRODUCT NUMBER: 42432073), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. BOLTS SHALL BE 5/8"-11NC X 2" LONG HEX STAINLESS STEEL WITH WASHER.
13. MANUFACTURER SHALL DRILL 2-3/16" X 1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF ROUND ROCK. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-07
APPROVED 03-01-18 DATE	BOLTED WASTEWATER MANHOLE COVER AND FRAME DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

BOLTED WASTEWATER MANHOLE COVER
NTS

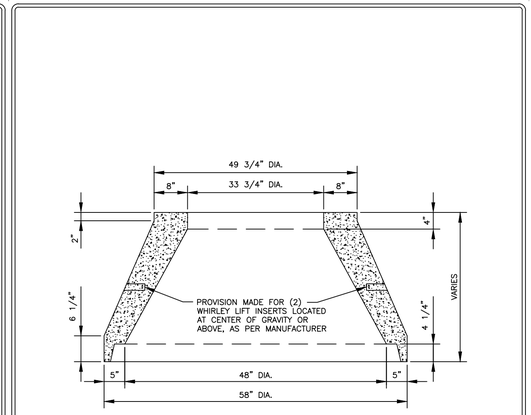


NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER: V-1432-3 (PRODUCT NUMBER: 41432059), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432010), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432089), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. MANUFACTURER SHALL DRILL 2-3/16" X 1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF ROUND ROCK. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-08
APPROVED 03-01-18 DATE	NON-BOLTED WASTEWATER MANHOLE COVER AND FRAME DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

NON-BOLTED WASTEWATER MANHOLE COVER
NTS

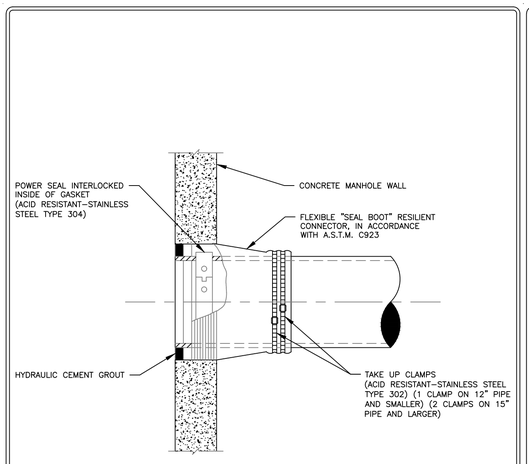


NOTE:

CONCENTRIC CONCRETE CONE SECTION SHALL BE MANUFACTURED USING 4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH AND IN ACCORDANCE WITH A.S.T.M. C478, AS MANUFACTURED BY CONCRETE PRODUCTS INCORPORATED, OR APPROVED EQUAL.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-09
APPROVED 03-01-18 DATE	PRECAST 48" CONCENTRIC CONCRETE CONE SECTION DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

PRECAST CONCENTRIC CONCRETE CONE SECTION
NTS

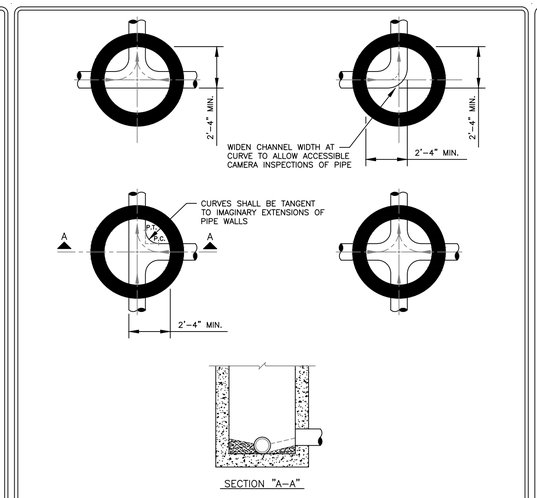


NOTE:

1. FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR TO BE A MINIMUM OF 12 INCHES (12") FROM A MANHOLE JOINT.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-10
APPROVED 03-01-18 DATE	FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR
NTS

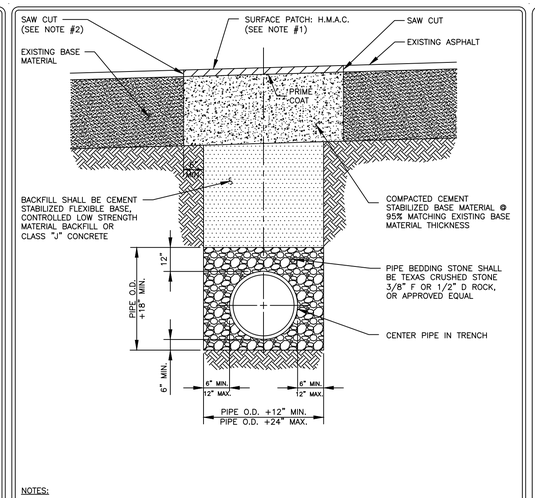


NOTES:

1. MINIMUM DROP FROM INLET TO OUTLET OF MANHOLE IS 0.1 FEET AND MAXIMUM DROP IS 2 FEET, UNLESS SPECIAL APPROVAL IS OBTAINED FROM THE CITY OF ROUND ROCK.
2. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
3. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
4. CHANNELS FOR FUTURE CONSTRUCTIONS, SHALL BE CONSTRUCTED WITH PIPE EXTENDING 3' BEYOND EXTERIOR OF MANHOLE WALL, WITH GLUED PLUG.
5. SLOPE MANHOLE BENCH AT 2:1 SLOPE FROM MANHOLE WALL TO CHANNEL.
6. INVERT CHANNEL SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR FOUR INCHES (4") DEEP.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-11
APPROVED 03-01-18 DATE	WASTEWATER FLOW PATTERNS FOR INVERT CHANNELS DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

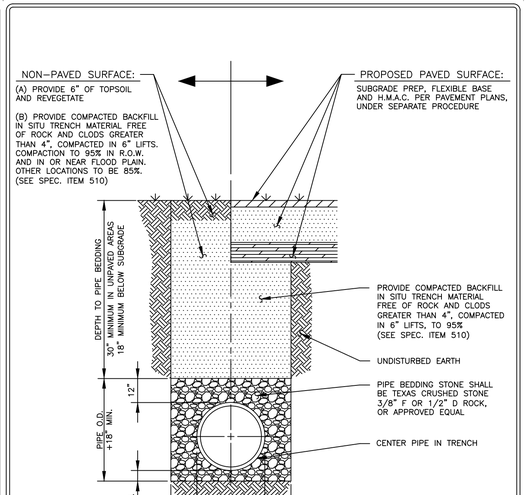
WASTEWATER FLOW PATTERNS
NTS



NOTES:

1. H.M.A.C. THICKNESS SHALL MATCH EXISTING ASPHALT THICKNESS AND NO LESS THAN 2".
2. THE CONTRACTOR SHALL SAW CUT, REMOVE AND REPLACE EXISTING PAVEMENT AND FLEXIBLE BASE A MINIMUM OF 6" BEYOND EITHER THE EDGE OF THE WASTEWATER LINE TRENCH OR THE POINT WHERE EXISTING PAVEMENT IS DAMAGED DUE TO TRENCHING OPERATIONS, WHICHEVER IS GREATER. FINISHED PATCH SHALL BE NEAT AND UNIFORM.
3. INSTALLATION OF BACKFILL, SAW CUTTING AND REMOVAL OF EXISTING PAVEMENT AND SURFACE PATCH SHALL NOT BE PAID FOR SEPARATELY. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN UNIT PRICE BID FOR WASTEWATER PIPE.
4. THE CONTRACTOR SHALL PROVIDE STEEL PLATES TO SPAN THE TRENCH AS NECESSARY OR TO ALLOW BACKFILL TO CURE. SUCH PLATES SHALL BE SUITABLE FOR VEHICLE PASSAGE OVER THE TRENCH AND SHALL BE SATISFACTORILY ANCHORED IN PLACE. COSTS FOR THIS ITEM SHALL BE INCLUDED IN UNIT PRICE BID FOR WASTEWATER PIPE.
5. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-17
APPROVED 03-01-18 DATE	WASTEWATER LINE BEDDING AND SURFACE REPAIR DETAIL (EXISTING PAVED SURFACE)	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-18
APPROVED 03-01-18 DATE	WASTEWATER LINE BEDDING AND SURFACE REPAIR DETAIL (NON-PAVED & PROPOSED PAVED SURFACE)	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

WASTEWATER LINE BEDDING & SURFACE REPAIR
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

ANTONIO A. PRIETE 93759 LICENSED PROFESSIONAL ENGINEER

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOMD | REVISIONS | DATE | No.

SHEET TITLE:

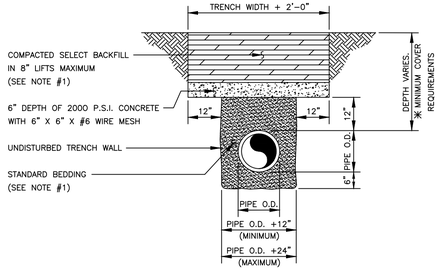
WASTEWATER DETAILS (1 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-27

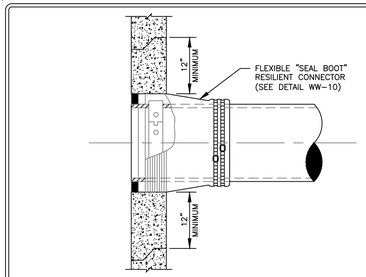


NOTE:

1. REFERENCE WATERLINE BEDDING AND SURFACE REPAIR DETAIL WT-08 & WASTEWATER LINE AND SURFACE REPAIR DETAIL WW-18 FOR PIPE BEDDING/BACKFILL REQUIREMENTS AND MINIMUM COVER REQUIREMENTS.
2. REQUIREMENTS FOR CONCRETE TRENCH CAPS IN WATERWAYS AND DRAINAGE AREAS NEED TO BE REVIEWED ON A CASE BY CASE BASIS AND APPROVED BY THE CITY ENGINEER AND INSPECTOR.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-20
APPROVED 03-01-18 DATE	CONCRETE TRENCH CAP DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

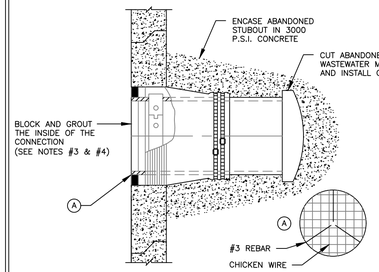
CONCRETE TRENCH CAP
NTS



NEW CONNECTIONS TO EXISTING WASTEWATER MANHOLES

NOTES:

1. EXISTING MANHOLES TO BE VACUUM TESTED PRIOR TO ANY CONNECTIONS.
2. NEW CONNECTIONS TO HAVE MINIMUM VERTICAL AND HORIZONTAL SEPARATION OF 12" ON THE OUTSIDE FACE OF THE MANHOLE FROM ANY EXISTING PENETRATIONS AND/OR MANHOLE JOINTS.
3. CONNECTIONS MADE INTO EXISTING MANHOLES ARE TO BE CORED AND NOT DRILLED/CHISELED.
4. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM THE NEW WASTEWATER CONNECTION.
5. EXISTING MANHOLES TO BE RECOATED AFTER ANY NEW WASTEWATER CONNECTION IS ADDED.



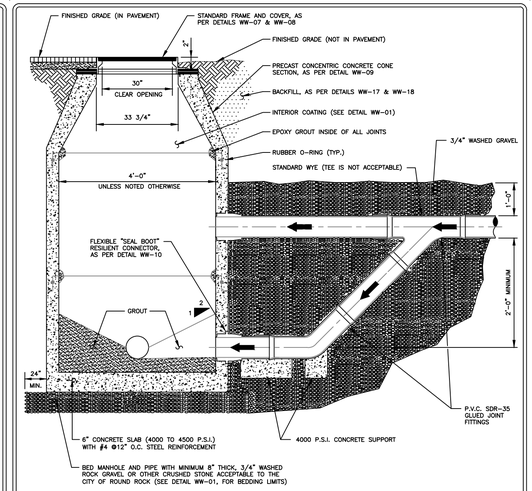
ABANDONMENT OF CONNECTIONS TO EXISTING WASTEWATER MANHOLES

NOTES:

1. THIS DETAIL IS INTENDED FOR WASTEWATER MANHOLES THAT WILL REMAIN IN SERVICE. FOR WASTEWATER MANHOLES THAT ARE TO BE ABANDONED, REFERENCE DETAIL WW-15.
2. WASTEWATER MANHOLE TO BE RECOATED AFTER GROUT IS INSTALLED.
3. BLOCK THE INLET OF THE MANHOLE WITH CHICKEN WIRE AND 3-#3 REBAR. GROUT THE INSIDE OF THE MANHOLE FLUSH WITH THE MANHOLE WALL.
4. CONNECTIONS 24" AND LARGER REQUIRE BRICK BLOCKING TO BE INSTALLED PRIOR TO GROUTING.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-21
APPROVED 03-01-18 DATE	EXISTING WASTEWATER MANHOLE CONNECTION DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

EXISTING WASTEWATER CONNECTION
NTS



NOTES:

1. SEE NOTES #2 THROUGH #10 ON DETAIL WW-01.
2. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED MORE THAN TWO FEET (2'-0") ABOVE THE MAIN INVERT CHANNEL.
3. WHEN P.V.C. PIPE IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS TO BE UTILIZED IN THE DROP ASSEMBLY ONLY. FITTINGS TO BE P.V.C. SDR-35 WITH TWO PART WATER RESISTANT GLUE AT ALL JOINTS.

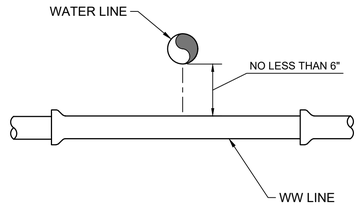
RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-02
APPROVED 03-01-18 DATE	PRECAST CONCRETE WASTEWATER MANHOLE WITH DROP CONNECTION DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

DROP MANHOLE
NTS

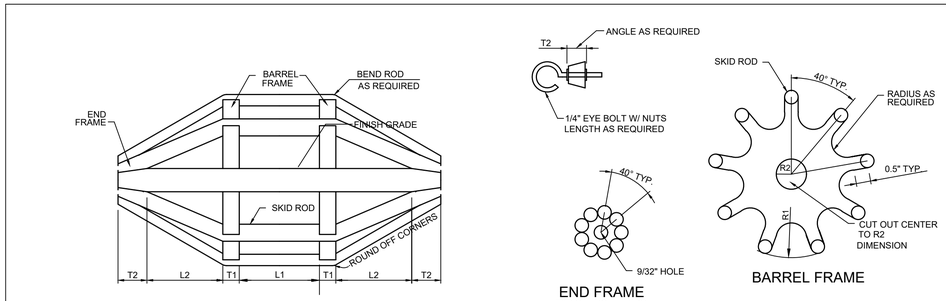
*DETAIL SHOWN FOR TCEQ REFERENCE ONLY.

NOTE:

WHERE A SEWER LINE CROSSES A WATER LINE, ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. CENTER 1 JOINT OF WASTEWATER LINE ON CROSSING.



LINE CROSSING
NTS



END FRAME
TYPICAL BOTH ENDS

BARREL FRAME

SIZE	TYPE	O.D. AVERAGE	MIN. WALL THICKNESS	R1	R2	L1	L2	T1	T2	ROD DIAMETER
6"	D3034 SDR35	6.275	0.180	2.810	0.750	4.500	6.000	0.375	1.000	0.375
6"	D3034 SDR26	6.275	0.241	2.750	1.750	4.500	6.000	0.375	1.000	0.375
6"	D2241 SDR26	6.625	0.255	2.900	0.750	4.500	6.000	0.375	1.000	0.375
8"	D3034 SDR35	8.400	0.241	3.760	1.250	6.000	6.000	0.375	1.000	0.375
8"	D3034 SDR26	8.400	0.323	3.680	1.250	6.000	6.000	0.375	1.000	0.375
8"	D2241 SDR26	8.625	0.331	3.780	1.250	6.000	6.000	0.375	1.000	0.375
10"	D3034 SDR35	10.50	0.300	4.700	1.500	7.500	6.000	0.375	1.000	0.375
10"	D3034 SDR26	10.50	0.404	4.600	1.500	7.500	6.000	0.375	1.000	0.375
10"	D2241 SDR26	10.75	0.413	4.710	1.500	7.500	6.000	0.375	1.000	0.375
12"	D3034 SDR35	12.50	0.357	5.600	1.750	9.000	6.000	0.375	1.000	0.375
12"	D3034 SDR26	12.50	0.481	5.480	1.750	9.000	6.000	0.375	1.000	0.375
12"	D2241 SDR26	12.75	0.490	5.590	1.750	9.000	6.000	0.375	1.000	0.375
15"	D3034 SDR35	15.30	0.437	6.850	2.000	11.250	6.000	0.375	1.000	0.375
15"	D3034 SDR26	15.30	0.588	6.710	2.000	11.250	6.000	0.375	1.000	0.375
16"	D2241 SDR26	16.0	0.615	7.010	2.000	11.250	6.000	0.375	1.000	0.375
18"	F679 T-1	18.701	0.536	8.060	2.500	13.500	9.000	0.500	1.500	0.500
21"	F679 T-1	22.047	0.632	9.500	3.000	150.750	9.000	0.500	1.500	0.500
24"	F679 T-1	24.803	0.711	10.680	3.500	18.000	9.000	0.500	1.500	0.500
27"	F679 T-1	27.953	0.801	12.030	4.000	20.25	9.000	0.500	1.500	0.500

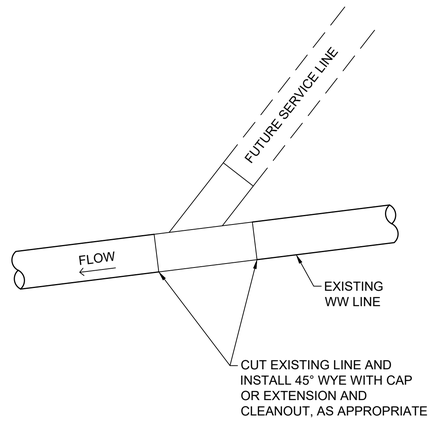
*MANDREL SHALL HAVE AN OUTSIDE DIAMETER (O.D.) EQUAL TO 95% OF THE INSIDE DIAMETER (I.D.) OF THE PIPE.

NOTES:

1. MANDREL SHALL BE CONSTRUCTED OF METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200PSI WITHOUT BEING DEFORMED.
2. AFTER WELDING IS COMPLETED, TRUE THE OUTSIDE DIAMETER DIMENSION. FOR THE FULL LENGTH OF "B" TO 0.010".
3. A PROVING RING SHALL BE PROVIDED AND USED FOR EACH SIZE MANDREL IN USE.
4. MANDREL OD MUST BE EQUAL TO 95% OF THE ID OF THE PIPE
5. MANDREL BARREL LENGTH 'B' MUST BE EQUAL TO 75% OF THE ID OF THE PIPE
6. ADJUSTABLE MANDREL IS NOT ACCEPTABLE.

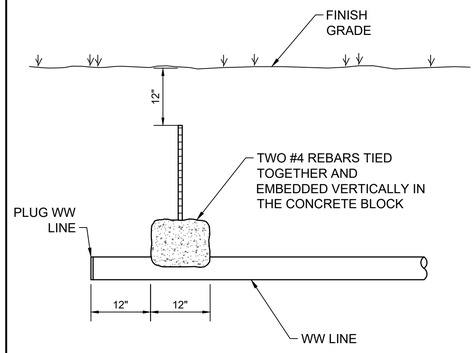
WASTEWATER MANDREL
NTS

*DETAIL SHOWN FOR TCEQ REFERENCE ONLY.



METHOD FOR JOINING FUTURE LATERALS
NTS

*DETAIL SHOWN FOR TCEQ REFERENCE ONLY.



TYPICAL STUBOUT MARKING
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7.12.24

PROJECT:

APPLEGATE CIRCLE SUBDIVISION IMPROVEMENTS

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

WASTEWATER DETAILS (2 OF 2)

WP PROJECT NO.:

135-002

SHEET NO.:

C-28

SITE DEVELOPMENT PLANS FOR:
APPLEGATE CIRCLE

WEST ONE-HALF ,TRACT 5-B
ROUND ROCK GLEN (2.532 AC.)
(UNRECORDED SUBDIVISION)

10 APPLEGATE CIRCLE
ROUND ROCK, TEXAS 78665

JULY, 2024
WILLIAMSON COUNTY PERMIT NO. 2024-908-COC

DESIGN PROFESSIONALS:

CIVIL ENGINEER / APPLICANT:

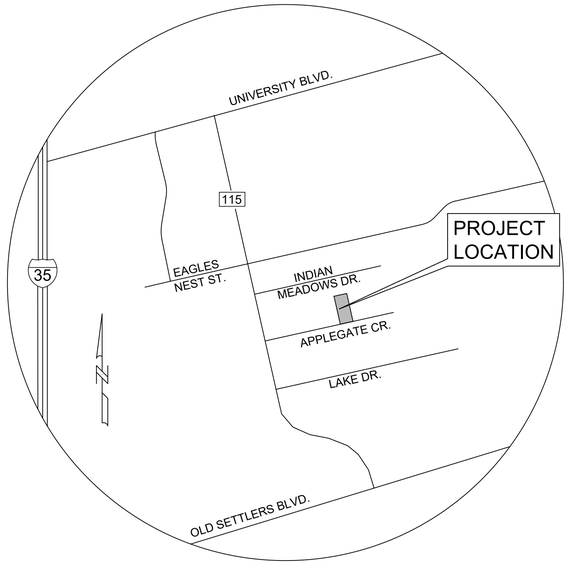
ANTONIO A. PRETE, P.E.
WAELTZ & PRETE, INC.
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TEXAS 78665
PH: (512) 505-8953

IMPERVIOUS COVER

	EXISTING	PROPOSED
PUBLIC SIDEWALK, STREETS, CURB & GUTTER	-----	-----
BUILDING FOOTPRINT (WITHIN LIMITS OF LOT ONLY)	2,500 SF	46,975 SF
PARKING, PRIVATE SIDEWALK (WITHIN LIMITS OF LOT ONLY)	8,725 SF	34,350 SF
TOTAL	11,225 SF	81,325 SF (1.87 AC.)
TOTAL AREA OF DISTURBANCE (LOC)	-----	107,785 SF (2.47 AC.)

SUBMITTAL DATE TRACKING TABLE:

SUBMITTAL TYPE	DATE SUBMITTED	DATE RETURNED
PRE-SUBMITTAL MEETING	19 DEC 2023	-----
SUBMITTAL #1	20 MAY 2024	21 JUNE 2024
SUBMITTAL #2	25 JUNE 2024	



LOCATION MAP
NTS

SHEET INDEX

NOTES:

1. THESE PLANS ARE NOT TO BE CONSIDERED FINAL FOR CONSTRUCTION UNTIL ACCEPTED BY THE CITY. CHANGES MAY BE REQUIRED PRIOR TO APPROVAL.
2. A PORTION OF THIS SITE IS WITHIN THE FEMA 1% ANNUAL CHANCE FLOODPLAIN, PER PANEL NUMBER 48491C0491F, DATED DECEMBER 20, 2019.
3. THIS SITE IS LOCATED WITHIN THE EDWARD'S AQUIFER RECHARGE ZONE. WATER QUALITY TREATMENT WILL BE PROVIDED FOR THE SITE.
4. FLOODPLAIN DEVELOPMENT / CERTIFICATION OF COMPLIANCE PERMIT NUMBER# _____.

Texas 811
know what's below.
Call before you dig.

STATE OF TEXAS

COUNTY OF WILLIAMSON

I, ANTONIO A. PRETE, P.E., DO HEREBY CERTIFY THAT THE PUBLIC WORKS AND DRAINAGE IMPROVEMENTS DESCRIBED HEREIN HAVE BEEN DESIGNED IN COMPLIANCE WITH THE SUBDIVISION AND BUILDING REGULATION ORDINANCES AND STORMWATER DRAINAGE POLICY ADOPTED BY WILLIAMSON COUNTY, TEXAS.

STATE OF TEXAS · ANTONIO A. PRETE · 93759 · LICENSED PROFESSIONAL ENGINEER

ANTONIO A. PRETE, P.E.
STATE OF TEXAS #93759

12 July 24
DATE

JOB NO.: 135-003

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, WILLIAMSON COUNTY MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

REVIEWED FOR COMPLIANCE WITH COUNTY REQUIREMENTS (WCSR 2021B):

_____
WILLIAMSON COUNTY, TEXAS DATE

SWPPP PERMIT # _____
RECORDED PLAT DOC # _____
WPAP DOC # _____ APPROVED: _____

OWNER:

DAVID LEHMANN
SUNRISE LBG, LLC
300 PINNACLE DRIVE
GEORGETOWN, TEXAS 78626
PH: (916) 220-2876

ENGINEER:

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

REVISIONS:

No.	Date	Revision	ACC.	DATE

City of Round Rock Standard Construction Notes
Dated May 05, 2006

GENERAL NOTES:

1. All construction shall be in accordance with the City of Round Rock Standard Specifications Manual.

2. Any existing utilities, pavement, curbs, sidewalks, structures, trees, etc., not planned for destruction or removal that are damaged or removed shall be repaired or replaced at his expense.

3. The Contractor shall verify all depths and locations of existing utilities prior to any construction. Any discrepancies with the construction plans found in the field shall be brought immediately to the attention of the Engineer who shall be responsible for revising the plans are appropriate.

4. Manhole frames, covers, valves, cleanouts, etc. shall be raised to finished grade prior to final paving construction.

5. The Contractor shall give the City of Round Rock 48 hours notice before beginning each phase of construction. Telephone (512)218-7043 (Development Services Office).

6. All areas disturbed or exposed during construction shall be revegetated in accordance with the plans and specifications. Revegetation of all disturbed or exposed areas shall consist of sodding or seeding, at the Contractor's option. However, the type of revegetation must equal or exceed the type of vegetation present before construction.

7. Prior to any construction, the Engineer shall convene a preconstruction conference between the City of Round Rock, himself, the Contractor, other utility companies, any affected parties and any other entity the City or Engineer may require.

8. The Contractor and the Engineer shall keep accurate records of all construction that deviates from the plans. The Engineer shall furnish the City of Round Rock accurate "As-Built" drawings following completion of all construction. These "As-Built" drawings shall meet with the satisfaction of the Engineering and Development Services Department prior to final acceptance.

9. The Round Rock City Council shall not be petitioned for acceptance until all necessary easement documents have been signed and recorded.

10. When construction is being carried out within easements, the Contractor shall confine his work to within the permanent and any temporary easements. Prior to final acceptance, the Contractor shall be responsible for removing all trash and debris within the permanent and temporary easements. Clean-up shall be to the satisfaction of the City Engineer.

11. Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities.

12. Available benchmarks (City of Round Rock Datum) that may be utilized for the construction of this project are described as follows:
(See Sheet C-4)

TRENCH SAFETY NOTES:

1 In accordance with the Laws of the State of Texas and the U. S. Occupational Safety and Health Administration regulations, all trenches over 5 feet in depth in either hard and compact or soft and unstable soil shall be sloped, shored, sheeted, braced or otherwise supported. Furthermore, all trenches less than 5 feet in depth shall also be effectively protected when hazardous ground movement may be expected. Trench safety systems to be utilized for this project will be provided by the contractor.

2 In accordance with the U. S. Occupational Safety and Health Administration regulations, when persons are in trenches 4-feet deep or more, adequate means of exit, such as a ladder or steps, must be provided and located so as to require no more than 25 feet of lateral travel.

3 If trench safety system details were not provided in the plans because trenches were anticipated to be less than 5 feet in depth and during construction it is found that trenches are in fact 5 feet or more in depth or trenches less than 5 feet in depth are in an area where hazardous ground movement is expected, all construction shall cease, the trenched area shall be barricaded and the Engineer notified immediately. Construction shall not resume until appropriate trench safety system details, as designed by a professional engineer, are retained and copies submitted to the City of Round Rock.

STREET AND DRAINAGE NOTES:

1. All testing shall be done by an independent laboratory at the Owner's expense. Any retesting shall be paid for by the Contractor. A City inspector shall be present during all tests. Testing shall be coordinated with the City inspector and he shall be given a minimum of 24 hours notice prior to any testing. Telephone (512)218-3241 (Inspections).

2. Backfill behind the curb shall be compacted to obtain a minimum of 95% maximum density to within 3" of top of curb. Material used shall be primarily granular with no rocks larger than 6" in the greatest dimension. The remaining 3" shall be clean topsoil free from all clods and suitable for sustaining plant life.

3. Depth of cover for all crossings under pavement including gas, electric, telephone, cable tv, water services, etc., shall be a minimum of 30" below subgrade.

4. Street rights-of-way shall be graded at a slope of 1/4" per foot toward the curb unless otherwise indicated. However, in no case shall the width of right-of-way at 1/4" per foot slope be less than 10 feet unless a specific request for an alternate grading scheme is made to and accepted by the City of Round Rock Engineering and Development Services Department.

5. Barricades built to City of Round Rock standards shall be constructed on all dead-end streets and as necessary during construction to maintain job and public safety.

6. All R.C.P. shall be minimum class III.

7. The subgrade material for the streets shown herein was tested by: XXXXXXXXXX

   And the paving sections designed in accordance with the current City of Round Rock design criteria. The paving sections are to be constructed as follows:
   (See Sheet C-14)

   The Geotechnical Engineer shall inspect the subgrade for compliance with the design assumptions made during preparation of the Soils Report. Any adjustments that are required shall be made through revision of the construction plans.

8. Where PI's are over 20, subgrades must be stabilized utilizing a method acceptable to the City Engineer. The Geotechnical Engineer shall recommend an appropriate subgrade stabilization if sulfates are determined to be present.

9. All weather driving surface capable of supporting 75,000 lbs fire apparatus shall be in place prior to delivery and on site storage of combustibles.

WATER AND WASTEWATER NOTES:

1. Pipe material for water mains shall be PVC (AWWA C-900, min. class 200), or Ductile Iron (AWWA C-100, min. class 200). Water services (2" or less) shall be polyethylene tubing (black, 200 psi, DR 9).

2. Pipe material for pressure wastewater mains shall be PVC (AWWA C-900, min. class 150), SDR 26 Higher Pressure Rated or Ductile Iron (AWWA C-100, min. class 200). Pipe material for gravity wastewater mains shall be PVC (ASTM D2241 or D3034, max. DR-26), Ductile Iron (AWWA C-100, min. class 200).

3. Unless otherwise accepted by the City Engineer, depth of cover for all lines out of the pavement shall be 42" min., and depth of cover for all lines under pavement shall be a min. of 30" below subgrade.

4. All fire hydrant leads shall be ductile iron pipe (AWWA C-100, min. class 200).

5. All iron pipe and fittings shall be wrapped with minimum 8-mil polyethylene and sealed with duct tape or equal accepted by the City Engineer.

6. The Contractor shall contact the City Inspector at (512)218-3241 to coordinate utility tie-ins and notify him at least 48 hours prior to connecting to existing lines.

7. All manholes shall be concrete with cast iron ring and cover. All manholes located outside of the pavement shall have bolted covers. Tapping of fiberglass manholes shall not be allowed.

8. The Contractor must obtain a bulk water permit or purchase and install a water meter for all water used during construction. A copy of this permit must be carried at all times by all who use water.

9. Line flushing or any activity using a large quantity of water must be scheduled with the city inspector, telephone (512)218-3241.

10. The Contractor, at his expense, shall perform sterilization of all potable water lines constructed and shall provide all equipment (including test gauges), supplies (including concentrated chlorine disinfecting material), and necessary labor required for the sterilization procedure. The sterilization procedure shall be monitored by City of Round Rock personnel. Water samples will be collected by the City of Round Rock to verify each treated line has attained an initial chlorine concentration of 50 ppm. Where means of flushing is necessary, the Contractor, at his expense, shall provide flushing devices and remove said devices prior to final acceptance by the City of Round Rock.

11. Sampling taps shall be brought up to 3 feet above grade and shall be easily accessible for City personnel. At the Contractor's request, and in his presence, samples for bacteriological testing will be collected by the City of Round Rock not less than 24 hours after the treated line has been flushed of the concentrated chlorine solution and charged with water approved by the City. The Contractor shall supply a check or money order, payable to the City of Round Rock, to cover the fee charged for testing each water sample. City of Round Rock fee amounts may be obtained by calling the Development Services Office at (512)218-7043.

12. The Contractor, at his expense, shall perform quality testing for all wastewater pipe installed and pressure pipe hydrostatic testing of all water lines constructed and shall provide all equipment (including pumps and gauges), supplies and labor necessary to perform the tests. Quality and pressure testing shall be monitored by City of Round Rock personnel.

13. The Contractor shall coordinate testing with the City of Inspector and provide no less than 24 hours notice prior to performing sterilization, quality testing or pressure testing.

14. The Contractor shall not open or close any valves unless authorized by the City of Round Rock.

15. All valve boxes and covers shall be cast iron.

16. All water service, wastewater service and valve locations shall be appropriately marked as follows:

water service	"W" on top of curb
wastewater service	"S" on top of curb
valve	"V" on face of curb

Tools for marking the curb shall be provided by the Contractor. Other appropriate means of marking service and valve locations shall be provided in areas without curbs. Such means of marking shall be as specified by the Engineer and accepted by the City of Round Rock.

17. Contact City of Round Rock Development Services Office at (512)218-7043 for assistance in obtaining existing water and wastewater locations.

18. The City of Round Rock Fire Department shall be notified 48 hours prior to testing of any building sprinkler piping in order that the Fire Department may monitor such testing.

19. Sand, as described in Specification item 510 pipe, shall not be used as bedding for water and wastewater lines. Acceptable bedding materials are pipe bedding stone, pea gravel and in lieu of sand, a naturally occurring or manufactured stone material conforming to ASTM C33 for stone quality and meeting the following gradation specification:

Sieve Size	Percent Retained By Weight
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

20. The Contractor is hereby notified that connecting to, shutting down, or terminating existing utility lines may have to occur at off-peak hours. Such hours are usually outside normal working hours and possibly between 12 a.m. and 6 a.m.

21. All wastewater construction shall be in accordance with the Texas Commission on Environmental Quality (TCEQ) Regulations, 30 TAC Chapter 213 and 317, as applicable. Whenever TCEQ and City of Round Rock Specifications conflict, the more stringent shall apply.

TRAFFIC MARKING NOTES:

1. Any methods, street markings and signage necessary for warning motorists, warning pedestrians or diverting traffic during construction shall conform to the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest edition.

2. All pavement markings, markers, paint, traffic buttons, traffic controls and signs shall be installed in accordance with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges and, the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest editions.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. Erosion control measures, site work and restoration work shall be in accordance with the City of Round Rock Erosion and Sedimentation Control Ordinance.

2. All slopes shall be sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.

3. Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Such installation shall be regularly inspected by the City of Round Rock for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.

4. All temporary erosion control measures shall not be removed until final inspection and approval of the project by the Engineer. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove each structure as approved by the Engineer.

5. All mud, dirt, rocks, debris, etc., spilled, tracked or otherwise deposited on existing paved streets, drives and areas used by the public shall be cleaned up immediately.

6. All disturbed areas shall be revegetated.

ABBREVIATIONS:

BOT = BOTTOM
CL = CLASS
CNC = TOP OF CONCRETE
DET = DETENTION
D/S = DOWNSPOUT
DI = DUCTILE IRON
ESMT = EASEMENT
EX = EXISTING
FG = FINISHED GROUND
FH = FIRE HYDRANT
FL = FLOWLINE
FPS = FEET PER SECOND
FLG = FLANGE
GB = GRADE BREAK
GV = GATE VALVE
HPT = HIGHPOINT
LOC = LIMITS OF CONSTRUCTION
LPT = LOW POINT
MH = MANHOLE
MJ = MECHANICAL JOINT
NG = NATURAL GROUND
PAV = TOP OF PAVEMENT
PDWF = PEAK DRY WEATHER FLOW
PWWF = PEAK WET WEATHER FLOW
PROP = PROPOSED
PVC = POLYVINYL CHLORIDE
REF = REFERENCE
RS = RESILIENT SEAT
SCH = SCHEDULE
SF = SILT FENCE
SLAB = TOP OF SLAB
SS = STORM SEWER
SSL = STORM SEWER LINE
SW = TOP OF SIDEWALK
TC = TOP OF CURB
TG = TOP OF GRATE
TOF = TOP OF FOOTING
TOI = TOP OF INLET
TOW = TOP OF WALL
TP = TREE PROTECTION
TR = TOP OF MANHOLE RIM
TYP = TYPICAL
WL = WATER LINE
WQ = WATER QUALITY
WSE = WATER SURFACE ELEVATION
WTR = WATER
WWL = WASTEWATER LINE
WWMH = WASTEWATER MANHOLE

LEGEND

- REBAR WITH CAP FOUND
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- WASTEWATER MANHOLE
- SIGN
- TREE
- POWER POLE
- LIGHT POLE
- SPRLINKLER CONTROL VALVE
- BENCHMARK
- BARB-WIRE FENCE
- CHAIN-LINK FENCE
- EDGE OF PAVEMENT
- GAS LINE
- UNDERGROUND ELEC.
- UNDERGROUND TELE.
- WATER LINE
- WASTEWATER LINE
- WOOD FENCE
- EASEMENT
- PROPERTY LINE

BM #1

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
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PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

RECOMD
REVISIONS
DATE
No.

SHEET TITLE:

NOTE SHEET (1 OF 2)

WP PROJECT NO.:

135-003

SHEET NO.:

C-2

Texas Commission on Environmental Quality
Organized Sewage Collection System
General Construction Notes

TCEQ-0596 (Rev. July 15, 2015)

1. This Organized Sewage Collection System (SCS) must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules and any local government standard specifications.

2. All contractors conducting regulated activities associated with this proposed regulated project must be provided with copies of the SCS 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. A written notice of construction must be submitted to the presiding 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.

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. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. These controls must remain in place until the disturbed areas have been permanently stabilized.

6. 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 TCEQ 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 and 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.

7. 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 6 inches.

8. 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.

9. 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 sheets C-30.

   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.

10. 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).

11. 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: N/A _____.

12. If pipe flexure is proposed, the following method of preventing deflection of the joint must be used: N/A _____.

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

13. New sewage collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the extensions. Such stub outs must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new stub-outs must be constructed sufficiently to extend beyond the end of the street pavement. All stub-outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle and in accordance with accepted plumbing techniques.

    If no stub-out is present an alternate method of joining laterals is shown in the detail on sheet C-27. (For potential future laterals).

    The private service lateral stub-outs must be installed as shown on the plan and profile sheets on sheets C-9 through C-10 and marked after backfilling as shown in the detail on sheet C-30.

14. Trenching, bedding and backfill must conform with 30 TAC §217.54. The bedding and backfill for flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II or III. Rigid pipe bedding must comply with the requirements of ASTM C 12 (ANSI A 106.2) classes A, B or C.

15. Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E).

16. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be:

(a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:

(1) *Low Pressure Air Test.*

A 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.

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.

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

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

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds
K = 0.000419 X D X L, but not less than 1.0
D = average inside pipe diameter in inches
L = length of line of same size being tested, in feet
Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface

(C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following Table C.3:

Pipe Diameter *(inches)*	Minimum Time *(seconds)*	Maximum Length for Minimum Time *(feet)*	Time for Longer Length *(seconds/foot)*
6	340	398	0.8550
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

(D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.

(E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure.

(F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.

(G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.

(2) *Infiltration/Exfiltration Test.*

(A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole.

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

(C) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch diameter per mile of pipe per 24 hours at a minimum test head of two feet above the crown of a pipe at an upstream manhole, or at least two feet above existing groundwater level, whichever is greater.

(D) For construction within a 25-year flood plain, the infiltration or exfiltration must not exceed 10 gallons per inch diameter per mile of pipe per 24 hours at the same minimum test head as in subparagraph (C) of this paragraph.

(E) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall undertake remedial action in order to reduce the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action.

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

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

(A) Mandrel Sizing.

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 STMs, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.

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.

All dimensions must meet the appropriate standard.

(B) Mandrel Design.

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

A mandrel must have nine or more odd number of runners or legs.

A barrel section length must equal at least 75% of the inside diameter of a pipe.

Each size mandrel must use a separate proving ring.

(C) Method Options.

An adjustable or flexible mandrel is prohibited.

A test may not use television inspection as a substitute for a deflection test.

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.

(1) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection.

(2) A deflection test method must be accurate to within plus or minus 0.2% deflection.

(3) An owner shall not conduct a deflection test until at least 30 days after the final backfill.

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

(5) If a pipe section fails a deflection test, an owner shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.

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

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.

(3) Hydrostatic Testing.

(A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.

(B) To perform a hydrostatic exfiltration test, an owner shall seal 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.

(C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.

(2) Vacuum Testing.

(A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.

(B) No grout must be placed in horizontal joints before testing.

(C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.

(D) An owner shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.

(E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's recommendations.

(F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.

(G) A test does not begin until after the vacuum pump is off.

(H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

18. All private service laterals must be inspected and certified in accordance with 30 TAC §213.5(c)(3)(I). After installation of and, prior to covering and connecting a private service lateral to an existing organized sewage collection system, a Texas Licensed Professional Engineer, Texas Registered Sanitarian, or appropriate city inspector must visually inspect the private service lateral and the connection to the sewage collection system, and certify that it is constructed in conformity with the applicable provisions of this section. The owner of the collection system must maintain such certifications for five years and forward copies to the appropriate regional office upon request. Connections may only be made to an approved sewage collection system.

Austin Regional Office
12100 Park 35 Circle, Bldg 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.

Texas Commission on Environmental Quality
Water Pollution Abatement Plan

TCEQ-0592 (Rev. 7/15/15)

General Construction Notes:

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 TCEQ-0592 (Rev. July 15, 2015) Page 2 of 2 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 Cirle, 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

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

NOTE SHEET (2 OF 2)

WP PROJECT NO.:

135-003

SHEET NO.:

C-3

TREE LIST

	TAG#	SIZE	TYPE	COMMENTS
	1526	23"	HACKBERRY	3 BOLES: 13",11",9"
	1527	17"	HACKBERRY	2 BOLES: 12",9"
	1659	18"	HACKBERRY	2 BOLES: 12",11"
R	2289	14"	PECAN	
R	2290	14"	ASH	3 BOLES: 8",7",4"
R	2291	8"	PECAN	
R	2292	15"	MULBERRY	2 BOLES: 10",9"
R	2293	19"	MULBERRY	
R	2294	31"	ASH	
R	2295	18"	ASH	
R	2296	20"	ASH	
R	2297	22"	ASH	
R	2298	21"	ASH	
R	2299	25"	ASH	
R	2300	19"	ASH	
R	2301	22"	ASH	2 BOLES: 15",13"
	2607	8"	HACKBERRY	
	2608	17"	HACKBERRY	4 BOLES: 8",7",6",5"
	2609	12"	HACKBERRY	3 BOLES: 7",6",4"
	2610	10"	HACKBERRY	
	2612	12"	HACKBERRY	2 BOLES: 8",8"
	2624	26"	HACKBERRY	
	2626	11"	HACKBERRY	3 BOLES: 7",6",2"
	2627	9"	HACKBERRY	
	2628	13"	HACKBERRY	
	2629	11"	HACKBERRY	
	2630	8"	HACKBERRY	
	2631	8"	HACKBERRY	
	2632	8"	HACKBERRY	
	2633	10"	HACKBERRY	
	2634	11"	HACKBERRY	2 BOLES: 8",5"
	2635	9"	HACKBERRY	
	2636	8"	HACKBERRY	
	2637	8"	HACKBERRY	
	2749	10"	HACKBERRY	3 BOLES: 5",5",4"
	2750	13"	HACKBERRY	
	2751	11"	HACKBERRY	2 BOLES: 9",4"
	2752	9"	HACKBERRY	
	2753	7"	HACKBERRY	
	2754	7"	HACKBERRY	
R	2763	19"	ASH	

NOTES:

1. DISTANCES ARE SURFACE DISTANCES.
2. COORDINATES ARE SURFACE VALUES WITH BEARING BASIS: NAD-83, TEXAS CENTRAL (4203), STATE PLANE SYSTEM. COORDINATES FOR THIS FILE SURFACE BASED ON A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00011. BASED ON THE TEXAS STATE PLAN COORDINATE SYSTEM, NAD83.
3. SURVEY WAS PROVIDED BY DIAMOND SURVEYING, INC. ALL RESPONSIBILITY FOR THE ACCURACY OF THIS SURVEY REMAINS WITH THE SURVEYOR WHO PREPARED IT. IN USING THIS SURVEY, THE ENGINEER MUST RELY UPON THE ACCURACY OF THE WORK PROVIDED BY THE SURVEYOR.
4. CONTRACTOR'S SURVEYOR SHALL LEVEL/ TRAVERSE THROUGH THE BENCHMARKS/ TRAVERSE POINTS NOTED ON THIS PLAN TO VERIFY VERTICAL/ HORIZONTAL DATUM.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

BENCHMARK:

BM #104:
PK NAIL SET IN SOUTH SIDE OF CONCRETE SIDEWALK ON THE SOUTH SIDE OF APPLEGATE CIRCLE, APPROXIMATELY 140' EAST OF SUNRISE ROAD.

ELEVATION = 746.02'
VERTICAL DATUM = NAVD-88 (GEOID 2012A)
N = 10173828.82
E = 3134008.16

BM #105:
PK NAIL SET IN SOUTHWEST CORNER OF A CONCRETE CULVERT WITH 18" CMP ON THE SOUTH SIDE OF APPLEGATE CIRCLE, APPROXIMATELY 900' EAST OF SUNRISE ROAD.

ELEVATION = 738.61
VERTICAL DATUM = NAVD-88 (GEOID 2012A)
N = 10174072.70
E = 3134634.35

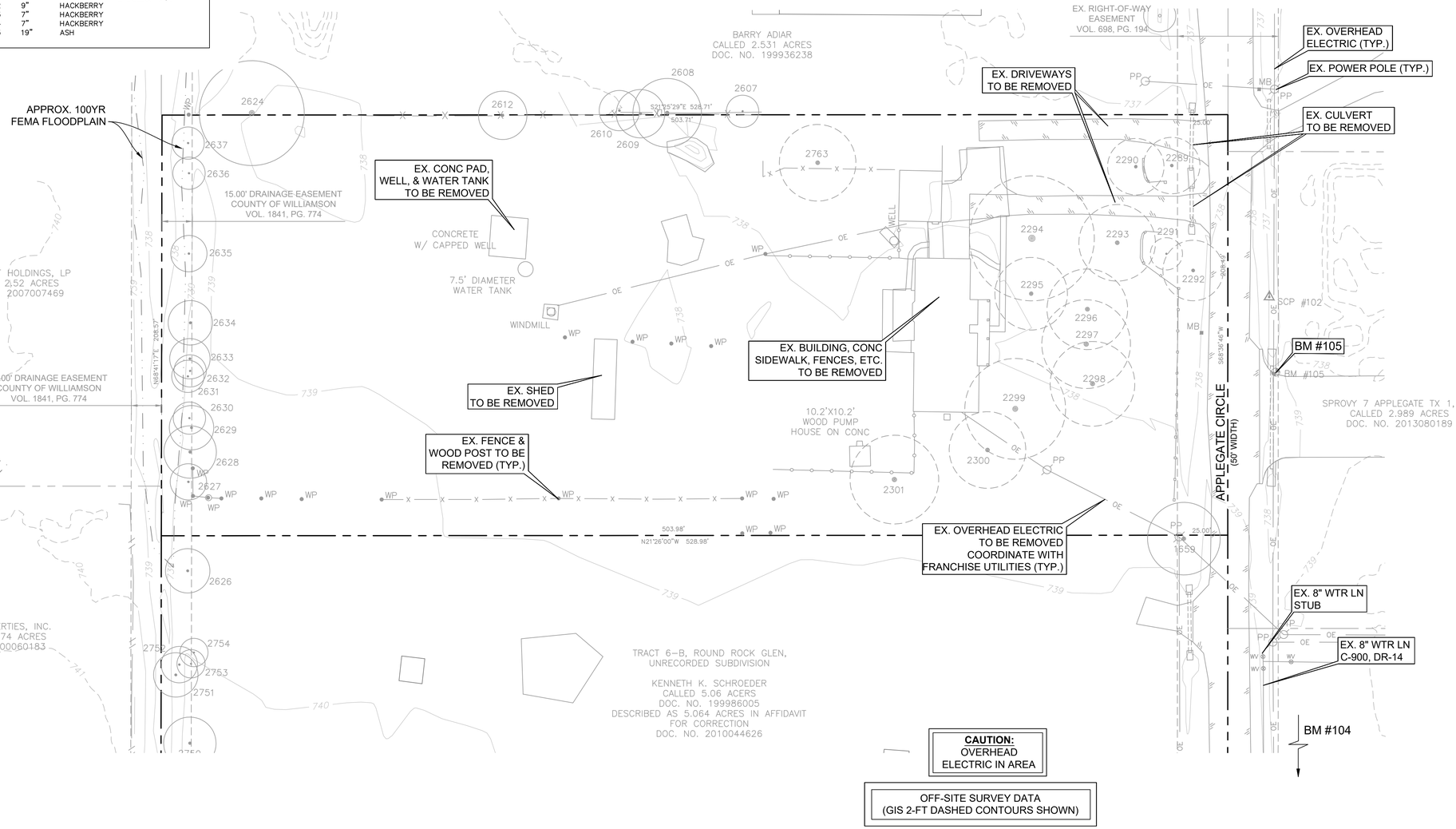
0 15 30 60
HORIZONTAL SCALE

know what's below. Call before you dig.

LEGEND:

TREE TO REMAIN

TREE TO BE REMOVED



CAUTION:
OVERHEAD
ELECTRIC IN AREA

OFF-SITE SURVEY DATA
(GIS 2-FT DASHED CONTOURS SHOWN)

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOM'D
REVISIONS
DATE
No.

SHEET TITLE:
EXISTING CONDITIONS & DEMOLITION PLAN

WP PROJECT NO.:
135-003

SHEET NO.:
C-4

K:\CAD\135-002 Applegate Corbel 4.6\DPLANS\SHTS\135-003 EX COND.dwg, 7/12/2024 11:14:05 AM, JDMC To PDF.p3

NOTES:

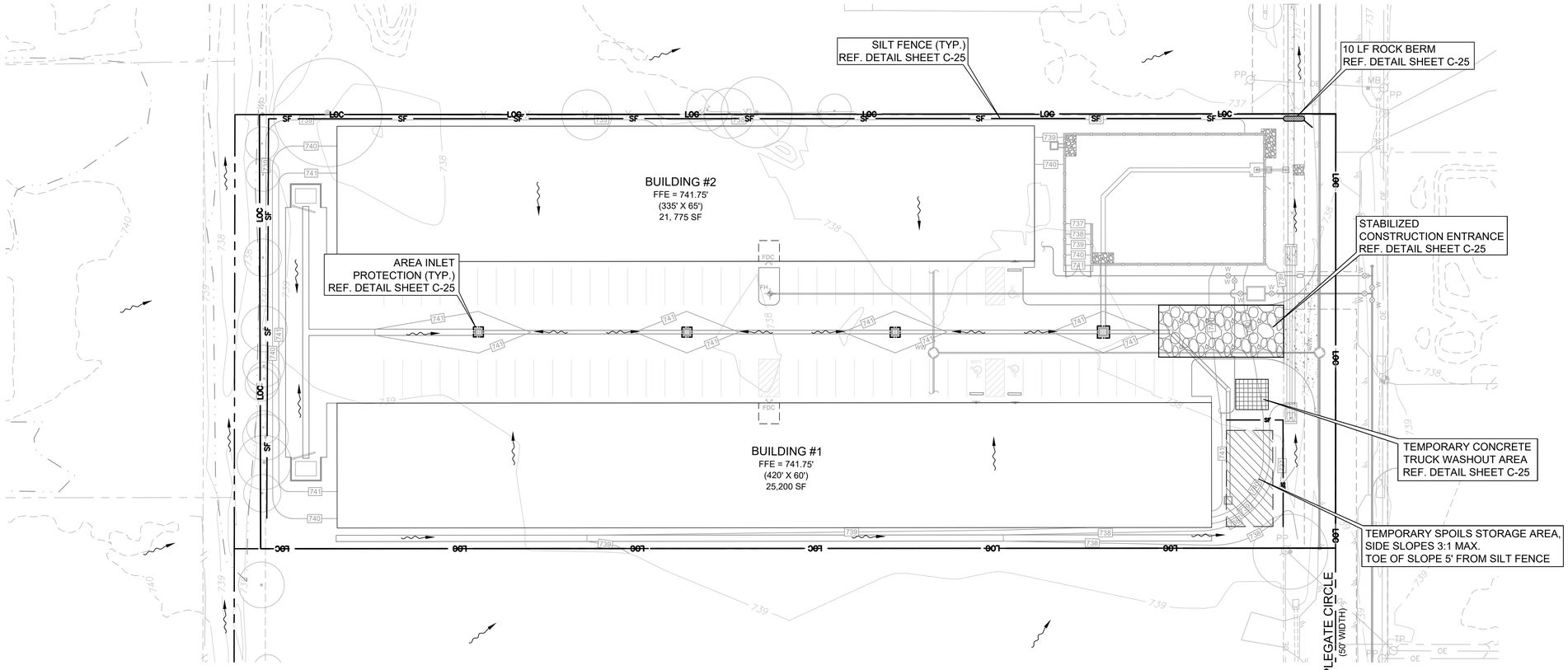
1. ANY DIRT, MUD, DEBRIS, ETC., SPILLED TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES, AND AREAS USED BY THE PUBLIC, SHALL BE IMMEDIATELY CLEANED UP.
2. THE CONTRACTOR MAY SUBMIT AN ALTERNATE PLAN FOR THE LOCATION OF THE STAGING & SPOILS AREA AND/OR THE CONCRETE TRUCK WASH OUT AREA.
3. ALL DISTURBED AREAS SHALL BE REVEGETATED.
4. POST THE INSTALLATION OF PROPOSED INLETS, INLET PROTECTION SHALL BE INSTALLED AS SOON AS PRACTICABLE
5. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY, MAINTAIN, REVISE, AND UPDATE THE PROJECT STORM WATER PREVENTION POLLUTION PLAN (SWPPP), AS REQUIRED IN ACCORDANCE WITH THE GENERAL PERMIT TXR 150000.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

LEGEND

- SILT FENCE — SF
- LIMITS OF CONSTRUCTION — LOC
- INLET PROTECTION
- ROCK BERM
- STABILIZED CONSTRUCTION ENTRANCE
- FLOW DIRECTION

0 15 30 60
HORIZONTAL SCALE

know what's below.
Call before you dig.



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FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12/24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOM'D
REVISIONS
DATE
No.

SHEET TITLE:

EROSION/ SEDIMENTATION CONTROL PLAN

WP PROJECT NO.:

135-003

SHEET NO.:

C-5

K:\CAD\135-003 Applegate Circle\4 CAD\PLANS\SITE\135-003 ESC.dwg 7/12/2024 11:14:23 AM, _DWG To PDF.pc3

NOTES:

1. NO PORTION OF THIS SITE IS WITHIN THE FEMA 100 YEAR FLOODPLAIN AS PER PANEL NUMBER 48491C0491F, DATED DECEMBER 20, 2019.
2. ALL PARKING CURB RETURNS ARE 3' RADII UNLESS OTHERWISE NOTED.
3. ALL SIDEWALK RAMP CURB RETURNS ARE 1' RADII UNLESS OTHERWISE NOTED.
4. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
5. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANTS.
6. TYPICAL PARKING SPACES SHALL BE 9' x 18' UNLESS OTHERWISE NOTED.
7. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS. DO NOT LAYOUT BUILDING / BUILDINGS BASED ON CIVIL DRAWINGS.
8. CONSTRUCTION STAKING SHALL BE PROVIDED BY THE CONTRACTOR.
9. ALL SIGNAGE WILL REQUIRE A SEPARATE SIGN PERMIT. APPROVAL OF A SITE DEVELOPMENT PERMIT OR BUILDING PERMIT DOES NOT CONSTITUTE APPROVAL OF SIGNAGE.
10. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

SITE PLAN INFORMATION:

LEGAL DESCRIPTION:	ROUND ROCK GLEN - LOT 5B (UNRECORDED SUBDIVISION)
SITE ADDRESS:	10 APPLEGATE CIRCLE
PROPOSED USE:	WAREHOUSE
TYPE OF CONSTRUCTION:	V-B
BUILDING OCCUPANCY:	WAREHOUSE
BUILDING HEIGHT:	25' (MAX HEIGHT)
SITE ZONING:	ETJ
BUILDING SET BACKS:	N/A
FIRE FLOW REQUIREMENT:	4,250 GPM 1,500 GPM (W/ 75% SPRINKLER REDUCTION)
TOTAL IMPERVIOUS COVER:	1.87 AC. (73.91%)

PARKING PROVIDED:

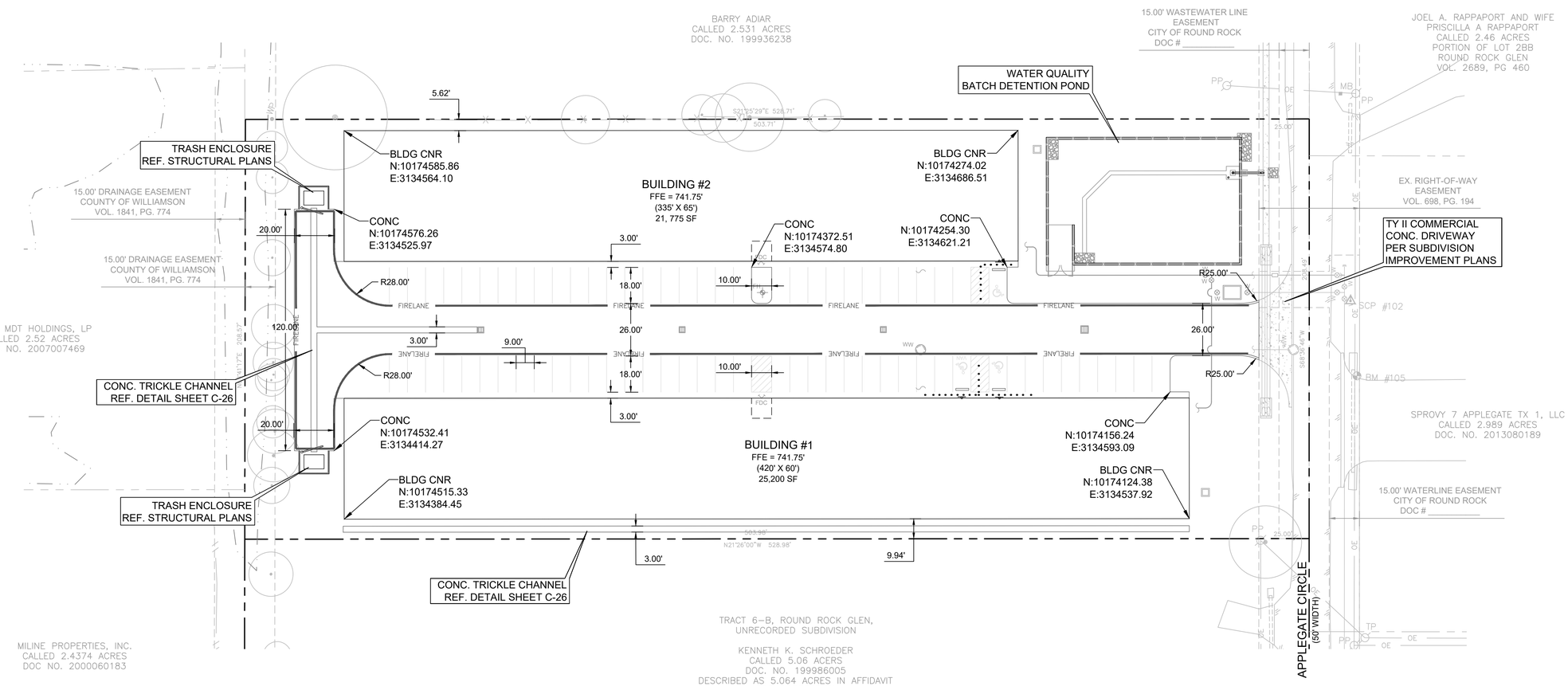
STANDARD PARKING	=	70
ACCESSIBLE PARKING (INCLUDES VAN ACCESSIBLE)	=	3
TOTAL PARKING PROVIDED	=	73

0 15 30 60
HORIZONTAL SCALE

Texas 811 know what's below. Call before you dig.

LEGEND

DELINEATES ACCESSIBLE ROUTE . . . . . .



WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7/12/24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

SITE PLAN

WP PROJECT NO.:

135-003

SHEET NO.:

C-6

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. REFER TO MEP PLAN FOR SERVICE CONNECTIONS TO UTILITY PROVIDERS: GAS / ELECTRIC / TELEPHONE / ETC.
4. STUB WATER & WASTEWATER SERVICE LINES 5' FROM BLDG. REFER TO MEP PLAN FOR CONTINUATION.
5. WHERE A SEWER CROSSES 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. CENTER 1 JOINT OF WASTEWATER LINE ON CROSSING.
6. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF ROUND ROCK.
7. TRENCH SAFETY SYSTEMS SHALL BE REQUIRED FOR TRENCHES EXCEEDING 5' DEPTH. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS.
8. ADJUST ALL MANHOLE COVERS, VALVE BOXES, AND CASTINGS TO FINISH GRADE.
9. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANTS.
10. RESTRAIN ALL 6" PIPE FITTINGS, VALVES, ETC. RESTRAINT LENGTHS SHALL BE 30 LF FORWARD AND BACKWARDS OF THE FITTING, VALVE, ETC. USE MEGALUG OR APPROVED EQUAL.
11. ALL FITTINGS SHALL HAVE THRUST BLOCKING.
12. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

0 15 30 60
HORIZONTAL SCALE

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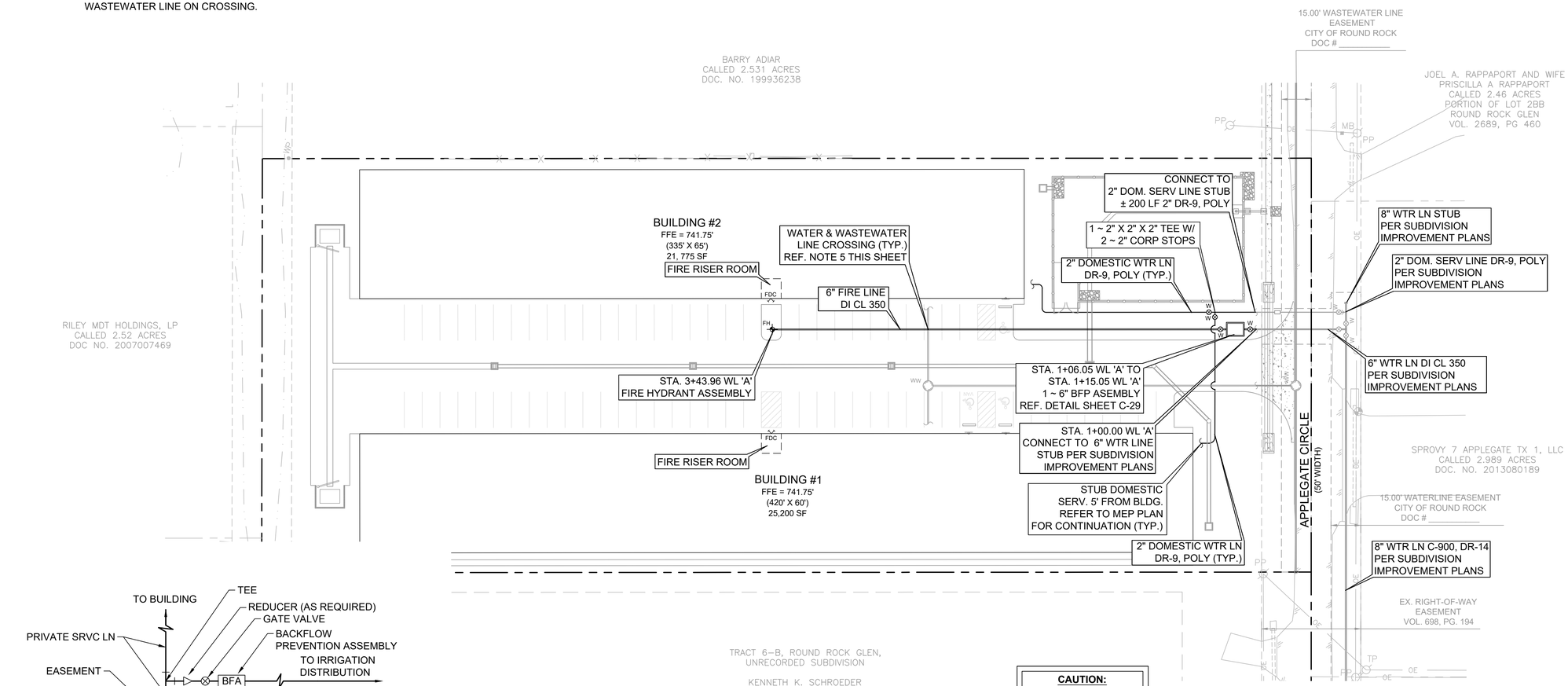
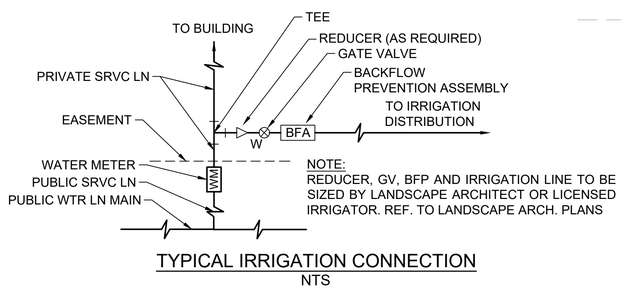




TYPICAL IRRIGATION CONNECTION
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

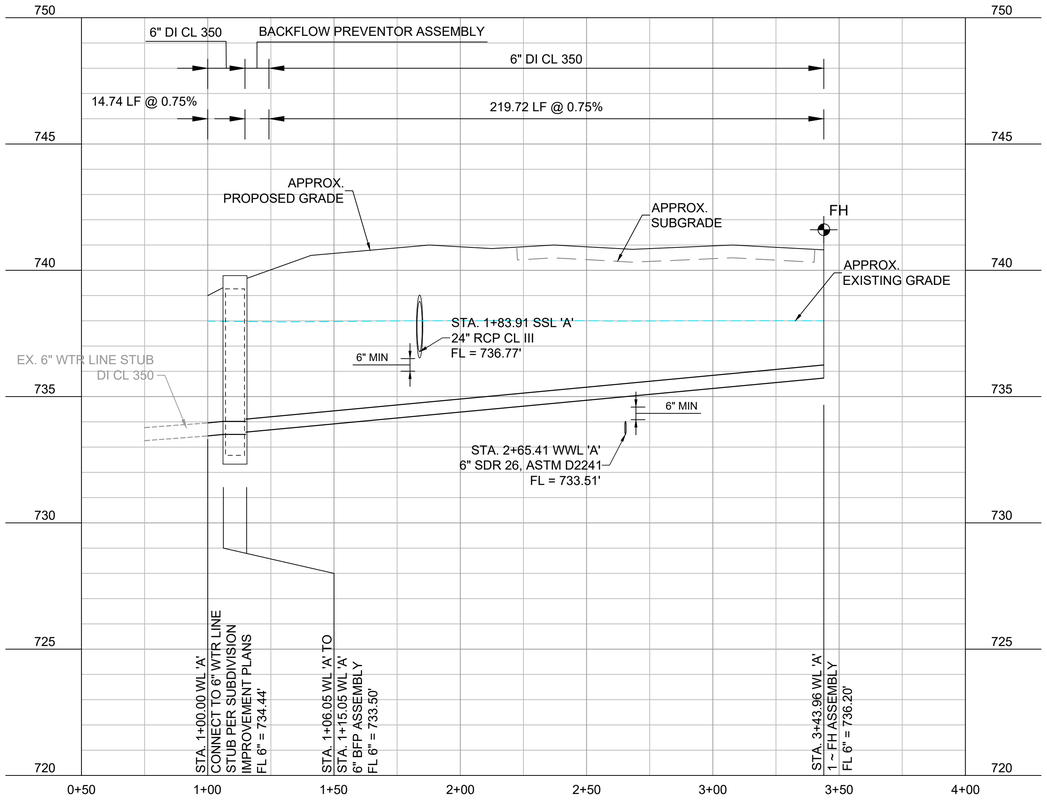
No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:
WATER PLAN

WP PROJECT NO.:
135-003

SHEET NO.:
C-7

K:\CAD\135-002 Applegate Circle\4 CAD\PLANS\SITE\135-003 UTILITY.dwg 7/12/2024 11:14:54 AM JSINCTo PDF.pc3



WATER LINE 'A' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
12 JULY 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMM'D

SHEET TITLE:

WATER PROFILE

WP PROJECT NO.:

135-003

SHEET NO.:

C-8

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. TRENCH SAFETY SYSTEMS SHALL BE REQUIRED FOR TRENCHES EXCEEDING 5' DEPTH. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS.
4. ADJUST ALL EXISTING MANHOLE COVERS, VALVE BOXES, AND CASTINGS TO FINISH GRADE.
5. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANTS.
6. STUB ALL WASTEWATER SERVICE LINES 5' FROM BLDG. REFER TO MEP PLAN FOR CONTINUATION.
7. WHERE A SEWER CROSSES 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. CENTER 1 JOINT OF WATER LINE AND WASTEWATER LINE ON CROSSING.
8. ALL MANHOLES SHALL BE COATED PER CITY OF ROUND ROCK SPECIFICATIONS & VACUUM TESTED TO ENSURE INTEGRITY.
9. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

0 15 30 60
HORIZONTAL SCALE

Texas 811
know what's below.
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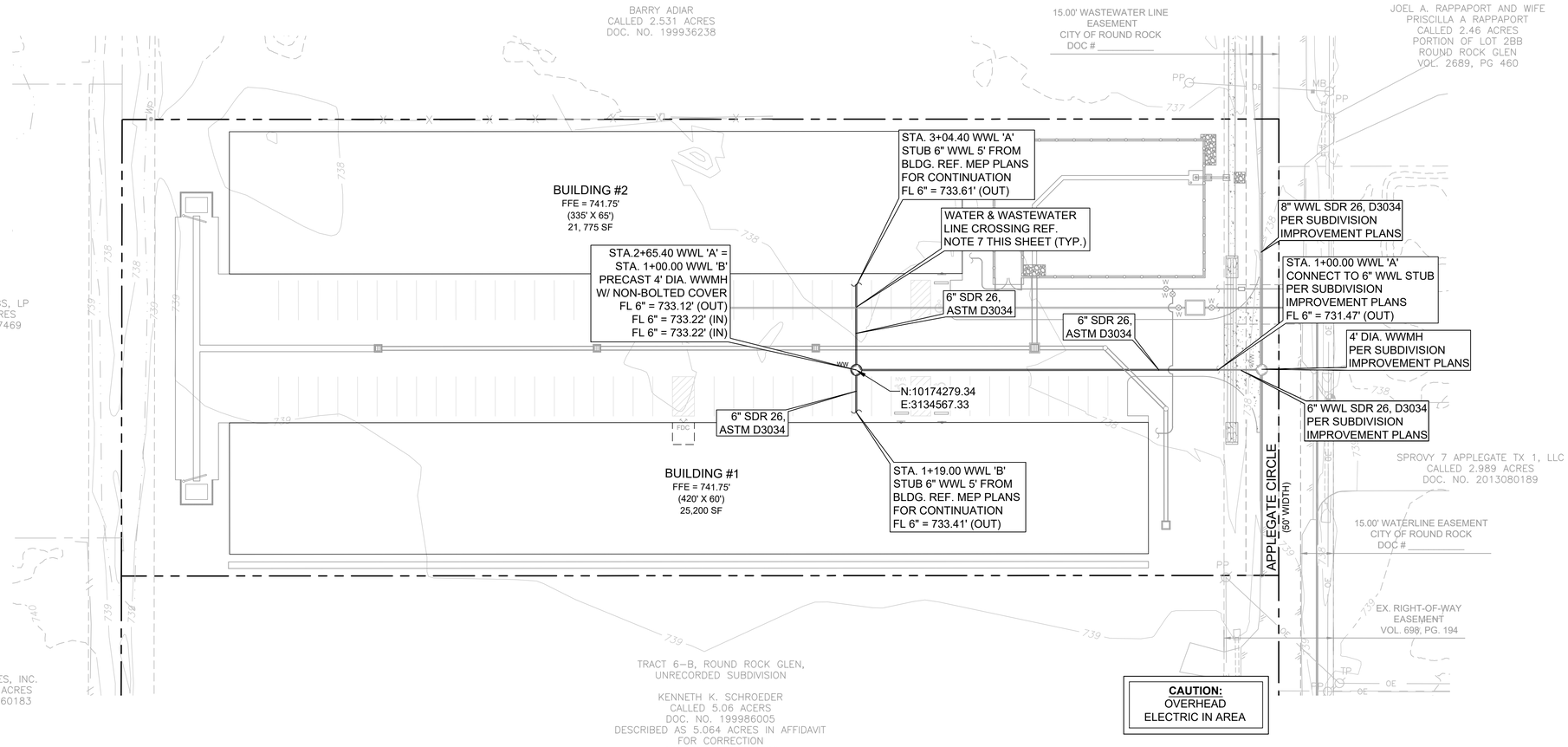


WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

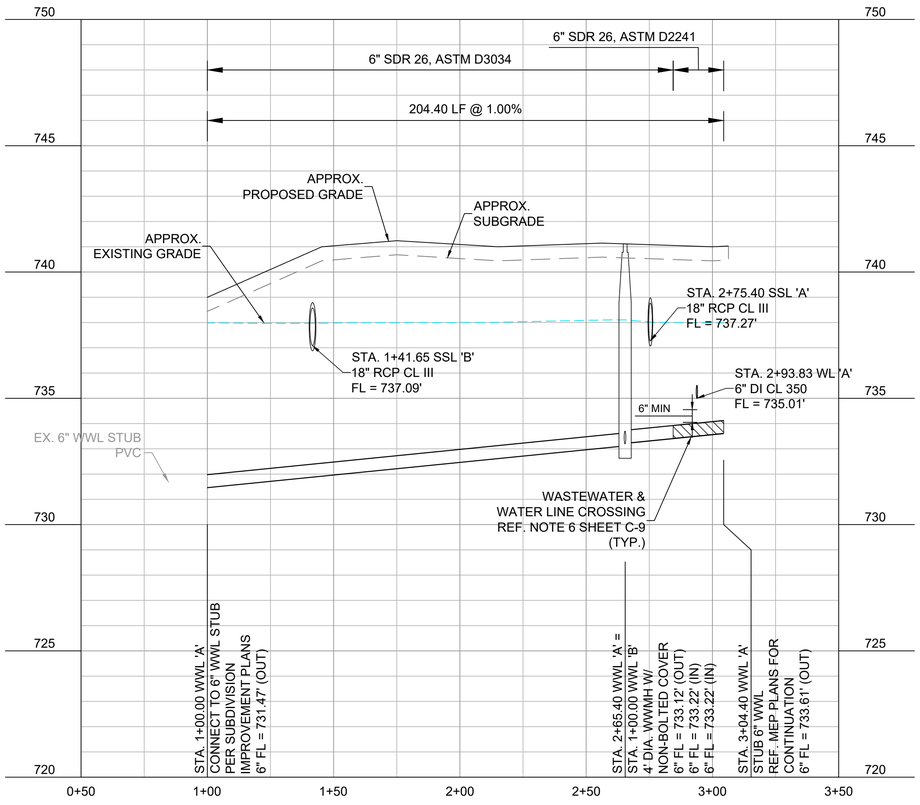
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:
WASTEWATER PLAN

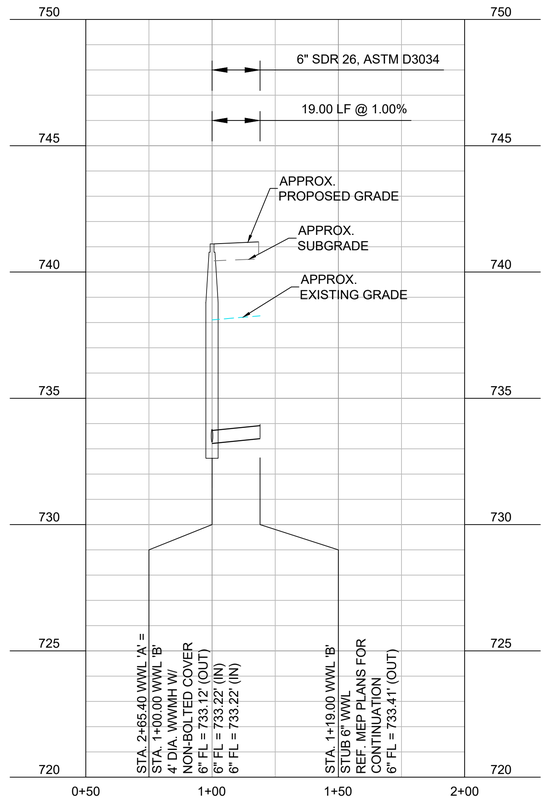
WP PROJECT NO.:
135-003

SHEET NO.:
C-9



WASTEWATER LINE 'A' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.



WASTEWATER LINE 'B' PROFILE

SCALE: 1" = 30' HORZ.
1" = 3' VERT.

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE
CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW
DRAWN: JRW
APPROVED: AAP
DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

WASTEWATER
PROFILE

WP PROJECT NO.:

135-003

SHEET NO.:

C-10

NOTES:

1. THE CONTRACTOR SHALL POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTHS OF ALL PROPOSED UTILITY CROSSINGS & CONNECTIONS PRIOR TO ANY CONSTRUCTION OR ORDERING OF MATERIALS. CONTRACTOR SHALL REPORT DISCREPANCIES OF EXISTING UTILITIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. POST THE INSTALLATION OF DRAINAGE INLETS, INLET PROTECTION SHALL BE INSTALLED AS SOON AS PRACTICAL, INLET PROTECTION SHALL REMAIN IN PLACE UNTIL VEGETATION HAS BEEN ESTABLISHED.
4. REFERENCE SHEET C-12 & C-13 FOR STORM SEWER PROFILES. REFERENCE SHEET C-## FOR STORM SEWER CALCULATIONS.
5. ALL STORM SEWER BENDS AND WYES SHALL BE PREFABRICATED.
6. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

0 15 30 60
HORIZONTAL SCALE

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know what's below.
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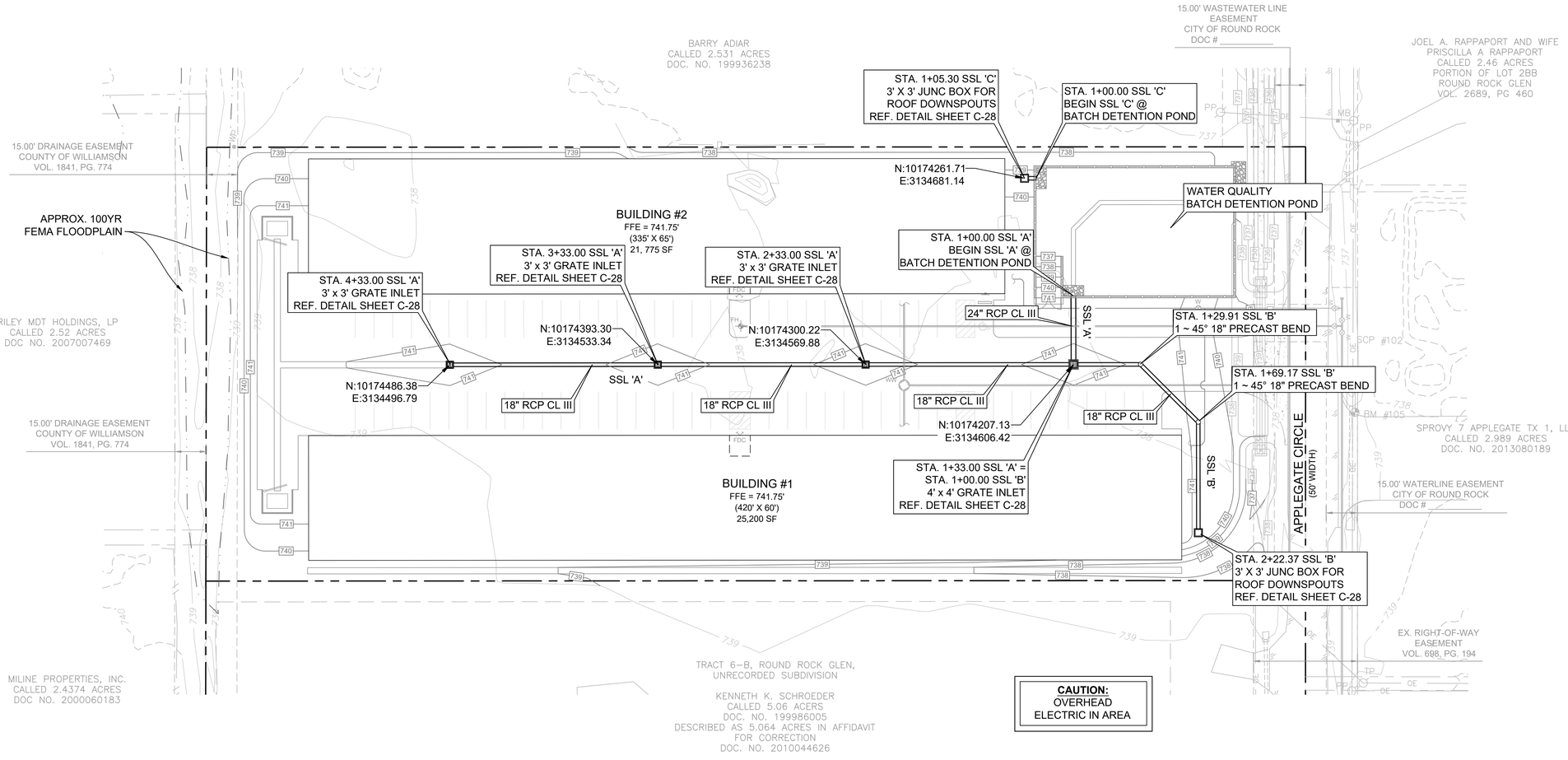

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

STORM SEWER PLAN

WP PROJECT NO.:

135-003

SHEET NO.:

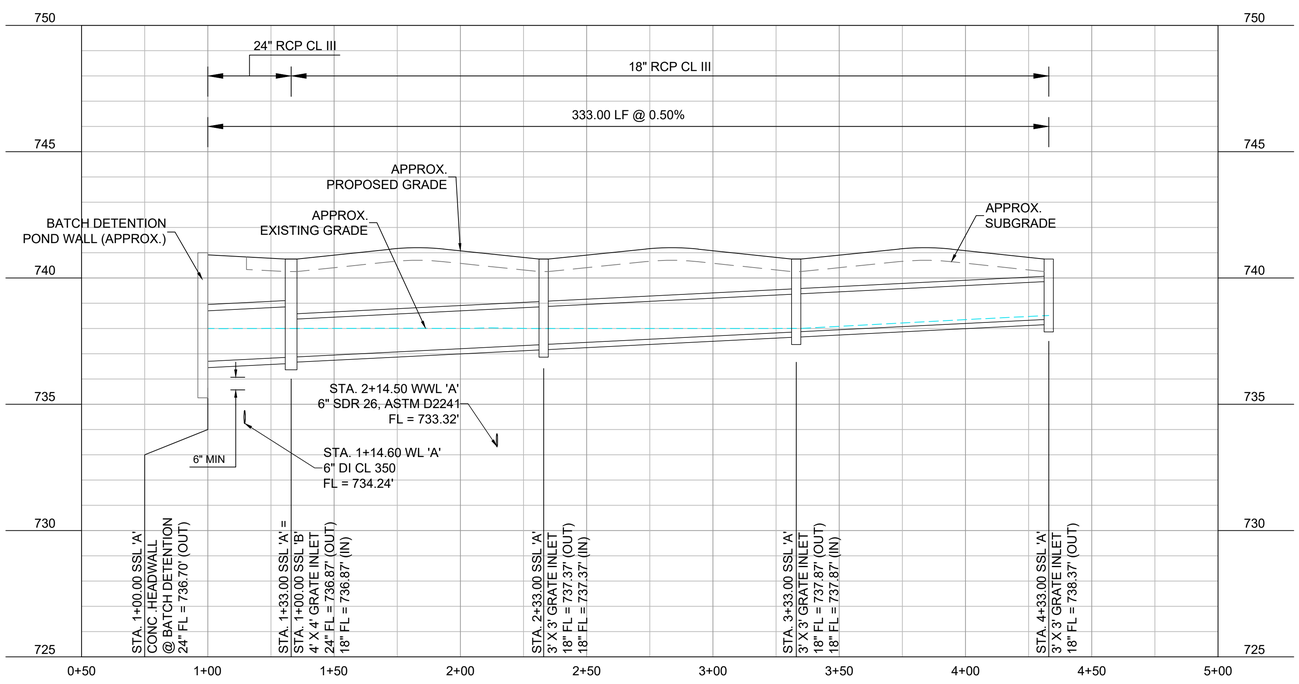
C-11

K:\CAD\135-003 Applegate Circle\4-CAD\PLANS\SITE\135-003 STORM.dwg 7/12/2024 11:11:56 AM, JWC to PDF.pc3

NOTES:

1. PRIOR TO CONSTRUCTING STORM SEWER LINE A MINIMUM OF 2' OF FILL EMBANKMENT SHALL BE PLACED ABOVE THE SOFFIT OF THE PIPE. ONCE COMPACTED, THE TRENCHING OPERATION MAY BEGIN.

2. REFERENCE SHEET C-## FOR HYDRAULIC STORM SEWER CALCULATIONS.



STORM SEWER LINE 'A' PROFILE
SCALE: 1" = 30' HORZ.
1" = 3' VERT.

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JUL 24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMTD

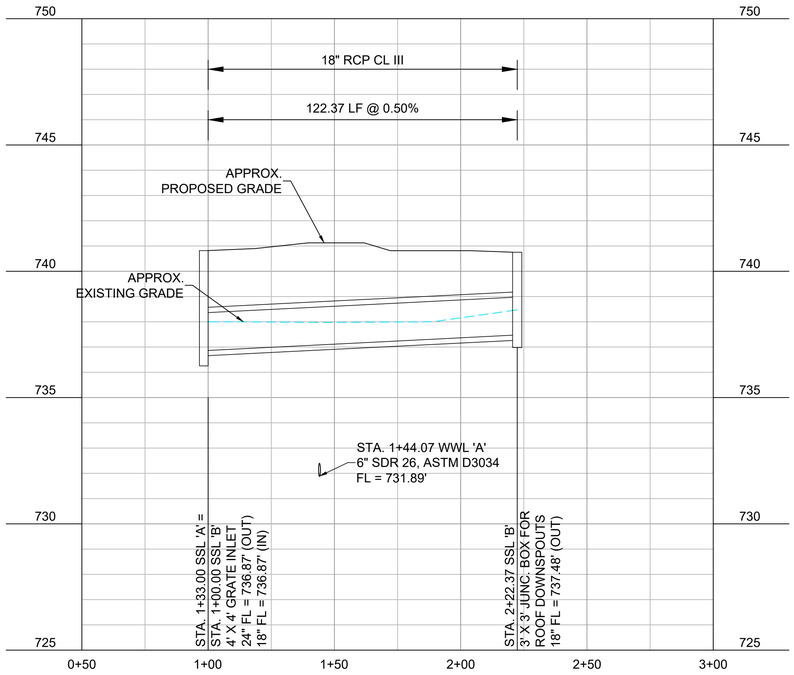
SHEET TITLE:
STORM SEWER PROFILE (1 OF 2)

WP PROJECT NO.:
135-003

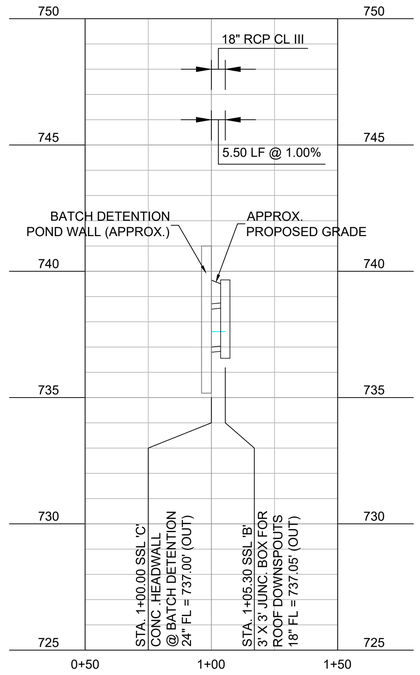
SHEET NO.:
C-12

NOTES:

1. PRIOR TO CONSTRUCTING STORM SEWER LINE A MINIMUM OF 2' OF FILL EMBANKMENT SHALL BE PLACED ABOVE THE SOFFIT OF THE PIPE. ONCE COMPACTED, THE TRENCHING OPERATION MAY BEGIN.
2. REFERENCE SHEET C-## FOR HYDRAULIC STORM SEWER CALCULATIONS.



STORM SEWER LINE 'B' PROFILE
SCALE: 1" = 30' HORZ.
1" = 3' VERT.



STORM SEWER LINE 'C' PROFILE
SCALE: 1" = 30' HORZ.
1" = 3' VERT.

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
12 July 24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:
STORM SEWER PROFILE (2 OF 2)

WP PROJECT NO.:
135-003

SHEET NO.:
C-13

NOTES:

1. PAVEMENT SECTIONS WERE PREPARED BY XXX THE CONSTRUCTION AND TESTING SHALL COMPLY WITH THEIR RECOMMENDATIONS FROM THE "XXX" DATED XXX.

   P.O.C.: XXX
   PHONE NO.: XXX

2. LIGHT DUTY PAVEMENT AREAS ARE DEFINED AS PARKING STALLS & MEDIUM DUTY PAVEMENT AREAS ARE DEFINED AS DRIVE AISLES AND FIRE LANES.

3. CONCRETE PAVING SHALL HAVE TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS AT INTERVALS NOT EXCEEDING 12.5 FEET. DEPTH OF JOINTS SHALL BE AT LEAST 1/4 OF THE SLAB THICKNESS. THE JOINTS MUST BE SAW CUT AS SOON AS THE CONCRETE HAS HARDENED AND WILL NOT REAR OR RAVEL WHEN CUT, WITHIN 6-12 HOURS OF PLACEMENT.

4. SUPPORT REINFORCEMENT STEEL WITH CHAIRS OF PRECAST CONCRETE BLOCKS ABOUT 1 INCH BELOW THE BOTTOM OF THE PLANNED CONTRACTION JOINTS.

5. PROVIDE LOAD TRANSFER AT THE INTERFACE BETWEEN AREAS OF CONCRETE PLACED AT DIFFERENT TIMES USING TIED AND KEYED CONSTRUCTION JOINTS. PLACE CONSTRUCTION JOINT AT PLANNED CONTRACTION JOINT LOCATIONS.

6. ALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH CORR SPECIFICATION ITEM 360.

7. STAGE PAVEMENT CONSTRUCTION SUCH THAT CONSTRUCTION TRAFFIC, INCLUDING CONCRETE TRUCKS, DO NOT TRAVEL ON NEWLY PLACED CONCRETE PAVEMENT UNTIL THE CONCRETE ACHIEVES AT LEAST 75% OF THE DESIGN STRENGTH, USUALLY 7 DAYS.

8. CONCRETE JOINTING FOR SIDEWALKS SHALL MATCH THE ADJACENT CURB OR PAVEMENT JOINTING.

9. SIDEWALKS ADJACENT TO CURB AND GUTTERS SHALL BE DOWELED TO PREVENT DIFFERENTIAL MOVEMENT.

10. SIDEWALKS AT DOORWAY LOCATIONS SHALL BE DOWELED TO THE BUILDING FOUNDATION TO PREVENT DIFFERENTIAL MOVEMENT.

11. CURBS WITHIN THE LIMITS OF CONCRETE PAVEMENT SHALL BE MONOLITHICALLY POURED WITH PAVEMENT.

12. FIRE ACCESS ALL WEATHER SURFACE (CONCRETE OR ASHPALT) IS REQUIRED FOR FIRE APPARTUS ACCESS ROADS BEFORE GOING VERTICAL WITH OR BRINGING CONBUSTIBLE MATERIALS TO THE CONSTRUCTION SITE. MUST SUPPORT 75,000 POUNDS. HYDRANTS AT THE CONSTRUCTION SITE SHALL BE IN SERVICE.

13. ALL SIGNAGE WILL REQUIRE A SEPARATE SIGN PERMIT. APPROVAL OF A SITE DEVELOPMENT PERMIT OR BUILDING PERMIT DOES NOT CONSTITUTE APPROVAL OF SIGNAGE.

14. FIRE HYDRANTS OR FIRE FLOW TANKS AND FIRE LANE ACCESS ROADWAYS SHALL BE INSTALLED, APPROVED BY WILLIAMSON COUNTY FIRE MARSHAL'S OFFICE, AND MAINTAINED PRIOR TO VERTICAL CONSTRUCTION OF ANY BUILDING OR STRUCTURE.

15. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

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HORIZONTAL SCALE

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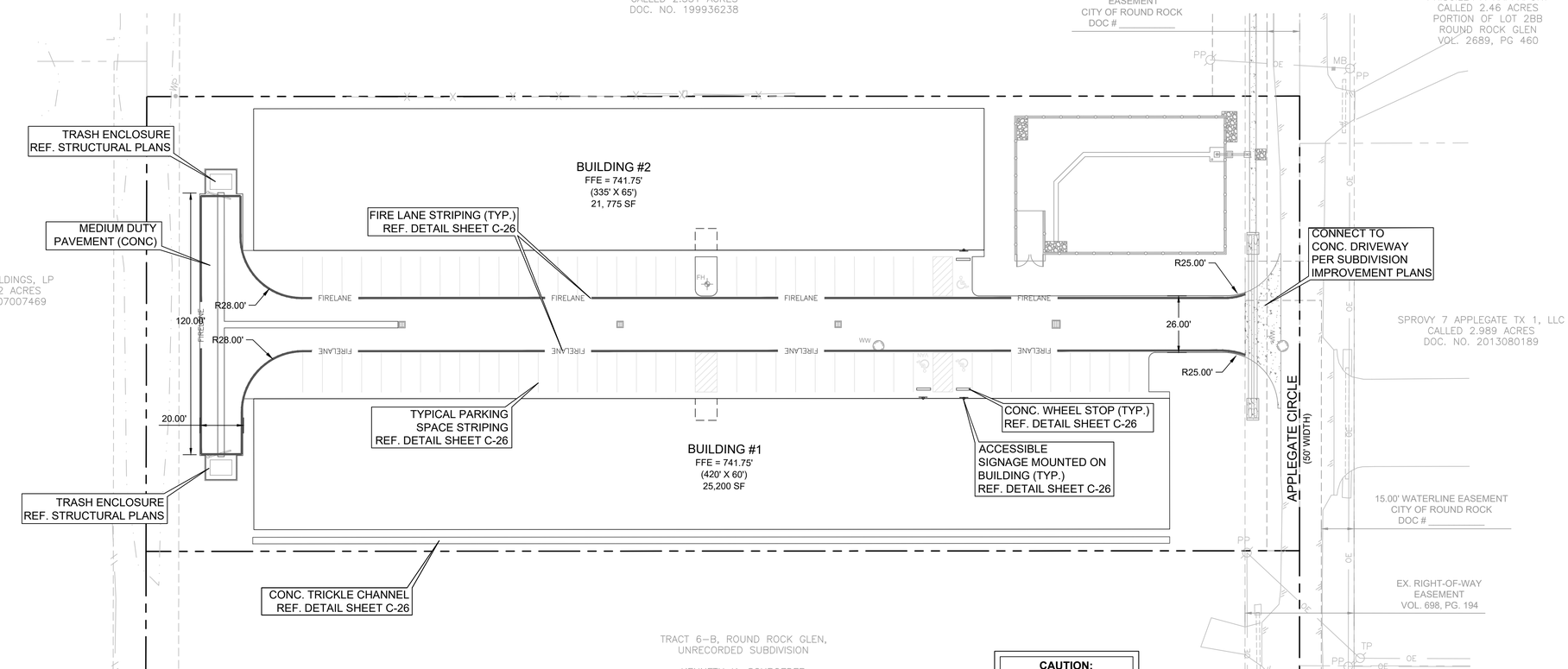
LEGEND:

MEDIUM DUTY PAVEMENT (CONC)



CAUTION:
OVERHEAD
ELECTRIC IN AREA

PAVEMENT SECTION RECOMMENDATIONS

RIGID PAVEMENT SECTION			
JOINTED REINFORCED CONCRETE PAVEMENT 3600 PSI @ 28 DAYS	---	6.0"	---

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

PAVING, SIGNAGE, & STRIPING PLAN

WP PROJECT NO.:

135-003

SHEET NO.:

C-14

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LEGEND

DELINEATES ACCESSIBLE ROUTE . . . . . .

NOTES:

1. THE ACCESSIBLE ROUTE SHALL NOT EXCEED 2% CROSS SLOPE NOR 5% RUNNING SLOPE WITH THE EXCEPTION OF CURB RAMPS AND RAMP/ RAIL SECTIONS, WHICH SHALL NOT EXCEED 2% CROSS SLOPE NOR 8.33% RUNNING SLOPE.
2. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

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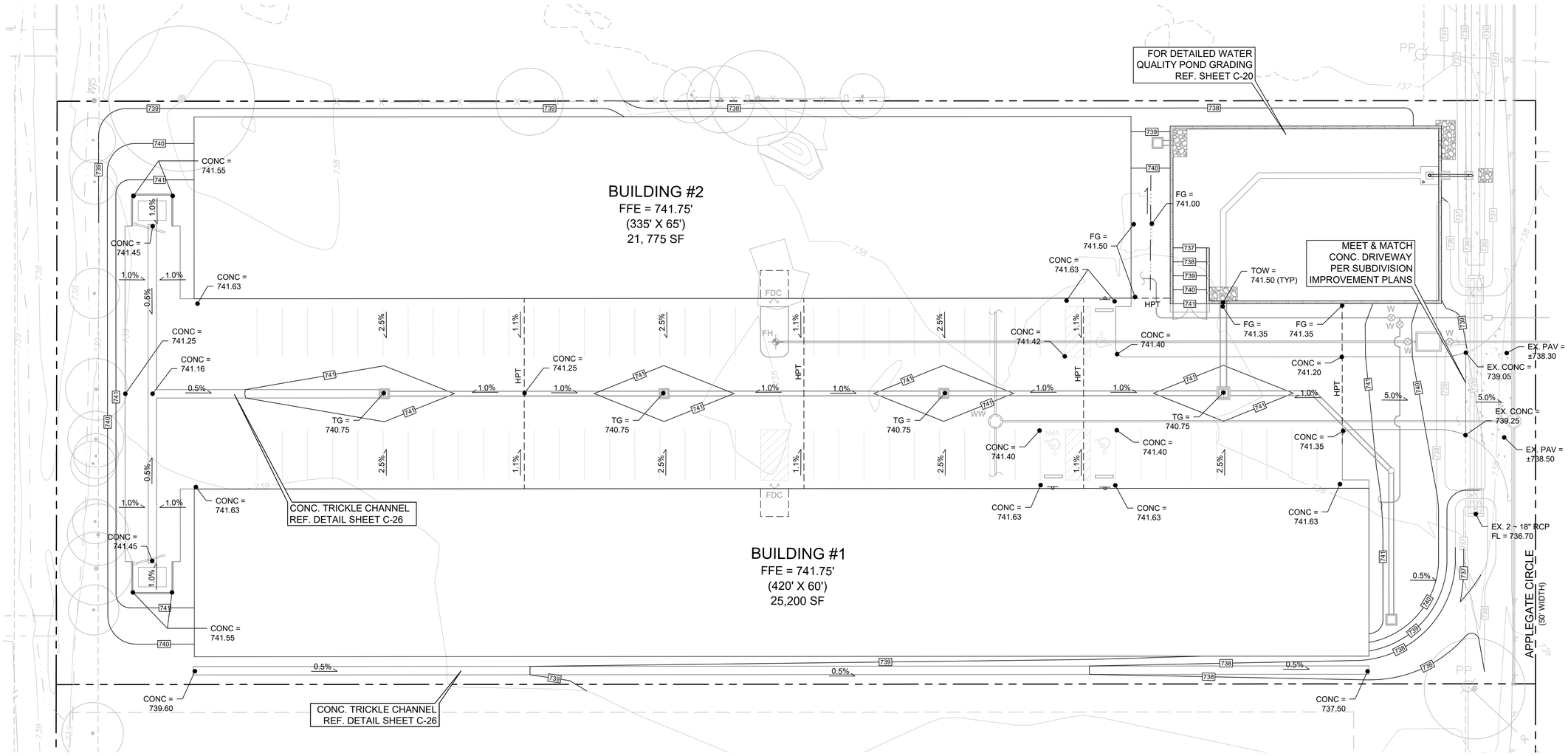

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
12/24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:
GRADING PLAN

WP PROJECT NO.:
135-003

SHEET NO.:
C-15

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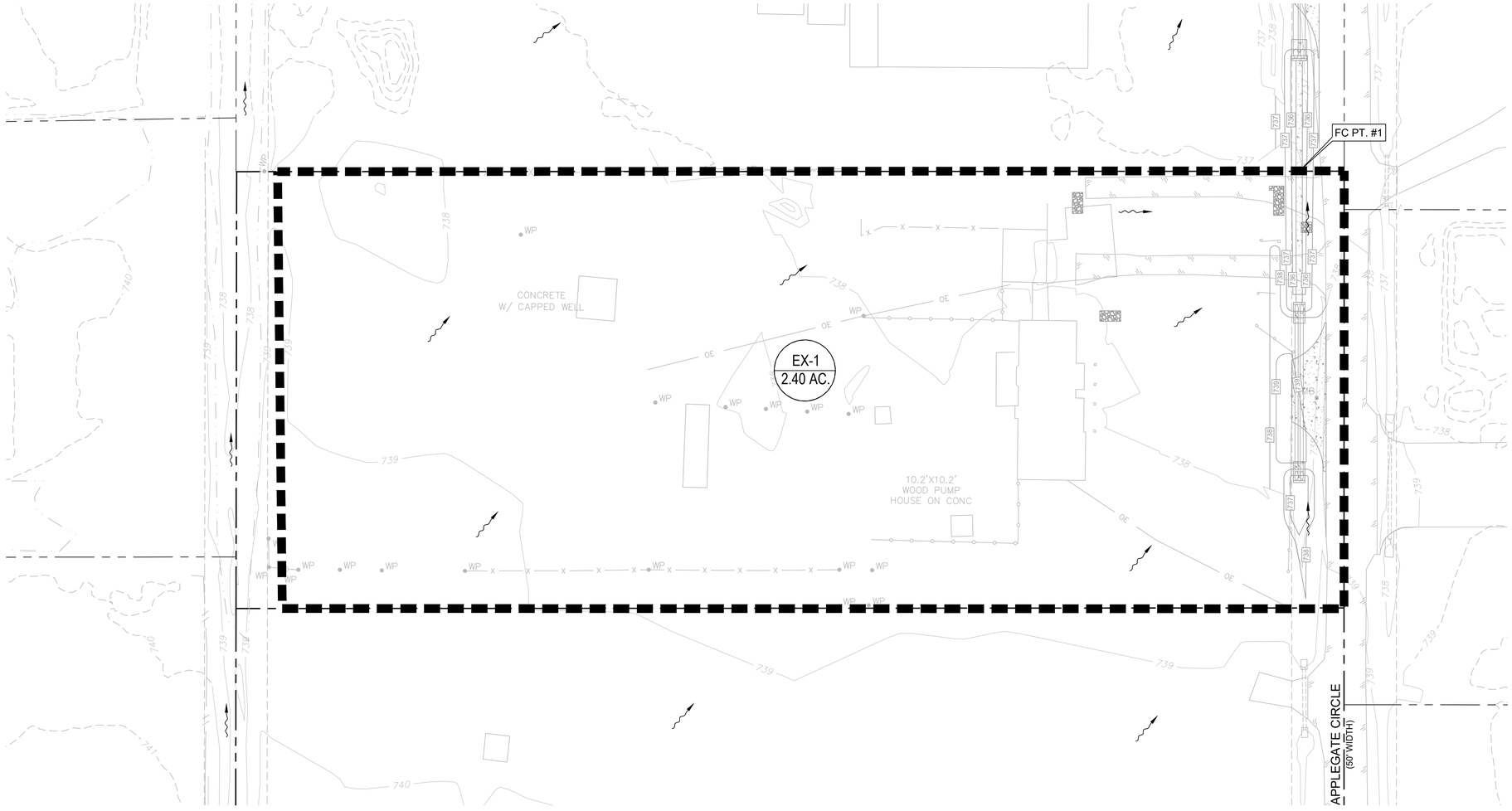
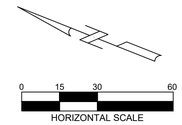
EXISTING CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
EX-1	2.40	5.0	10	0.34	0.40	0.44	0.51	6.24	9.13	11.00	14.20	5.09	8.76	11.62	17.38





LEGEND

EX. DRAINAGE BOUNDARY

FLOW DIRECTION

NOTE:

1. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

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STATE OF TEXAS
ANTONIO A. PRETE
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LICENSED PROFESSIONAL ENGINEER
12 JUL 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOM'D
REVISIONS
DATE
No.

SHEET TITLE:

EXISTING DRAINAGE AREA MAP

WP PROJECT NO.:

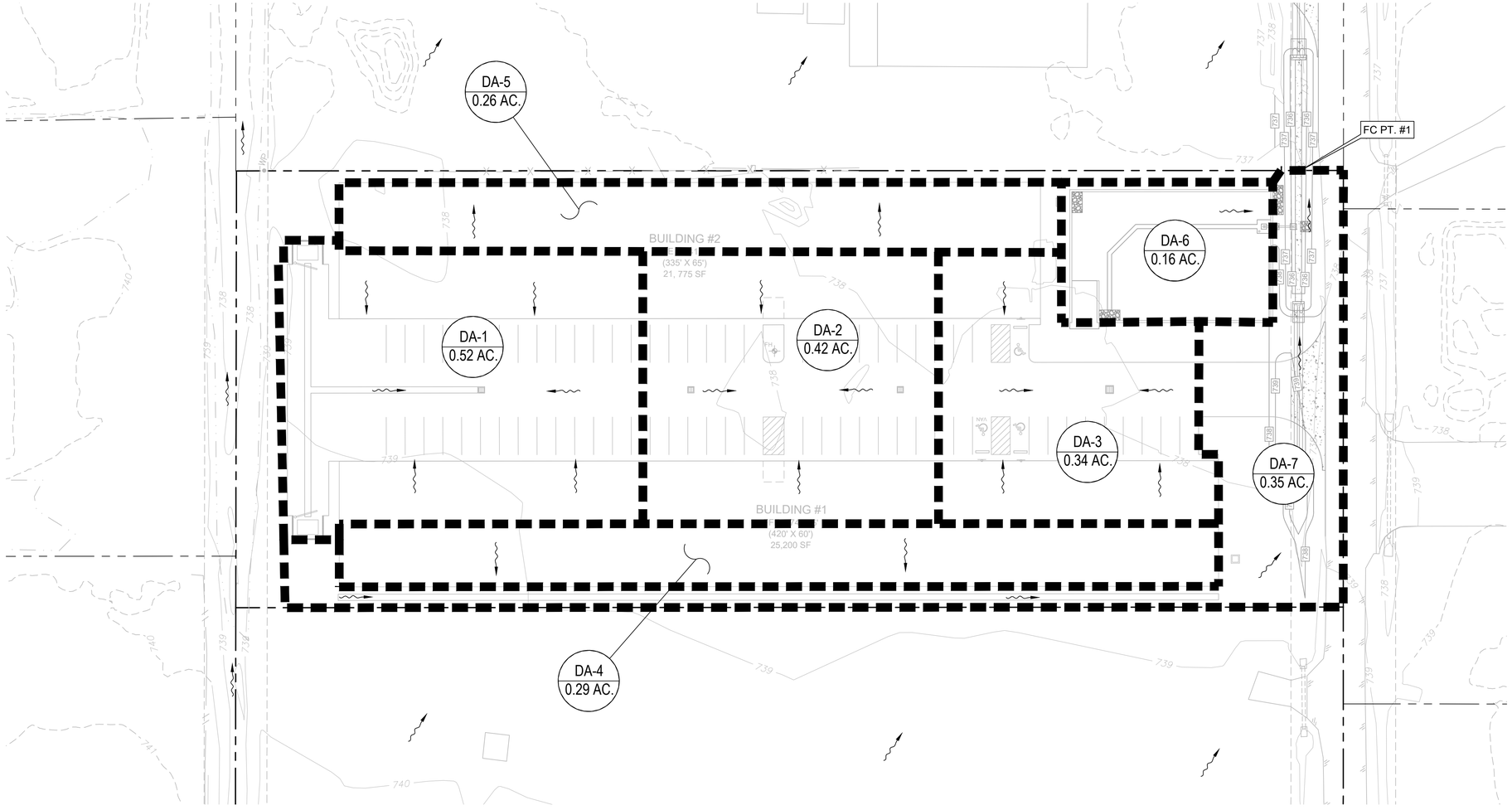
135-003

SHEET NO.:

C-16

PROPOSED CONDITIONS DRAINAGE TABLE (RATIONAL METHOD - ATLAS 14 BRUSHY CREEK WATERSHED):

SUB-BASIN DESIGNATION	AREA [acres]	T_c [min.]	ESTIMATED IMPERV. +/- [%]	C_2	C_{10}	C_{25}	C_{100}	I_2 [in/hr]	I_{10} [in/hr]	I_{25} [in/hr]	I_{100} [in/hr]	Q_2 [cfs]	Q_{10} [cfs]	Q_{25} [cfs]	Q_{100} [cfs]
DA-1	0.52	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	2.43	3.94	5.03	7.16
DA-2	0.42	5.0	95	0.73	0.81	0.86	0.94	6.24	9.13	11.00	14.20	1.91	3.11	3.97	5.61
DA-3	0.34	5.0	80	0.70	0.78	0.83	0.92	6.24	9.13	11.00	14.20	1.49	2.42	3.10	4.44
DA-4	0.29	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	1.36	2.20	2.81	3.99
DA-5	0.26	5.0	100	0.75	0.83	0.88	0.97	6.24	9.13	11.00	14.20	1.22	1.97	2.52	3.58
DA-6	0.16	5.0	0	0.29	0.35	0.39	0.46	6.24	9.13	11.00	14.20	0.29	0.51	0.69	1.05
DA-7	0.35	5.0	25	0.41	0.47	0.51	0.59	6.24	9.13	11.00	14.20	0.90	1.50	1.96	2.93



0 15 30 60
HORIZONTAL SCALE

LEGEND

PROP. DRAINAGE BOUNDARY

FLOW DIRECTION

NOTE:

1. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.

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STATE OF TEXAS
ANTONIO A. PRETE
93799
LICENSED
PROFESSIONAL ENGINEER
12/4/24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

PROPOSED DRAINAGE AREA MAP

WP PROJECT NO.:

135-003

SHEET NO.:

C-17

AREA FOR DETERMINING TSS REMOVAL CALCULATIONS		
WQ BASIN	AREA IN BASIN	IMP. AREA IN BASIN
WQ-1	1.99 AC.	1.79 AC.
WQ-2	0.54 AC.	0.08 AC.
TOTAL	2.53 AC.	1.87 AC.

LEGEND

IMPERVIOUS COVER TO BE ACCOUNTED FOR BY OVER TREATMENT

FLOW DIRECTION

0 20 40 80
HORIZONTAL SCALE

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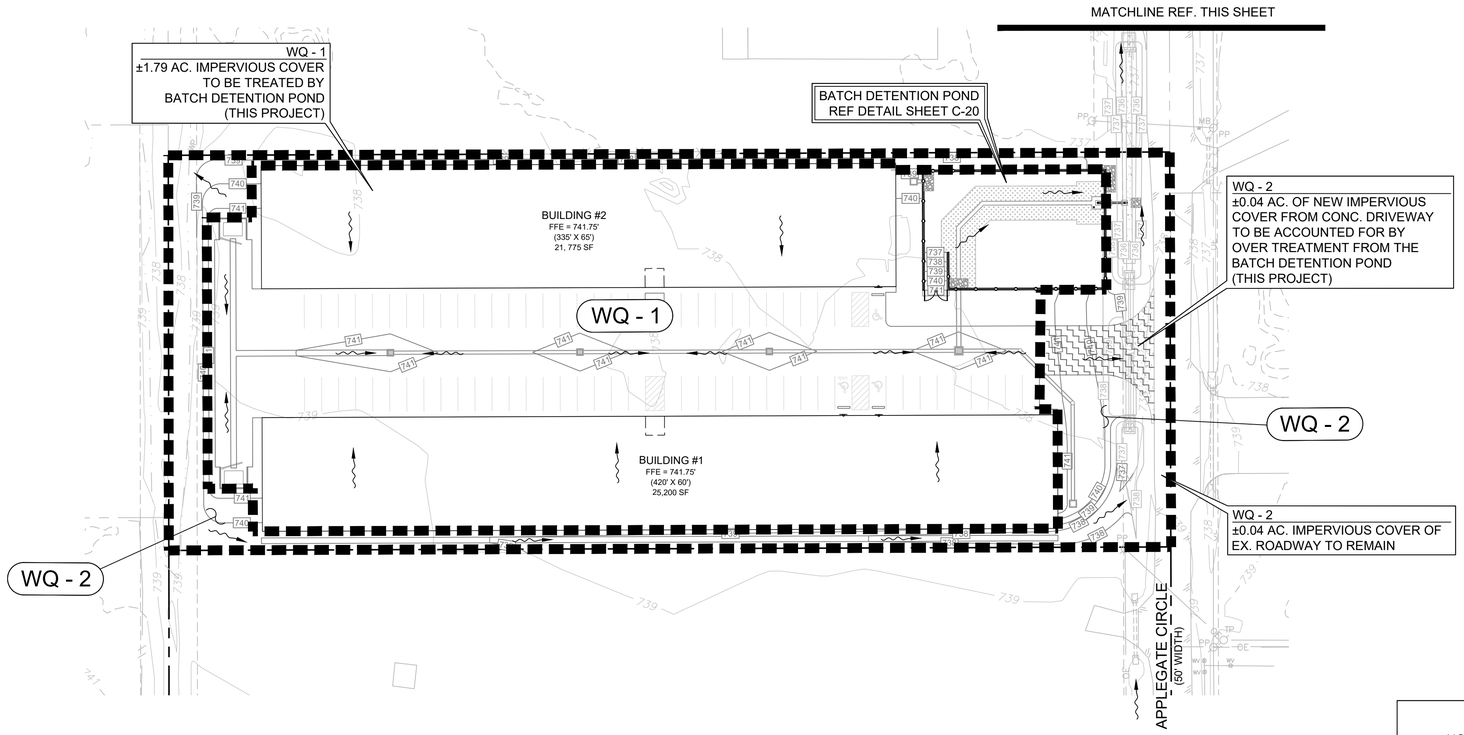
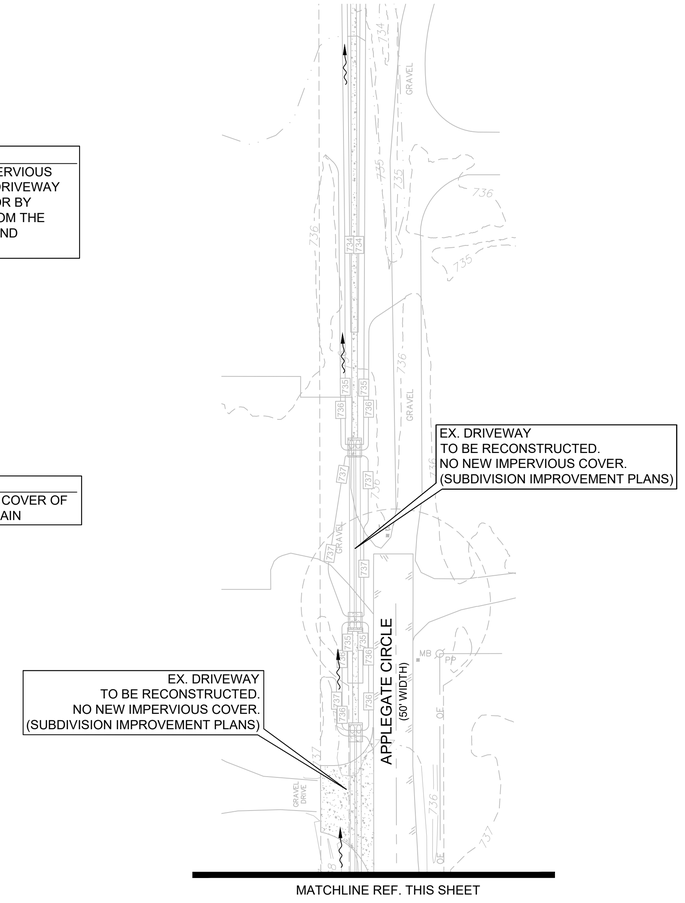
NOTE:

1. REFERENCE SHEET C-2 FOR ABBREVIATIONS AND MASTER LEGEND.





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ANTONIO A. PRETE
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12-Jul-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

WATER QUALITY SUMMARY

WP PROJECT NO.:

135-003

SHEET NO.:

C-18

OVERALL TSS REMOVAL CALCULATIONS

IN ACCORDANCE WITH TCEQ REGULATIONS: RG-348

Required Load Reduction (L_M)- Total Project Area:

Eq 3.2 $L_m = 28.9 (A_N * P)$

County =		Williamson	
P	= Average Annual Precipitation	32.0	[in]
$A_{tot-prj}$	= Total project area included in the plan	2.53	[ac]
A_{pre}	= Predevelopment impervious area	0.26	[ac]
A_{post}	= Postdevelopment impervious area	1.87	[ac]
A_N	= Area of the net increase of impervious area	1.61	[ac]
IC_{pre}	= Fraction of impervious cover (Pre Development)	10.28	[%]
IC_{post}	= Fraction of impervious cover (Post Development)	73.91	[%]
L_M	= Req'd TSS removal (***80%*** of Increase)	**1,401**	**[lbs]**

BATCH DETENTION POND REMOVAL CALCULATIONS

IN ACCORDANCE WITH TCEQ REGULATIONS: RG-348

Load Removed by BMP (L_R):

Eq 3.8 $L_R = (\text{BMP Eff}) * P (A_I*34.6 + A_P*0.54)$

$A_{tot-sub}$	= Total area treated in the BMP subbasin	1.99	[ac]
A_I	= Impervious area proposed in BMP subbasin	1.79	[ac]
A_p	= Pervious area remainaing in the BMP subbasin	0.20	[ac]
IC	= Impervious cover (Post Development)	89.95	[%]
BMP Type =		**Batch Detention**	
BMP Eff	= BMP TSS Removal Efficiency	0.91	
L_R	= TSS Load Removed From Subbasin by BMP	**1,807**	**[lbs]**

Fraction of Annual Runoff to Treat the subbasin (F):

Eq 3.9 $F = L_M / \Sigma L_R$

Desired L_M	= Req'd TSS removal (80% of Increase typical)	1,401	[lbs]
L_R	= Load removed from *each* BMP	1,807	[lbs]
F	= Fraction of the Annual Rainfall treated by BMP	**0.78**	

Water Quality Volume Required (WQV_{req}):

Eq 3.10 $WQV = d * R_V * A$

Eq 3.11 $R_v = 1.72(IC)^3 - 1.97(IC)^2 + 1.23(IC) + .02$

$WQV_{req} = WQV + S$

F =	Fraction of the Annual Rainfall treated by BMP	0.78	
d =	Rainfall Depth required to capture	1.00	[in]
A =	Portion of Site contributing to BMP	1.99	[ac]
IC =	Fraction of Impervious Cover	0.90	
R_v =	Runoff Coefficient	0.78	
WQV =	Water quality volume	5,665	[ft^3]
S =	20% Increase for Sediment Storage	1,133	[ft^3]
WQV_{req} =	Water quality volume required (With 20% increase)	**6,798**	**[ft^3]**

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

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SHEET TITLE:

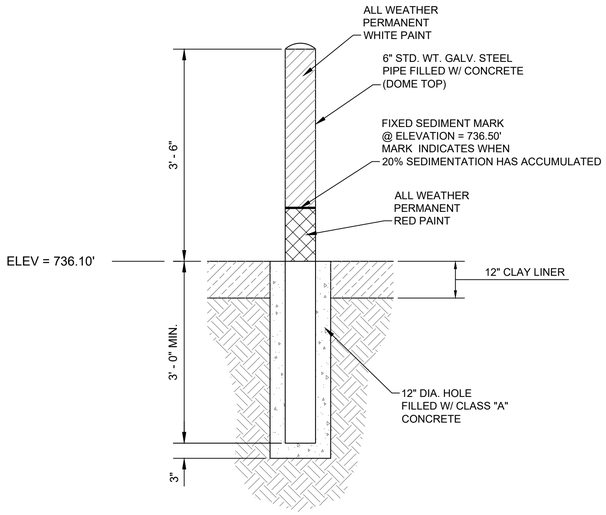
WATER QUALITY CALCULATIONS

WP PROJECT NO.:

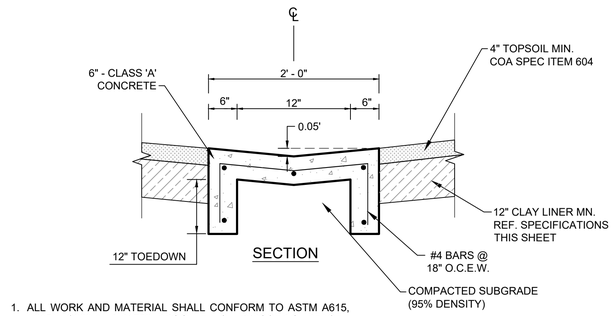
135-003

SHEET NO.:

C-19

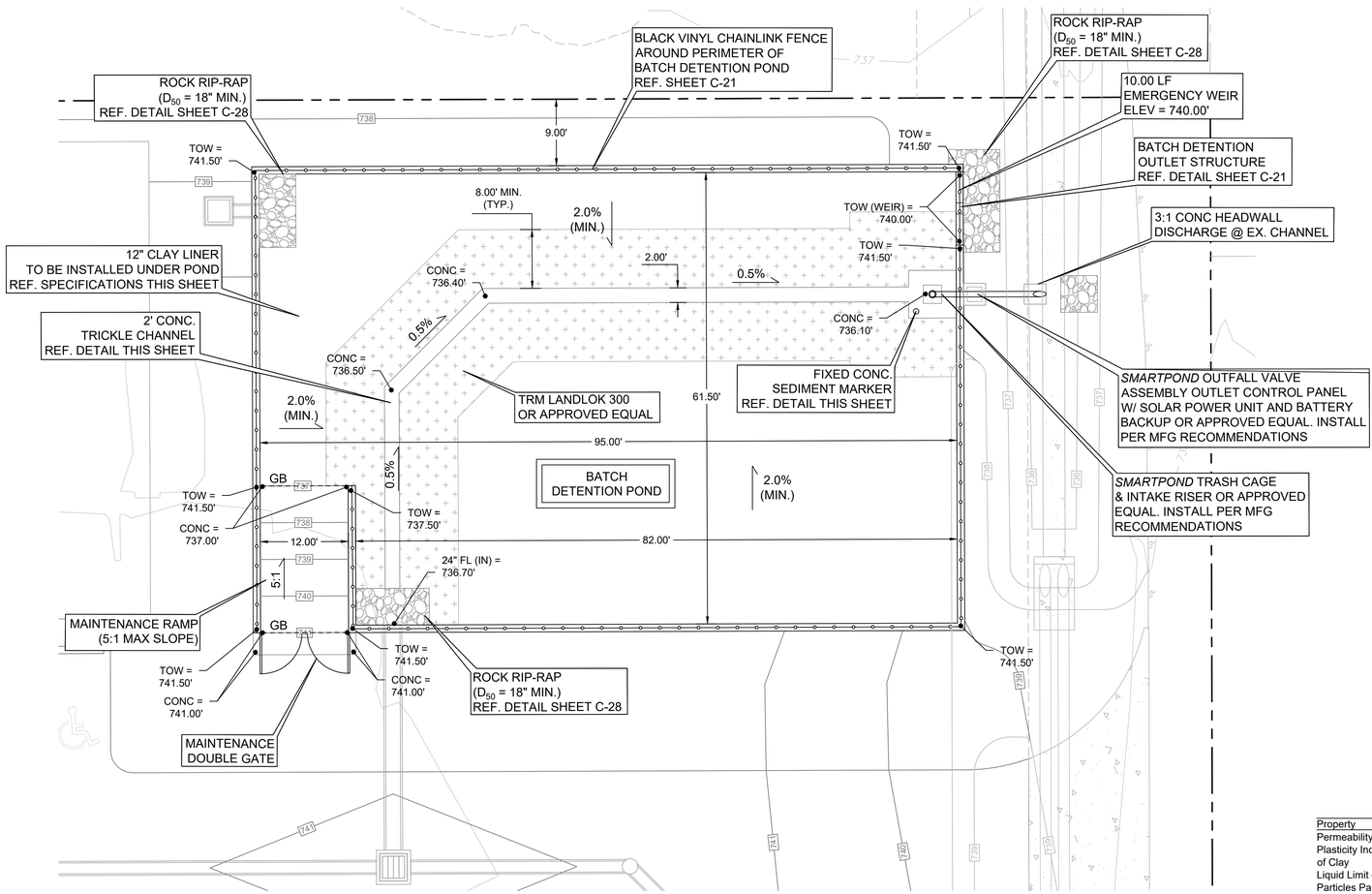


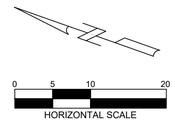
FIXED CONCRETE SEDIMENT MARKER
NTS



1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 10' - 0'.
3. EXPANSION JOINTS AS PER STANDARD ASTM D-1752.
4. EXPANSION JOINT INTERVALS SHALL NOT EXCEED 40' - 0".

CONCRETE TRICKLE CHANNEL
W/ TOEDOWN
NTS





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Call before you dig.

NOTE:

1. 12" CLAY LINER SHOULD BE INSTALLED IN LIFTS NO GREATER THAN 6" AND AS RECOMMENDED BY A LICENSED GEOTECHNICAL ENGINEER AND SHALL BE KEPT MOIST AT ALL TIMES TO AVOID CRACKING. THE GEOTECHNICAL ENGINEER SHALL MONITOR THE INSTALLATION OF THE CLAY LINER AND TEST IT TO CERTIFY THAT IT WILL NOT LEAK. SPECIFICATIONS ARE LISTED ON THE SHEET.
2. SEE SHEET C-23 FOR BATCH DETENTION POND CONTROLLER LOGIC AND BLOCK DIAGRAMS.
3. CLEARLY VISIBLE ALARM SYSTEM TO BE PROVIDED WITH BATCH DETENTION CONTROLLER TO INDICATE SYSTEM MALFUNCTION. ALARM SYSTEM TO FEATURE SUNLIGHT VISIBLE LED ALARM LIGHT.
4. SIGN TO BE POSTED WITH PHONE NUMBERS OF THE OWNER AND APPROPRIATE TCEQ REGIONAL OFFICE.
5. SEE TXDOT SPECIAL SPECIFICATION 7130 FOR BATCH DETENTION MATERIAL, EQUIPMENT, AND CONSTRUCTION. A COPY OF TXDOT SPECIAL SPECIFICATION 7130 IS INCLUDED IN THE WPAP FOR THE IRONWOOD CONNECTION FACILITY.

CLAY LINER SPECIFICATIONS

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	Cm/Sec	1 x 10 $^{-6}$
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30 Clay
Particles Passing	ASTM D-422	%	Not less than 30 Clay
Compaction	ASTM D-2216	%	95% of Standard Proctor Density

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
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ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 July 24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

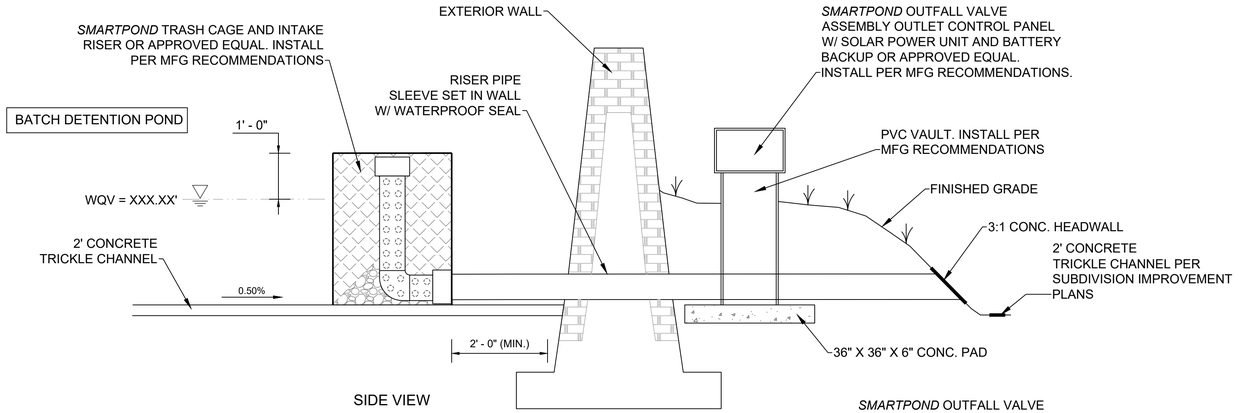
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

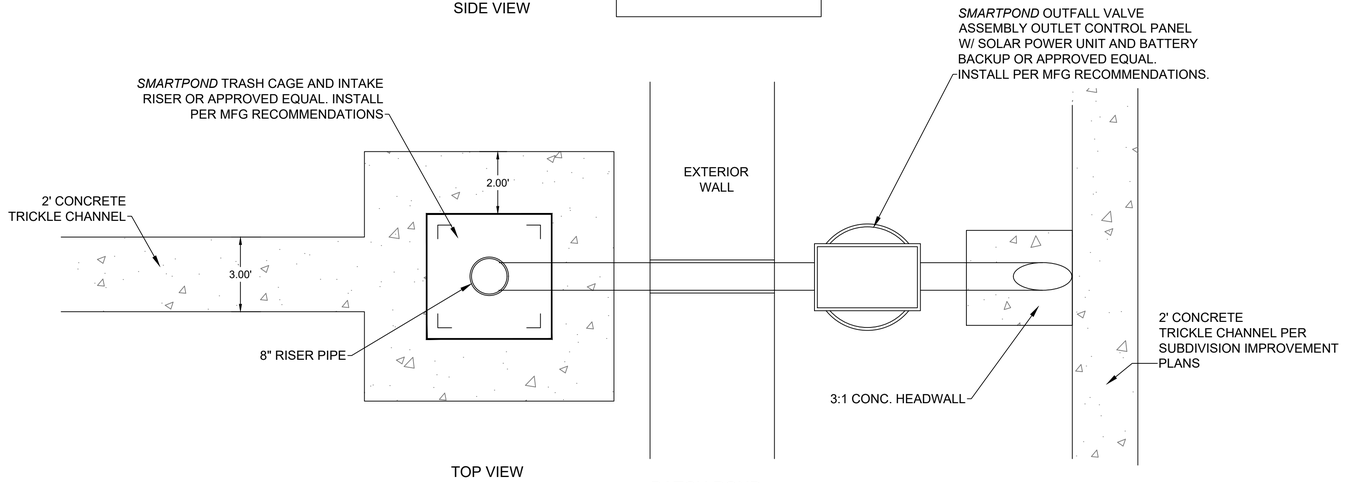
REVISIONS
No. | DATE | RECOM'D

SHEET TITLE:
BATCH DETENTION POND

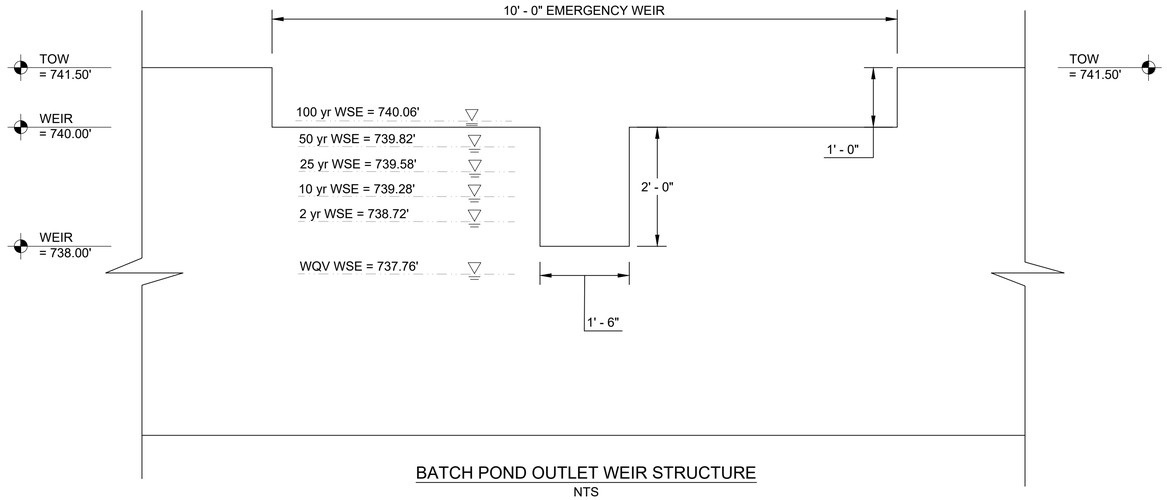
WP PROJECT NO.:
135-003

SHEET NO.:
C-20





BATCH POND
VALVE OUTFALL DETAIL
NTS



BATCH POND OUTLET WEIR STRUCTURE
NTS

NOTE TO CONTRACTOR:
DETENTION POND WALL SECTIONS ARE SHOWN FOR INFORMATION ONLY.
REF. STRUCTURAL PLANS FOR WALL DESIGN, DIMENSIONS, NOTES, & DETAILS.

NOTES:

1. CONTROL VALVE TO BE MOTOR ACTUATED VALVE. VALVE SHALL BE WIRED TO A CONTROLLER THAT OPENS VALVE 12 HOURS AFTER RAINFALL EVENT AND CLOSES VALVE ONCE POND HAS DRAINED DRY. CONTROLLER SHALL INCLUDE PROVISION FOR A MANUAL OVERRIDE SWITCH.
2. 8" PERFORATED RISER PIPE SHALL INCLUDE PERFORATIONS AT THE FLOWLINE OF THE PIPE.

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12 JUL 24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

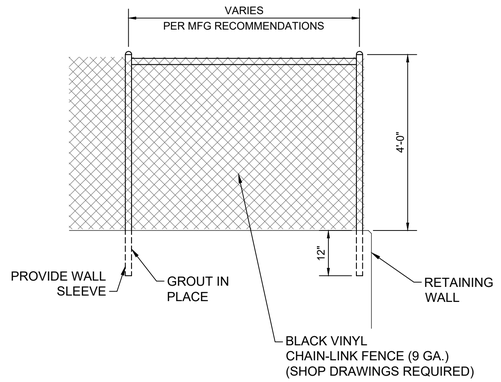
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

RECOMD
REVISIONS
DATE
No.

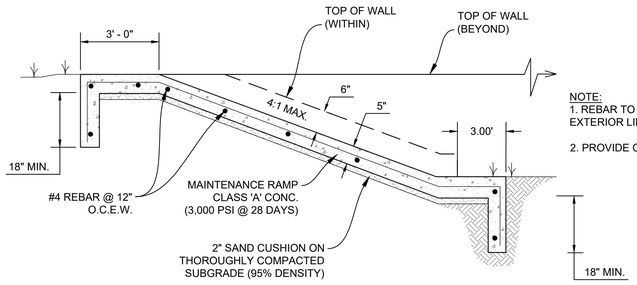
SHEET TITLE:
BATCH DETENTION POND DETAILS (1 OF 3)

WP PROJECT NO.:
135-003

SHEET NO.:
C-21



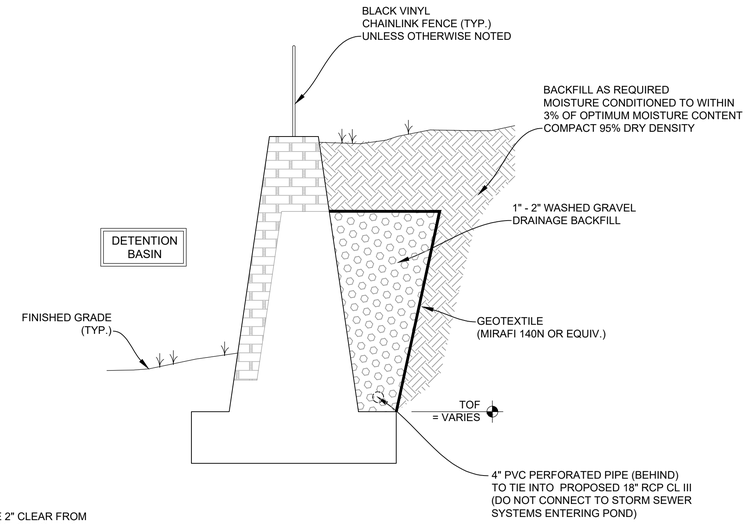
BLACK VINYL CHAIN LINK FENCE
NTS



NOTE:
1. REBAR TO HAVE 2" CLEAR FROM EXTERIOR LIMITS OF CONC. TYP.

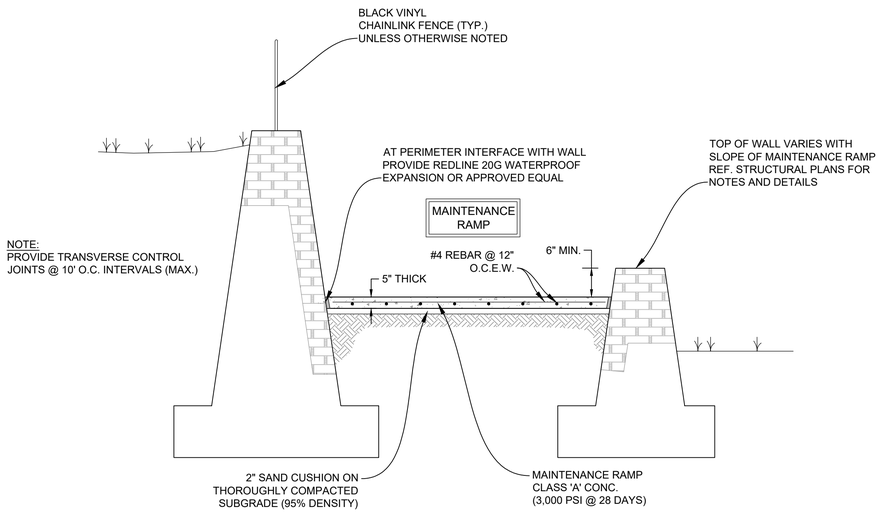
2. PROVIDE CONTROL JOINTS @ 10' O.C.

MAINTENANCE RAMP TOEDOWN
NTS



TYPICAL POND WALL SECTION
NTS

NOTE TO CONTRACTOR:
DETENTION POND WALL SECTIONS ARE SHOWN FOR INFORMATION ONLY.
REF. STRUCTURAL PLANS FOR WALL DESIGN, DIMENSIONS, NOTES, & DETAILS.

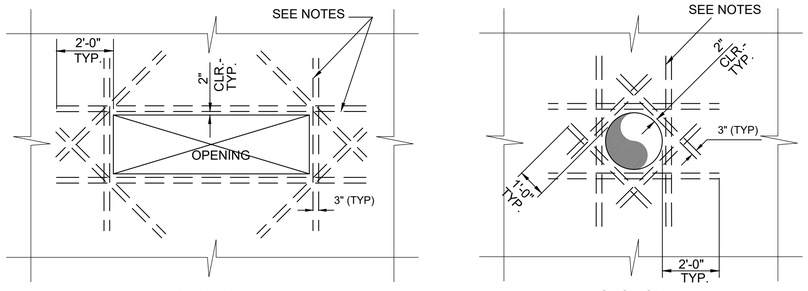


MAINTENANCE RAMP
NTS

RETAINING WALL NOTES & SPECIFICATIONS

GENERAL NOTES:

1. ANY CONCRETE CONSTRUCTION OF THE RETAINING WALL SHALL COMPLY WITH THE CITY OF ROUND ROCK SPECIFICATIONS, SERIES 400, "CONCRETE STRUCTURES AND MISCELLANEOUS CONCRETE".
2. THE CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCE FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS.
3. JOB SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL, AT A MINIMUM, ADHERE TO OCCUPATIONAL SAFETY AND HEALTH (OSHA) REGULATIONS TO PROTECT PERSONNEL.
4. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.
5. OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE, IF AN OPTION IS CHOSEN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.
6. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, NOTES, AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE POND. MEASURES SHALL BE TAKEN TO PREVENT PONDING OF WATER WITHIN THE FOUNDATION AREA.
8. FINAL SUBGRADE SHALL BE PROOFROLLED WITH A 15 TON PNEUMATIC ROLLER OR EQUIVALENT EQUIPMENT TO IDENTIFY WEAK AREAS. WEAK AREAS SHALL BE REMOVED AND REPLACED WITH SOILS WITH SIMILAR CLASSIFICATION, MOISTURE CONTENT AND DENSITY, AS THE ADJACENT IN-SITU SOILS. EXPOSED LIMESTONE FILLED WITH CRUSHED LIMESTONE BASE MATERIAL. PRIOR TO FOOTING CONSTRUCTION, THE SUBGRADE PREPARATION SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
9. OVER EXCAVATIONS SHALL BE BROUGHT TO THE CORRECT LINES AND GRADES WITH CONCRETE. THIS WILL BE AT THE CONTRACTOR'S EXPENSE.
10. BACKFILL SHALL COMPLY WITH THE GEOTECHNICAL INVESTIGATION. BACKFILLING SHALL NOT BEGIN UNTIL THE WALL HAS CURED FOR 7 DAYS AND REACHED 75% OF THE TOTAL 28 DAY COMPRESSIVE STRENGTH. FORMS SHALL REMAIN IN PLACE DURING THE CURING PERIOD.
11. BACKFILL PLACEMENT SHALL BE CONTROLLED TO PREVENT OVER COMPACTION OR DAMAGE TO THE STRUCTURE.
12. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SCI 318, UNLESS OTHERWISE NOTED.
13. LAP SPLICES SHALL BE 36 BAR DIAMETERS, UNLESS OTHERWISE NOTED.
14. A TREMIE SHALL BE USED TO PLACE CONCRETE WHERE THE FALL IS GREATER THAN 5 FEET.
15. REINFORCING STEEL SHALL BE ASTM 615 (FY =60 KSI), GRADE 60.
16. REBAR SHALL BE SUPPORTED OR PLACED ON CHAIRS AT THE POSITION REQUIRED BY THE DRAWINGS.
17. NO FIELD CUTTING REINFORCEMENT BY TORCH WILL BE ALLOWED. ACCEPTABLE CUTTING SHALL BE SHEARING OR SAWING.
18. WATERSTOPS SHALL COMPLY WITH THE CORR SPEC ITEM 416.
19. ALL VISIBLE CONCRETE SURFACES SHALL RECEIVE A GRADE I, CLASS A FINISH, IN ACCORDANCE WITH CORR SPEC ITEM 411.



NOTES:
1. USE SAME NUMBER OF MATTES AS NORMAL WALL REINFORCING.
2. BAR SIZE TO BE SAME AS LARGEST DIAMETER BAR IN NORMAL REINFORCING.

EXTRA REINFORCEMENT AT OPENINGS
NTS

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

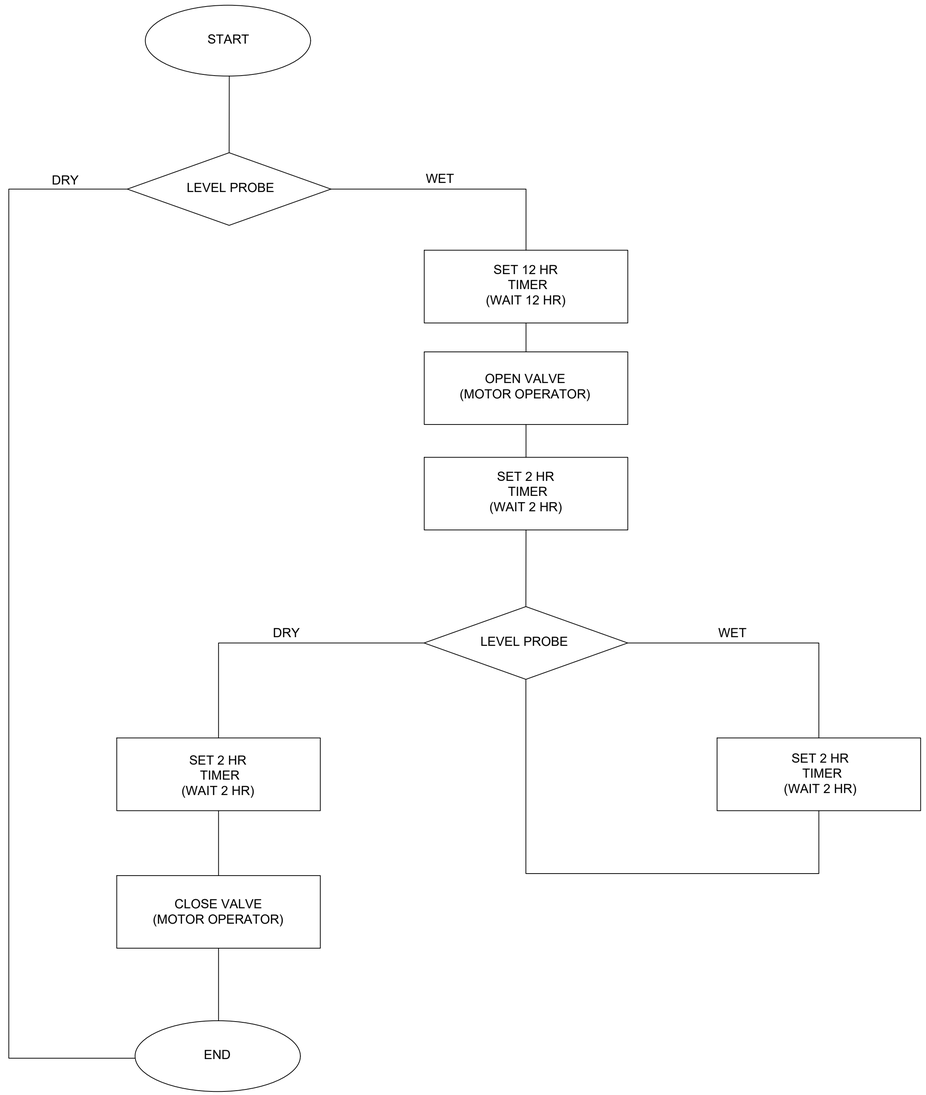
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

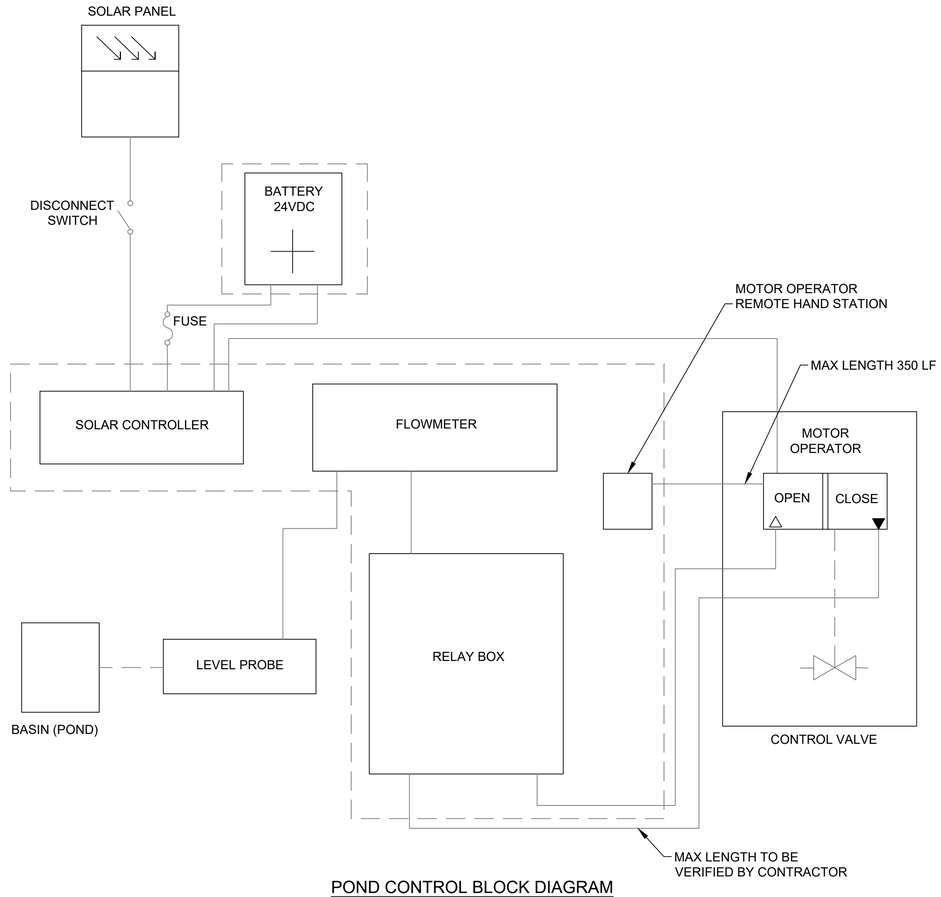
SHEET TITLE:
BATCH DETENTION POND DETAILS (2 OF 3)

WP PROJECT NO.:
135-003

SHEET NO.:
C-22



POND LEVEL CONTROL FLOW DIAGRAM
NTS



POND CONTROL BLOCK DIAGRAM
NTS

NOTE:

1. INSTALL COMPONENTS FOR SOLAR PHOTOVOLTAIC SYSTEM IN ACCORDANCE WITH NEC.
2. INSTALL ALL ABOVE GRADE CABLING IN RIGID METALLIC UNLESS OTHERWISE SPECIFICALLY IDENTIFIED BY THE MANUFACTURER AS DETRIMENTAL TO SIGNAL STRENGTH.
3. EQUIPMENT WITHIN DASHED LINES IS CONTAINED WITHIN THE SOLAR CONTROL PANEL OR BATTERY ENCLOSURE.
4. REFER TO SPECIAL SPECIFICATIONS 1012BATCH DETENTION POND FOR SOLAR CONTROL PANEL EQUIPMENT REQUIREMENTS.
5. REFER TO TXDOT STANDARD DETAILS BDS(1) AND TS-FD-12 FOR POLE MOUNTED SOLAR POWER SYSTEM.

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE
CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

BATCH
DETENTION
POND DETAILS
(3 OF 3)

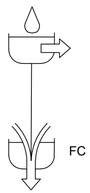
WP PROJECT NO.:

135-003

SHEET NO.:

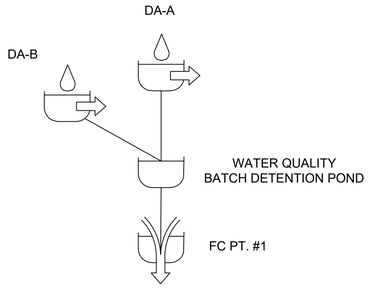
C-23

EX-A



EXISTING CONDITIONS
HEC-HMS MODEL SCHEMATIC
NTS

DA-A



PROPOSED CONDITIONS
HEC-HMS MODEL SCHEMATIC
NTS

HEC-HMS SUMMARY & INPUT VARIABLES:

DRAINAGE AREA BOUNDRY CONDITIONS SUMMARY:

	SUB-BASIN [ID]	AREA [mi^2]	AREA [ac]	CURVE #	Tc [min]	Tc lag [min]	
EXISTING CONDITIONS:	EX-A	0.0037500	2.40	85.4	5.00	3.00	*
PROPOSED CONDITIONS:	DA-A	0.0031094	1.99	96.6	5.00	3.00	*
	DA-B	0.0005469	0.35	87.5	5.00	3.00	*

* Minimum T_c lag used = 3 min

SUMMARY OF EXISTING VS. PROPOSED CONDITIONS RUNOFF AT SPECIFIED FLOW CONCENTRATION POINTS:

STORM EVENT	Ex Peak Discharge FC PT #1	Prop Peak Discharge FC PT #1
CORR 3hr	[cfs]	[cfs]
2 year	6.02	3.74
10 year	11.21	8.06
25 year	15.04	10.94
50 year	18.30	13.29
100 year	22.11	17.56

* Refer to Drainage Area Maps for Concentration Flow Points (eg FC PT # X).

SUMMARY TABLE: BATCH DETENTION WATER QUALITY POND

STORM EVENT	Peak Discharge Det Pnd	Peak Storage Det Pnd	Peak Elevation Det Pnd	Peak Discharge FC PT. #1
CORR 3hr	[cfs]	[ac-ft]	[ft]	[cfs]
2 year	3.24	0.28	738.72	3.74
10 year	6.78	0.35	739.28	8.06
25 year	9.26	0.39	739.58	10.94
50 year	11.25	0.43	739.82	13.29
100 year	15.12	0.46	740.06	17.56

* Refer to HEC-HMS Output for more information.
* Refer to Drainage Area Maps for Concentration Flow Points (eg FC PT # X).

STAGE - STORAGE - DISCHARGE: WATER QUALITY & BATCH DETENTION POND

	STAGE [msl]	AREA [ft^2]	AVG. AREA [ft^2]	∆ ELEV. [ft]	STORAGE [ft^3]	CUMULATIVE [ft^3]	CUMULATIVE [ac-ft]	RECTANGULAR WEIR [cfs]	EMERGENCY WEIR [cfs]	TOTAL DISCHARGE [cfs]	
WATER QUALITY VOLUME	736.10	0	0	0	0	0	0	0.00	0.00	**0.00**	
	737.00	5,610	2,805	0.90	2,524	2,524	0.058	0.00	0.00	**0.00**	WQV Req'd = 6,798 cf @ 737.76'
	738.00	5,670	5,640	1.00	5,640	8,164	0.187	0.00	0.00	**0.00**	
	739.00	5,730	5,700	1.00	5,700	13,864	0.318	4.50	0.00	**4.50**	
	740.00	5,790	5,760	1.00	5,760	19,624	0.451	12.73	0.00	**12.73**	
	741.00	5,850	5,820	1.00	5,820	25,444	0.584	23.38	30.00	**53.38**	

Rectangular Weir --> FL = 738.00, L = 1.50', H = 3.00'
Emergency Weir --> FL = 740.00, L = 10.00', H = 1.00'

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STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:
APPLEGATE CIRCLE

CLIENT:
SUNRISE LBG, LLC

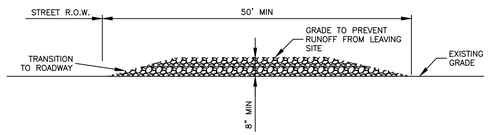
DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

REVISIONS
No. | DATE | RECOMD

SHEET TITLE:
BATCH DETENTION POND CALCULATIONS

WP PROJECT NO.:
135-003

SHEET NO.:
C-24



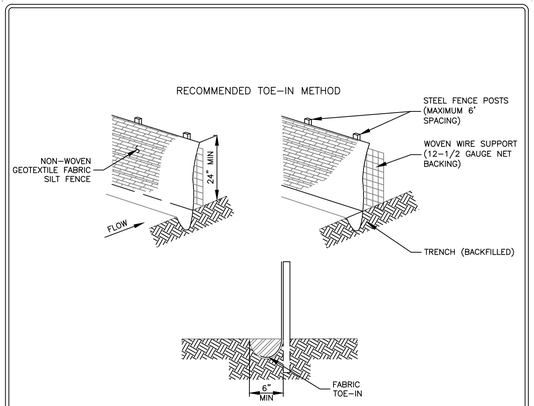
CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" – 8" OPEN GRADED ROCK.
2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.
6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–09
APPROVED 03–25–11 DATE	STABILIZED CONSTRUCTION ENTRANCE DETAIL	ROUND ROCK, TEXAS FUNCTIONAL MOBILITY PRIORITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)		

STABILIZED CONSTRUCTION ENTRANCE
NTS



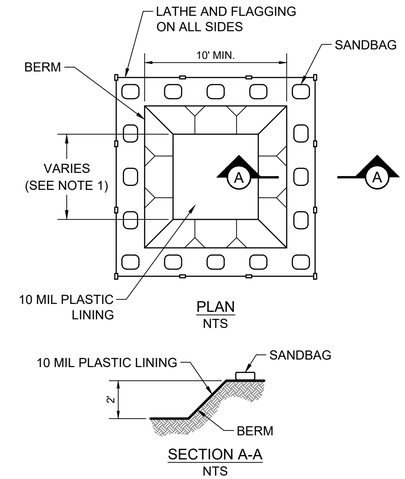
CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–10
APPROVED 03–25–11 DATE	SILT FENCE DETAIL	ROUND ROCK, TEXAS FUNCTIONAL MOBILITY PRIORITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)		

SILT FENCE
NTS



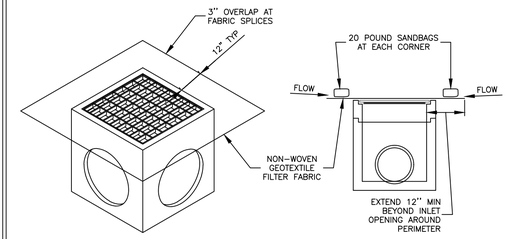
INSTALLATION NOTES:

1. 10' MIN. OR AS REQUIRED TO CONTAIN WASTE CONCRETE.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
4. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER EVERY STORM EVENT.

TEMPORARY CONCRETE TRUCK WASHOUT AREA
NTS

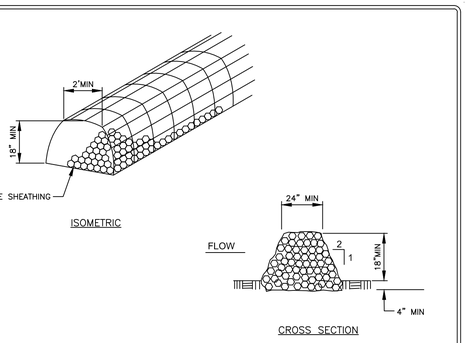


NOTES:

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.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–15
APPROVED 03–25–11 DATE	AREA INLET PROTECTION DETAIL	ROUND ROCK, TEXAS FUNCTIONAL MOBILITY PRIORITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)		

AREA INLET PROTECTION
NTS



NOTES:

1. USE ONLY OPEN GRADED ROCK (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/ OR FABRIC CORE–WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH OF 6", THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–12
APPROVED 03–25–11 DATE	ROCK BERM DETAIL	ROUND ROCK, TEXAS FUNCTIONAL MOBILITY PRIORITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)		

ROCK BERM
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

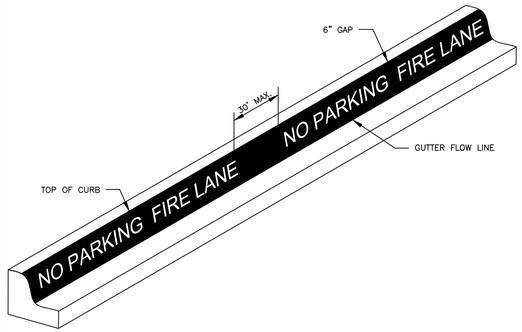
ESC DETAILS

WP PROJECT NO.:

135-003

SHEET NO.:

C-25



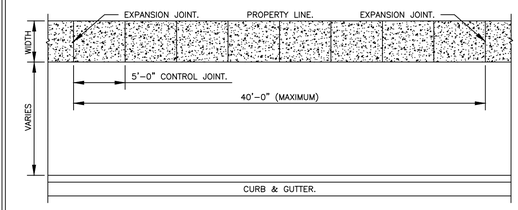
NOTES:

FIRE LANE STRIPING TO BE 6" WIDE RED PAINT WITH "NO PARKING FIRE LANE" IN 4" TALL WHITE LETTERS. WORDING MAY NOT BE SPACED GREATER THAN 30' APART. STRIPING TO BE PAINTED ON THE FACE OF CURB WHEN PRESENT AND PAINTED FLAT ON THE PARKING SURFACE WHEN IT IS NOT.

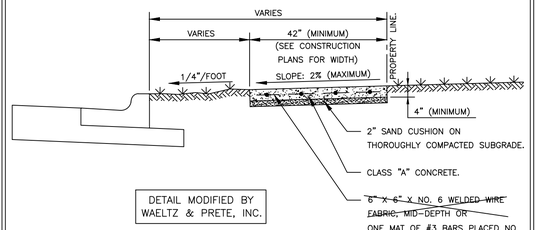
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: ST-13
APPROVED 02-10-06 DATE	FIRE LANE MARKING DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.		

FIRE LANE MARKING DETAIL
NTS

*DETAIL MODIFIED BY WAELTZ & PRETE, INC.



PLAN

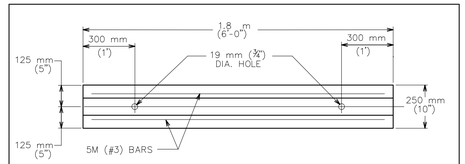


DETAIL MODIFIED BY WAELTZ & PRETE, INC.

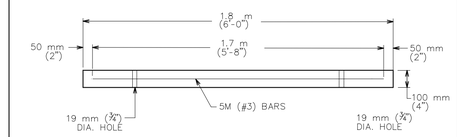
SECTION

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: ST-01
APPROVED 07-11-06 DATE	SIDEWALK DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.		

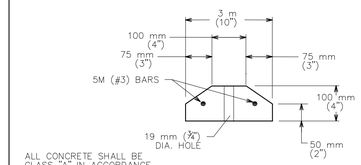
SIDEWALK DETAIL
NTS



PLAN



LONGITUDINAL SECTION

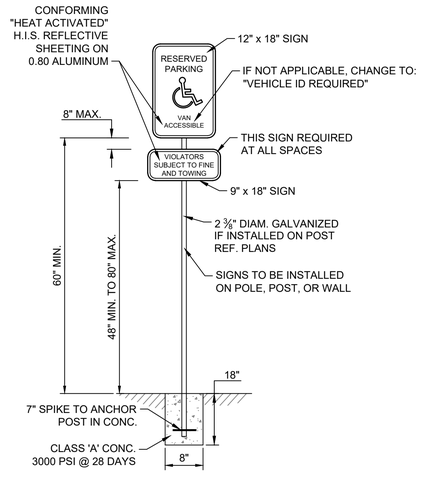


ALL CONCRETE SHALL BE CLASS "A" IN ACCORDANCE WITH ITEM 403S.

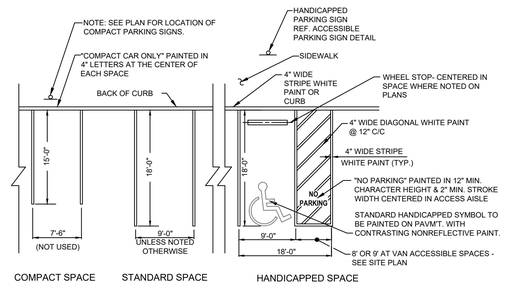
CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		PARKING LOT BUMPER CURB
RECORD COPY SIGNED BY BILL GARDNER	3/15/05	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
APPROVED	ADOPTED	STANDARD NO. 439S-1

WHEEL STOP
NTS

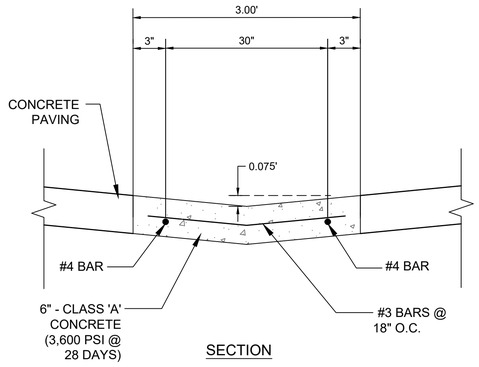


ACCESSIBLE PARKING SIGN
NTS



NOTES:
1. DRIVE AISLE IS MIN. 26' WIDE
2. RAMP ACCESS AND SURFACE SLOPES SHALL COMPLY WITH ADA/TAS REQUIREMENTS.
3. EACH HANDICAPPED PARKING SPACE SHALL BE SIGNED IN ACCORDANCE WITH ADA REQUIREMENTS.

TYPICAL PARKING SPACE LAYOUT
NTS



SECTION

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 10'-0'.
3. EXPANSION JOINTS AS PER STANDARD ASTM D-1752.
4. EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0".

CONCRETE TRICKLE CHANNEL
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

ANTONIO A. PRIEJ 93759 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

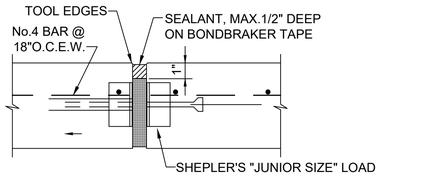
SITE DETAILS (1 OF 2)

WP PROJECT NO.:

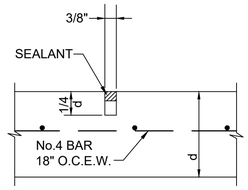
135-003

SHEET NO.:

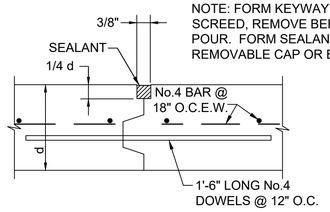
C-26



PAVING EXPANSION JOINT

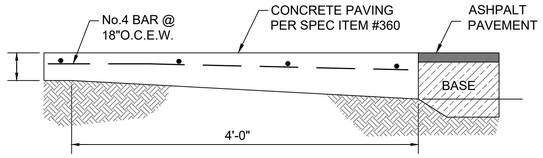


PAVING CONTROL JOINT



NOTE: FORM KEYWAY WITH METAL SCREED, REMOVE BEFORE SECOND POUR. FORM SEALANT GROVE WITH REMOVABLE CAP OR BY TOOLING.

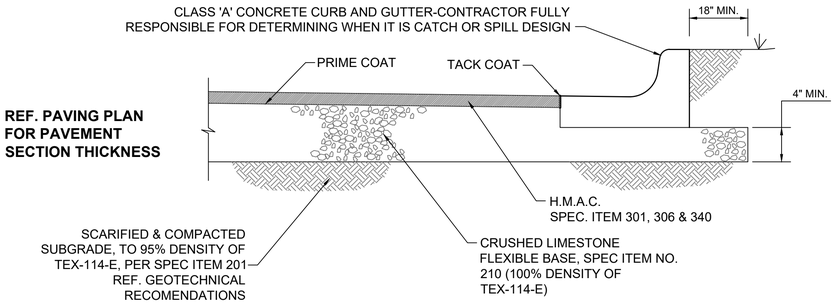
PAVING CONSTRUCTION JOINT



ASPHALT/CONCRETE TRANSITION

RIGID PAVEMENT DETAILS
NTS

REF. PAVING PLAN FOR PAVEMENT SECTION THICKNESS



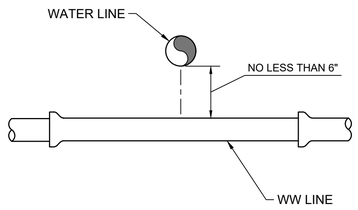
TYPICAL SECTION

FLEXIBLE PAVEMENT DETAILS
NTS

* DETAIL SHOWN FOR TCEQ REFERENCE ONLY.

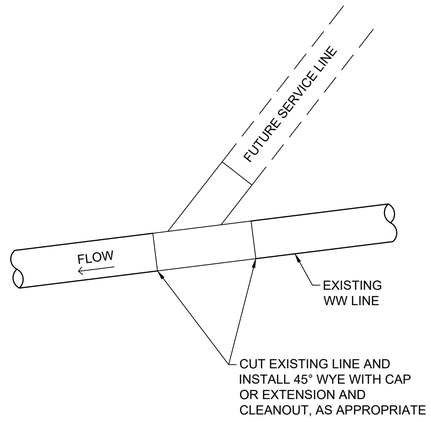
NOTE:

WHERE A SEWER LINE CROSSES A WATER LINE, ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. CENTER 1 JOINT OF WASTEWATER LINE ON CROSSING.



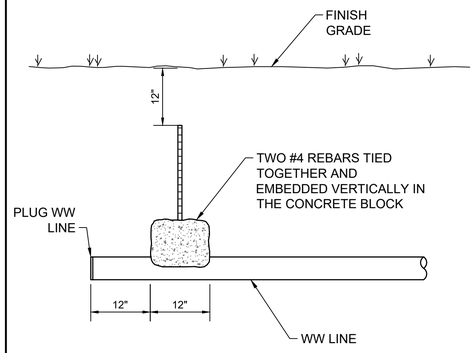
LINE CROSSING
NTS

* DETAIL SHOWN FOR TCEQ REFERENCE ONLY.



METHOD FOR JOINING FUTURE LATERALS
NTS

* DETAIL SHOWN FOR TCEQ REFERENCE ONLY.



TYPICAL STUBOUT MARKING
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
12 JULY 24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOM'D

SHEET TITLE:

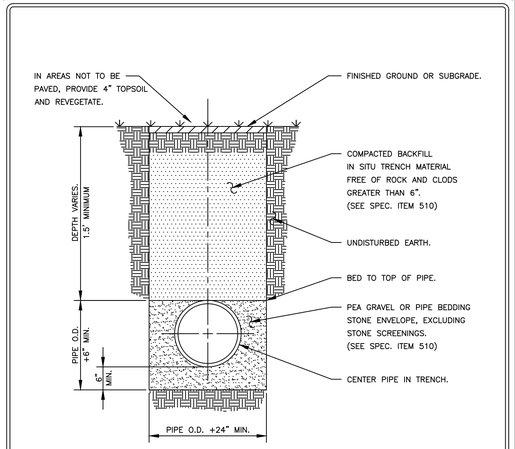
SITE DETAILS (2 OF 2)

WP PROJECT NO.:

135-003

SHEET NO.:

C-27

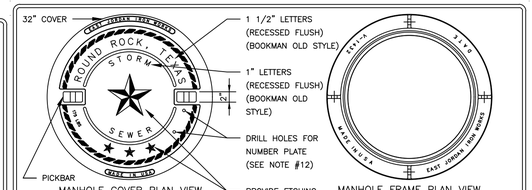


NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: DR-02
APPROVED 08-21-03 DATE	STORM SEWER LINE BEDDING DETAIL (NON-PAVED SURFACE)	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.		

STORM SEWER LINE BEDDING DETAIL
NTS

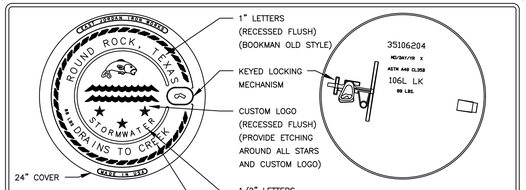


NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER: V-1432-3 (PRODUCT NUMBER: 41432058), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432010), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432080), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. MANUFACTURER SHALL DRILL 2-3/16"X1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF ROUND ROCK. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: DR-06
APPROVED 08-09-05 DATE	NON-BOLTED STORMSEWER MANHOLE COVER AND FRAME DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.		

STORM SEWER MANHOLE FRAME & COVER
NTS

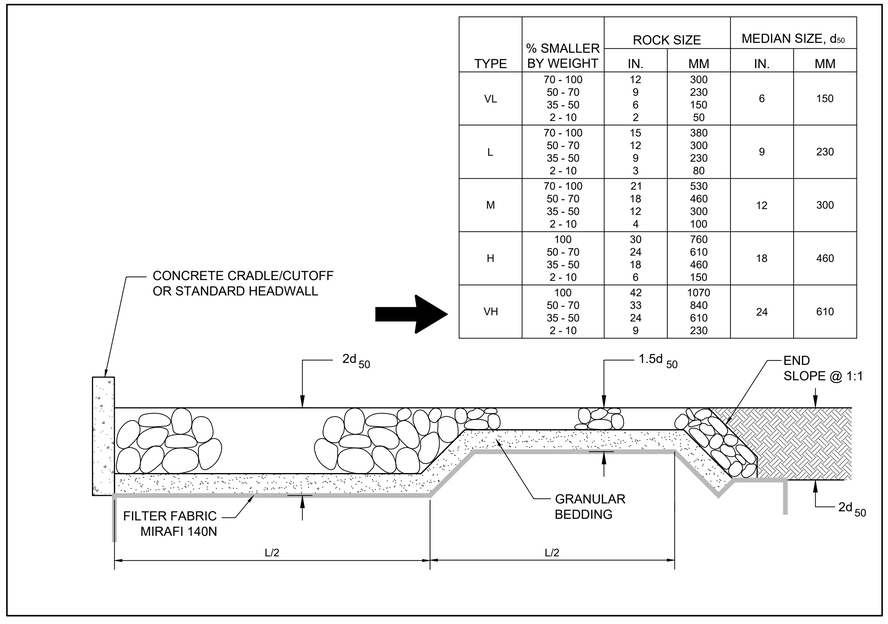


NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. INLET COVER SHALL BE MODEL NUMBER: 106L LK (PRODUCT NUMBER: 35106204), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
3. INLET FRAME SHALL BE MODEL NUMBER: 106L LK (PRODUCT NUMBER: 35206004), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
4. INLET COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: 106L-4L LK (PRODUCT NUMBER: 35506204), AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. INLET COVER WEIGHT SHALL BE 88 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
7. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
8. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
9. INLET COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.

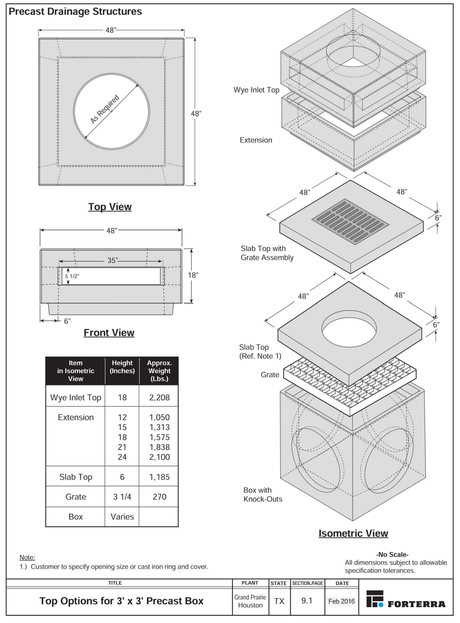
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: DR-07
APPROVED 09-13-05 DATE	STORM SEWER INLET COVER AND FRAME DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.		

STORM SEWER INLET FRAME & COVER
NTS



TYPE	% SMALLER BY WEIGHT	ROCK SIZE IN.	ROCK SIZE MM	MEDIAN SIZE, d_{50} IN.	MEDIAN SIZE, d_{50} MM
VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	300 230 150 50	6	150
L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	380 300 230 80	9	230
M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	530 460 300 100	12	300
H	100 50 - 70 35 - 50 2 - 10	30 24 18 6	760 610 460 150	18	460
VH	100 50 - 70 35 - 50 2 - 10	42 33 24 9	1070 840 610 230	24	610

ROCK RIP-RAP
NTS



Item in Isometric View	Height (Inches)	Approx. Weight (Lbs.)
Wye Inlet Top	18	2,208
Extension	12 15 18 21 24	1,050 1,313 1,575 1,838 2,100
Slab Top	6	1,185
Grate	3 1/4	270
Box	Varies	

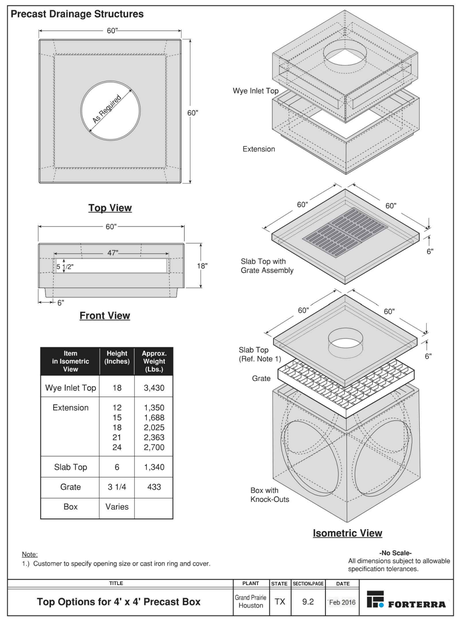
Note:
1.) Customer to specify opening size or cast iron ring and cover.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION/PAGE	DATE
Top Options for 3' x 3' Precast Box	Grand Prairie Houston	TX	9.1	Feb 2016

FORTERRA

3' X 3' GRATE INLET
NTS



Item in Isometric View	Height (Inches)	Approx. Weight (Lbs.)
Wye Inlet Top	18	3,430
Extension	12 15 18 21 24	1,350 1,688 2,025 2,363 2,700
Slab Top	6	1,340
Grate	3 1/4	433
Box	Varies	

Note:
1.) Customer to specify opening size or cast iron ring and cover.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION/PAGE	DATE
Top Options for 4' x 4' Precast Box	Grand Prairie Houston	TX	9.2	Feb 2016

FORTERRA

4' X 4' GRATE INLET
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

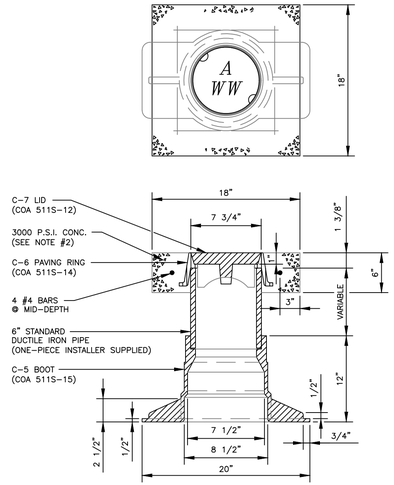
STORM SEWER DETAILS

WP PROJECT NO.:

135-003

SHEET NO.:

C-28

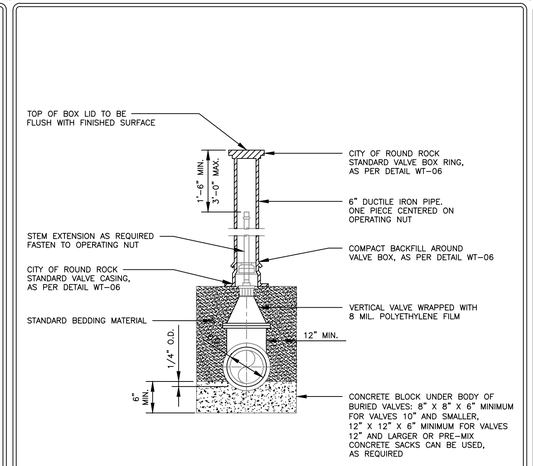


NOTES:

1. NUMBERED CASTINGS STANDARDS SHOWN IN PARENTHESES ARE REFERENCES TO THE CITY OF AUSTIN STANDARDS CRITERIA MANUAL.
2. DELETE CONCRETE AND REBAR WHEN VALVE IS WITHIN PAVED STREET.

RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-06
APPROVED 03-01-18 DATE	VALVE BOX ASSEMBLY DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

VALVE BOX ASSEMBLY
NTS

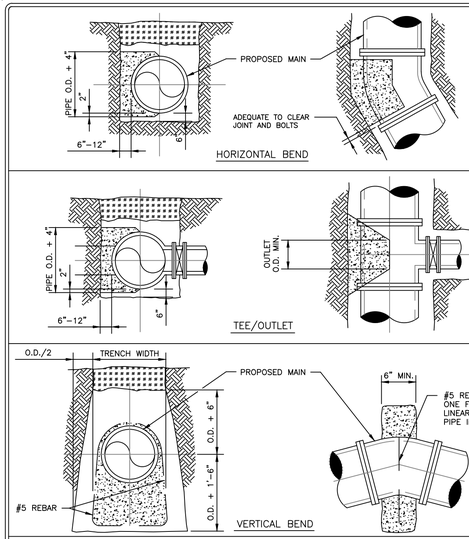


NOTES:

1. ALL VALVES AND VALVE CANS SHALL BE ACCESSIBLE FOR OPERATION ONCE THE NEW WATERLINE IS PUT INTO SERVICE. BURYING LINE VALVES IS PROHIBITED.
2. ALL VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED "V" ON FACE OF CURB.

RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-11
APPROVED 03-01-18 DATE	VERTICAL VALVE INSTALLATION DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

VERTICAL VALVE INSTALLATION
NTS



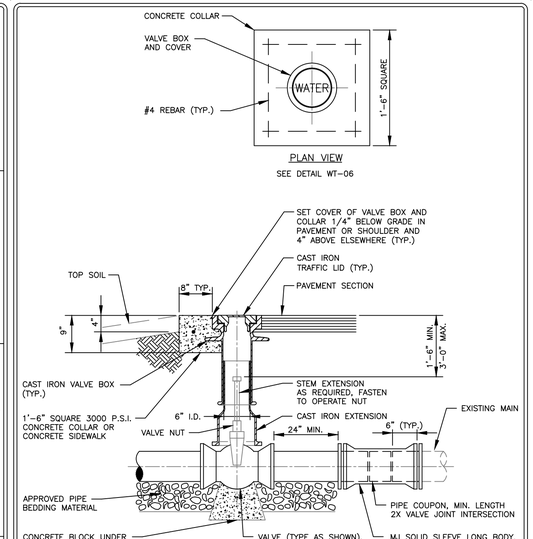
THRUST BLOCK DESIGN AS FOLLOWS:

A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50% SURGE ALLOWANCE
B. MAXIMUM SOIL BEARING:
C. ALL PIPE & FITTING TO BE WRAPPED WITH 40 PLASTIC MIL.

SOIL TYPE	PRESSURE
LIMESTONE	4000 LBS./SQ. FT.
UNDISTURBED SOIL, CALICHE	2000 LBS./SQ. FT.
LOOSE OR SPONGY SOIL	1500 LBS./SQ. FT.

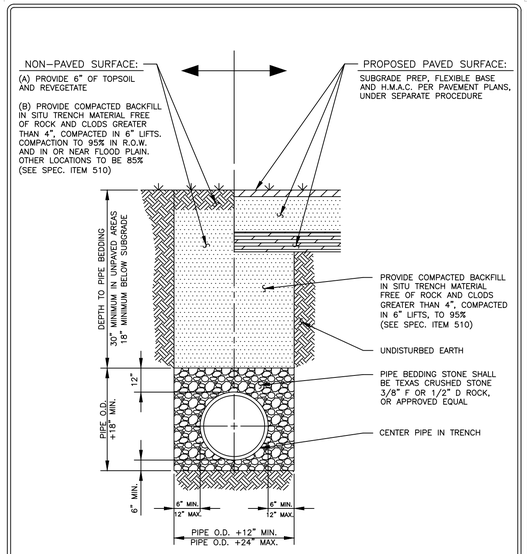
RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-25
APPROVED 03-01-18 DATE	THRUST BLOCK DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

THRUST BLOCK
NTS



RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-22
APPROVED 03-01-18 DATE	GATE VALVE DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

GATE VALVE
NTS

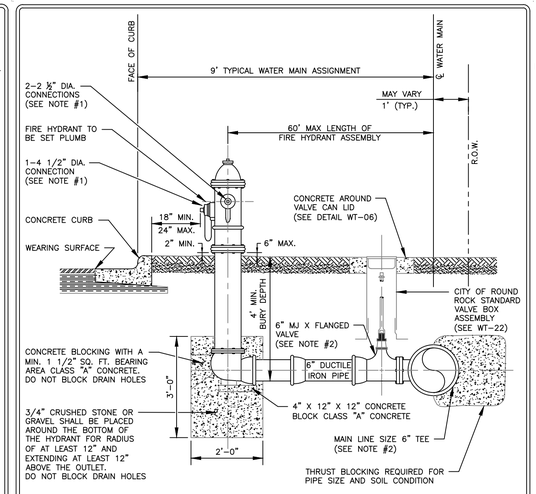


NOTE:

1. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-08
APPROVED 03-01-18 DATE	WATERLINE BEDDING AND SURFACE REPAIR DETAIL (NON-PAVED & PROPOSED PAVED SURFACE)	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

WATERLINE BEDDING AND SURFACE REPAIR
NTS

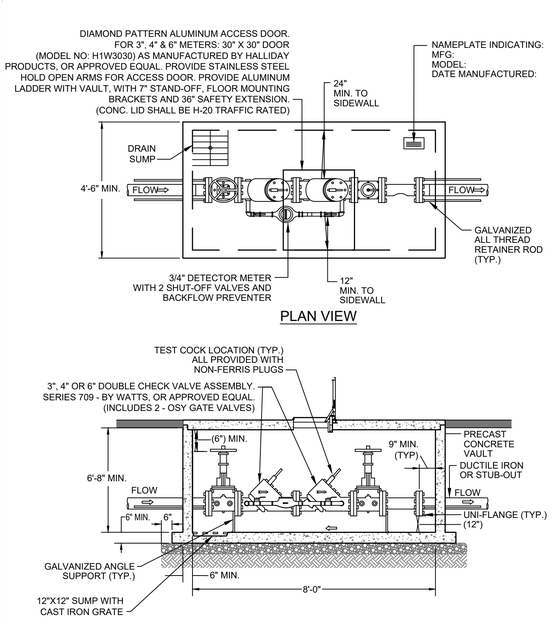


NOTES:

1. THREADS ON OUTLET NOZZLES SHALL BE NATIONAL STANDARD THREAD.
2. TEE MAY HAVE FLANGED OUTLET FOR MJ X FLANGED GATE VALVE OR, ANCHOR (SWIVEL) TEE MAY BE USED WITH MJ X MJ GATE VALVE.
3. A BLUE REFLECTIVE DELINEATOR OF TYPE APPROVED BY THE ENGINEER SHALL BE PLACED 2 TO 3 FEET OFFSET FROM THE CENTERLINE OF PAVED STREETS OR PAVED ACCESS WAYS, ON THE SIDE OF AND IN LINE WITH ALL NEWLY INSTALLED FIRE HYDRANTS.
4. PIPE, VALVE, TEE AND HYDRANT BARREL SHALL BE WRAPPED IN 8 MM POLY.
5. FIRE HYDRANT LEADS SHALL NOT CONTAIN ANY HORIZONTAL OR VERTICAL BENDS EXCEPT FOR WHAT IS SHOWN IN THE DETAIL.
6. FIRE HYDRANT LEAD AND ASSEMBLY SHALL BE RESTRAINED AND THRUST BLOCKED.

RECORD SIGNED COPY ON FILE AT UⒶES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT-05
APPROVED 03-01-18 DATE	FIRE HYDRANT ASSEMBLY DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

FIRE HYDRANT ASSEMBLY
NTS



SPECIFICATIONS:

CONCRETE:
THE VAULT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
THE VAULT SHALL BE MANUFACTURED USING 4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH AND IN ACCORDANCE WITH ASTM C478.

REINFORCEMENT:
GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

ALUMINUM DOOR:
ALUMINUM SKID-RESISTANT FLOOR PLATE WELDED TO A 3" ANGLE FRAME WITH (2) 3" X 3" ANGLE SUPPORTS (300 P.S.F.).

NOTES:

1. VAULT SHALL BE A PRECAST UNIT APPROVED AND/OR DESIGNED BY AN ENGINEER.
2. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
3. ALL TEST COCKS MUST BE REDIRECTED UPWARD AND PLUGGED.
4. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
5. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY THE WATER AND WASTEWATER UTILITY'S SPECIAL SERVICE DIVISION WITHIN 5 DAYS AFTER BEING INSTALLED.
6. IF CONTRACTOR ELECTS TO PROVIDE CAST-IN-PLACE CONCRETE VAULT, ALL COLD JOINTS SHALL HAVE A 6" VERTICAL WATER STOP EMBEDDED 6" INTO THE PREVIOUS POUR.
7. ALL INTERIOR IRON, DUCTILE IRON OR STEEL SHALL BE PROVIDED WITH THE MANUFACTURES SPECIFIED AND APPLY COATING TO PREVENT CORROSION.
8. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF VAULT, INCLUDING REINFORCEMENT. THE SHOP DRAWINGS ARE TO BE SEALED AND SIGNED BY A REGISTERED ENGINEER.
9. CONTRACTOR SHALL VERIFY ALL VAULT AND VALVE DIMENSIONS WITH MANUFACTURER, PRIOR TO ORDERING MATERIALS. SUBMITTALS REQUIRED.

BACKFLOW PREVENTER AND VAULT
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED
PROFESSIONAL ENGINEER

PROJECT:

APPLEGATE
CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

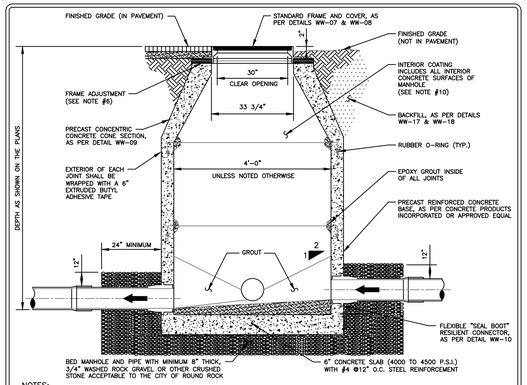
UTILITY DETAILS
(1 OF 2)

WP PROJECT NO.:

135-003

SHEET NO.:

C-29

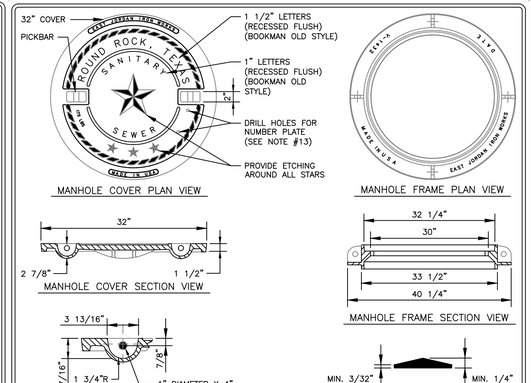


NOTES:

1. IF DROP IS SIX INCHES (6") TO TWO FEET (2'-0"), CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED INVERT TO EXTEND UNDER THE DROP CONNECTION.
2. SEE CONSTRUCTION PLANS FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZES AND TYPES.
3. MANHOLES SHALL BE PRECAST A.S.T.M. C478 BELL AND SPIGOT WITH "O" RING JOINTS.
4. MANHOLES TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR H20 TRAFFIC LOADING.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED, WHEN MANHOLES ARE LOCATED OUTSIDE OF PAVEMENT.
6. FRAME ADJUSTMENT HEIGHT SHALL CONSIST OF FIVE INCHES (5") MINIMUM TO EIGHTEEN INCHES (18") MAXIMUM. GRADE RINGS SHALL BE GROUTED WITH A NON-SHRINK GROUT INSIDE AND OUTSIDE. HDPE GRADE RINGS, MAY NOT BE USED.
7. FOR MANHOLES TO BE VENTED, SEE DETAILS WW-05 AND WW-06.
8. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO THE FLOW STREAM. ALL P.V.C. PIPE SHALL BE REMOVED FROM INVERT.
9. BASE SECTION SHALL BE DESIGNED FOR H20 LOADING, PLUS EARTH LOAD AT 130 PCF.
10. ENTIRE INTERIOR CONCRETE SURFACES OF WASTEWATER MANHOLES TO BE COATED WITH RAVEN 405, SPRAYWALL, OR APPROVED EQUAL, (WITH A UNIFORM THICKNESS OF 124 MILS AND A MINIMUM THICKNESS OF 100 MILS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST). FOR REHABILITATING MANHOLES 1/2" MINIMUM THICKNESS CALCIUM ALUMINATE CEMENTITIOUS COATING AND OTHER INTERIOR SURFACES MAY BE COATED IF RECOMMENDED BY COATING MANUFACTURER. (IN LIEU OF INTERIOR COATINGS NEW PRECAST MANHOLES CONTAINING CONSHIELD WILL BE ACCEPTED PROVIDING THE MANUFACTURER STENCILS "CONSHIELD" ON THE INSIDE AND OUTSIDE OF ALL MANHOLE SECTIONS.)

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-01
APPROVED 03-01-18 DATE	PRECAST CONCRETE WASTEWATER MANHOLE DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

PRECAST WASTEWATER MANHOLE
NTS

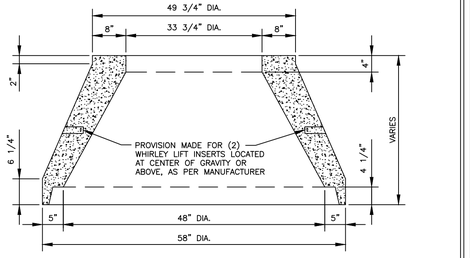


NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER: V-1432-3 (PRODUCT NUMBER: 41432059), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432010), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-1432 (PRODUCT NUMBER: 41432089), AS MANUFACTURED BY EAST JORDAN IRON WORKS INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
7. MANHOLE COVER WEIGHT SHALL BE 175 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. MANUFACTURER SHALL DRILL 2-3/16" X 1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF ROUND ROCK. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-08
APPROVED 03-01-18 DATE	NON-BOLTED WASTEWATER MANHOLE COVER AND FRAME DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

NON-BOLTED WASTEWATER MANHOLE COVER
NTS

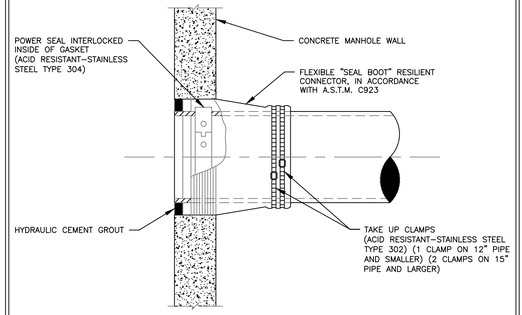


NOTE:

CONCENTRIC CONCRETE CONE SECTION SHALL BE MANUFACTURED USING 4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH AND IN ACCORDANCE WITH A.S.T.M. C478, AS MANUFACTURED BY CONCRETE PRODUCTS INCORPORATED, OR APPROVED EQUAL.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-09
APPROVED 03-01-18 DATE	PRECAST 48" CONCENTRIC CONCRETE CONE SECTION DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

PRECAST CONCENTRIC CONCRETE CONE SECTION
NTS

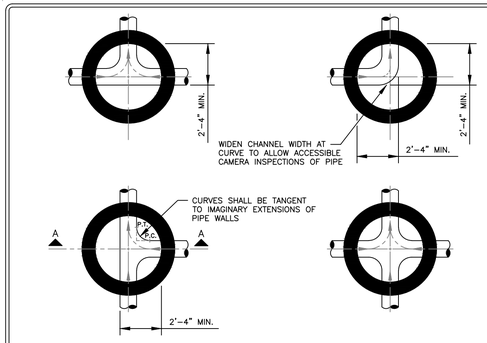


NOTE:

1. FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR TO BE A MINIMUM OF 12 INCHES (12") FROM A MANHOLE JOINT.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-10
APPROVED 03-01-18 DATE	FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

FLEXIBLE "SEAL BOOT" RESILIENT CONNECTOR
NTS

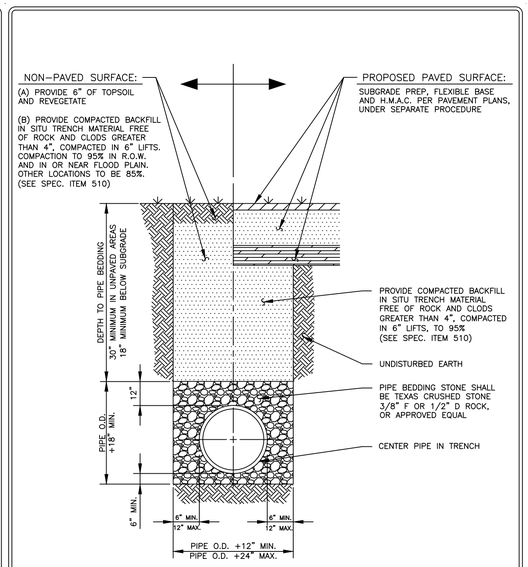


NOTES:

1. MINIMUM DROP FROM INLET TO OUTLET OF MANHOLE IS 0.1 FEET AND MAXIMUM DROP IS 2 FEET, UNLESS SPECIAL APPROVAL IS OBTAINED FROM THE CITY OF ROUND ROCK.
2. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
3. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
4. CHANNELS FOR FUTURE CONSTRUCTIONS, SHALL BE CONSTRUCTED WITH PIPE EXTENDING 3' BEYOND EXTERIOR OF MANHOLE WALL, WITH GLUED PLUG.
5. SLOPE MANHOLE BENCH AT 2:1 SLOPE FROM MANHOLE WALL TO CHANNEL.
6. INVERT CHANNEL SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR FOUR INCHES (4") DEEP.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-11
APPROVED 03-01-18 DATE	WASTEWATER FLOW PATTERNS FOR INVERT CHANNELS DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

WASTEWATER FLOW PATTERNS
NTS

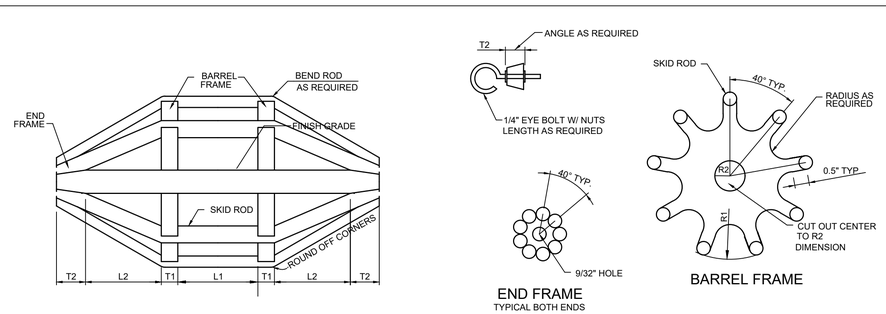


NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW-18
APPROVED 03-01-18 DATE	WASTEWATER LINE BEDDING AND SURFACE REPAIR DETAIL (NON-PAVED & PROPOSED PAVED SURFACE)	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

WASTEWATER LINE BEDDING & SURFACE REPAIR
NTS



SIZE	TYPE	O.D. AVERAGE	MIN. WALL THICKNESS	R1	R2	L1	L2	T1	T2	ROD DIAMETER
6"	D3034 SDR35	6.275	0.180	2.810	0.750	4.500	6.000	0.375	1.000	0.375
6"	D3034 SDR26	6.275	0.241	2.750	1.750	4.500	6.000	0.375	1.000	0.375
6"	D2241 SDR26	6.625	0.255	2.900	0.750	4.500	6.000	0.375	1.000	0.375
8"	D3034 SDR35	8.400	0.241	3.760	1.250	6.000	6.000	0.375	1.000	0.375
8"	D3034 SDR26	8.400	0.323	3.680	1.250	6.000	6.000	0.375	1.000	0.375
8"	D2241 SDR26	8.625	0.331	3.780	1.250	6.000	6.000	0.375	1.000	0.375
10"	D3034 SDR35	10.50	0.300	4.700	1.500	7.500	6.000	0.375	1.000	0.375
10"	D3034 SDR26	10.50	0.404	4.600	1.500	7.500	6.000	0.375	1.000	0.375
10"	D2241 SDR26	10.75	0.413	4.710	1.500	7.500	6.000	0.375	1.000	0.375
12"	D3034 SDR35	12.50	0.357	5.600	1.750	9.000	6.000	0.375	1.000	0.375
12"	D3034 SDR26	12.50	0.481	5.480	1.750	9.000	6.000	0.375	1.000	0.375
12"	D2241 SDR26	12.75	0.490	5.590	1.750	9.000	6.000	0.375	1.000	0.375
15"	D3034 SDR35	15.30	0.437	6.850	2.000	11.250	6.000	0.375	1.000	0.375
15"	D3034 SDR26	15.30	0.588	6.710	2.000	11.250	6.000	0.375	1.000	0.375
16"	D2241 SDR26	16.0	0.615	7.010	2.000	11.250	6.000	0.375	1.000	0.375
18"	F679 T-1	18.701	0.536	8.060	2.500	13.500	9.000	0.500	1.500	0.500
21"	F679 T-1	22.047	0.632	9.500	3.000	150.750	9.000	0.500	1.500	0.500
24"	F679 T-1	24.803	0.711	10.680	3.500	18.000	9.000	0.500	1.500	0.500
27"	F679 T-1	27.953	0.801	12.030	4.000	20.25	9.000	0.500	1.500	0.500

*MANDREL SHALL HAVE AN OUTSIDE DIAMETER (O.D.) EQUAL TO 95% OF THE INSIDE DIAMETER (I.D.) OF THE PIPE.

NOTES:

1. MANDREL SHALL BE CONSTRUCTED OF METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200PSI WITHOUT BEING DEFORMED.
2. AFTER WELDING IS COMPLETED, TRUE THE OUTSIDE DIAMETER DIMENSION. FOR THE FULL LENGTH OF "B" TO 0.010".
3. A PROVING RING SHALL BE PROVIDED AND USED FOR EACH SIZE MANDREL IN USE.
4. MANDREL OD MUST BE EQUAL TO 95% OF THE ID OF THE PIPE
5. MANDREL BARREL LENGTH 'B' MUST BE EQUAL TO 75% OF THE ID OF THE PIPE
6. ADJUSTABLE MANDREL IS NOT ACCEPTABLE.

WASTEWATER MANDREL
NTS

WAELTZ & PRETE, INC.
CIVIL ENGINEERS
211 N. A.W. GRIMES BLVD.
ROUND ROCK, TX. 78665
PH (512) 505-8953
FIRM TX. REG. #F-10308

STATE OF TEXAS
ANTONIO A. PRETE
93759
LICENSED PROFESSIONAL ENGINEER
7-12-24

PROJECT:

APPLEGATE CIRCLE

CLIENT:

SUNRISE LBG, LLC

DESIGNED: JRW APPROVED: AAP
DRAWN: JRW DATE: 7/12/2024

No.	DATE	REVISIONS	RECOMD

SHEET TITLE:

UTILITY DETAILS (2 OF 2)

WP PROJECT NO.:

135-003

SHEET NO.:

C-30