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: Cross Creek Commercial Park						**2. Regulated Entity No.:**			
3. Customer Name: Cross Creek Commercial Park, 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):**		12.45
9. Application Fee:	$6,500		**10. Permanent BMP(s):**					Sand Filter	
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Williamson		**14. Watershed:**					San Gabriel	

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 X 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. Jen Henderson
Print Name of Customer/Authorized Agent
5/10/2024
Signature of Customer/Authorized Agent Date

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

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: Jen Henderson

Date: 5/10/2024

Signature of Customer/Agent:

_____

Project Information

1. Regulated Entity Name: Cross Creek Commercial Park
2. County: Williamson
3. Stream Basin: San Gabriel
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   [X] Recharge Zone
   [ ] Transition Zone

6. Plan Type:

   [X] WPAP
   [ ] SCS
   [ ] Modification
   [ ] AST
   [ ] UST
   [ ] Exception Request

7. Customer (Applicant):

Contact Person: Tyler Humes
Entity: Cross Creek Commercial Park
Mailing Address: 406 N Lee St #201
City, State: Round Rock, Texas Zip: 78664
Telephone: 512.401.8882 FAX: _____
Email Address: tylerh@lottbrothers.com

8. Agent/Representative (If any):

Contact Person: Jen Henderson, P.E.
Entity: Henderson Professional Engineers
Mailing Address: 600 Round Rock West Drive, Suite 604
City, State: Round Rock, Texas Zip: 78681
Telephone: 737.203.8953 FAX: _____
Email Address: hpe@hendersonpe.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 _____
☒ The project site is not located within any city's limits or ETJ. Released from Georgetown ETJ 04/2024

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.

355 Cross Creek Rd Georgetown, TX 78628

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: _____

14. [X] **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:

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

15. Existing project site conditions are noted below:

- [ ] Existing commercial site
- [X] Existing industrial site
- [ ] Existing residential site
- [ ] Existing paved and/or unpaved roads
- [ ] Undeveloped (Cleared)
- [ ] Undeveloped (Undisturbed/Uncleared)
- [ ] Other: _____

Prohibited Activities

16. [X] 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. [X] 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:

- [X] 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. [X] 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
- [X] 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. [X] 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. [X] 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.

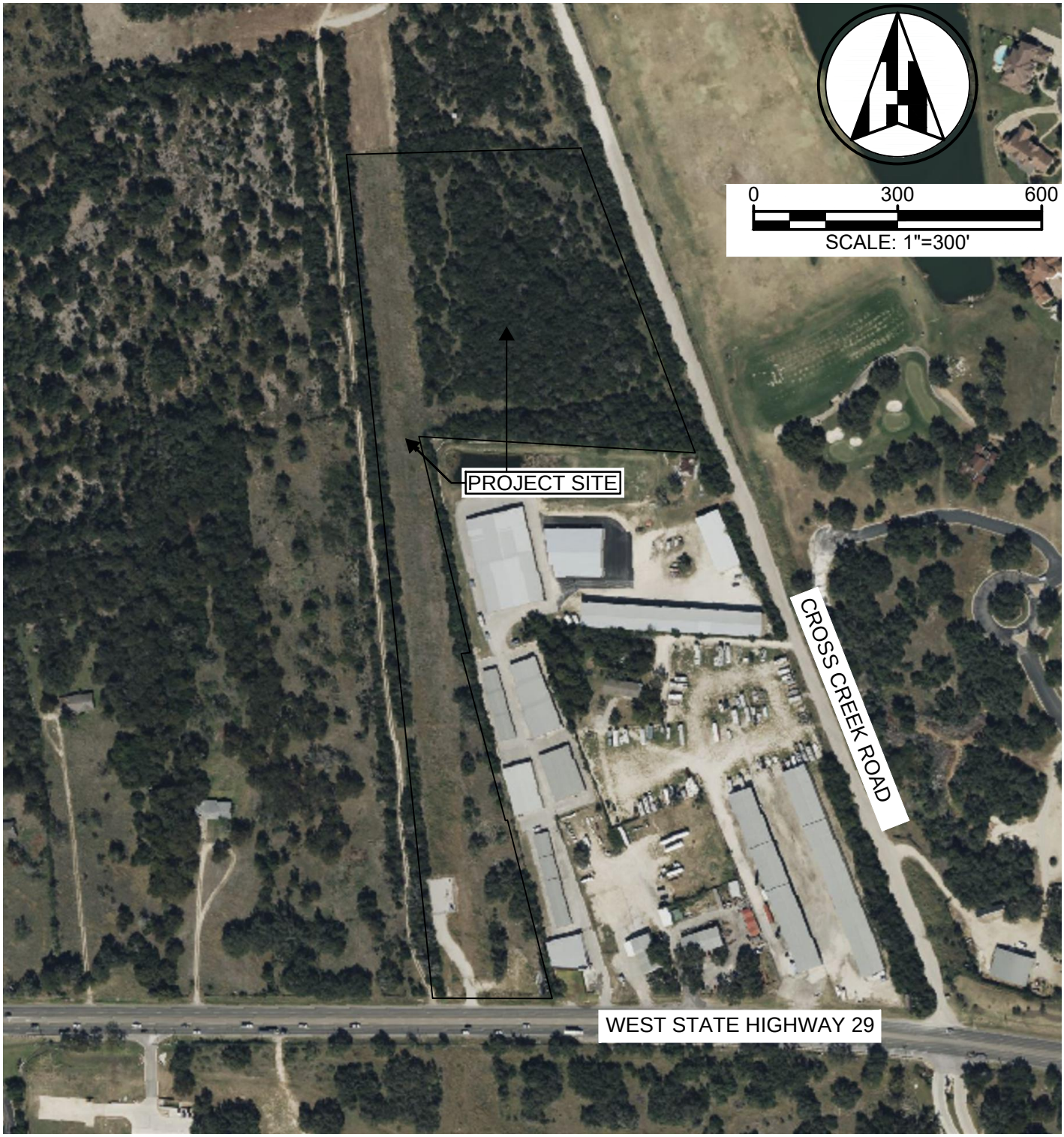


EXHIBIT
TO SERVE

CROSS CREEK COMMERCIAL PARK, LLC

6540 W SH 29
GEORGETOWN, TX, 78628

---- **ROAD MAP**

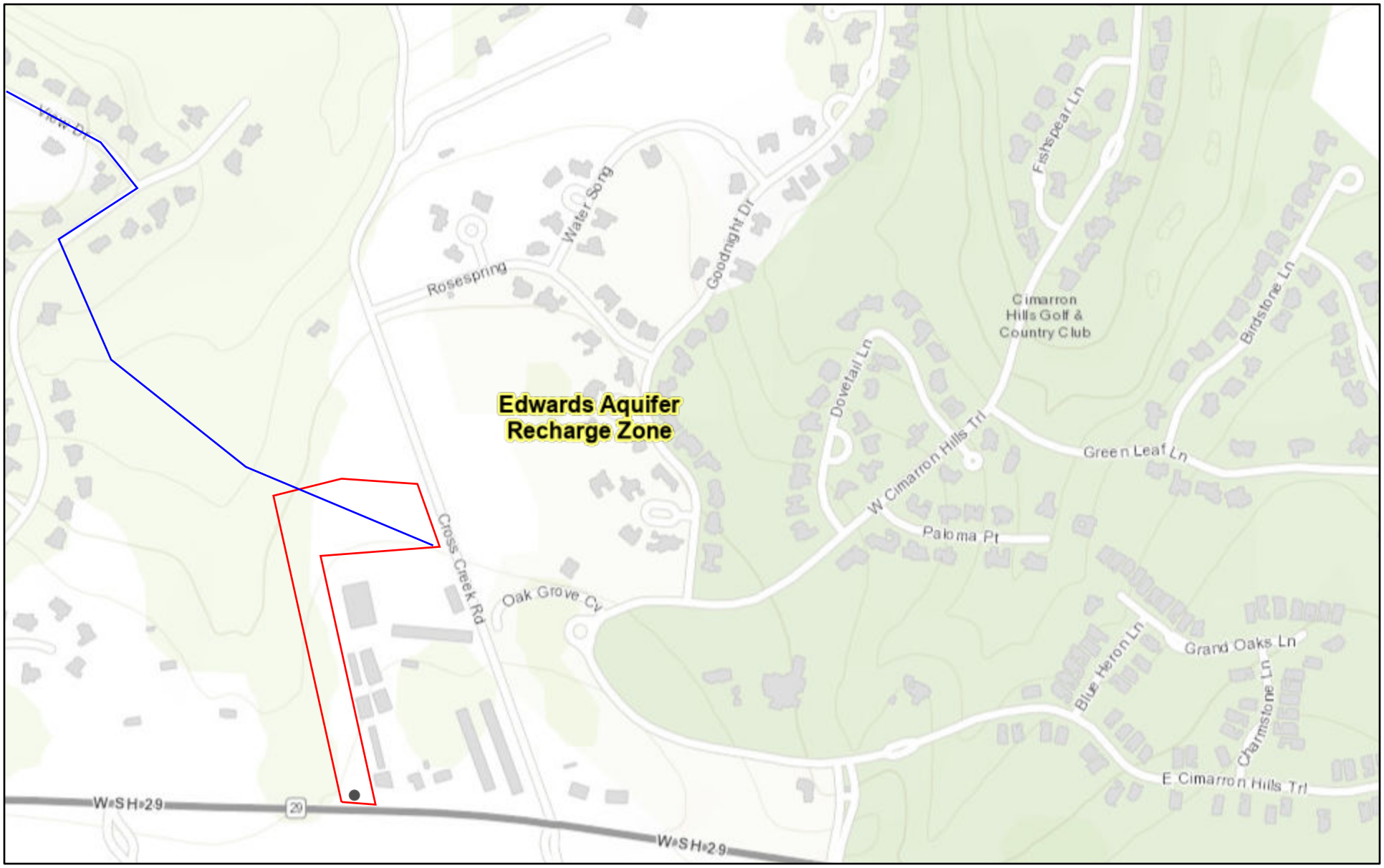
Henderson Professional Engineers

HPE
Civil Engineering

600 ROUND ROCK WEST DRIVE, SUITE 604
ROUND ROCK, TX 78681
512.350.6228
PELS FIRM #F-22208
www.hendersonpe.com

WBE210166 | HUB 1853873845300

Edwards Aquifer Viewer Custom Print



3/21/2024, 1:48:15 PM

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Edwards Aquifer Label

7.5 Minute Quad Grid

TX Counties

TCEQ_EDWARDS_OFFICIAL_MAPS

County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA, TCEQ

Web AppBuilder for ArcGIS

County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA | TCEQ |

Project Description

The project site is 12.45 acres located northwest of the Cross Creek Road and West State Highway 29 intersection. The address is 6540 W SH 29, Georgetown, TX 78628. The project site is located within the ETJ of the City of Georgetown, Williamson County, Texas. No portion of the project site is located in the 1% annual chance (100-year) floodplain per the FEMA map panel 48491C0275E effective September 26, 2008. The project site is located within the Edwards Aquifer Recharge Zone. Hydrologic soil group information came from digital information served by the United States Department of Agriculture Natural Resources Conservation Service through the Web Soil Survey 2.0 portal. The project site is entirely type 'D' soil.

The project site is currently considered to be vacant land, and most of the property is undeveloped. According to a land survey conducted by Cuplin & Associates, Inc., there is an existing crude oil pipeline underground along the length of the property. There is an existing valve site on a concrete pad on the property that is associated with said pipeline. There is also an existing firework stand and a concrete footing for a billboard. A tree survey was conducted on the site by Texas Land Surveying. Trees are present throughout the site, but they are the densest on the eastern side. The trees surveyed are composed mostly of live oak and elm, and there are some mesquites as well. A strip of land on the west side of the site, running south to north, is cleared for the crude oil pipeline. The existing impervious cover of the project site is 1.7% and the proposed is 35.6%.

The proposed development of this project includes adding 7 new buildings, a storage yard, ADA-compliant sidewalks, parking lots, loading zones and other concrete surfaces. This project is focused on the northern portion of the property, which will have two driveway that both access Cross Creek Road. The proposed storage yards will be grass and is pervious, attempts to add impervious cover here will require a Modification to this WPAP.

A detention pond is planned for this project. For water quality, a sedimentation basin and a filtration basin is planned. No demolition is planned for this project.

The aforementioned pre-development impervious cover consists of an existing gated concrete driveway and fenced in concrete pad with a valve site, an existing firework stand, and a concrete footing for a billboard. These are located on the south side of the property, adjacent to Highway 29. They are included as existing impervious cover in relation to the entire property area. However, it is not within the drainage area that goes into the proposed detention pond and the water quality basins, so it is not included as pre-development impervious cover in Drainage Basin Parameters section of the TSS Removal Calculations.

Curb cuts from Cross Creek Road are included in the proposed impervious cover. However, it is not within the drainage area that goes into the proposed detention pond and the water quality basins because of grading. To reflect this within the TSS Removal Calculations, it is included within the total post-development impervious cover in the Required Load Reduction section and is not included as post-development impervious cover in the Drainage Basin Parameters section.

WCAD

Property	Owner	Property Address	Tax Year	2025 Market Value
R663926	CROSS CREEK COMMERCIAL PARK LLC	355 CROSS CREEK RD, GEORGETOWN, TX 78628	2025	N/A

Page: Property Details

2025 GENERAL INFORMATION

Property Status	Active
Property Type	Land - Transitional
Legal Description	REFERENCE ONLY - C807 - CROSS CREEK COMMERCIAL PARK CONDO, ACRES 10.016, COMMON INT, (REF)
Neighborhood	N15PD - Office Condominium-liberty Hill
Account	R-15-5544-0000-0000
Related Properties	R663928, R663929, R663930, R663931, R663932, R663933, R663934, R663935, R663936, R663937, R663938, R663939, R663940, R663941, R663942, R663943, R663944, R663945, R663946, R663947, R663948, R663949, R663950, R663951, R663952, R663953, R663954, R663955, R663956, R663957, R663958, R663959, R663960, R663961, R663962, R663963, R663964, R663965, R663966, R663967, R663968, R663969, R663970, R663971
Map Number	4-1218
Effective Acres	-

2025 OWNER INFORMATION

Owner Name	CROSS CREEK COMMERCIAL PARK LLC
Owner ID	
Exemptions	
Percent Ownership	100%
Mailing Address	406 N LEE ST ROUND ROCK, TX 78664
Agent	-

2025 VALUE INFORMATION

MARKET VALUE

Improvement Homesite Value	N/A
Improvement Non-Homesite Value	N/A
Total Improvement Market Value	N/A
Land Homesite Value	N/A
Land Non-Homesite Value	N/A
Land Agricultural Market Value	N/A
Land Timber Market Value	N/A
Total Land Market Value	N/A
Total Market Value	N/A

ASSESSED VALUE

Total Improvement Market Value	N/A
Land Homesite Value	N/A
Land Non-Homesite Value	N/A
Agricultural Use	N/A
Timber Use	N/A
Total Appraised Value	N/A
Homestead Cap Loss	N/A
Circuit Breaker Limit Cap Loss	
Total Assessed Value	N/A

2025 ENTITIES & EXEMPTIONS

TAXING ENTITY	EXEMPTIONS	EXEMPTIONS AMOUNT	TAXABLE VALUE	TAX RATE PER 100	TAX CEILING
REF- Reference Account		N/A	N/A	N/A	N/A

2025 LAND SEGMENTS

LAND SEGMENT TYPE	STATE CODE	HOMESITE	MARKET VALUE	AG USE	TIM USE	LAND SIZE
1 - Vacant Land	C1 - Vac Res Land - 20ac Or Less	No	N/A	N/A	N/A	-

Property	Owner	Property Address	Tax Year	2025 Market Value
R661759	TBN DEVELOPMENT LLC	W SH 29, GEORGETOWN, TX 78628	2025	N/A

Page: Property Details

2025 GENERAL INFORMATION

Property Status	Active
Property Type	Land - Transitional
Legal Description	AW0005 AW0005 - Fisk, G. Sur., ACRES 2.448
Neighborhood	-
Account	R-15-0005-0000-0012C
Map Number	4-1218
Effective Acres	-

2025 OWNER INFORMATION

Owner Name	TBN DEVELOPMENT LLC
Owner ID	
Exemptions	
Percent Ownership	100%
Mailing Address	406 N LEE ST ROUND ROCK, TX 78664-4313
Agent	-

2025 VALUE INFORMATION

MARKET VALUE

Improvement Homesite Value	N/A
Improvement Non-Homesite Value	N/A
Total Improvement Market Value	N/A
Land Homesite Value	N/A
Land Non-Homesite Value	N/A
Land Agricultural Market Value	N/A
Land Timber Market Value	N/A
Total Land Market Value	N/A
Total Market Value	N/A

ASSESSED VALUE

Total Improvement Market Value	N/A
Land Homesite Value	N/A
Land Non-Homesite Value	N/A
Agricultural Use	N/A
Timber Use	N/A
Total Appraised Value	N/A
Homestead Cap Loss	N/A
Circuit Breaker Limit Cap Loss	
Total Assessed Value	N/A

2025 ENTITIES & EXEMPTIONS

TAXING ENTITY	EXEMPTIONS	EXEMPTIONS AMOUNT	TAXABLE VALUE	TAX RATE PER 100
CAD- Williamson CAD		N/A	N/A	N/A
F01- Wmsn ESD #4		N/A	N/A	N/A
GWI- Williamson CO		N/A	N/A	N/A
RFM- Wmsn CO FM/RD		N/A	N/A	N/A
SLH- Liberty Hill ISD		N/A	N/A	N/A

2025 LAND SEGMENTS

LAND SEGMENT TYPE	STATE CODE	HOMESITE	MARKET VALUE	AG USE	TIM USE	LAND SIZE
1 - Vacant Land	C5 - Commercial Vacant Land	No	N/A	N/A	N/A	106,635 Sq. ft
TOTALS						106,635 Sq. ft / 2.448000 acres

SALES HISTORY

DEED DATE	SELLER	BUYER	INSTR #	VOLUME/PAGE
3/25/2024	CROSS CREEK COMMERCIAL PARK LLC	TBN DEVELOPMENT LLC	2024025099	

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Kevin Denson, P.G. Telephone: 512 442-1122

Date: June 13, 2024 Fax: 512 442-1181

Representing: Terracon Consultants, Inc. (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: Cross Creek Commercial Park

Project Information

1. Date(s) Geologic Assessment was performed: June 6, 2024
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

STATE OF TEXAS
Mark Kevin Denson
GEOLOGY
1594
LICENSED
PROFESSIONAL GEOSCIENTIST

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
GsB	D	2-3
EeB	D	0-1

** Soil Group Definitions (Abbreviated)*

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

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

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

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

   Applicant's Site Plan Scale: 1" = _____'
   Site Geologic Map Scale: 1" = 100'
   Site Soils Map Scale (if more than 1 soil type): 1" = 250 '

9. Method of collecting positional data:

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

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

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

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

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

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

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

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

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

Administrative Information

15. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Cross Creek Commercial Park, 6540 W Highway 29, Georgetown, Texas

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
F-1	30.64069	-97.79986	CD	5	Ked									5	10	X		X		Hilltop
F-2	30.64097	-97.80036	CD	5	Ked									5	10	X		X		Hilltop
F-3	30.64131	-97.79917	CD	5	Ked									5	10	X		X		Hilltop
F-4	30.6419	-97.8003	CD	5	Ked									5	10	X		X		Hilltop

* DATUM NAD27

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC 213

Date 6/13/2024

Sheet 1 of 1

TNRCC-0585-Table (Rev. 5-1-02)

STATE OF TEXAS
Mark Kevin Denson
GEOLOGY
1594
LICENSED
PROFESSIONAL GEOSCIENTIST

ATTACHMENT B

Stratigraphic Column
Cross Creek Commercial Park
6540 W Highway 29, Georgetown, Texas

HYDROGEOLOGIC SUBDIVISION	FORMATION	THICKNESS (feet)	LITHOLOGY
Edwards Aquifer	Edwards Limestone	150	Mudstone to packstone, crystalline limestone, wackestone

Source: Senger, Collins and Kreitler, 1990

6/13/2024

STATE OF TEXAS
Mark Kevin Denson
GEOLOGY
1594
LICENSED
PROFESSIONAL GEOSCIENTIST

ATTACHMENT C
SITE-SPECIFIC GEOLOGY

The Geologic Assessment (GA) of the Cross Creek Commercial Park was performed by Kevin Denson, P.G., of Terracon on June 6, 2024. The site consists of three tracts totaling approximately 12.45 acres, and is located at 6540 West Highway 29 in Georgetown, Williamson County, Texas. The site is undeveloped and mostly heavily wooded land.

Exhibit 1 (attached) is a site location map depicting the site in relation to the surrounding area. The areas immediately surrounding the site are a mix of residential, commercial, and undeveloped properties. The site is characterized as gently sloping to the northwest, and site elevation ranges from about 972 to 944 feet above mean sea level (msl).

The surficial geologic unit present at the site has been identified as the Edwards Formation. Exhibit 3 (attached) is a geologic map of the site. The Edwards consists of massive to thin bedded limestones and dolostones. The formation is characterized by honeycomb textures, collapse breccias and cavern systems, which account for most of the significant porosity within the strata that compose most of the aquifer.

The recharge zone boundary of the Edwards Aquifer is located approximately 3,300 feet south of the site. Table 1 (attached) is a stratigraphic column prepared for the site. Exposure of the geologic unit is typically obscured by soil and vegetation, with scattered outcrops present mostly in the northern portion of the site. No faulting was observed on the site and the nearest mapped fault is located approximately 3.5 miles west-northwest of the site. The fault, which trends toward the northeast, is associated with the Balcones Fault zone which represents the dominant structural trend in the vicinity of the site. The completed Geologic Assessment form is attached.

A total of four minor geologic features were observed on the site, as described below. As seen on the attached Geologic Assessment Table, the features are not considered to be significant recharge features.

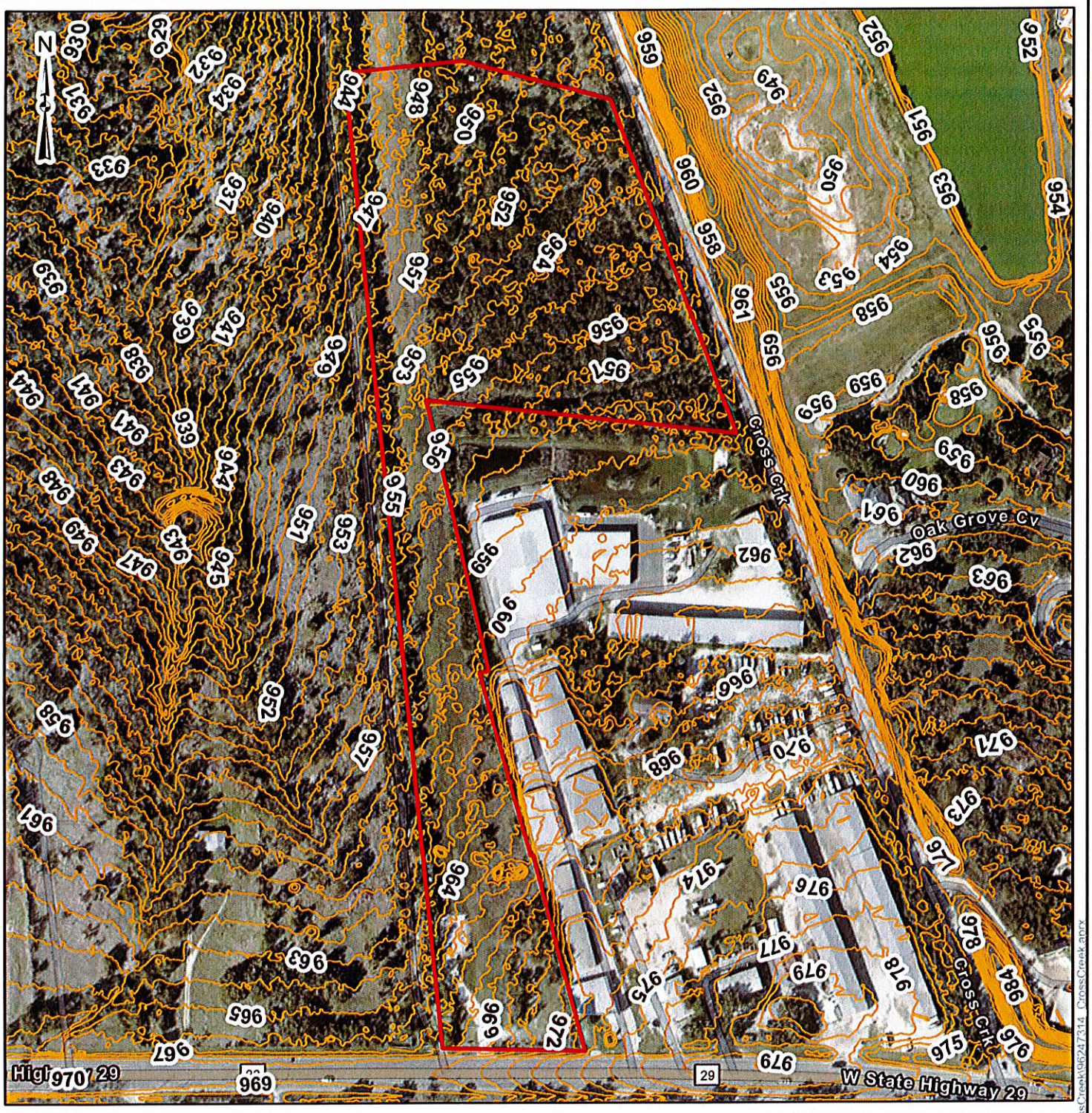
Feature F-1: Non-karst closed depression with a diameter of 5 feet and a depth of 1 foot. No rock outcrop was present.

Feature F-2: Non-karst closed depression with a diameter of 5 feet and a depth of 1.5 feet. No rock outcrop was present.

Feature F-3: Non-karst closed depression measuring approximately 4 feet by 3 feet by 1 foot deep. No rock outcrop was present.

Feature F-4: Non-karst closed depression with a diameter of 3 feet and a depth of 1.5 feet. No rock outcrop was present.

No springs or streams were observed onsite. A review of the site maps contained in Ordinance 2015-14 indicated there are no known springs occupied by the Georgetown Salamander on the site and the nearest known occupied site is located approximately 1 mile northeast of the site (Water Tank Cave). Due to the lack of significant sensitive recharge features observed on the site, the potential for fluid movement to the Edwards aquifer beneath the project is considered low.



Approximate Project Boundary

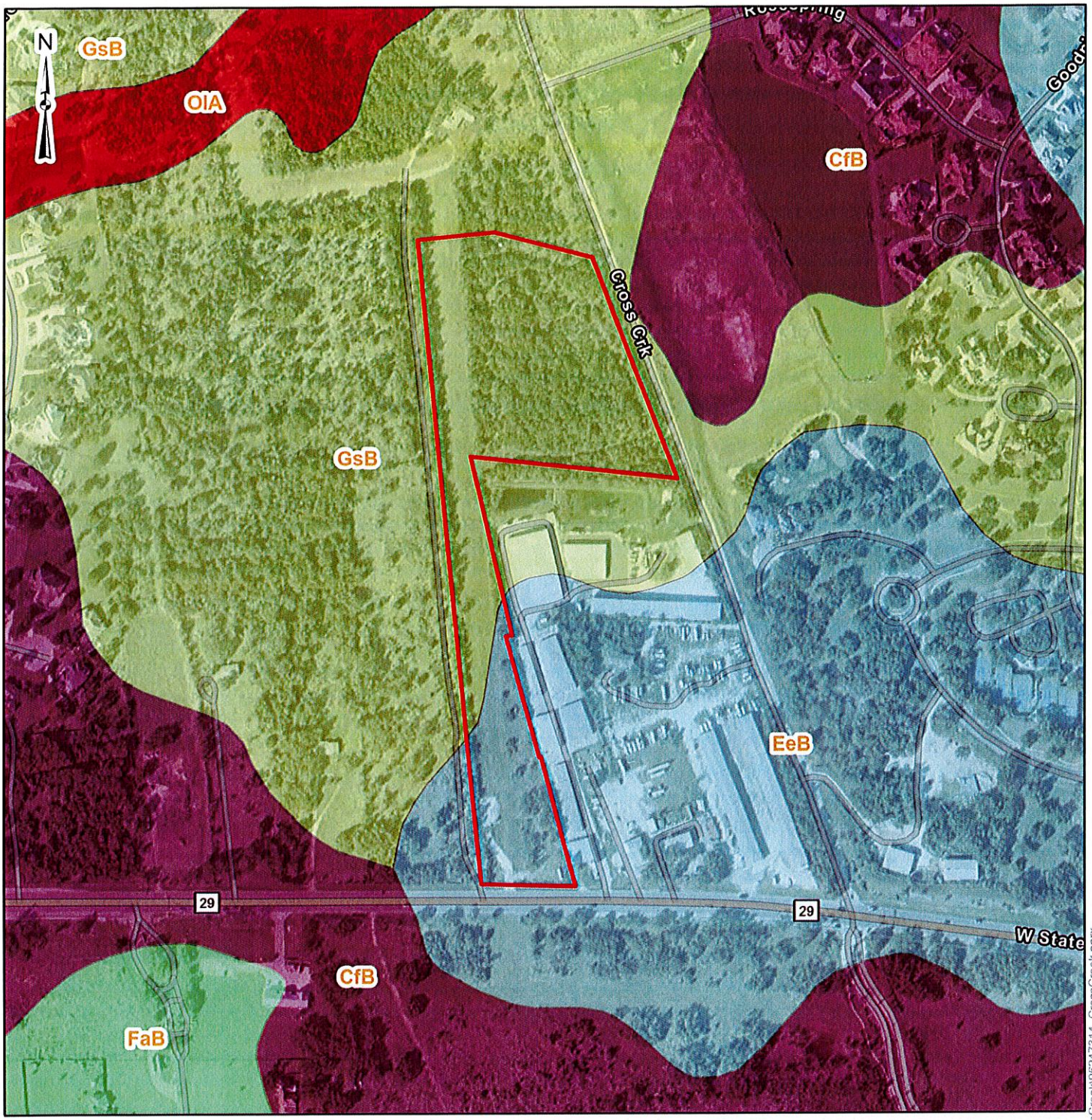
Williamson CAD 1-ft Topography

0 125 250 500 Feet

DATA SOURCES:
Williamson County TX, Maxar, Microsoft, Esri Community Maps Contributors, County of Williamson, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Project No.: 96247314	Terracon	Site Specific Topography	Exhibit
Date: Jun 2024		**Cross Creek Commercial Park**	**1.0**
Drawn By: RC	5307 Industrial Oaks Blvd. - #160 Austin, TX 78735	6540 West Highway 29	
Reviewed By: KD	PH. (512) 442-1122 terracon.com	Georgetown, Williamson County, Texas	

N:\GIS\Projects\2024\96247314_CrossCreek\Maps\96247314_CrossCreek.aprx



- Approximate Project Boundary
- Crawford clay, 1 to 3 percent slopes (CfB)
- Eckrant stony clay, 0 to 3 percent slopes, stony (EeB)
- Fairlie clay, 1 to 2 percent slopes (FaB)
- Georgetown stony clay loam, 1 to 3 percent slopes (GsB)
- Oakalla soils, 0 to 1 percent slopes, channeled, frequently flooded (OlA)

0 250 500 1,000 Feet

DATA SOURCES:
Esri Community Maps Contributors, County of Williamson, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Williamson County TX, Maxar

Project No.:	96247314
Date:	Jun 2024
Drawn By:	RC
Reviewed By:	KD

Terracon
5307 Industrial Oaks Blvd. - #160 Austin, TX 78735
PH. (512) 442-1122 terracon.com

Site Specific Soils

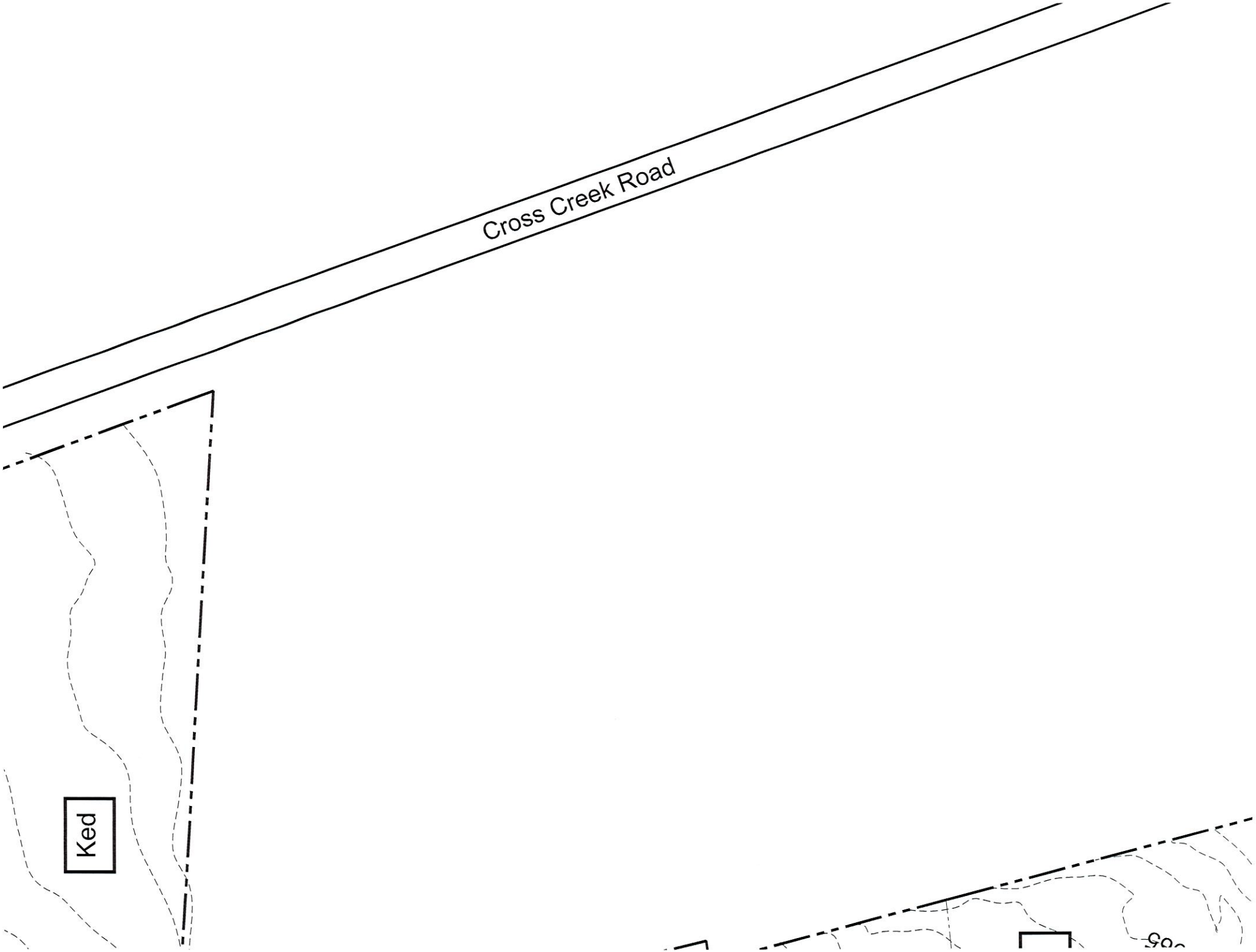
Cross Creek Commercial Park

6540 West Highway 29
Georgetown, Williamson County, Texas

Exhibit

2.0

N:\GIS\Projects\2024\96247314 CrossCreek\Maps\96247314 CrossCreek.aprx


Cross Creek Road
Ked

Approximate Project Boundary

TCEQ Edwards Aquifer Zone Data

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Feet

0 1,250 2,500 5,000

DATA SOURCES:
County of Williamson, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Williamson County TX, Maxar, TNRIS, Bureau of Economic Geology

Project No.:	96247314
Date:	Jun 2024
Drawn By:	RC
Reviewed By:	KD

Terracon

5307 Industrial Oaks Blvd. - #160 Austin, TX 78735

PH. (512) 442-1122 terracon.com

Edwards Aquifer Zones

Cross Creek Commercial Park

6540 West Highway 29
Georgetown, Williamson County, Texas

Exhibit

4.0

N:\GIS\Projects\2024\96247314_CrossCreek\Maps\96247314_CrossCreek.aprx

Soil Map—Williamson County, Texas
(6540 W SH 29)

Map Scale: 1:3,070 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Texas
Survey Area Data: Version 24, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

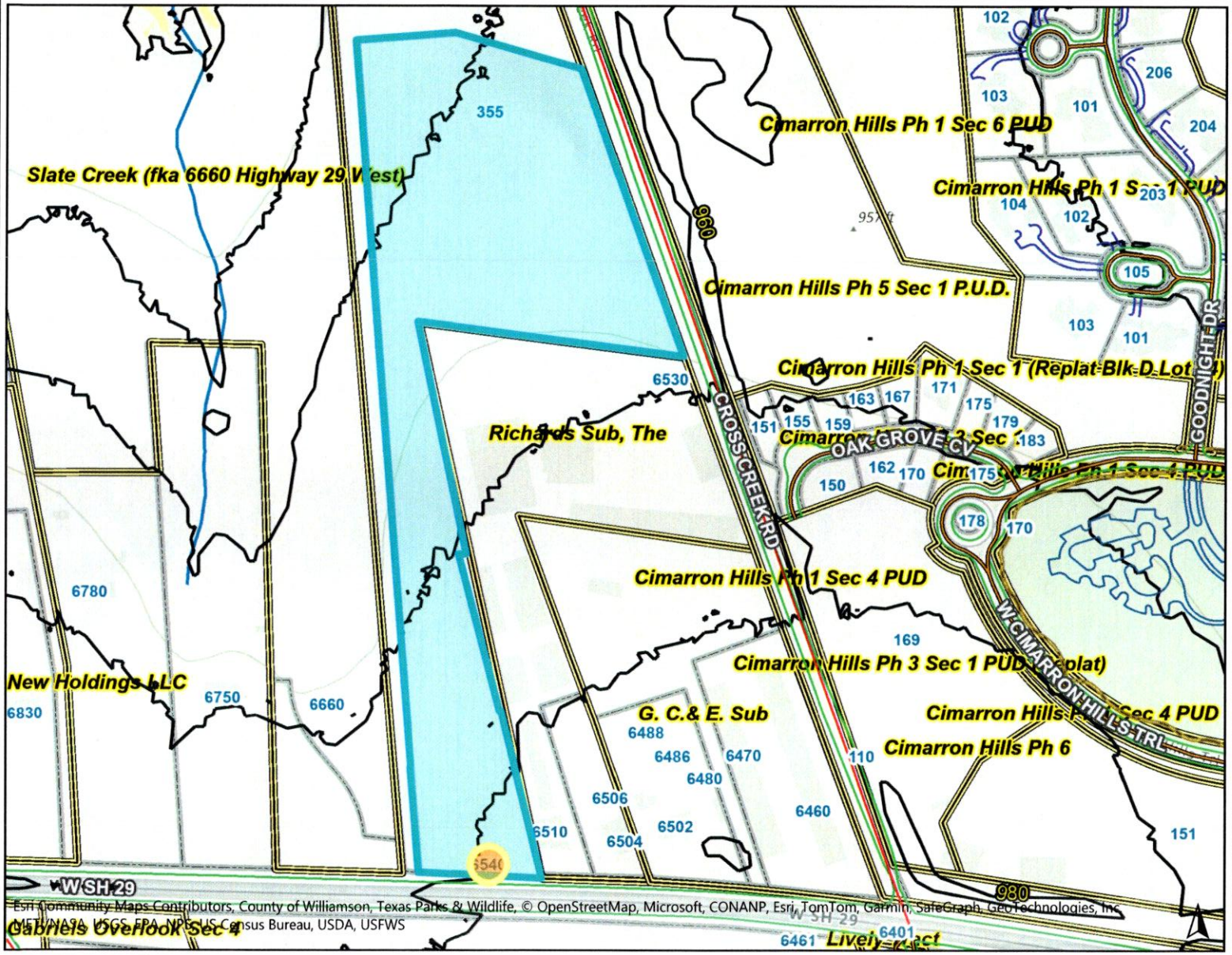
Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EeB	Eckrant stony clay, 0 to 3 percent slopes, stony	1.4	12.2%
GsB	Georgetown stony clay loam, 1 to 3 percent slopes	10.1	87.8%
Totals for Area of Interest		**11.5**	**100.0%**

WILLIAMSON COUNTY | Lott Bros.



Legend

FEMA Floodplain (Static 10/16/2023)

- Zone AE - 1% Annual Chance (100-yr)
- Zone X - 0.2% Annual Chance (500-yr)

Address

- Address

Road & Bridge Roads

- Private Roads
- Wilco Roads
  - WILLIAMSON MAINTAINED

Streets

- Streets

Breaklines

- Breaklines
  - Driveway
  - Edge of Pavement

Notes

0 500 1000 ft

1:4514

This map and data are for general planning purposes only. The base map conforms to National Map Accuracy Standards in unobstructed areas. Williamson County makes no warranty, representation or guarantee as to the content, sequence, accuracy, timeliness or completeness of any of the database information or spatial locations depicted. Furthermore, all warranties on merchantability and fitness for a particular purpose are hereby disclaimed. In no event shall Williamson County be liable to the recipient or any other party for damages of any type, including but not limited to incidental, consequential or exemplary damages arising out of the use or inability to use these materials.

3/27/2024 11:47:21 AM

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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: Jen Henderson, P.E.

Date: 5/10/2024

Signature of Customer/Agent:

_____

Regulated Entity Name: CROSS CREEK COMMERCIAL PARK

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): 12.45

3. Estimated projected population:_____

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	79,818	÷ 43,560 =	1.83
Parking	92,226	÷ 43,560 =	2.12
Other paved surfaces	18,482	÷ 43,560 =	0.42
Total Impervious Cover	190,526	÷ 43,560 =	4.37

Total Impervious Cover 4.37 **÷ Total Acreage** 12.45 **X 100 =** 35 **% Impervious Cover**

5. [X] **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. [X] 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:

_____% Domestic	_____Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day _____	

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 _____ (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" = 20 '.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Flood Map 48491C0275E Dated September 26, 2008.

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 _____ (#) 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. [X] The drainage patterns and approximate slopes anticipated after major grading activities.

23. [X] Areas of soil disturbance and areas which will not be disturbed.

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

25. [X] Locations where soil stabilization practices are expected to occur.

26. [ ] Surface waters (including wetlands).

    [X] N/A

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

    [X] There will be no discharges to surface water or sensitive features.

28. [X] Legal boundaries of the site are shown.

Administrative Information

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

Factors Affecting Surface Water Quality

The construction activities associated with the Cross Creek Commercial Park, LLC plan of development could result in additional Total Suspended Solids (TSS) loads during the construction of the site improvements. This potential increased locating will be mitigated with the use of silt fencing that is to be placed downgradient of the active construction areas and the placement of stabilized construction entrances at the entrance(s) of the project. Rock berms may be used in areas of concentrated flows during construction activities.

The overall impervious cover of the site will be 35.6%, 4.43-acres of the 12.45-acre site. The runoff from the site will be treated by a sedimentation basin and a filtration basin. The permanent stormwater control calculations have been provided on the plan set and demonstrate the functionality of the proposed stormwater Best Management Practices. The proposed stormwater conveyance system will protect the water quality of the San Gabriel River.

Volume and Character of Stormwater

The peak storm water before construction for Cross Creek Commercial Park, LLC improvements has been calculated to be 50.194 cfs for the 25-yr storm event and 88.630 cfs for the 100-yr storm event. This is given that the project site is currently 12.45 acres of land that is open space in fair condition over soils group D at 1 - 3 percent slopes and a percent impervious cover of 1.7%. The character of existing runoff is that of undeveloped land in proximity to developed storage facilities and other commercial structures.

After construction the character of the runoff will change such that hydrocarbon residues from vehicles, buildings, and other contamination typical of a developed storage facility may be present. The peak storm water discharges post-construction after detention has been calculated to be 13.704 cfs for the 25-yr storm event and 15.391 cfs for the 100-yr storm event, given that the overall proposed impervious cover percentage of the property is 35.6% and offsite flows that previously pathed through the property are redirected using walls and slopes. A proposed water quality pond with sedimentation and filtration basins on the site will capture most of the foreign elements. A proposed detention pond will detain the peak runoff for the 2-, 10-, 25-, and 100-year storms and releases are designed to be less than the existing conditions.

Detailed calculations will be shown within the construction plan set sheet set.

Department of Infrastructure
County Engineer's Office
3151 SE Inner Loop, Ste B
Georgetown, TX 78626
T: 512.943.3330
F: 512.943.3335

J. Terron Evertson, PE, DR, CFM

WILLIAMSON COUNTY
1848

November 21, 2024

Cross Creek Commercial Park
406 Lee Street, Suite #201
Round Rock, Texas 78681

RE: 6450 W. SH 29 & 355 Cross Creek Rd., Georgetown, Texas 78628
Being a 12.45 acre tract, more or less, out of the Greenleaf Fisk Survey, Abstract No. 5, Wiliamson County, Texas

The above referenced property is located within the Edwards Aquifer Recharge Zone.

Based on the surrounding subdivisions and the soil survey for Williamson County and planning material received, this office is able to determine that the soil and site conditions of this lot is suitable to allow the use of on-site sewage facilities (OSSF). It should be noted that this office has not actually studied the physical properties of this site. Site specific conditions such as OSSF setbacks, recharge features, drainage, soil conditions, etc…, will need taken into account in planning any OSSF.

These OSSF's will have to be designed by a professional engineer or a registered sanitarian. An Edwards Aquifer protection plan shall be approved by the appropriate TCEQ regional office before an authorization to construct an OSSF may be issued. The owner will be required to inform each prospective buyer, lessee or renter of the following in writing:

- That an authorization to construct shall be required before an OSSF can be constructed in the subdivision;
- That a notice of approval shall be required for the operation of an OSSF;
- Whether an application for a water pollution abatement plan as defined in Chapter 213 has been made, whether it has been approved and if any restrictions or conditions have been placed on the approval.

If this office can be of further assistance, please do not hesitate to call.

Sincerely,

D.E. McPeters

Doug McPeters, OS 8626
Williamson County - OSSF

Attachment D - Exception to the Required Geologic Assessment Not Requested

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: Jen Henderson

Date: 5/10/2024

Signature of Customer/Agent:

Regulated Entity Name: CROSS CREEK COMMERCIAL PARK

Project Information

Potential Sources of Contamination

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

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

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

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

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

- ☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- ☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   - ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
   - ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: San Gabriel

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:

- [X] 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.
- [X] 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.
- [X] A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
- [X] 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. [X] 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.
   - [X] There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. [X] **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. [X] **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.

[X] 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.

    [X] N/A

12. [X] **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. [X] 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. [X] 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. [X] 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. [X] 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. [X] **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. [X] 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. [X] Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. [X] All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. [X] 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. [X] 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

The first steps that should be taken in the event of a spill are keeping people safe, identifying what has been spilled, and determining if warning signs are needed. The next step is to call the State of Texas Spill-Reporting Hotline and the SERC: 1-800-832-8224 no later than 24 hours after the discovery of the spill or discharge. The local TCEQ office shall also be contacted at 512-339-2929. All clean-up will follow the Spill Prevention and Control guidance outlined in Chapter 327 of the Texas Administrative Code.

Reasonable Response Actions:

1. Arrival of the responsible person or response personnel hired by the responsible person at the time of the discharge/spill
2. Make an effort to stop the spill or discharge
3. Minimizing the impact of the spill on public health and the environment
4. Neutralizing the effects of the incident
5. Removing the discharged or spilled substances
6. Managing the wastes

HPE
Civil Engineering

Kind of spill	Where discharged	Reportable quantity	Rule, statute, or responsible agency
Hazardous substance	onto land	"Final RQ" in Table 302.4 in **40 CFR 302.4** (PDF)	**30 TAC 327**
	into water	"Final RQ" or 100 lbs, whichever is **less**	
Any oil	coastal waters	as required by the Texas General Land Office	**Texas General Land Office**
Crude oil, oil that is neither a petroleum product nor used oil	onto land	210 gallons (five barrels)	**30 TAC 327**
	directly into water	enough to create a sheen	
Petroleum product, used oil	onto land, from an exempt PST facility	210 gallons (five barrels)	**30 TAC 327**
	onto land, or onto land from a non-exempt PST facility	25 gallons	
	directly into water	enough to create a sheen	
Associated with the exploration, development and production of oil, gas, or geothermal resources	under the jurisdiction of the Railroad Commission of Texas	as required by the Railroad Commission of Texas	**Railroad Commission of Texas**
Industrial solid waste or other substances	into water	100 lbs	**30 TAC 327**
From petroleum storage tanks, underground or aboveground	into water	enough to create a sheen on water	**30 TAC 334** .75-81
From petroleum storage tanks, underground or aboveground	onto land	25 gallons or equal to the RQ under **40 CFR 302**	**30 TAC 327**
Other substances that may be useful or valuable and are not ordinarily considered to be waste, but will cause pollution if discharged into water in the state	into water	100 lbs	**30 TAC 327**

https://www.tceq.texas.gov/response/spills/spill_rq.html

If a spill or accidental discharge is to occur it will be promptly contained by the responsible persons. Any spills will be excavated and properly disposed of.

Attachment B – Potential Sources of Contamination

There are a few potential sources of contamination with the construction of this project. A potential source of contamination is fuel for the equipment that will be utilized for excavation and other construction activities on the site. Concrete paving as well as a concrete curb and gutter will also take place on the site to construct the buildings, driveway, and parking lot. Paving can introduce a potential for surface water contamination.

Attachment C – Sequence of Major Activities

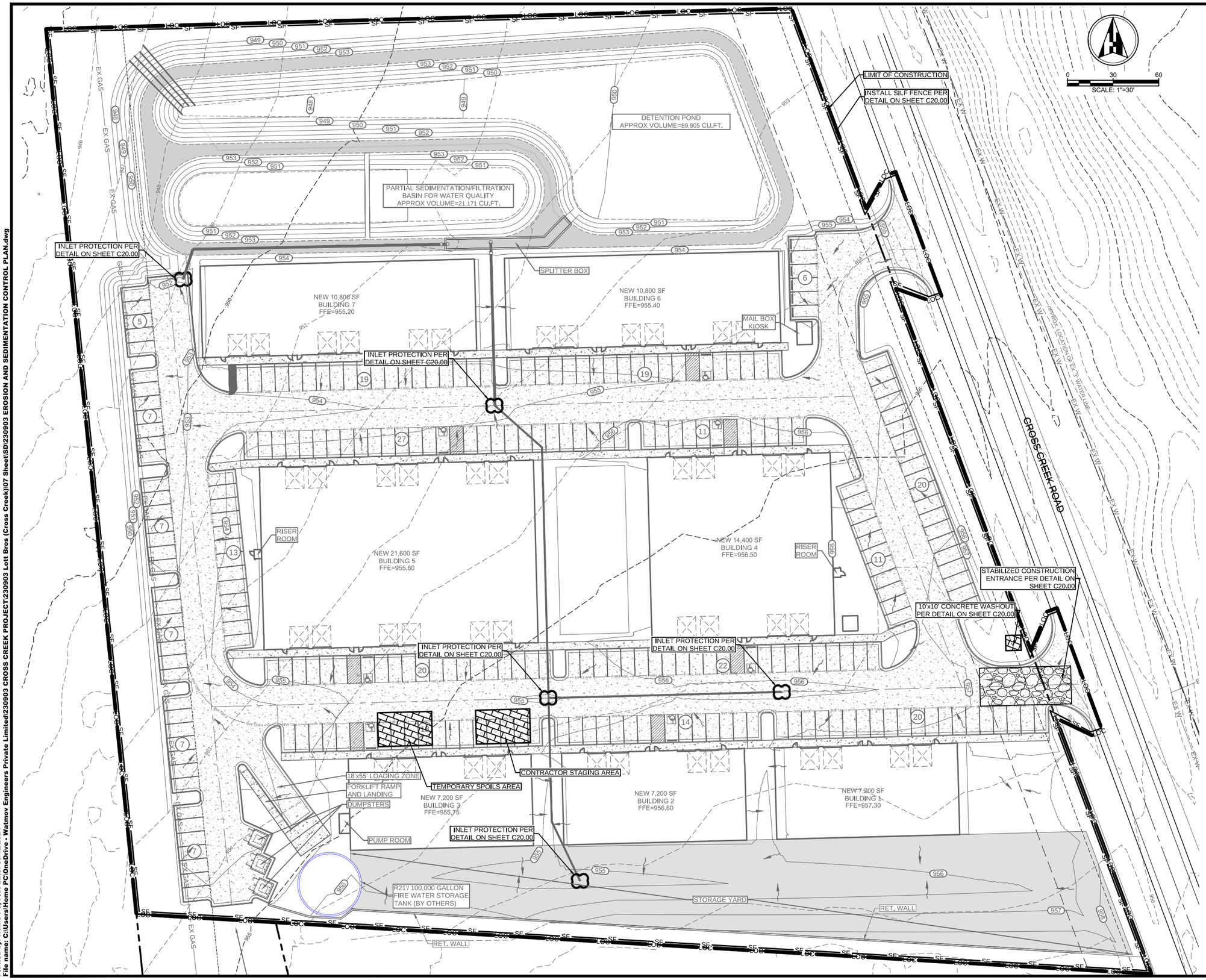
Below is a list of the major activities that will take place for the site development. The nearest receiving water ultimately discharges to San Gabriel.

1. There will be clearing and grubbing where the construction will take place. Approximately 8.19 acres of the site will be cleared of brush and trees. Silt fence will be put in place along the perimeter of the limits of construction to ensure that any soil loosened in the process will be contained on the site in the event of a storm. Tree protection will be installed before other trees are removed.
2. Excavation and utility installation will take place after the clearing and grubbing. The silt fence will still be in place from the initial installation and will be inspected to ensure it is still intact. Any damaged portions will be removed and replaced. A stabilized construction entrance will be used to prevent track out from the site.
3. After the utilities are installed the construction of the buildings, parking lots, driveways, and other developments will proceed. All previously mentioned erosion and sediment controls will be incorporated into the site development. Additional silt fencing will be put in place downstream if necessary. A concrete washout will be utilized for concrete waste.

Attachment D – Temporary Best Management Practices and Measures

Several temporary BMPs will be utilized on the project site. A silt fence will be placed along the perimeter of the site to prevent flows from picking up sediment and discharging from the site. A stabilized construction entrance will also be provided in order to prevent any vehicles entering or exiting the site from tracking out sediment into the street. Flows from the site will be contained in order to prevent them from entering surface streams, sensitive features, or the aquifer. There have not been any naturally occurring or manmade sensitive features identified on the site by the geologic survey.

Attachment F – Structural Practices



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WBE210166 | HUB 1853873845300

LEGEND

LOC	LIMITS OF CONSTRUCTION (8.12 Ac.)
	ROCK CHECK DAM
	INLET PROTECTION
SF	SILT FENCE
CF	CONSTRUCTION FENCE
FD	FILTER DIKE
TP	TREE PROTECTION FENCE
	FLOW ARROW

NOTES:

1. NO ENVIRONMENTALLY SENSITIVE AREAS ARE LOCATED ON OR DOWNSTREAM OF THIS PROJECT SITE.
2. THIS PROJECT WILL NOT REQUIRE ANY FORM OF PHASING OR SLOPE STABILIZATION.
3. REFER TO LANDSCAPE PLANS FOR RESEEDING AND REVEGETATION REQUIREMENTS.
4. NO PERMANENT EROSION CONTROL MEASURES WILL BE INSTALLED WITH THIS PROJECT.
5. REFER TO SHEET C20.00 FOR STANDARD DETAILS - ESC.
6. 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.
7. 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.
8. 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.
9. ALL DISTURBED AREAS SHALL BE RE-VEGETATED TO MEET THE REQUIRMENTS OF THE CITY OF GEORGETOWN ORDINANCES.
10. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE INSPECTOR AT THE TIME OF CONSTRUCTION.

REVISION

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

EROSION AND SEDIMENTATION CONTROL PLAN

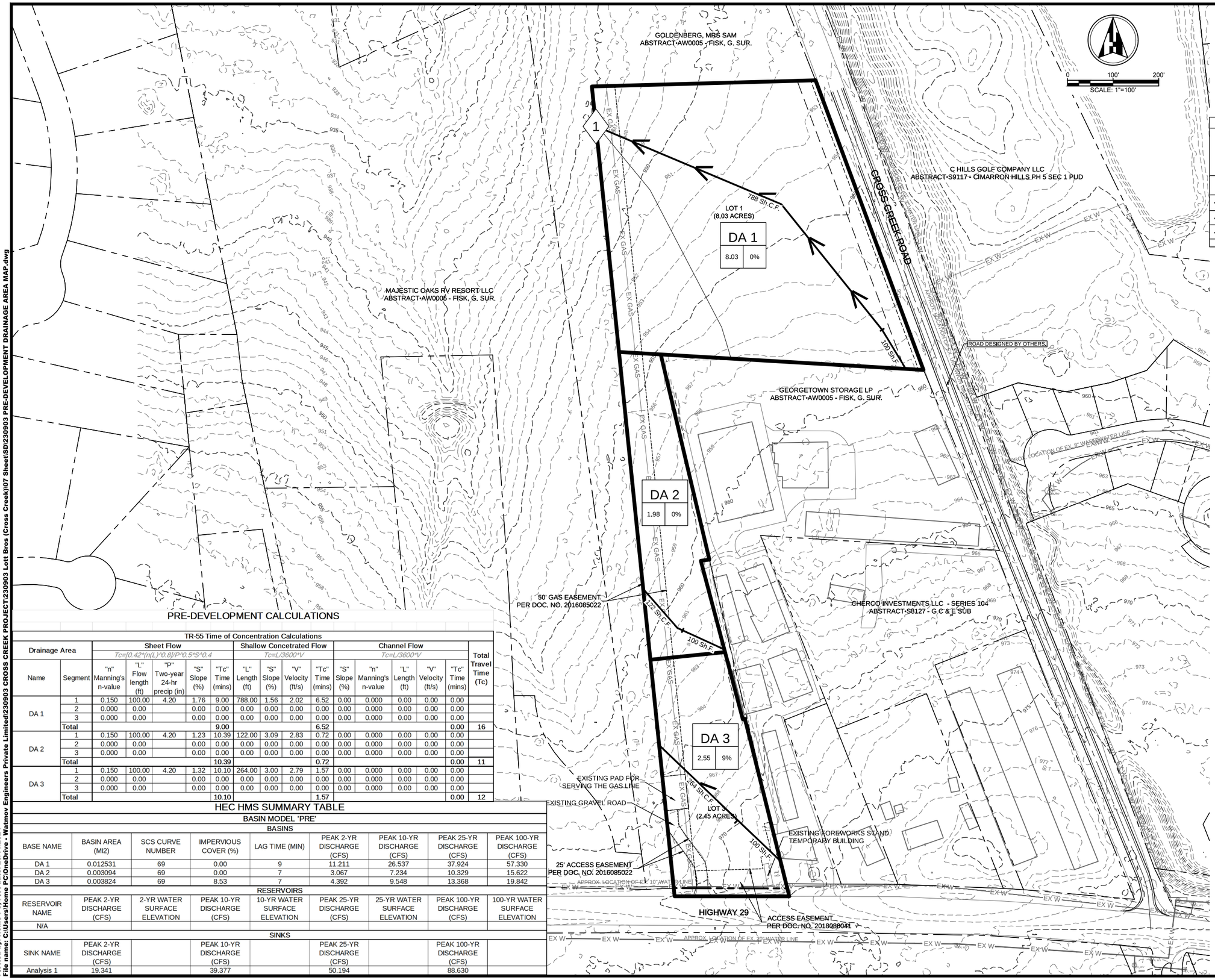
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C08.01

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Loft Bros (Cross Creek)\07 Sheet\SD\230903 EROSION AND SEDIMENTATION CONTROL PLAN.dwg



PRE-DEVELOPMENT CALCULATIONS

TR-55 Time of Concentration Calculations

Drainage Area		Sheet Flow					Shallow Concetrated Flow				Channel Flow					Total Travel Time (Tc)
		Tc=[0.42*(n(L)^0.8)/P^0.5*S^0.4					Tc=L/3600*V				Tc=L/3600*V					
Name	Segment	"n" Manning's n-value	"L" Flow length (ft)	"P" Two-year 24-hr precip (in)	"S" Slope (%)	"Tc" Time (mins)	"L" Length (ft)	"S" Slope (%)	"V" Velocity (ft/s)	"Tc" Time (mins)	"S" Slope (%)	"n" Manning's n-value	"L" Length (ft)	"V" Velocity (ft/s)	"Tc" Time (mins)	
DA 1	1	0.150	100.00	4.20	1.76	9.00	788.00	1.56	2.02	6.52	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					9.00				6.52					0.00	16
DA 2	1	0.150	100.00	4.20	1.23	10.39	122.00	3.09	2.83	0.72	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					10.39				0.72					0.00	11
DA 3	1	0.150	100.00	4.20	1.32	10.10	264.00	3.00	2.79	1.57	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					10.10				1.57					0.00	12

HEC HMS SUMMARY TABLE

BASIN MODEL 'PRE'

BASINS

BASE NAME	BASIN AREA (MI2)	SCS CURVE NUMBER	IMPERVIOUS COVER (%)	LAG TIME (MIN)	PEAK 2-YR DISCHARGE (CFS)	PEAK 10-YR DISCHARGE (CFS)	PEAK 25-YR DISCHARGE (CFS)	PEAK 100-YR DISCHARGE (CFS)
DA 1	0.012531	69	0.00	9	11.211	26.537	37.924	57.330
DA 2	0.003094	69	0.00	7	3.067	7.234	10.329	15.622
DA 3	0.003824	69	8.53	7	4.392	9.548	13.368	19.842

RESERVOIRS

RESERVOIR NAME	PEAK 2-YR DISCHARGE (CFS)	2-YR WATER SURFACE ELEVATION	PEAK 10-YR DISCHARGE (CFS)	10-YR WATER SURFACE ELEVATION	PEAK 25-YR DISCHARGE (CFS)	25-YR WATER SURFACE ELEVATION	PEAK 100-YR DISCHARGE (CFS)	100-YR WATER SURFACE ELEVATION
N/A								

SINKS

SINK NAME	PEAK 2-YR DISCHARGE (CFS)		PEAK 10-YR DISCHARGE (CFS)		PEAK 25-YR DISCHARGE (CFS)		PEAK 100-YR DISCHARGE (CFS)	
Analysis 1	19.341		39.377		50.194		88.630	

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LEGEND

DA 1 / 0.90 Ac. / 0%	DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE
X	ANALYSIS POINT
100 LF Sh.F.	SHEET FLOW SEGMENT OF TIME OF CONCENTRATION (Tc) PATH
500 LF Sh.C.F.	SHALLOW CONCENTRATED FLOW SEGMENT OF Tc PATH
500 LF Ch.F.	CHANNELIZED FLOW SEGMENT OF Tc PATH
	FLOW ARROW

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

PRE-DEVELOPMENT DRAINAGE AREA MAP

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

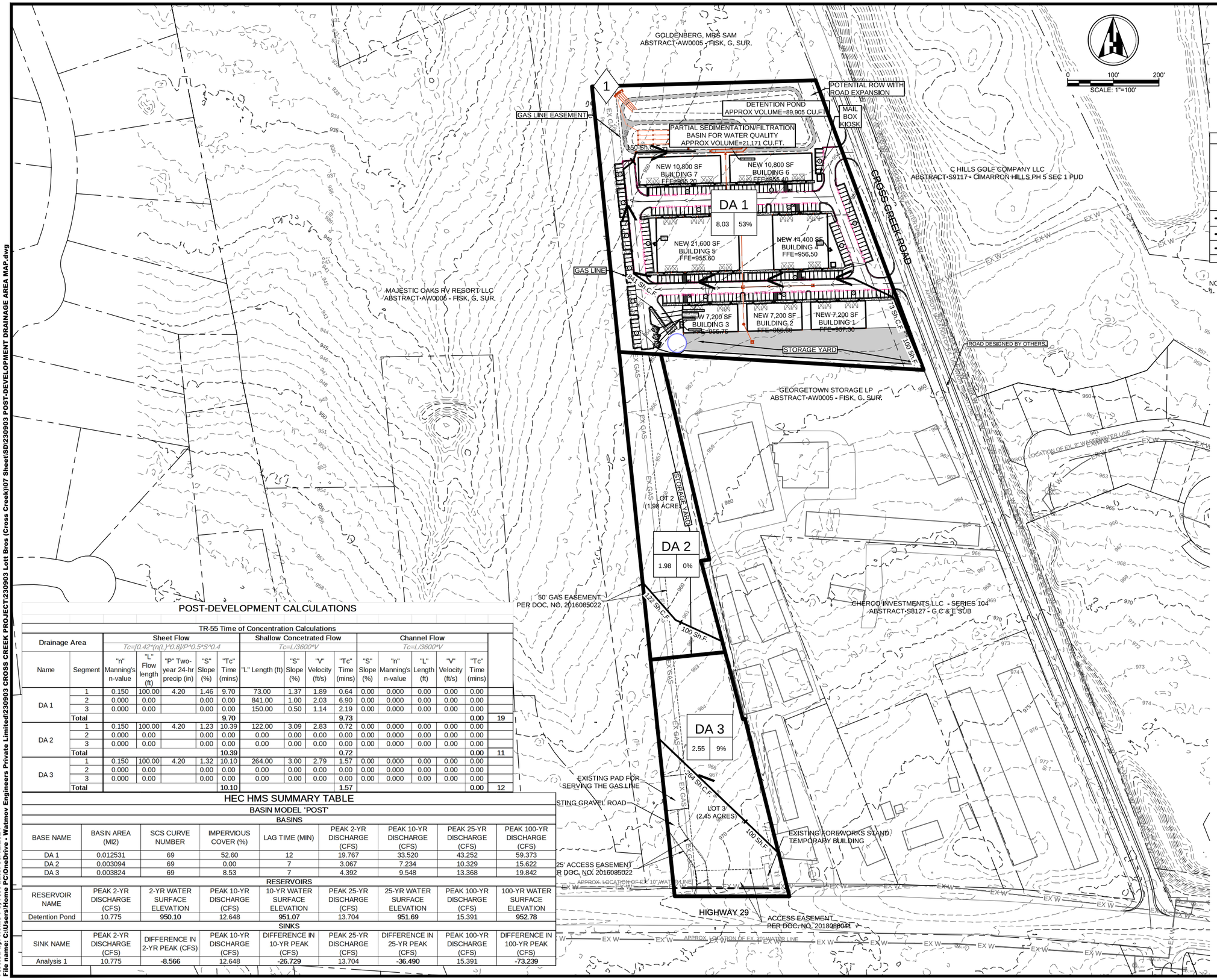
PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C09.00

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by Home PC, Plot date: 29/11/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 PRE-DEVELOPMENT DRAINAGE AREA MAP.dwg

Attachment G – Drainage Area Map



POST-DEVELOPMENT CALCULATIONS

TR-55 Time of Concentration Calculations

Drainage Area		Sheet Flow					Shallow Concetrated Flow				Channel Flow					
		Tc=[0.42*(n(L)^0.8)/P^0.5*S^0.4					Tc=L/3600*V				Tc=L/3600*V					
Name	Segment	"n" Manning's n-value	"L" Flow length (ft)	"P" Two-year 24-hr precip (in)	"S" Slope (%)	"Tc" Time (mins)	"L" Length (ft)	"S" Slope (%)	"V" Velocity (ft/s)	"Tc" Time (mins)	"S" Slope (%)	"n" Manning's n-value	"L" Length (ft)	"V" Velocity (ft/s)	"Tc" Time (mins)	
DA 1	1	0.150	100.00	4.20	1.46	9.70	73.00	1.37	1.89	0.64	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	841.00	1.00	2.03	6.90	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	150.00	0.50	1.14	2.19	0.00	0.000	0.00	0.00	0.00	
	Total					**9.70**				**9.73**					**0.00**	**19**
DA 2	1	0.150	100.00	4.20	1.23	10.39	122.00	3.09	2.83	0.72	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					**10.39**				**0.72**					**0.00**	**11**
DA 3	1	0.150	100.00	4.20	1.32	10.10	264.00	3.00	2.79	1.57	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					**10.10**				**1.57**					**0.00**	**12**

HEC HMS SUMMARY TABLE

BASIN MODEL 'POST'

BASINS

BASE NAME	BASIN AREA (MI2)	SCS CURVE NUMBER	IMPERVIOUS COVER (%)	LAG TIME (MIN)	PEAK 2-YR DISCHARGE (CFS)	PEAK 10-YR DISCHARGE (CFS)	PEAK 25-YR DISCHARGE (CFS)	PEAK 100-YR DISCHARGE (CFS)
DA 1	0.012531	69	52.60	12	19.767	33.520	43.252	59.373
DA 2	0.003094	69	0.00	7	3.067	7.234	10.329	15.622
DA 3	0.003824	69	8.53	7	4.392	9.548	13.368	19.842

RESERVOIRS

RESERVOIR NAME	PEAK 2-YR DISCHARGE (CFS)	2-YR WATER SURFACE ELEVATION	PEAK 10-YR DISCHARGE (CFS)	10-YR WATER SURFACE ELEVATION	PEAK 25-YR DISCHARGE (CFS)	25-YR WATER SURFACE ELEVATION	PEAK 100-YR DISCHARGE (CFS)	100-YR WATER SURFACE ELEVATION
Detention Pond	10.775	**950.10**	12.648	**951.07**	13.704	**951.69**	15.391	**952.78**

SINKS

SINK NAME	PEAK 2-YR DISCHARGE (CFS)	DIFFERENCE IN 2-YR PEAK (CFS)	PEAK 10-YR DISCHARGE (CFS)	DIFFERENCE IN 10-YR PEAK (CFS)	PEAK 25-YR DISCHARGE (CFS)	DIFFERENCE IN 25-YR PEAK (CFS)	PEAK 100-YR DISCHARGE (CFS)	DIFFERENCE IN 100-YR PEAK (CFS)
Analysis 1	10.775	**-8.566**	12.648	**-26.729**	13.704	**-36.490**	15.391	**-73.239**

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LEGEND

DA 1 / 0.90 Ac. / 0%	DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE
X	ANALYSIS POINT
100 LF Sh.F.	SHEET FLOW SEGMENT OF TIME OF CONCENTRATION (Tc) PATH
500 LF Sh.C.F.	SHALLOW CONCENTRATED FLOW SEGMENT OF Tc PATH
500 LF Ch.F.	CHANNELIZED FLOW SEGMENT OF Tc PATH
	FLOW ARROW

NOTES:
1. THE FLOW OF THE SITE HAS NOT BEEN INSCREASED FROM THE PRE-DEVELOPED CONDITION.

Henderson Professional Engineers
600 ROUND ROCK WEST DRIVE, SUITE 604
ROUND ROCK, TX 78681
512.350.6228
PELS FIRM #F-22208
www.hendersonpe.com
Civil Engineering
WBE210166 | HUB 185387845300

REVISION

No.	
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

POST-DEVELOPMENT DRAINAGE AREA MAP

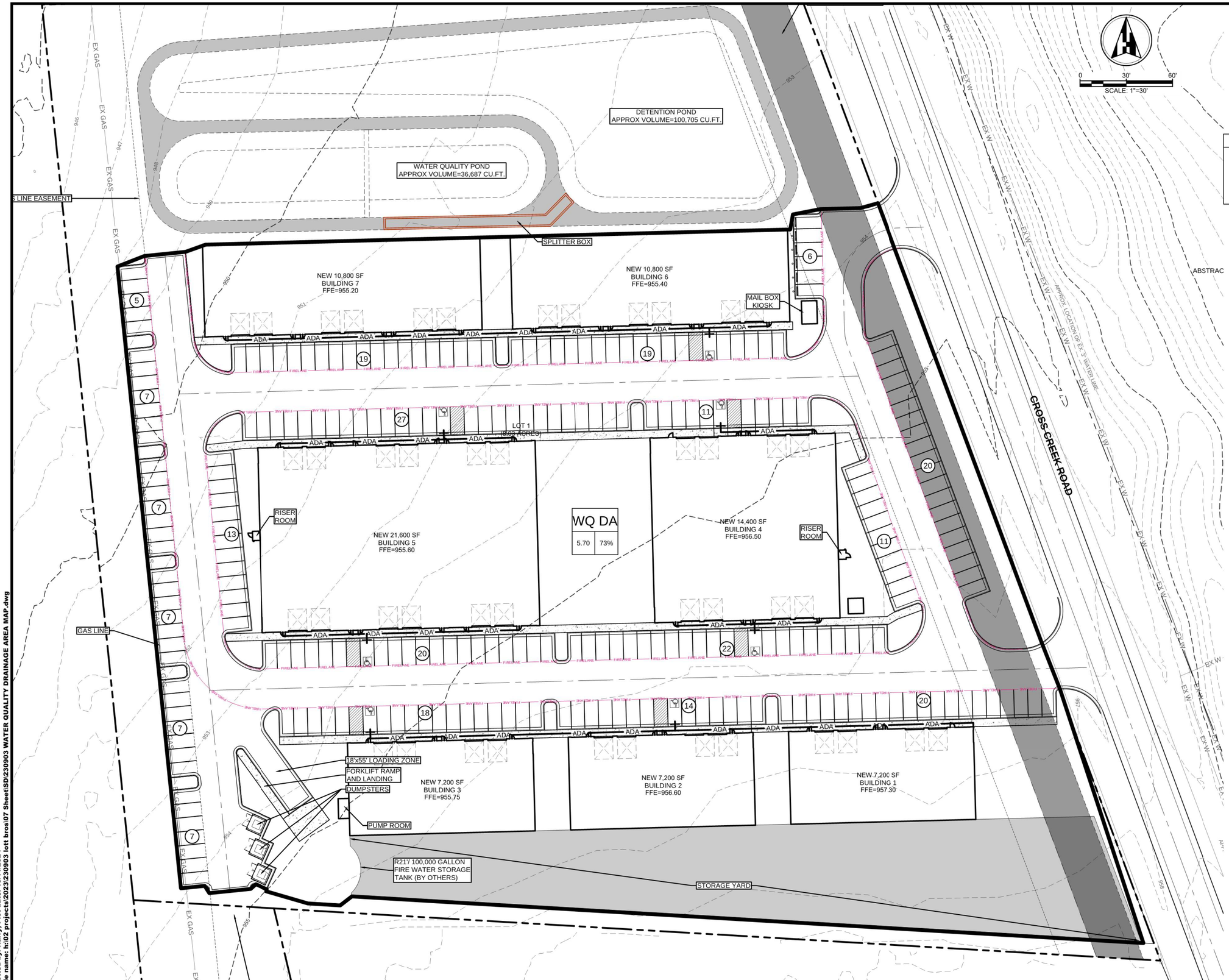
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C10.00

Plotted by Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POST-DEVELOPMENT DRAINAGE AREA MAP.dwg

COUNTY PERMIT NUMBER: 2024-734-COC



LEGEND	
WQ DA 0.90 0%	WATER QUALITY DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE

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No.	REVISION
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

WATER QUALITY DRAINAGE AREA MAP

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C18.05

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 WATER QUALITY DRAINAGE AREA MAP.dwg

COUNTY PERMIT NUMBER: 2024-734-COC

Attachment I – Inspection and Maintenance for BMPs

The following inspection plan has been laid out for each BMP:

1. Silt fence
    a. Silt fence will be inspected monthly and after large rainfall events to ensure there are not any compromised points. If it is found that the silt fence is damaged it will be removed and replaced with new fence.
2. Stabilized Construction Entrance
    a. A stabilized construction entrance will be provided for the site. The construction entrance will be inspected on a monthly basis. If the aggregate becomes damaged or no longer prevents track out, it will be removed and replaced with new aggregate.
3. Concrete Washout
    a. A concrete washout will be provided for any excess concrete and for truck cleaning. The washout will be inspected on a monthly basis and at the end of the day on concrete pours. Once the washout is full, it will be disposed of properly and either replaced with a new washout or emptied fully.
4. Tree Protection
    a. Tree protection will be installed at the beginning of the project. All tree protection will be inspected on a monthly basis. If the protection is damaged at any point during the construction process it will be replaced with adequate protection.

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Silt Fence Maintenance	Date	Signature
Inspect all fencing weekly, and after any rainfall.		
Remove sediment when buildup reaches 6 inches.		
Replace any torn fabric or install a second line of fencing parallel to the torn section.		
Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.		
When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.		

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Stabilized Construction Entrance	Date	Signature
The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.		
All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.		
When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.		
When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.		
All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.		

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Tree Protection	Date	Signature
If the soil has become compacted over the root zone of any tree, the ground should be aerated by punching holes with an iron bar. The bar should be driven 1- foot deep and then moved back and forth until the soil is loosened. This procedure should be repeated every 18 inches until all of the compacted soil beneath the crown of the tree has been loosened.		
Any damage to the crown, trunk, or root system of any tree retained on the site should be repaired immediately.		
Whenever major root or bark damage occurs, remove some foliage to reduce the demand for water and nutrients.		
Damaged roots should immediately be cut off cleanly inside the exposed or damaged area. Cut surfaces should be painted with approved tree paint, and moist peat moss, burlap, or topsoil should be spread over the exposed area.		
To treat bark damage, carefully cut away all loosened bark back into the undamaged area, taper the cut at the top and bottom, and provide drainage at the base of the wound.		
All tree limbs damaged during construction or removed for any other reason should be cut off above the collar at the preceding branch junction.		

Care for serious injuries should be prescribed by a forester or a tree specialist.		
Broadleaf trees that have been stressed or damaged should receive a heavy application of fertilizer to aid their recovery. Trees should be fertilized in the late fall (after November 1) or the early spring (until April 1). Fall applications are preferred, as the nutrients will be made available over a longer period of time. Fertilizer should be applied to the soil over the feeder roots. In no case should it be applied closer than 3 feet to the trunk. Fertilizer should be applied using approved fertilization methods and equipment.		
Maintain a ground cover of organic mulch around trees that is adequate to prevent erosion, protect roots, and hold water.		

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Civil Engineering

Sediment Basins	Date	Signature
Inspection should be made weekly and after each rainfall. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed by the contractor.		
Trash and other debris should be removed after each rainfall to prevent clogging of the outlet structure.		
Accumulated silt should be removed and the basin should be re-graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity.		
The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.		

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

The following inspection plan has been laid out for each soil stabilization practices:

1. Tree Protection
    a. Tree protection will be installed at the beginning of the project. All tree protection will be inspected on a monthly basis. If the protection is damaged at any point during the construction process it will be replaced with adequate protection.
2. Permanent Vegetation
    a. At the conclusion of construction, all disturbed areas will be re-seeded with permanent grass/vegetation.
    b. Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days.

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: Jen Henderson

Date: 5/10/2024

Signature of Customer/Agent

_____

Regulated Entity Name: CROSS CREEK COMMERCIAL PARK

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. [X] Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   [ ] N/A

2. [X] 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.

   [X] 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. [X] 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.
   - [X] 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.
   - [X] The site will not be used for multi-family residential developments, schools, or small business sites.

6. [X] **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.
- [X] 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. [X] **Attachment C - BMPs for On-site Stormwater**.

   - [X] 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.

   [X] N/A

9. [X] 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.

   - [X] 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. [X] **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:

    - [X] Design calculations (TSS removal calculations)
    - [X] TCEQ construction notes
    - [X] All geologic features
    - [X] All proposed structural BMP(s) plans and specifications

    [ ] N/A

11. [X] **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:

    [X] Prepared and certified by the engineer designing the permanent BMPs and measures
    [X] Signed by the owner or responsible party
    [X] Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    [X] 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.

    [X] 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.

    [X] N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. [X] 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

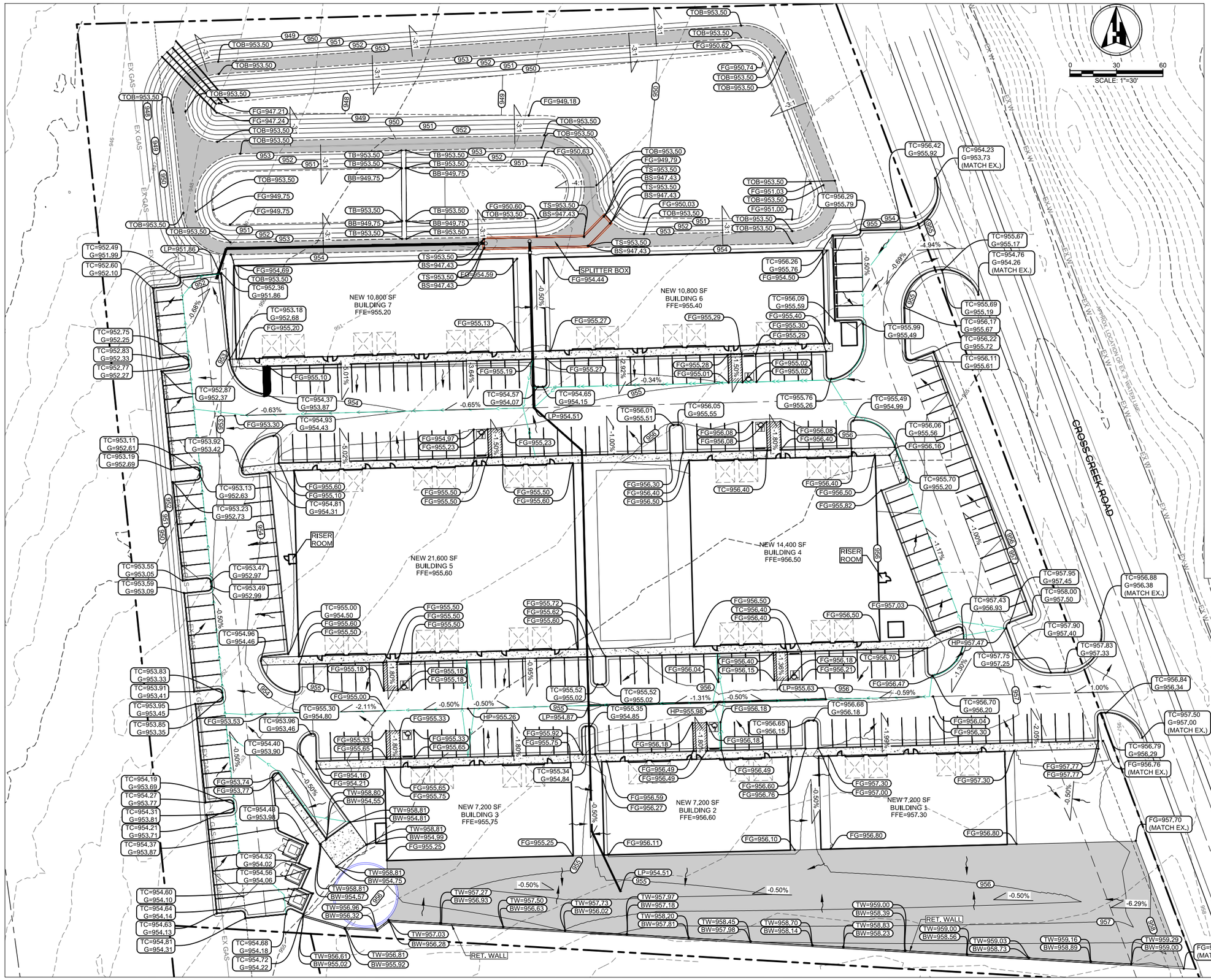
15. [X] A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    [ ] N/A

Attachment B - BMPs for Upgradient Stormwater

No BMPs for upgradient stormwater runoff will be necessary with the proposed development, for the off-site developments have their own water quality measures taken to treat water that discharges onto our project site. The offsite flows from Cimarron Self Storage ponds, where the north discharge flows through the point of interest in existing conditions, is redirected using retaining walls and sloping around curbs. This can be seen south of the storage yard and parking in the Grading Plan (Sheet C17.01).

Upgradient stormwater will not be conveyed though the proposed BMPs.



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LEGEND	
ADA	ACCESSIBLE ROUTE OF TRAVEL
TC	TOP OF CURB
G	GUTTER
TW	TOP OF WALL
BW	BOTTOM OF WALL
FG	FINISHED GRADE
FL	FLOWLINE
TP	TOP OF PAVEMENT
TI	TOP OF INLET
EG	EXISTING GRADE
HP	HIGH POINT
LP	LOW POINT
	FLOW ARROW
	FLOW LINE

NOTES:
1. SLOPES OF ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
2. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30". RAMPS SHALL BE PROVIDED WITH HANDRAILS AND GROUND SURFACE EDGE PROTECTION EACH SIDE AND ENTIRE LENGTH OF RAMP PER TDLR ADA REQUIREMENTS.
3. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50.
4. GROUND SURFACE ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM AND SLIP RESISTANT.
5. THE OVERALL MAXIMUM GRADE OF THE FIRE LANE SHALL NOT EXCEED 10%.

Henderson Professional Engineers
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WBE210166 | HUB 1853873845300

REVISION

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

GRADING PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C17.01

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmoy Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 GRADING.dwg

COUNTY PERMIT NUMBER: 2024-734-COC

759-16-01	PROPOSED FLOW RATES IN CFS			
	2YR	10YR	25YR	100YR
PROPOSED AREAS				
1	1.18	2.04	2.38	3.04
2	0.11	0.19	0.22	0.28
3	0.27	0.46	0.53	0.67
4	0.36	0.86	1	1.27
5	3.43	5.8	6.76	8.59
6	5.84	10.07	11.77	15.02
7	4.17	7.45	8.77	11.28
8	7.01	13.86	16.66	21.97
9	5.69	9.92	11.63	14.87
10	2.63	4.39	5.11	6.47
11	3.2	6.65	8.07	10.78
12	2.08	3.93	4.68	6.1
13	2.29	3.82	4.44	5.63
14	0.5	1.05	1.28	1.72
C	2.41	4.69	5.62	7.38

NOTE: PROPOSED AREAS 1-4 CORRELATE TO EXISTING AREA A' (AREA 2 IS RELEASED TO THE WEST PROPERTY LINE IN BOTH EXISTING AND PROPOSED CONDITIONS).

WEST PROPERTY LINE FLOW CALCULATIONS

Area or Device	Q2 cfs	Q10 cfs	Q25 cfs	Q100 cfs
Areas 2 & 14	0.61	1.24	1.50	1.72
3" WQ Orifice	0.28	0.36	0.39	0.40
seven(7) 8" Pipes	10.09	14.96	16.62	17.22
150' Weir	0.00	0.00	0.00	26.38
Total Flow	10.98	16.56	18.51	45.72
Allowable Flow	15.55	29.94	35.87	47.07

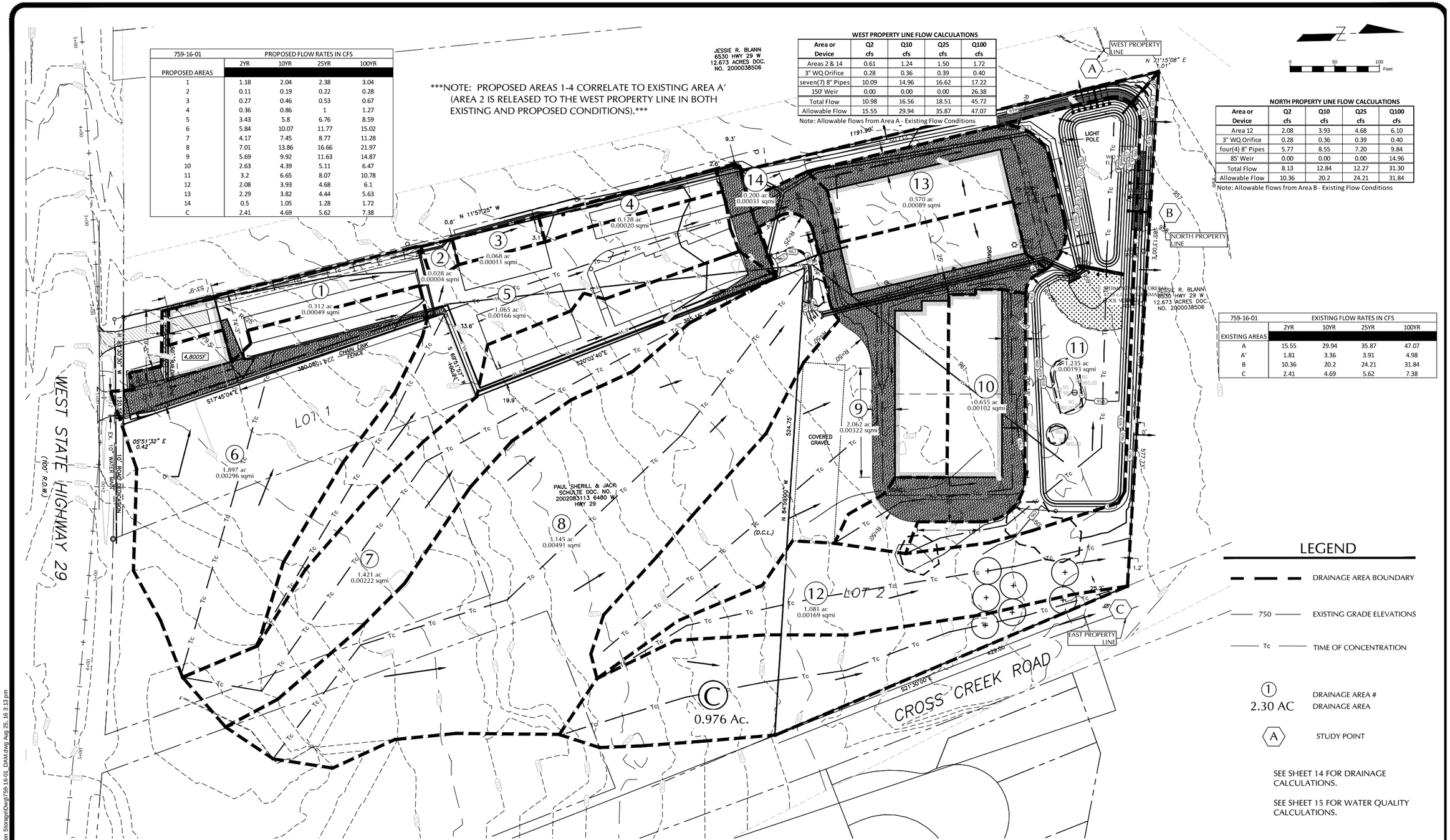
Note: Allowable flows from Area A - Existing Flow Conditions

NORTH PROPERTY LINE FLOW CALCULATIONS

Area or Device	Q2 cfs	Q10 cfs	Q25 cfs	Q100 cfs
Area 12	2.08	3.93	4.68	6.10
3" WQ Orifice	0.28	0.36	0.39	0.40
four(4) 8" Pipes	5.77	8.55	7.20	9.84
85' Weir	0.00	0.00	0.00	14.96
Total Flow	8.13	12.84	12.27	31.30
Allowable Flow	10.36	20.2	24.21	31.84

Note: Allowable flows from Area B - Existing Flow Conditions

759-16-01	EXISTING FLOW RATES IN CFS			
	2YR	10YR	25YR	100YR
EXISTING AREAS				
A	15.55	29.94	35.87	47.07
A'	1.81	3.36	3.91	4.98
B	10.36	20.2	24.21	31.84
C	2.41	4.69	5.62	7.38



SEE SHEET 14 FOR DRAINAGE CALCULATIONS.

SEE SHEET 15 FOR WATER QUALITY CALCULATIONS.

No.	REVISION	BY	DATE

DATE: 25-Aug-2016
SCALE:
PROJECT NO: 759-16-01
DESIGNED BY: KM & HS
DRAWN BY: KM, HS, JL
CHECKED BY: TH
REVISED BY:

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

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

25-Aug-2016 STATE OF TEXAS TIM HAYNIE 91819 LICENSED PROFESSIONAL ENGINEER

HAYNIE CONSULTING, INC.
Civil Engineers and Land Surveyors
1010 Provident Lane
Round Rock, Texas 78664
T.B.P.E. Firm No. F-002411
T.B.P.L.S. Firm No. 100250-00
512.837.2446

CIMARRON SELF STORAGE
PROPOSED DRAINAGE PLAN
SITE DEVELOPMENT PLANS
PROJECT NO: 759-16-01

SHEET NO.
13 OF 22
SWP-2016-010

X:\759 Alan Garrett\759-16-01 Cimarron Storage\Dwg\759-16-01_DAM.dwg Aug 25, 16 3:13 pm

Cimarron Self Storage Detention *Type III 24-hr 2-Year Rainfall=4.10"*
Prepared by Toshiba Printed 8/2/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 5

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D1: Developed Runoff Area=7.846 ac 66.68% Impervious Runoff Depth=3.14" Flow Length=535' Tc=5.6 min CN=93 Runoff=28.64 cfs 2.050 af

Subcatchment E1: Existing Runoff Area=7.846 ac 0.00% Impervious Runoff Depth=2.30" Flow Length=550' Tc=12.4 min CN=84 Runoff=18.25 cfs 1.501 af

Link Developed Flows: Dev. Flows Inflow=28.64 cfs 2.050 af Primary=28.64 cfs 2.050 af

Link Existing Flows: Exist. Flows Inflow=18.25 cfs 1.501 af Primary=18.25 cfs 1.501 af

Total Runoff Area = 15.692 ac Runoff Volume = 3.551 af Average Runoff Depth = 2.72"
66.66% Pervious = 10.460 ac 33.34% Impervious = 5.232 ac

Cimarron Self Storage Detention *Type III 24-hr 10-Year Rainfall=6.80"*
Prepared by Toshiba Printed 8/2/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 14

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D1: Developed Runoff Area=7.846 ac 66.68% Impervious Runoff Depth=5.63" Flow Length=535' Tc=5.6 min CN=93 Runoff=49.85 cfs 3.679 af

Subcatchment E1: Existing Runoff Area=7.846 ac 0.00% Impervious Runoff Depth=4.66" Flow Length=550' Tc=12.4 min CN=84 Runoff=36.09 cfs 3.047 af

Link Developed Flows: Dev. Flows Inflow=49.85 cfs 3.679 af Primary=49.85 cfs 3.679 af

Link Existing Flows: Exist. Flows Inflow=36.09 cfs 3.047 af Primary=36.09 cfs 3.047 af

Total Runoff Area = 15.692 ac Runoff Volume = 6.726 af Average Runoff Depth = 5.14"
66.66% Pervious = 10.460 ac 33.34% Impervious = 5.232 ac

Cimarron Self Storage Detention *Type III 24-hr 25-Year Rainfall=7.90"*
Prepared by Toshiba Printed 8/2/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 23

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment D1: Developed Runoff Area=7.846 ac 66.68% Impervious Runoff Depth=6.64" Flow Length=535' Tc=5.6 min CN=93 Runoff=58.40 cfs 4.343 af

Subcatchment E1: Existing Runoff Area=7.846 ac 0.00% Impervious Runoff Depth=5.66" Flow Length=550' Tc=12.4 min CN=84 Runoff=43.37 cfs 3.698 af

Link Developed Flows: Dev. Flows Inflow=58.40 cfs 4.343 af Primary=58.40 cfs 4.343 af

Link Existing Flows: Exist. Flows Inflow=43.37 cfs 3.698 af Primary=43.37 cfs 3.698 af

Total Runoff Area = 15.692 ac Runoff Volume = 8.041 af Average Runoff Depth = 6.16"
66.66% Pervious = 10.460 ac 33.34% Impervious = 5.232 ac

Cimarron Self Storage Detention *Type III 24-hr 100-Year Rainfall=10.00"*
Prepared by Toshiba Printed 8/2/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 32

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

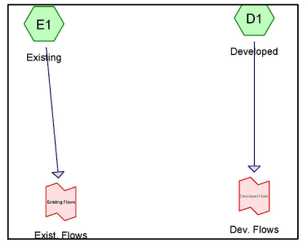
Subcatchment D1: Developed Runoff Area=7.846 ac 66.68% Impervious Runoff Depth=8.58" Flow Length=535' Tc=5.6 min CN=93 Runoff=74.63 cfs 5.607 af

Subcatchment E1: Existing Runoff Area=7.846 ac 0.00% Impervious Runoff Depth=7.58" Flow Length=550' Tc=12.4 min CN=84 Runoff=57.22 cfs 4.955 af

Link Developed Flows: Dev. Flows Inflow=74.63 cfs 5.607 af Primary=74.63 cfs 5.607 af

Link Existing Flows: Exist. Flows Inflow=57.22 cfs 4.955 af Primary=57.22 cfs 4.955 af

Total Runoff Area = 15.692 ac Runoff Volume = 10.562 af Average Runoff Depth = 8.08"
66.66% Pervious = 10.460 ac 33.34% Impervious = 5.232 ac



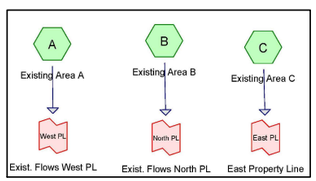
2–YEAR DETENTION REQ'D = 2.050 AC–Ft – 1.501 Ac–Ft = 0.549 Ac–Ft

25–YEAR DETENTION REQ'D = 4.343 AC–Ft – 3.698 Ac–Ft = 0.645 Ac–Ft

10–YEAR DETENTION REQ'D = 3.679 AC–Ft – 3.047 Ac–Ft = 0.632 Ac–Ft

100–YEAR DETENTION REQ'D = 5.607 AC–Ft – 4.955 Ac–Ft = 0.652 Ac–Ft

DETENTION CALCULATIONS



Cimarron Self Storage Existing Flows *Type III 24-hr 2-Year Rainfall=4.10"*
Prepared by Toshiba Printed 7/7/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 5

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment A: Existing Area A Runoff Area=8.082 ac 23.83% Impervious Runoff Depth=2.46" Flow Length=1,250' Slope=0.0200 '/' Tc=18.3 min UI Adjusted CN=86 Runoff=17.36 cfs 1.663 af

Subcatchment B: Existing Area B Runoff Area=5.787 ac 11.23% Impervious Runoff Depth=2.37" Flow Length=1,437' Slope=0.0200 '/' Tc=26.1 min UI Adjusted CN=85 Runoff=10.36 cfs 1.144 af

Subcatchment C: Existing Area C Runoff Area=0.976 ac 10.14% Impervious Runoff Depth=2.38" Flow Length=630' Slope=0.0200 '/' Tc=11.5 min CN=85 Runoff=2.41 cfs 0.194 af

Link East PL: East Property Line Inflow=2.41 cfs 0.194 af Primary=2.41 cfs 0.194 af

Link North PL: Exist. Flows North PL Inflow=10.36 cfs 1.144 af Primary=10.36 cfs 1.144 af

Link West PL: Exist. Flows West PL Inflow=17.36 cfs 1.663 af Primary=17.36 cfs 1.663 af

Total Runoff Area = 14.845 ac Runoff Volume = 2.997 af Average Runoff Depth = 2.42"
81.98% Pervious = 12.170 ac 18.02% Impervious = 2.675 ac

Cimarron Self Storage Existing Flows *Type III 24-hr 10-Year Rainfall=6.80"*
Prepared by Toshiba Printed 7/7/2016
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment A: Existing Area A Runoff Area=8.082 ac 23.83% Impervious Runoff Depth=4.87" Flow Length=1,250' Slope=0.0200 '/' Tc=18.3 min UI Adjusted CN=86 Runoff=33.30 cfs 3.280 af

Subcatchment B: Existing Area B Runoff Area=5.787 ac 11.23% Impervious Runoff Depth=4.75" Flow Length=1,437' Slope=0.0200 '/' Tc=26.1 min UI Adjusted CN=85 Runoff=20.20 cfs 2.291 af

Subcatchment C: Existing Area C Runoff Area=0.976 ac 10.14% Impervious Runoff Depth=4.77" Flow Length=630' Slope=0.0200 '/' Tc=11.5 min CN=85 Runoff=4.69 cfs 0.388 af

Link East PL: East Property Line Inflow=4.69 cfs 0.388 af Primary=4.69 cfs 0.388 af

Link North PL: Exist. Flows North PL Inflow=20.20 cfs 2.291 af Primary=20.20 cfs 2.291 af

Link West PL: Exist. Flows West PL Inflow=33.30 cfs 3.280 af Primary=33.30 cfs 3.280 af

Total Runoff Area = 14.845 ac Runoff Volume = 5.959 af Average Runoff Depth = 4.82"
81.98% Pervious = 12.170 ac 18.02% Impervious = 2.675 ac

Cimarron Self Storage Existing Flows *Type III 24-hr 25-Year Rainfall=7.90"*
Prepared by Toshiba Printed 7/7/2016
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment A: Existing Area A Runoff Area=8.082 ac 23.83% Impervious Runoff Depth=5.88" Flow Length=1,250' Slope=0.0200 '/' Tc=18.3 min UI Adjusted CN=86 Runoff=39.78 cfs 3.957 af

Subcatchment B: Existing Area B Runoff Area=5.787 ac 11.23% Impervious Runoff Depth=5.75" Flow Length=1,437' Slope=0.0200 '/' Tc=26.1 min UI Adjusted CN=85 Runoff=24.21 cfs 2.773 af

Subcatchment C: Existing Area C Runoff Area=0.976 ac 10.14% Impervious Runoff Depth=5.77" Flow Length=630' Slope=0.0200 '/' Tc=11.5 min CN=85 Runoff=5.62 cfs 0.469 af

Link East PL: East Property Line Inflow=5.62 cfs 0.469 af Primary=5.62 cfs 0.469 af

Link North PL: Exist. Flows North PL Inflow=24.21 cfs 2.773 af Primary=24.21 cfs 2.773 af

Link West PL: Exist. Flows West PL Inflow=39.78 cfs 3.957 af Primary=39.78 cfs 3.957 af

Total Runoff Area = 14.845 ac Runoff Volume = 7.199 af Average Runoff Depth = 5.82"
81.98% Pervious = 12.170 ac 18.02% Impervious = 2.675 ac

Cimarron Self Storage Existing Flows *Type III 24-hr 100-Year Rainfall=10.00"*
Prepared by Toshiba Printed 7/7/2016
HydroCAD® 10.00-18 s/n 09454 © 2016 HydroCAD Software Solutions LLC Page 26

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment A: Existing Area A Runoff Area=8.082 ac 23.83% Impervious Runoff Depth=7.81" Flow Length=1,250' Slope=0.0200 '/' Tc=18.3 min UI Adjusted CN=86 Runoff=52.07 cfs 5.257 af

Subcatchment B: Existing Area B Runoff Area=5.787 ac 11.23% Impervious Runoff Depth=7.67" Flow Length=1,437' Slope=0.0200 '/' Tc=26.1 min UI Adjusted CN=85 Runoff=31.84 cfs 3.701 af

Subcatchment C: Existing Area C Runoff Area=0.976 ac 10.14% Impervious Runoff Depth=7.70" Flow Length=630' Slope=0.0200 '/' Tc=11.5 min CN=85 Runoff=7.36 cfs 0.626 af

Link East PL: East Property Line Inflow=7.36 cfs 0.626 af Primary=7.36 cfs 0.626 af

Link North PL: Exist. Flows North PL Inflow=31.84 cfs 3.701 af Primary=31.84 cfs 3.701 af

Link West PL: Exist. Flows West PL Inflow=52.07 cfs 5.257 af Primary=52.07 cfs 5.257 af

Total Runoff Area = 14.845 ac Runoff Volume = 9.584 af Average Runoff Depth = 7.75"
81.98% Pervious = 12.170 ac 18.02% Impervious = 2.675 ac

EXISTING DRAINAGE CALCULATIONS

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 2-Year Rainfall=4.10"*
Prepared by Toshiba Printed 8/9/2016
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Time span=5.00-58.00 hrs, dt=0.05 hrs, 1061 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Developed Area 1 Runoff Area=0.311 ac 76.85% Impervious Runoff Depth=3.41" Tc=5.0 min CN=94 Runoff=1.18 cfs 0.088 af

Subcatchment2: Developed Area 2 Runoff Area=0.028 ac 100.00% Impervious Runoff Depth=3.78" Tc=5.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3: Developed Area 3 Runoff Area=0.068 ac 100.00% Impervious Runoff Depth=3.78" Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment4: Developed Area 4 Runoff Area=0.128 ac 100.00% Impervious Runoff Depth=3.78" Tc=5.0 min CN=98 Runoff=0.52 cfs 0.040 af

Subcatchment5: Developed Area 5 Runoff Area=1.065 ac 88.17% Impervious Runoff Depth=3.61" Flow Length=790' Slope=0.0200 '/' Tc=11.9 min CN=96 Runoff=3.43 cfs 0.320 af

Subcatchment6: Developed Area 6 Runoff Area=1.898 ac 71.50% Impervious Runoff Depth=3.41" Flow Length=625' Slope=0.0200 '/' Tc=12.3 min CN=94 Runoff=5.84 cfs 0.539 af

Subcatchment7: Developed Area 7 Runoff Area=1.422 ac 55.20% Impervious Runoff Depth=3.11" Flow Length=855' Slope=0.0200 '/' Tc=11.6 min CN=91 Runoff=4.17 cfs 0.369 af

Subcatchment8: Developed Area 8 Runoff Area=3.145 ac 25.25% Impervious Runoff Depth=2.46" Flow Length=1,075' Slope=0.0200 '/' Tc=13.9 min UI Adjusted CN=84 Runoff=7.01 cfs 0.645 af

Subcatchment9: Developed Area 9 Runoff Area=2.012 ac 62.03% Impervious Runoff Depth=3.31" Flow Length=700' Slope=0.0200 '/' Tc=14.7 min CN=93 Runoff=5.60 cfs 0.555 af

Subcatchment10: Developed Area 10 Runoff Area=0.654 ac 88.07% Impervious Runoff Depth=3.78" Tc=5.0 min CN=98 Runoff=2.63 cfs 0.206 af

Subcatchment11: Developed Area 11 Runoff Area=1.235 ac 0.00% Impervious Runoff Depth=2.21" Tc=5.0 min CN=81 Runoff=3.20 cfs 0.227 af

Subcatchment12: Developed Area 12 Runoff Area=1.089 ac 9.09% Impervious Runoff Depth=2.73" Flow Length=725' Slope=0.0200 '/' Tc=26.2 min CN=87 Runoff=2.08 cfs 0.248 af

Subcatchment13: Developed Area 13 Runoff Area=0.569 ac 100.00% Impervious Runoff Depth=3.78" Tc=5.0 min CN=98 Runoff=2.29 cfs 0.179 af

Subcatchment14: Developed Area 14 Runoff Area=0.200 ac 0.00% Impervious Runoff Depth=2.12" Tc=5.0 min CN=80 Runoff=0.50 cfs 0.035 af

Pond 1P: Detention WQ Pond Peak Elev=959.14' Storage=0.943 af Inflow=32.57 cfs 3.190 af Outflow=16.43 cfs 3.174 af

Link North PL: West & North Property Line (Split Flow) Inflow=18.45 cfs 3.422 af Primary=18.45 cfs 3.422 af

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 10-Year Rainfall=6.80"*
Prepared by Toshiba Printed 8/9/2016
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Time span=5.00-58.00 hrs, dt=0.05 hrs, 1061 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Developed Area 1 Runoff Area=0.311 ac 76.85% Impervious Runoff Depth=6.02" Tc=5.0 min CN=94 Runoff=2.04 cfs 0.156 af

Subcatchment2: Developed Area 2 Runoff Area=0.028 ac 100.00% Impervious Runoff Depth=6.35" Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment3: Developed Area 3 Runoff Area=0.068 ac 100.00% Impervious Runoff Depth=6.35" Tc=5.0 min CN=98 Runoff=0.46 cfs 0.036 af

Subcatchment4: Developed Area 4 Runoff Area=0.128 ac 100.00% Impervious Runoff Depth=6.35" Tc=5.0 min CN=98 Runoff=0.86 cfs 0.068 af

Subcatchment5: Developed Area 5 Runoff Area=1.065 ac 88.17% Impervious Runoff Depth=6.21" Flow Length=790' Slope=0.0200 '/' Tc=11.9 min CN=96 Runoff=5.80 cfs 0.551 af

Subcatchment6: Developed Area 6 Runoff Area=1.898 ac 71.50% Impervious Runoff Depth=3.41" Flow Length=625' Slope=0.0200 '/' Tc=12.3 min CN=94 Runoff=10.07 cfs 0.953 af

Subcatchment7: Developed Area 7 Runoff Area=1.422 ac 55.20% Impervious Runoff Depth=5.72" Flow Length=855' Slope=0.0200 '/' Tc=11.6 min CN=91 Runoff=7.45 cfs 0.678 af

Subcatchment8: Developed Area 8 Runoff Area=3.145 ac 25.25% Impervious Runoff Depth=4.95" Flow Length=1,075' Slope=0.0200 '/' Tc=13.9 min UI Adjusted CN=84 Runoff=13.86 cfs 1.297 af

Subcatchment9: Developed Area 9 Runoff Area=2.012 ac 62.03% Impervious Runoff Depth=5.93" Flow Length=700' Slope=0.0200 '/' Tc=14.7 min CN=93 Runoff=9.82 cfs 0.994 af

Subcatchment10: Developed Area 10 Runoff Area=0.654 ac 88.07% Impervious Runoff Depth=6.35" Tc=5.0 min CN=98 Runoff=4.39 cfs 0.346 af

Subcatchment11: Developed Area 11 Runoff Area=1.235 ac 0.00% Impervious Runoff Depth=4.62" Tc=5.0 min CN=81 Runoff=6.65 cfs 0.475 af

Subcatchment12: Developed Area 12 Runoff Area=1.089 ac 9.09% Impervious Runoff Depth=5.26" Flow Length=725' Slope=0.0200 '/' Tc=26.2 min CN=87 Runoff=5.00 cfs 0.480 af

Subcatchment13: Developed Area 13 Runoff Area=0.569 ac 100.00% Impervious Runoff Depth=6.35" Tc=5.0 min CN=98 Runoff=3.82 cfs 0.301 af

Subcatchment14: Developed Area 14 Runoff Area=0.200 ac 0.00% Impervious Runoff Depth=4.51" Tc=5.0 min CN=80 Runoff=1.05 cfs 0.075 af

Pond 1P: Detention WQ Pond Peak Elev=960.02' Storage=1.690 af Inflow=58.76 cfs 5.856 af Outflow=24.24 cfs 5.840 af

Link North PL: West & North Property Line (Split Flow) Inflow=27.91 cfs 6.319 af Primary=27.91 cfs 6.319 af

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 2-Year Rainfall=4.10"*
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Link Pipe 1: West PL Pipe Inflow=14.75 cfs 1.378 af Primary=14.75 cfs 1.378 af

Link Pipe 3: Offsite Flows Inflow=7.01 cfs 0.645 af Primary=7.01 cfs 0.645 af

Link Pipe A1: East PL Pipe Inflow=4.17 cfs 0.369 af Primary=4.17 cfs 0.369 af

Link West PL: West Property Line Inflow=0.61 cfs 0.044 af Primary=0.61 cfs 0.044 af

Total Runoff Area = 13.924 ac Runoff Volume = 3.482 af Average Runoff Depth = 3.02"
50.59% Pervious = 6.994 ac 49.41% Impervious = 6.930 ac

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 10-Year Rainfall=6.80"*
Prepared by Toshiba Printed 8/9/2016
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Link Pipe 1: West PL Pipe Inflow=25.55 cfs 2.442 af Primary=25.55 cfs 2.442 af

Link Pipe 3: Offsite Flows Inflow=13.86 cfs 1.297 af Primary=13.86 cfs 1.297 af

Link Pipe A1: East PL Pipe Inflow=7.45 cfs 0.678 af Primary=7.45 cfs 0.678 af

Link West PL: West Property Line Inflow=1.24 cfs 0.090 af Primary=1.24 cfs 0.090 af

Total Runoff Area = 13.924 ac Runoff Volume = 6.426 af Average Runoff Depth = 5.58"
50.59% Pervious = 6.994 ac 49.41% Impervious = 6.930 ac

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 25-Year Rainfall=7.90"*
Prepared by Toshiba Printed 8/9/2016
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Time span=5.00-58.00 hrs, dt=0.05 hrs, 1061 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Developed Area 1 Runoff Area=0.311 ac 76.85% Impervious Runoff Depth=7.08" Tc=5.0 min CN=94 Runoff=2.36 cfs 0.184 af

Subcatchment2: Developed Area 2 Runoff Area=0.028 ac 100.00% Impervious Runoff Depth=7.40" Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment3: Developed Area 3 Runoff Area=0.068 ac 100.00% Impervious Runoff Depth=7.40" Tc=5.0 min CN=98 Runoff=0.53 cfs 0.042 af

Subcatchment4: Developed Area 4 Runoff Area=0.128 ac 100.00% Impervious Runoff Depth=7.40" Tc=5.0 min CN=98 Runoff=1.00 cfs 0.079 af

Subcatchment5: Developed Area 5 Runoff Area=1.065 ac 88.17% Impervious Runoff Depth=7.27" Flow Length=790' Slope=0.0200 '/' Tc=11.9 min CN=96 Runoff=6.76 cfs 0.645 af

Subcatchment6: Developed Area 6 Runoff Area=1.898 ac 71.50% Impervious Runoff Depth=7.09" Flow Length=625' Slope=0.0200 '/' Tc=12.3 min CN=94 Runoff=11.77 cfs 1.121 af

Subcatchment7: Developed Area 7 Runoff Area=1.422 ac 55.20% Impervious Runoff Depth=6.78" Flow Length=855' Slope=0.0200 '/' Tc=11.6 min CN=91 Runoff=8.77 cfs 0.804 af

Subcatchment8: Developed Area 8 Runoff Area=3.145 ac 25.25% Impervious Runoff Depth=6.00" Flow Length=1,075' Slope=0.0200 '/' Tc=13.9 min UI Adjusted CN=84 Runoff=16.66 cfs 1.572 af

Subcatchment9: Developed Area 9 Runoff Area=2.012 ac 62.03% Impervious Runoff Depth=6.99" Flow Length=700' Slope=0.0200 '/' Tc=14.7 min CN=93 Runoff=11.63 cfs 1.172 af

Subcatchment10: Developed Area 10 Runoff Area=0.654 ac 88.07% Impervious Runoff Depth=7.40" Tc=5.0 min CN=98 Runoff=5.11 cfs 0.403 af

Subcatchment11: Developed Area 11 Runoff Area=1.235 ac 0.00% Impervious Runoff Depth=5.65" Tc=5.0 min CN=81 Runoff=8.07 cfs 0.581 af

Subcatchment12: Developed Area 12 Runoff Area=1.089 ac 9.09% Impervious Runoff Depth=6.35" Flow Length=725' Slope=0.0200 '/' Tc=26.2 min CN=87 Runoff=6.68 cfs 0.576 af

Subcatchment13: Developed Area 13 Runoff Area=0.569 ac 100.00% Impervious Runoff Depth=7.40" Tc=5.0 min CN=98 Runoff=4.44 cfs 0.351 af

Subcatchment14: Developed Area 14 Runoff Area=0.200 ac 0.00% Impervious Runoff Depth=5.93" Tc=5.0 min CN=80 Runoff=1.28 cfs 0.092 af

Pond 1P: Detention WQ Pond Peak Elev=960.40' Storage=2.024 af Inflow=69.30 cfs 6.954 af Outflow=26.88 cfs 6.938 af

Link North PL: West & North Property Line (Split Flow) Inflow=31.19 cfs 7.514 af Primary=31.19 cfs 7.514 af

Cimarron Self Storage Proposed Flows HCS 8-5-16 *Type III 24-hr 100-Year Rainfall=10.00"*
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Link Pipe 1: West PL Pipe Inflow=38.19 cfs 3.699 af Primary=38.19 cfs 3.699 af

Link Pipe 3: Offsite Flows Inflow=21.97 cfs 2.101 af Primary=21.97 cfs 2.101 af

Link Pipe A1: East PL Pipe Inflow=11.28 cfs 1.045 af Primary=11.28 cfs 1.045 af

Link West PL: West Property Line Inflow=2.00 cfs 0.147 af Primary=2.00 cfs 0.147 af

Total Runoff Area = 13.924 ac Runoff Volume = 9.965 af Average Runoff Depth = 8.65"
50.59% Pervious = 6.994 ac 49.41% Impervious = 6.930 ac

PROPOSED DRAINAGE CALCULATIONS

No.	REVISION	BY	DATE

DATE: 25-Aug-2016
SCALE:
PROJECT NO: 759-16-01
DESIGNED BY: KM & HS
DRAWN BY: KM, HS, JL
CHECKED BY: TH
REVISED BY:

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

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

25-Aug-2016
STATE OF TEXAS
TIM HAYNIE
91819
LICENSED PROFESSIONAL ENGINEER

HAYNIE CONSULTING, INC.
Civil Engineers and Land Surveyors
1010 Provident Lane
Round Rock, Texas 78664
T.B.P.E. Firm No. F-002411
T.B.P.L.S. Firm No. 100250-00
512.837.2446

CIMARRON SELF STORAGE
DRAINAGE CALCULATIONS
SITE DEVELOPMENT PLANS
PROJECT NO: 759–16–01

SHEET NO.
14 OF 22
SWP–2016–010

X:\759 Alan Garrett\759-16-01 Cimarron Storage\Dwg\759-16-01_Construction Standards.dwg Aug 25, 16 3:13 pm

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Cimarron Self Storage
Date Prepared: 8/2/2016

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

$L_M = 28.93(A_N \times P)$

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

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Williamson	
Total project area included in plan * =	7.86	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	5.16	acres
Total post-development impervious cover fraction * =	0.66	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	4776	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	7.86	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	5.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.66	
$L_{M\ THIS\ BASIN}$ =	4776	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Wet Basin
Removal efficiency = 93 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	7.86	acres
A_I =	5.16	acres
A_P =	2.70	acres
L_R =	5356	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 4776 lbs.

F = 0.89

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

Rainfall Depth =	1.60	inches
Post Development Runoff Coefficient =	0.46	
On-site Water Quality Volume =	21226	cubic feet

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

Off-site area draining to BMP =	7.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.02	
Off-site Water Quality Volume =	813	cubic feet
Storage for Sediment =	4408	
Total Capture Volume (required water quality volume(s) x 1.20) =	26447	cubic feet

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

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	Enter determined permeability rate or assumed value of 0.1
Irrigation area =	NA	square feet	
	NA	acres	

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	NA	cubic feet	
Minimum filter basin area =	NA	square feet	
Maximum sedimentation basin area =	NA	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	NA	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

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

10. Bioretention System Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = NA cubic feet

11. Wet Basins Designed as Required in RG-348 Pages 3-66 to 3-71

Required capacity of Permanent Pool =	26447	cubic feet	Permanent Pool Capacity is 1.20 times the WQV
Required capacity at WQV Elevation =	47674	cubic feet	Total Capacity should be the Permanent Pool Capacity plus a second WQV.

REQUIRED

CITY OF GEORGETOWN
WATER QUALITY VOLUME
CALCULATIONS (85% REMOVAL)

Load Calculations per Eq. 3.1

L=AxPxRvXcX0.226

where,		Value	
	L= Annual Pollutant Load (lbs)	L	
	A=Contributing Area (acres)	7.86	Acres
	P=Average Annual Precipitation (in.)	32	Inches
	Rv=Appropriate Runoff Coefficient	**Adjusted per I.C., 0.03 for Pervious & 0.90 fo**	
	C=Average TSS concentration (mg/L)	**80mg/L for Pervious, 170 mg/L for Impervio**	
	0.226=units conversion factor	**0.226**	

For post developed Site

Impervious Area =	5.159	Acres
Pervious Area =	2.702	Acres

Rv for Pervious Area = .03
Rv for Impervious Area = .90
An = Area of Net increase of Impervious Cover (acres) = 5.159 Acres

L = 0.226 (An x P x 0.9 x 170 - An x P x 0.03 x 80) Equation 3.2
L = 34.0 (An x P) Equation 3.3

L (Dev IC)= 5613 Lbs. 841.9488

For 85% Removal Rate,
Lm(85%) = 4771 Lbs. Required

AREA TO POND (BMP No. 1) CALCULATIONS

Area to Pond=	647360	S.F.		=	14.861 Acres
Offsite Area to Pond	304920	S.F.		=	7.000 Acres
Offsite Impervious Area to Pond	115434	S.F.	* (Treated IC)	=	2.650 Acres
Offsite Pervious Area to Pond	189486	S.F.		=	4.350 Acres
Onsite Area to Pond	342440	S.F.		=	7.861 Acres
Onsite Impervious Area to Pond	224735	S.F.		=	5.159 Acres
Onsite Pervious Area to Pond	117705	S.F.		=	2.702 Acres

* 2.66 Acres offsite IC has natural BMP (Natural VFS) prior to entering site)

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Cimarron
Date Prepared: 2/29/2016

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadshee

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Williamson	
Total project area included in plan * =	7.85	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	5.16	acres
Total post-development impervious cover fraction * =	0.66	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	4491	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	14.85	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	5.16	acres
Post-development impervious fraction within drainage basin/outfall area =	0.35	
$L_{M\ THIS\ BASIN}$ =	4491	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Wet Basin
Removal efficiency = 93 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	7.85	acres
A_I =	5.16	acres
A_P =	2.69	acres
L_R =	5356	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 4491 lbs.

F = 0.84

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

Rainfall Depth =	1.26	inches
Post Development Runoff Coefficient =	0.47	
On-site Water Quality Volume =	16727	cubic feet

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

Off-site area draining to BMP =	7.00	acres		
Off-site Impervious cover draining to BMP =	2.66	acres		
Impervious fraction of off-site area =	0.38			
Off-site Runoff Coefficient =	0.30			
Off-site Water Quality Volume =	9523	cubic feet	26250	
			31500	
Storage for Sediment =	5250		57750	
Total Capture Volume (required water quality volume(s) x 1.20) =	31500	cubic feet	0.72313535	1.3257

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

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	NA	square feet	
	NA	acres	

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

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

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

9A. Full Sedimentation and Filtration System

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

9B. Partial Sedimentation and Filtration System

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

10. Bioretention System Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = NA cubic feet

11. Wet Basins Designed as Required in RG-348 Pages 3-66 to 3-71

Required capacity of Permanent Pool =	31500	cubic feet	**Permanent Pool Capacity is 1.20 times the WQV**
Required capacity at WQV Elevation =	48227	cubic feet	**Total Capacity should be the Permanent Pool Capacity plus a second WQV.**

PROVIDED

APPROVED TCEQ WATER QUALITY VOLUME CALCULATIONS

No.	REVISION	BY	DATE

DATE: 25-Aug-2016
SCALE:
PROJECT NO: 759-16-01
DESIGNED BY: KM & HS
DRAWN BY: KM, HS, JL
CHECKED BY: TH
REVISED BY:

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

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

25-Aug-2016
STATE OF TEXAS
TIM HAYNIE
91819
PROFESSIONAL ENGINEER

HAYNIE CONSULTING, INC.
Civil Engineers and Land Surveyors
1010 Provident Lane
Round Rock, Texas 78664
T.B.P.E. Firm No. F-002411
T.B.P.L.S. Firm No. 100250-00
512.837.2446

CIMARRON SELF STORAGE
WATER QUALITY CALCULATIONS
SITE DEVELOPMENT PLANS
PROJECT NO: 759-16-01

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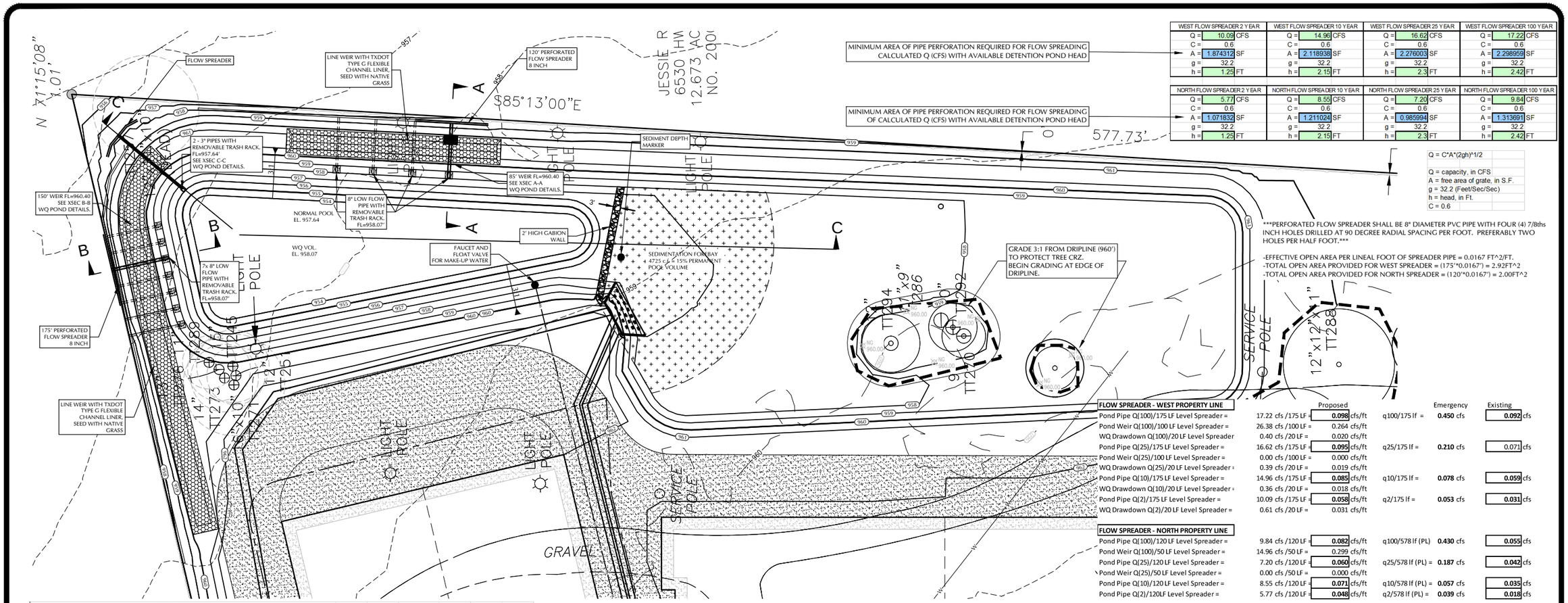


WEST FLOW SPREADER 2 YEAR	WEST FLOW SPREADER 10 YEAR	WEST FLOW SPREADER 25 YEAR	WEST FLOW SPREADER 100 YEAR
Q = 10.09 CFS	Q = 14.96 CFS	Q = 16.62 CFS	Q = 17.22 CFS
C = 0.6	C = 0.6	C = 0.6	C = 0.6
A = 1.874312 SF	A = 2.118938 SF	A = 2.276003 SF	A = 2.298959 SF
g = 32.2	g = 32.2	g = 32.2	g = 32.2
h = 1.25 FT	h = 2.15 FT	h = 2.3 FT	h = 2.42 FT

MINIMUM AREA OF PIPE PERFORATION REQUIRED FOR FLOW SPREADING CALCULATED Q (CFS) WITH AVAILABLE DETENTION POND HEAD

NORTH FLOW SPREADER 2 YEAR	NORTH FLOW SPREADER 10 YEAR	NORTH FLOW SPREADER 25 YEAR	NORTH FLOW SPREADER 100 YEAR
Q = 5.77 CFS	Q = 8.55 CFS	Q = 7.20 CFS	Q = 9.84 CFS
C = 0.6	C = 0.6	C = 0.6	C = 0.6
A = 1.071832 SF	A = 1.211024 SF	A = 0.985994 SF	A = 1.313691 SF
g = 32.2	g = 32.2	g = 32.2	g = 32.2
h = 1.25 FT	h = 2.15 FT	h = 2.3 FT	h = 2.42 FT

MINIMUM AREA OF PIPE PERFORATION REQUIRED FOR FLOW SPREADING OF CALCULATED Q (CFS) WITH AVAILABLE DETENTION POND HEAD

Q = C*A*(2gh)^1/2

Q = capacity, in CFS
A = free area of grate, in S.F.
g = 32.2 (Feet/Sec/Sec)
h = head, in Ft.
C = 0.6

PERFORATED FLOW SPREADER SHALL BE 8" DIAMETER PVC PIPE WITH FOUR (4) 7/8ths INCH HOLES DRILLED AT 90 DEGREE RADIAL SPACING PER FOOT. PREFERABLY TWO HOLES PER HALF FOOT.

-EFFECTIVE OPEN AREA PER LINEAL FOOT OF SPREADER PIPE = 0.0167 FT^2/FT.
-TOTAL OPEN AREA PROVIDED FOR WEST SPREADER = (175'*0.0167') = 2.92FT^2
-TOTAL OPEN AREA PROVIDED FOR NORTH SPREADER = (120'*0.0167') = 2.00FT^2

FLOW SPREADER - WEST PROPERTY LINE		Proposed		Emergency	Existing
Pond Pipe Q(100)/175 LF Level Spreader =	17.22 cfs /175 LF =	0.098 cfs/ft	q100/175 lf =	0.450 cfs	0.092 cfs
Pond Weir Q(100)/100 LF Level Spreader =	26.38 cfs /100 LF =	0.264 cfs/ft			
WQ Drawdown Q(100)/20 LF Level Spreader	0.40 cfs /20 LF =	0.020 cfs/ft			
Pond Pipe Q(25)/175 LF Level Spreader =	16.62 cfs /175 LF =	0.095 cfs/ft	q25/175 lf =	0.210 cfs	0.071 cfs
Pond Weir Q(25)/100 LF Level Spreader =	0.00 cfs /100 LF =	0.000 cfs/ft			
WQ Drawdown Q(25)/20 LF Level Spreader =	0.39 cfs /20 LF =	0.019 cfs/ft			
Pond Pipe Q(10)/175 LF Level Spreader =	14.96 cfs /175 LF =	0.085 cfs/ft	q10/175 lf =	0.078 cfs	0.059 cfs
WQ Drawdown Q(10)/20 LF Level Spreader =	0.36 cfs /20 LF =	0.018 cfs/ft			
Pond Pipe Q(2)/175 LF Level Spreader =	10.09 cfs /175 LF =	0.058 cfs/ft	q2/175 lf =	0.053 cfs	0.031 cfs
WQ Drawdown Q(2)/20 LF Level Spreader =	0.61 cfs /20 LF =	0.031 cfs/ft			
FLOW SPREADER - NORTH PROPERTY LINE					
Pond Pipe Q(100)/120 LF Level Spreader =	9.84 cfs /120 LF =	0.082 cfs/ft	q100/578 lf (PL)	0.430 cfs	0.055 cfs
Pond Weir Q(100)/50 LF Level Spreader =	14.96 cfs /50 LF =	0.299 cfs/ft			
Pond Pipe Q(25)/120 LF Level Spreader =	7.20 cfs /120 LF =	0.060 cfs/ft	q25/578 lf (PL) =	0.187 cfs	0.042 cfs
Pond Weir Q(25)/50 LF Level Spreader =	0.00 cfs /50 LF =	0.000 cfs/ft			
Pond Pipe Q(10)/120 LF Level Spreader =	8.55 cfs /120 LF =	0.071 cfs/ft	q10/578 lf (PL) =	0.057 cfs	0.035 cfs
Pond Pipe Q(2)/120LF Level Spreader =	5.77 cfs /120 LF =	0.048 cfs/ft	q2/578 lf (PL) =	0.039 cfs	0.018 cfs

POND SUMMARY

ELEVATION (FT.)	AREA (ACRES)	AVERAGE AREA (AC.)	INC. ELEV. (FT.)	INC. VOLUME (AC.-FT.)	TOTAL VOL. (AC.-FT.)	TOTAL VOL (CUBIC FT.)
954.0	0.124				0.000	0
		0.137	1.00	0.137		2992
955.0	0.151				0.137	5984
		0.165	1.00	0.165		9569
956.0	0.179				0.302	13155
		0.223	1.00	0.223		18008
957.0	0.267				0.525	22860
		0.332	0.50	0.166		26470
957.5	0.396				0.691	30081
		0.461	0.50	0.230		35096
958.0	0.525				0.921	40112
		0.594	0.50	0.297		46585
958.5	0.664				1.218	53058
		0.733	0.50	0.367		61043
959.0	0.803				1.585	69027
		0.839	1.00	0.839		87302
960.0	0.876				2.424	105577
		0.913	1.00	0.913		125456
961.0	0.950				3.336	145335

Normal Pool = 31,500 CF @ EL. 957.64
Normal Pool + WQV = 48,227 CF @ El. 958.07
PROVIDED

Normal Pool + WQV + 2 Yr DET = 1.794 AF @ EL. 959.25
Normal Pool + WQV + 10 Yr DET = 1.912 AF @ EL. 959.39
Normal Pool + WQV + 25 Yr DET = 1.930 AF @ EL. 959.41
Normal Pool + WQV + 100 Yr DET = 1.944 AF @ EL. 959.43

DETENTION VOL. / STAGE / DISCHARGE FLOW CALCULATIONS

Storm frequency	Detention Vol. (AcFt) Required	Detention Vol. (AcFt) Provided	WSEL Pond FT. (msl)	Q (cfs) Allowable	Q (cfs) Proposed
2-Year	0.549	0.601	959.14	25.02	15.49
10-Year	0.632	1.388	960.02	48.54	22.73
25-Year	0.645	1.594	960.4	58.20	38.63
100-Year	0.652	1.713	960.55	76.80	76.25

1). Detention Volume Provided = Volume Above Wet Pond Elevation - WQ Vol. (16,727 CF or 0.384 AcFt)
2). Q (cfs) Allowable = Existing Flow Conditions Area A and B minus Developed Areas 2,12 & 14 (bypass Flows)
3). Q (cfs) Proposed = Total of 10-8" Dia. Pipes,2- 3" WQ Orifice and Weir flow (150' Total)

Wetland Plant List

Install Bulrush in clumps, with individual plants spaced approximately three to four feet on center:

BULRUSH	WATER DEPTH	NOTES
Scirpus validus, Bulrush	1' — 3'	8' tall evergreen, resists cattail encroachment
Scirpus californicus, Bulrush	1' — 3'	8' tall evergreen, resists cattail encroachment

Install in clumps in shallow water, with individual plants spaced at approximately three feet on center:

MARSH DIVERSITY	WATER DEPTH	NOTES
3. Echinodorus rostratus, Burhead	3" - 1'	1' to 2' tall, annual, heart-shaped leaves, flower similar to arrowhead
9. Najas guadalupensis, Water-Naiad	1' —4'	Submergent, valuable to fish and wildlife

Install spikerush at or near the water's edge, with individual plants spaced approximately three to six feet on center.

SPIKERUSH	WATER DEPTH	NOTES
Eleocharis macrostachys, Spikerush	0" — 6"	1' tall, rhizomatous, reduces erosion at the pond edge
Eleocharis quadrangulata, Spikerush	3" — 1'	2' to 2.5' tall, rhizomatous, can accommodate deeper water, 4-angled

Install Arrowhead in clumps in shallow water, with individual plants spaced approximately three feet on center.

ARROWHEAD	WATER DEPTH	NOTES
Sagittaria latifolia, Arrowhead	2" — 1'	2' height, wildlife value, white flowers, proven water quality performer

Floating-leafed aquatic plants are rooted in the sediment of the pond, and have leaves that float on the surface of the water. These leaves shade the water, which limits potential algae growth. Should be placed at random locations throughout the pond:

AQUATICS	WATER DEPTH	NOTES
1. Cabomba caroliniana, Fanwort	1' — 4'	Approximately 6' length underwater, submergent
2. Ceratophyllum spp., Coon-tail	1' —4'	Maximum 8' length, tolerant of turbidity and water fluctuation, wildlife food

3.4.2 Basin Lining Requirements

Impermeable liners should be used for water quality basins (retention, extended detention, sand filters, wet ponds and constructed wetlands) located over the recharge zone and in areas with the potential for groundwater contamination. Impermeable liners may be clay, concrete or geomembrane. If geomembrane is used, suitable geotextile fabric should be placed on the top and bottom of the membrane for puncture protection and the liners covered with a minimum of 6 inches of compacted topsoil. The topsoil should be stabilized with appropriate vegetation. Clay liners should meet the specifications in Table 3-6 and have a minimum thickness of 12 inches.

Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-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

3-38

If a geomembrane liner is used it should have a minimum thickness of 30 mils and be ultraviolet resistant. The geotextile fabric (for protection of geomembrane) should be nonwoven geotextile fabric and meet the specifications in Table 3-7.

Table 3-7 Geotextile Fabric Specifications (COA, 2004)

Property	Test Method	Unit	Specification (min)
Unit Weight		oz/yd²	8
Filtration Rate		inches	0.08
Puncture Strength	ASTM D-751*	lb	125
Mullen Burst Strength	ASTM D-751	psi	400
Tensile Strength	ASTM D-1682	lb	200
Equip. Opening Size	US Standard Sieve	No.	80

*modified

Installation methods for geomembrane liners vary according to the site requirements. Figure 3-13 shows a typical installation on an earthen slope with the top of the liner keyed in above the maximum water level of the basin. Figure 3-14 presents an example of geomembrane liner attached to the exterior of a concrete or rock wall. The "liquid membrane" shown in the figure is a hot fluid-applied, rubberized asphalt typically used for waterproofing and roofing applications, such as Hydrotech 6125 or equivalent.

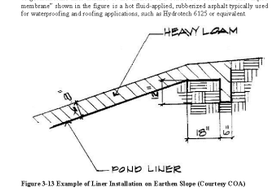
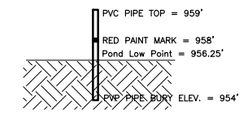


Figure 3-13 Example of Liner Installation on Earthen Slope (Courtesy COA)

3-39



SEDIMENT MARKER DETAIL
N.T.S.

NATIVE FISH GAMBUSIA AFFINIS (MOSQUITO FISH) WILL BE UTILIZED FOR MOSQUITO MINIMIZATION

No.	REVISION	BY	DATE

DATE: 25-Aug-2016
SCALE:
PROJECT NO: 759-16-01
DESIGNED BY: KM & HS
DRAWN BY: KM, HS, JL
CHECKED BY: TH
REVISED BY:

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25-Aug-2016
STATE OF TEXAS
TIM HAYNIE
91819
LICENSED PROFESSIONAL ENGINEER

HAYNIE CONSULTING, INC.
Civil Engineers and Land Surveyors
1010 Provident Lane
Round Rock, Texas 78664
T.B.P.E. Firm No. F-002411
T.B.P.L.S. Firm No. 100250-00
512.837.2446

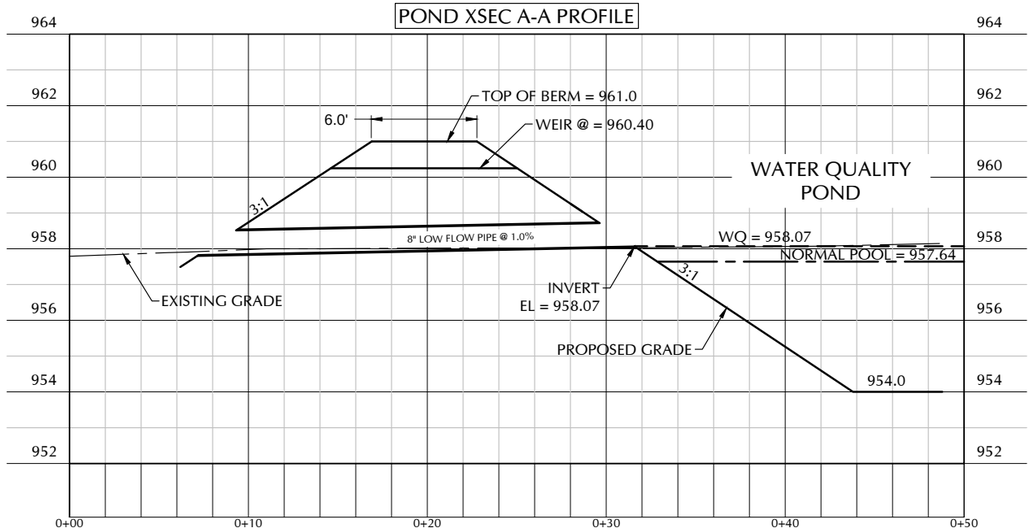
CIMARRON SELF STORAGE
POND PLAN
SITE DEVELOPMENT PLANS
PROJECT NO: 759-16-01

SHEET NO.
16 OF 22
SWP-2016-010

X:\759 Alan Garrett\759-16-01 Cimarron Storage\Dwg\759-16-01_PBASE.dwg Aug 25, 16 3:13 pm

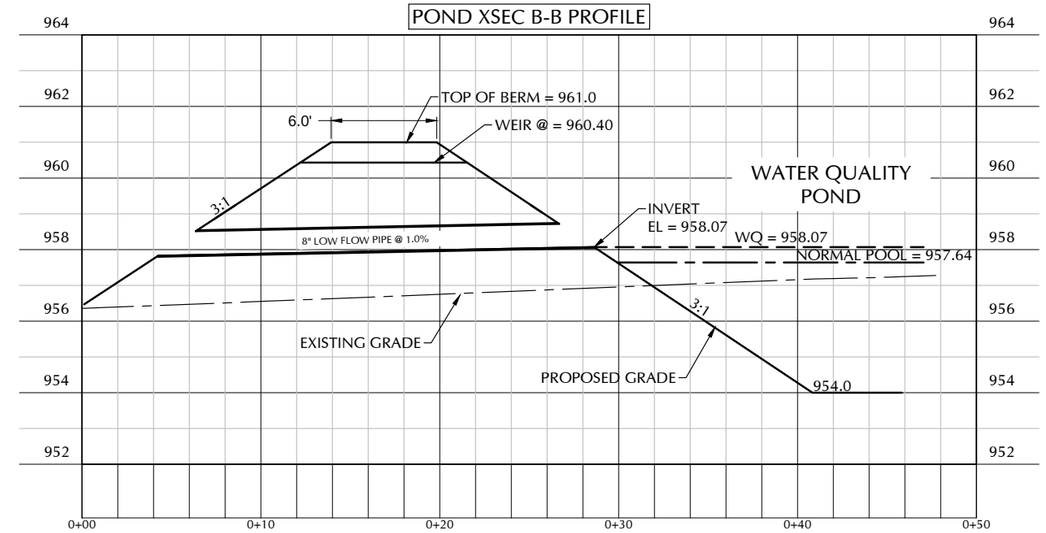
1" = 4' H
1" = 2' V

POND XSEC A-A PROFILE



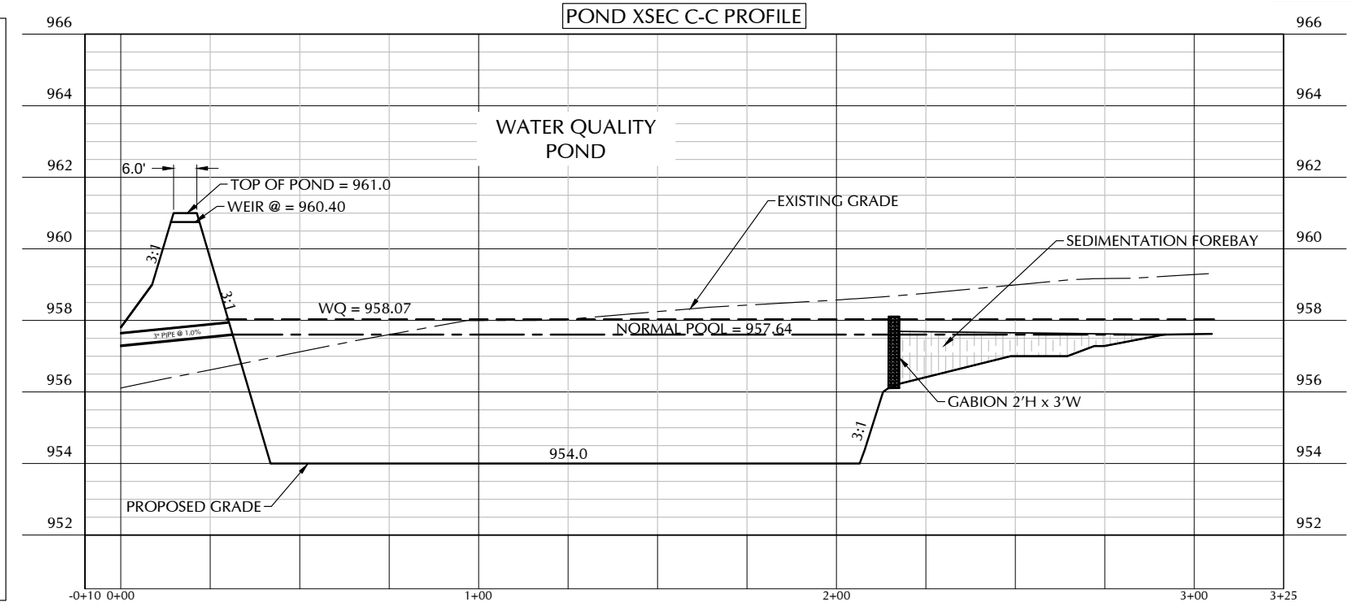
1" = 4' H
1" = 2' V

POND XSEC B-B PROFILE



1" = 20' H
1" = 2' V

POND XSEC C-C PROFILE



Installation Instructions

Trough-O-Matic Automatic Metal Float Valve

TM630/TM630T/TM830A5

- Sturdy adjustable brackets tighten down with thumb screws and make installation on edge of troughs and tanks fast and easy.
- Accepts standard 3/4" garden hose thread. Direct pipe installation quickly achieved with 3/4" adapter (not included).
- One piece float molded from durable maintenance free polyethylene.
- Adjustable neoprene valve seat delivers long life (Models TM830 & TM830T).
- Longer float leverages up to 55 psi water pressure with 245 gallons per hour capacity.

Each Automatic Float Valve Contains:

1 Metal Valve Housing
1 Plastic Orifice Insert (*already assembled*)
1 Hose Washer (*already assembled*)
1 Float Assembly
1 Large Cotter Pin 1/8" x 2-1/4"
2 C-Shaped Brackets
2 Thumb Screws 1/4"-20 x 2"
2 Mounting Screws 1/4"-20 x 3/8" (TM830)
4 Mounting Screws 1/4"-20 x 3/8" (TM830T &TM830A5)
2 L-Shaped Brackets (TM830T & TM830A5)
4 Self Tapping Screws #10 x 3/4" (TM830T & TM830A5)
1 Anti-Siphon Valve Stem (TM830A5)
1 Anti-Siphon Valve Housing (TM830A5)
1 Small Cotter Pin 1/8" x 1-1/8" (TM830A5)

Tools Required:

Straight Blade Screw Driver
Phillips Head Screw Driver
Needle Nose Pliers
Food Grade Anti-Seize Compound

Assembly Instructions (Models TM830 & TM830T):

1. Familiarize yourself with all of the automatic float valve components.
   a. Open the loose parts bag and inventory the contents.
   b. The plastic orifice insert and hose washer is already assembled in the valve housing. Make sure the orifice insert and washer are firmly seated against the valve housing.
   c. The rubber valve seat is already pinned to the float. Make sure the seat and pin are firmly seated against the float.
2. Position the float assembly inside the valve housing and slide the large 2-1/4" cotter pin through the housing and the float assembly (see Figure 1). Spread the ends of the large cotter pin open slightly with pliers. When properly installed, the float assembly should pivot freely on the cotter pin inside the valve housing.
3. See Mounting Instructions.

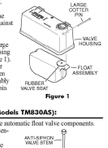


Figure 1

Assembly Instructions (Models TM830A5):

1. Familiarize yourself with all of the automatic float valve components.
   a. Open the loose parts bag and inventory the contents.
   b. The plastic orifice insert and hose washer is already assembled in the anti-siphon valve housing. Make sure the orifice insert and washer are firmly seated against the anti-siphon valve housing.
2. Position the anti-siphon valve stem assembly in the slot of the float and slide the 1-1/8" cotter pin (smallest of the two cotter pins) through the float and the valve stem assembly (see Figure 2) then spread the end of the cotter pin open slightly. When properly installed, the valve stem assembly should pivot freely on the cotter pin inside the float.
3. Thread the anti-siphon valve housing all the way into the valve housing.
4. Position float assembly inside valve housing and slide the large 2-1/4" cotter pin through the housing and the float assembly (see Figure 3). Spread the ends of the large cotter pin open slightly with pliers. When properly installed, the float assembly should pivot freely on the cotter pin inside the valve housing.
5. See Mounting Instructions.

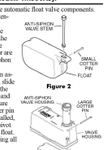


Figure 2

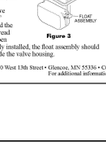


Figure 3

Mounting Instructions:

Standard Rim Tank Mounting (All Models):

1. Slide both C-shaped brackets into the valve housing as shown (see Figure 4).
   Note: Use the upper mounting holes in the valve housing to maintain a water level about 4" below the rim. Use the lower mounting holes in the valve housing to maintain a water level about 2-3/8" below the rim.
2. Attach each C-shaped bracket to the valve housing with the 3/8" mounting screws.
3. Apply food grade anti-seize compound to threads and connect the water supply line.
4. Position the automatic float valve assembly over the tank rim.
5. Thread the thumb screws through the C-shaped brackets and tighten.
6. Test automatic float valve operation.

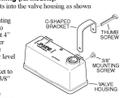


Figure 4

Wide Rim Tank Mounting (Models TM830T & TM830A5):

1. Slide both L-shaped brackets into the valve housing as shown (see Figure 5).
2. Attach each L-shaped bracket to the valve housing with the 3/8" mounting screws.
3. Attach a C-shaped bracket to each L-shaped bracket with the 3/8" mounting screws.
   Note: There are two positions on the L-shaped bracket which allows you to adjust for varying rim widths.
4. Apply food grade anti-seize compound to threads and connect the water supply line.
5. Position the automatic float valve assembly over the tank rim.
6. Thread the thumb screws through the C-shaped brackets and tighten.
7. Test automatic float valve operation.

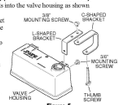


Figure 5

Extra Wide Rim Tank Mounting (Models TM830T & TM830A5):

1. Slide both L-shaped brackets into the valve housing as shown (see Figure 6).
2. Attach each L-shaped bracket to the valve housing with the 3/8" mounting screws.
3. Apply food grade anti-seize compound to threads and connect the water supply line.
4. Position the automatic float valve assembly over the tank rim.
5. Attach each L-shaped bracket to the tank rim with two (2) self tapping screws.
   Note: Pre-drill the tank rim at the desired automatic float valve mounting location with a 1/8" drill if necessary.
6. Test automatic float valve operation.

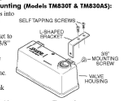
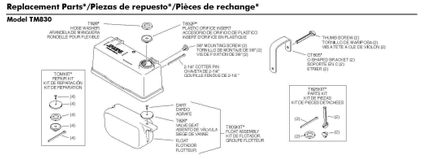


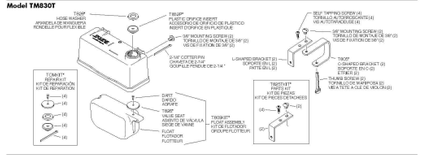
Figure 6

Replacement Parts*/Piezas de repuesto*/Pièces de rechange*

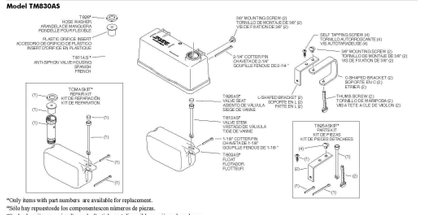
Model TM830



Model TM830T



Model TM830A5



*Only items with part numbers are available for replacement.
*Sólo hay repuestos los componentes con números de piezas.
*Seules les pièces munies d'un code d'article sont disponibles pièces de rechange.

Miller Manufacturing Company
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For additional information visit www.miller-mfg.com

171175 10/13

No.	REVISION	BY	DATE

DATE: 25-Aug-2016
SCALE:
PROJECT NO: 759-16-01
DESIGNED BY: KM & HS
DRAWN BY: KM, HS, JL
CHECKED BY: TH
REVISED BY:

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

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25-Aug-2016
STATE OF TEXAS
TIM HAYNIE
91819
LICENSED PROFESSIONAL ENGINEER

HAYNIE CONSULTING, INC.
Civil Engineers and Land Surveyors
1010 Provident Lane
Round Rock, Texas 78664
T.B.P.E. Firm No. F-002411
T.B.P.L.S. Firm No. 100250-00
512.837.2446

CIMARRON SELF STORAGE
POND SECTIONS & DETAILS
SITE DEVELOPMENT PLANS
PROJECT NO: 759-16-01

SHEET NO.
17 OF 22
SWP-2016-010

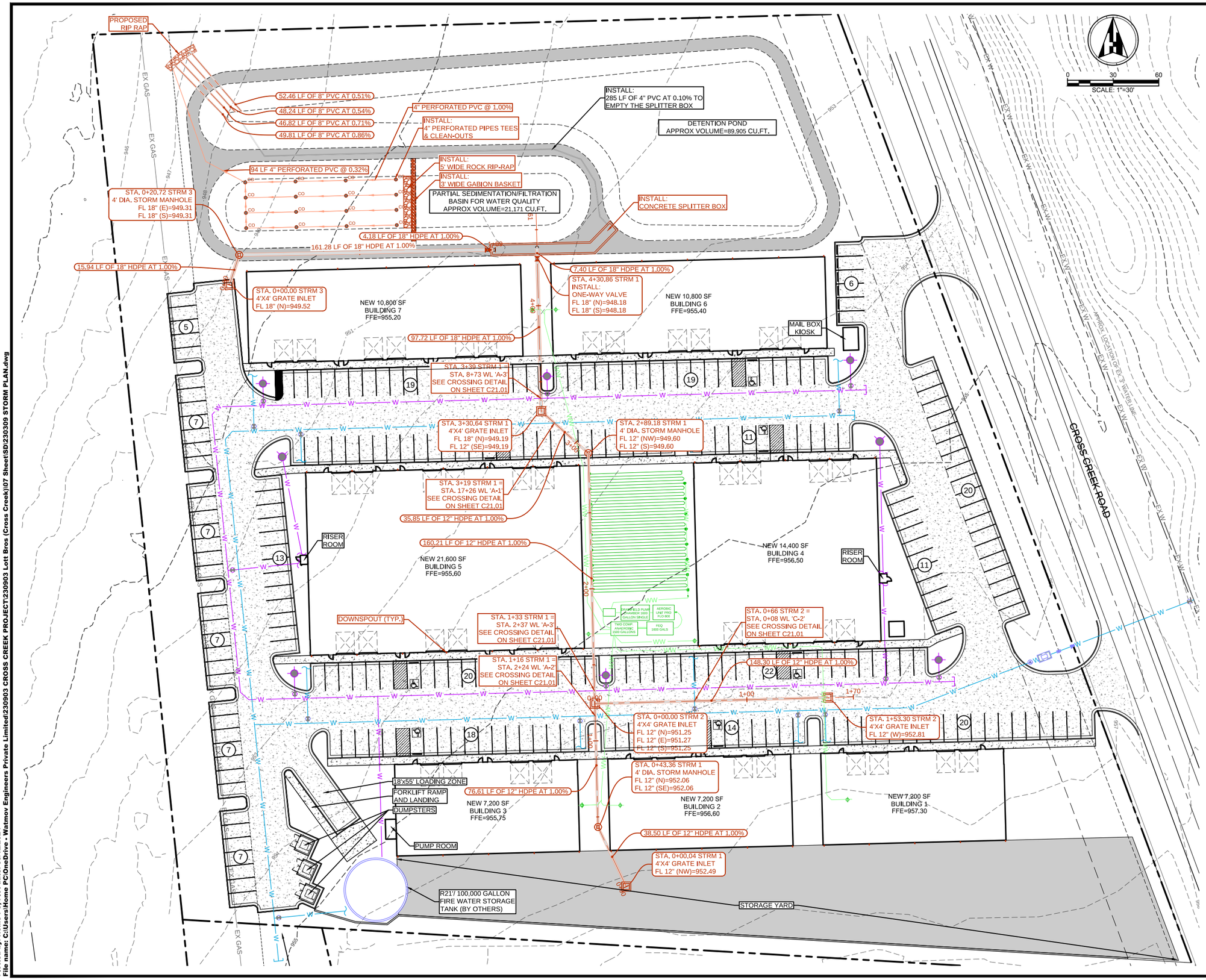
X:\759 Alan Garrett\759-16-01 Cimarron Storage\Dwg\759-16-01 _PBASE.dwg Aug 25, 16 3:13 pm

Attachment C - BMPs for On-site Stormwater

The floor areas and the total available water quality volume of the sedimentation basin and the filtration basin have been included within the notes section on Sheet C18.04 (Water Quality Calculations). The minimum required areas and water quality volume are shown within the calculations on the same sheet.

The one-way valves to close off the sedimentation basin in case hazardous materials enters are labeled and called out on Sheet 13.01 (Storm Sewer Plan).

The gabion basket will extend across the width of the entire water quality basin, but the stone rip-rap will extend across the bottom of the sand filter system and not up the slopes.



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LEGEND

EX W	EXISTING WATER LINE
W	WATER LINE
W	WATER FIRE LINE
EX WW	EXISTING WASTEWATER LINE
	WASTEWATER LINE
EX SD	EXISTING STORMWATER LINE
	STORMWATER LINE
	BUILDING SETBACK
	SUBJECT PROPERTY
	EXISTING WASTEWATER MANHOLE
	WASTEWATER MANHOLE
529	EXISTING CONTOUR
	BENCHMARK
	WATER VALVE
	IRON ROD FOUND (IRF)
	FIRE HYDRANT
	FDC
	ELECTRIC POWER POLE
	UTILITY PIPE CAP
	UTILITY PIPE CONTINUATION
	BACKFLOW PREVENTER
	ONE-WAY VALVE

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STORM SEWER PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C13.01

Plotted by: Home PC, Plot date: 03/12/2024
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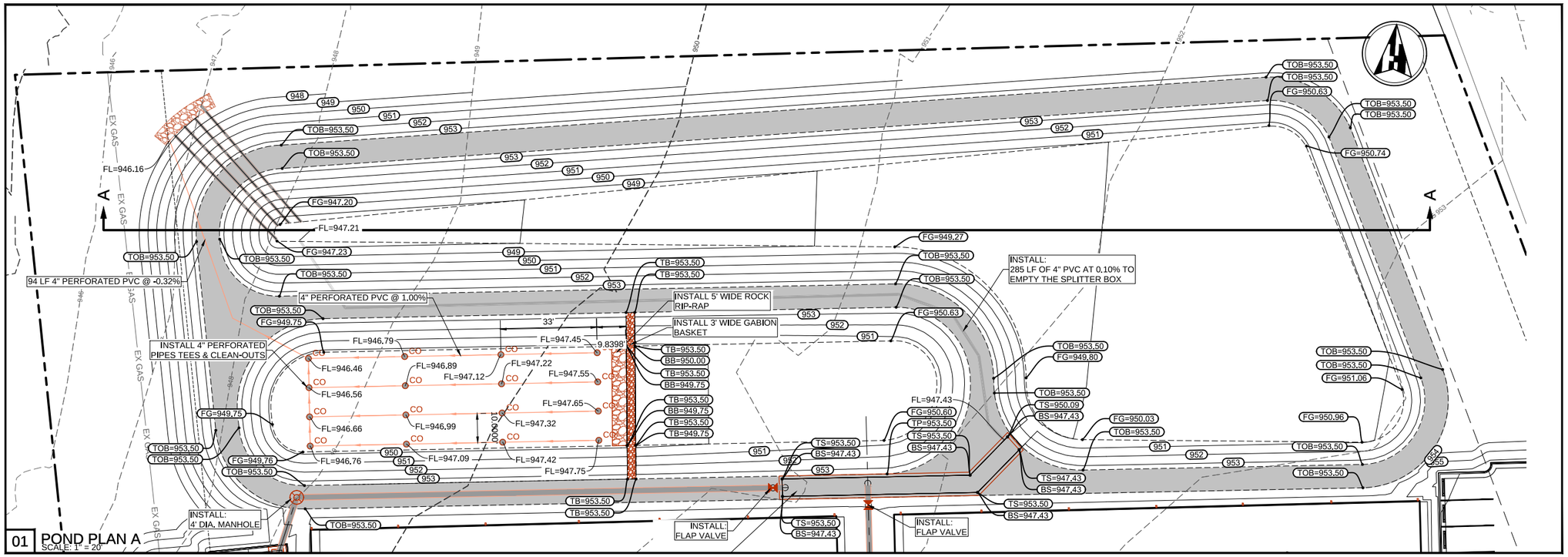
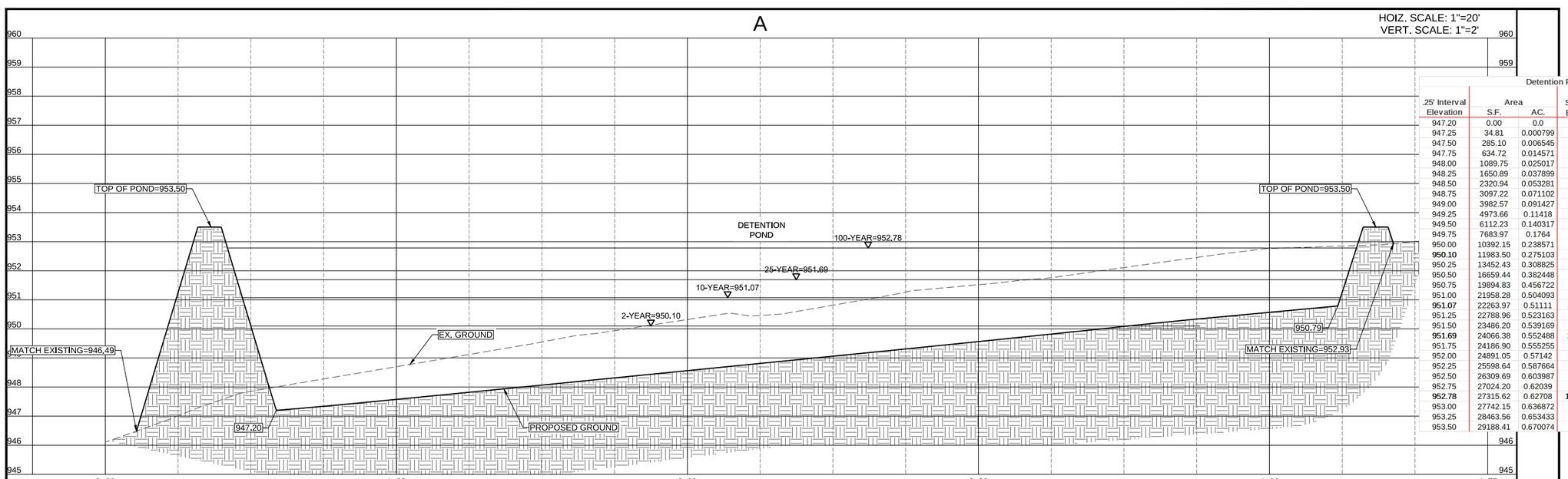
COUNTY PERMIT NUMBER: 2024-734-COC



01 POND PLAN A
SCALE: 1" = 20'



02 POND SECTION A
SCALE: 1" = 20'

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	2-yr	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	10-yr	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	25-yr	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	100-yr	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 1

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
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COUNTY PERMIT NUMBER: 2024-734-COC

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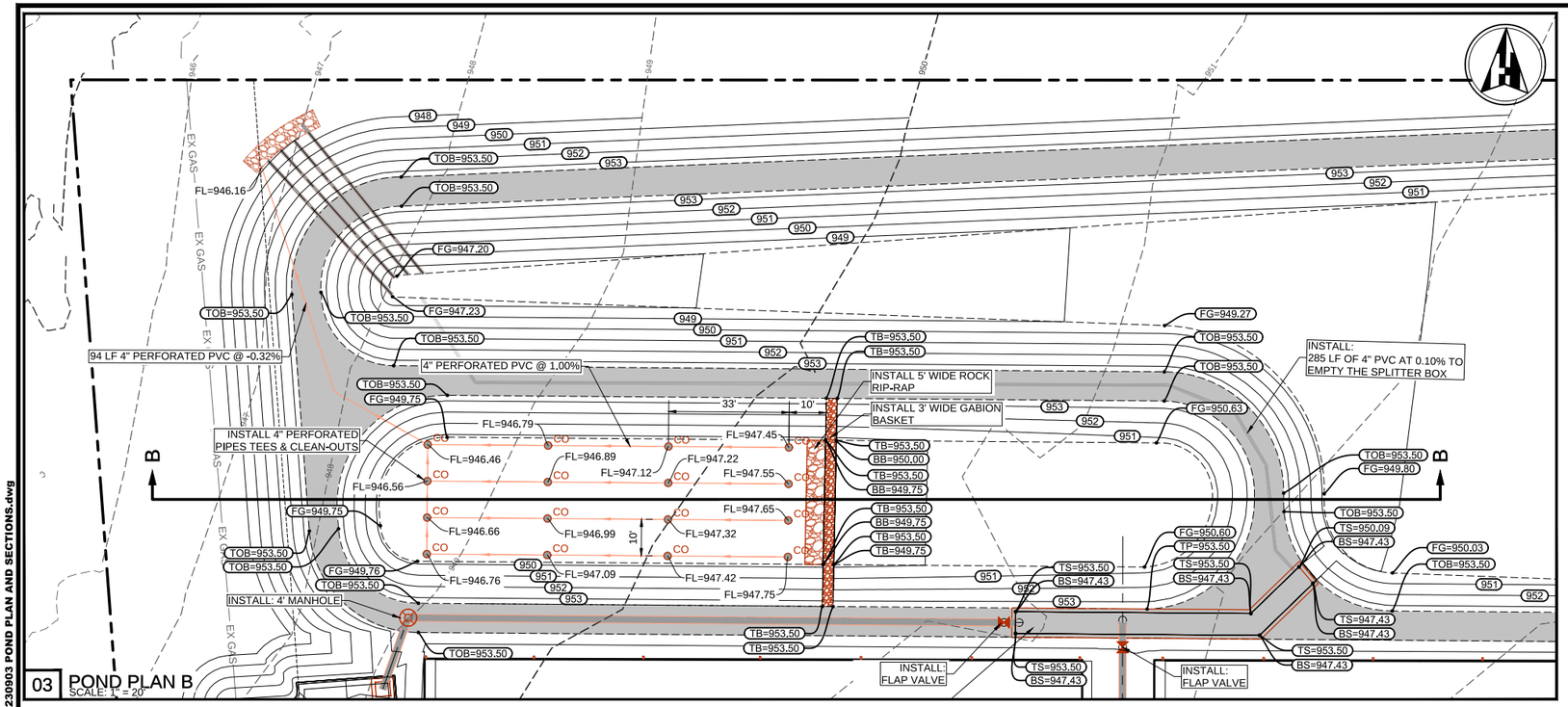
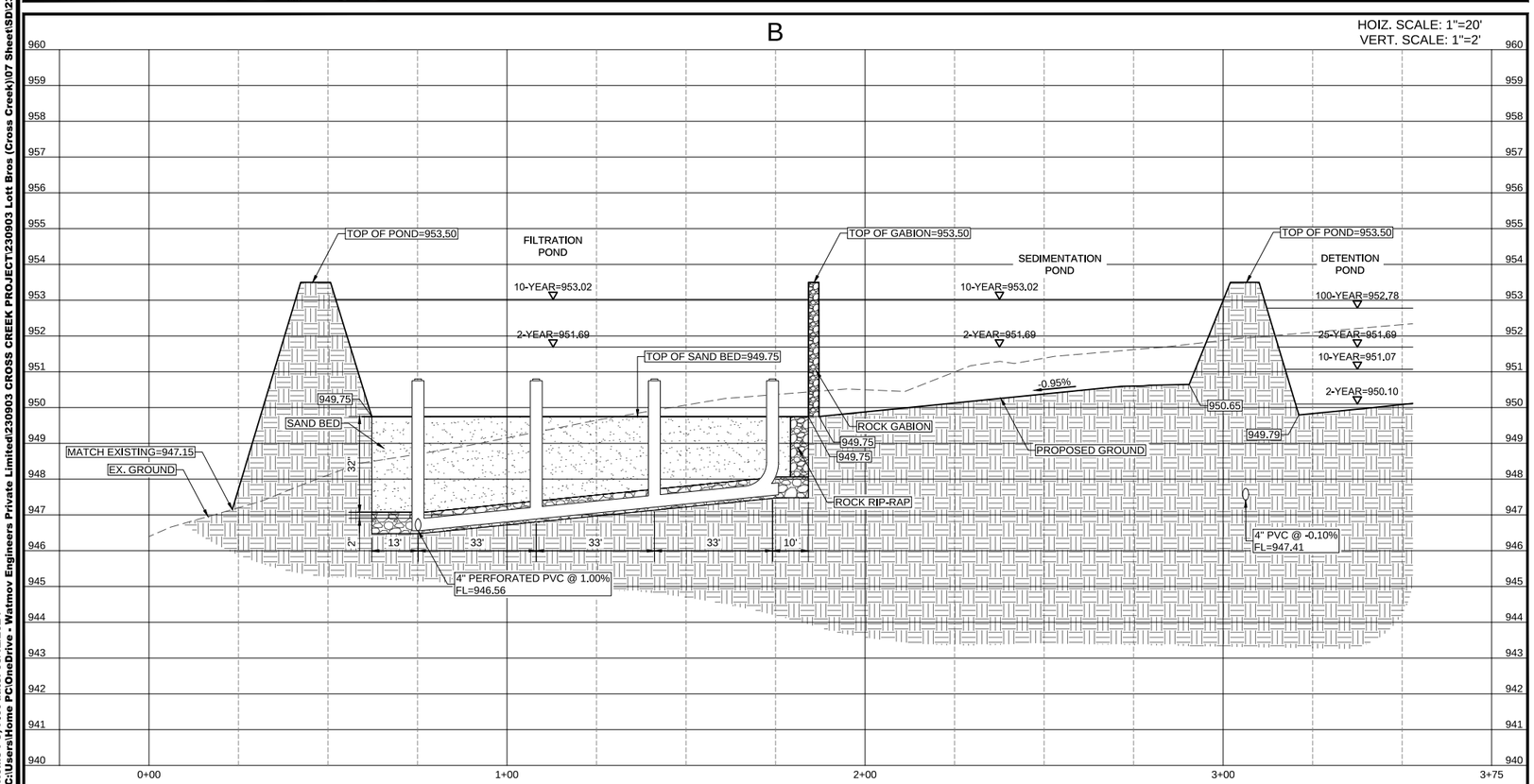


03 POND PLAN B
SCALE: 1" = 20'



04 POND SECTION B
SCALE: 1" = 20'

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ABBREVIATIONS LEGEND

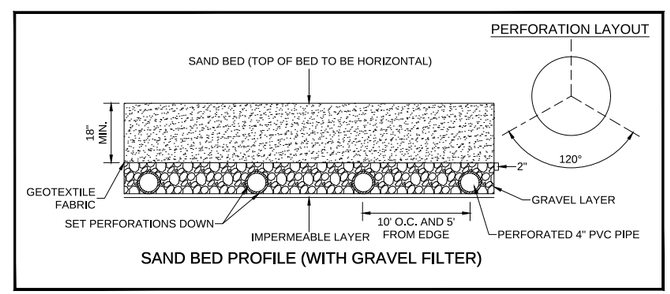
TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Sedimentation Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	0.00	0.0		0	-
950.00	870.65	0.019987		108.83125	108.8313
950.25	1782.41	0.040919		331.6325	440.4638
950.50	2738.46	0.062866		565.10875	1005.5725
950.75	3747.41	0.086029		810.73375	1816.3063
951.00	3956.18	0.090821		962.94875	2779.2550
951.25	4168.21	0.095689		1015.54875	3794.8038
951.50	4383.51	0.100632		1068.965	4863.7688
951.69	4565.34	0.104806	**2-yr**	836.717034	5700.4858
951.75	4602.05	0.105649		288.772636	5989.2584
952.00	4823.85	0.11074		1178.2375	7167.4959
952.25	5048.87	0.115906		1234.09	8401.5859
952.50	5277.13	0.121146		1290.75	9692.3359
952.75	5508.63	0.126461		1348.22	11040.5559
953.00	5743.38	0.13185		1406.50125	12447.0572
953.02	5774.80	0.132571	**10-yr**	103.663584	12550.7208
953.25	5981.38	0.137314		1363.71642	13914.4372
953.50	6222.65	0.142852		1525.50375	15439.9409

Filtration Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	4049.15	0.1		0	-
950.00	4253.66	0.097651		1037.85125	1037.85125
950.25	4459.99	0.102387		1089.20625	2127.0575
950.50	4668.13	0.107166		1141.015	3268.0725
950.75	4878.10	0.111986		1193.27875	4461.35125
951.00	5089.88	0.116848		1245.9975	5707.34875
951.50	5518.90	0.126697		2652.195	8359.54375
951.69	5699.65	0.130846	**2-yr**	1048.93461	9408.478362
951.75	5736.15	0.131684		360.227763	9768.706125
952.00	5955.22	0.136713		1461.42125	11230.12738
952.25	6176.11	0.141784		1516.41625	12746.54363
952.50	6398.84	0.146897		1571.86875	14318.41238
952.75	6623.40	0.152052		1627.78	15946.19238
953.00	6849.79	0.15725		1684.14875	17630.34113
953.02	6879.92	0.157941	**10-yr**	123.567381	17753.90851
953.25	7078.04	0.162489		1619.12324	19373.03175
953.50	7308.15	0.167772		1798.27375	21171.3055



SAND BED PROFILE (WITH GRAVEL FILTER)

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

POND PLAN AND SECTION 2

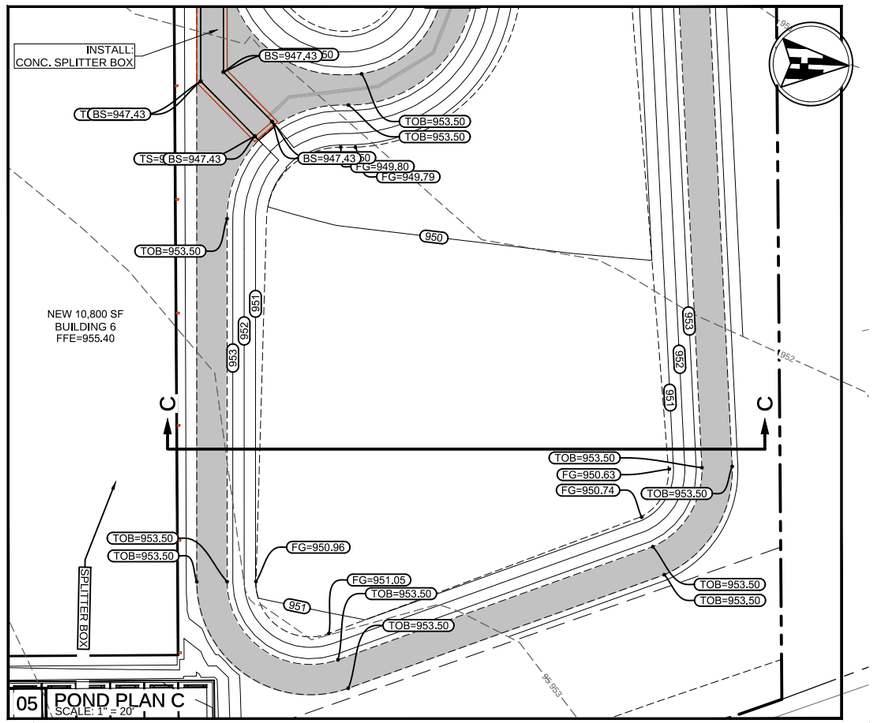
STATE OF TEXAS
JENNIFER L HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

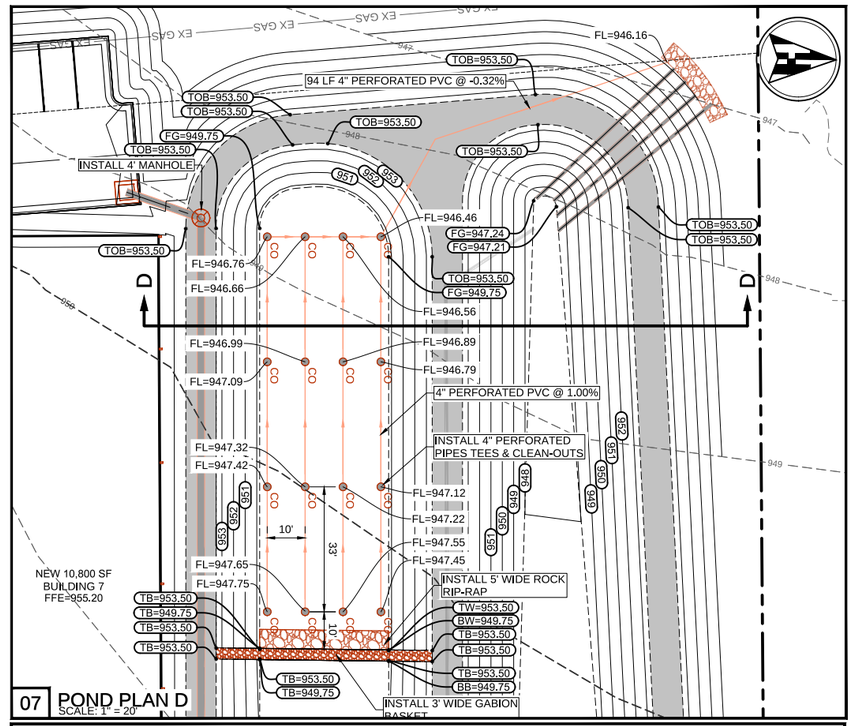
C18.02

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg

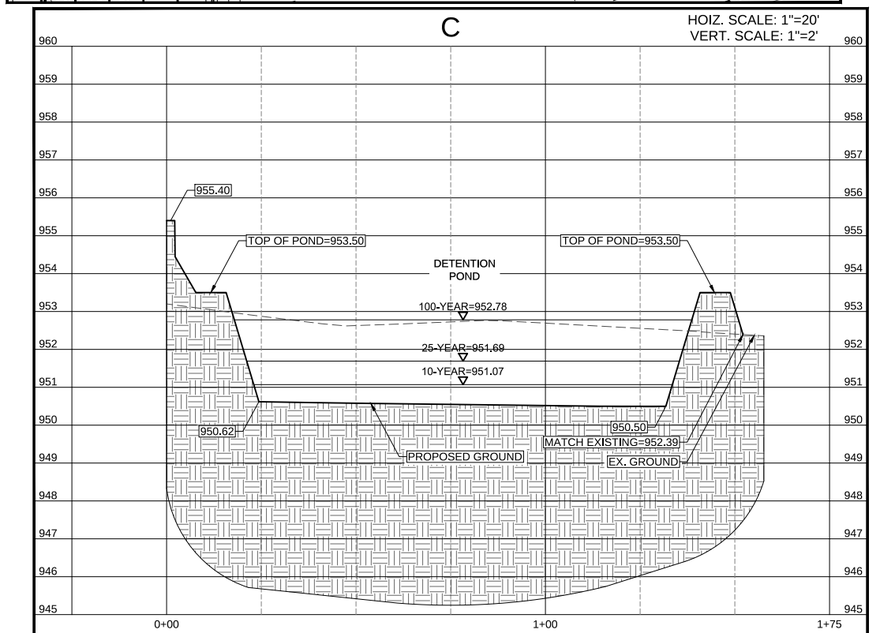
COUNTY PERMIT NUMBER: 2024-734-COC



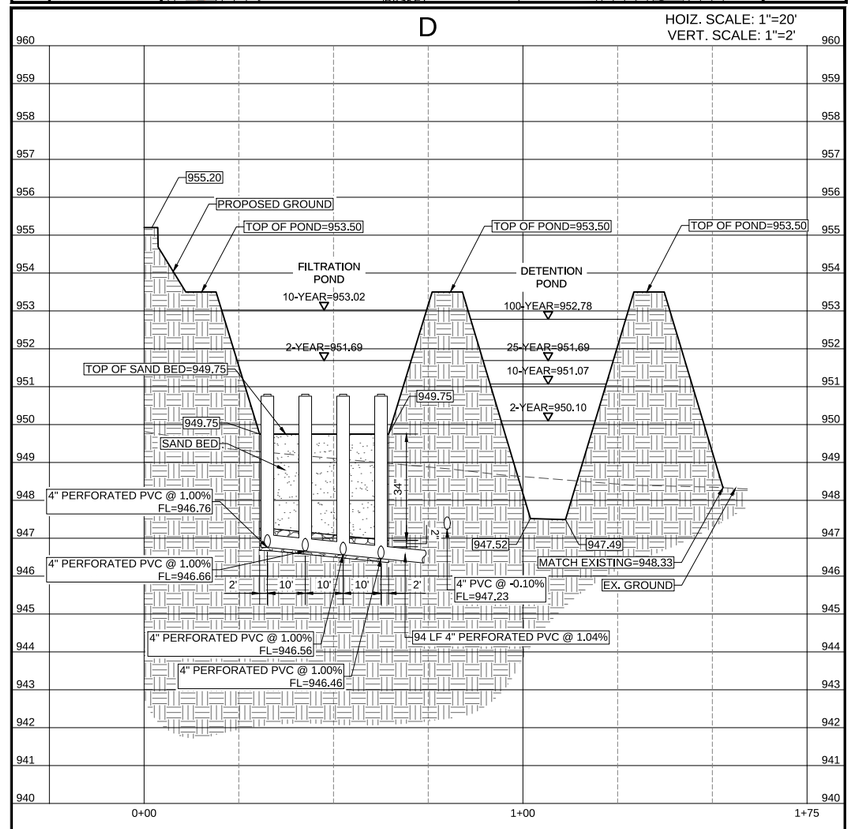
05 POND PLAN C
SCALE: 1" = 20'



07 POND PLAN D
SCALE: 1" = 20'



06 POND SECTION C
SCALE: 1" = 20'



08 POND SECTION D
SCALE: 1" = 20'

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ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	**2-yr**	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	**10-yr**	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	**25-yr**	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	**100-yr**	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

Filtration Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	4049.15	0.1		0	-
950.00	4253.66	0.097651		1037.85125	1037.85125
950.25	4459.99	0.102387		1089.20625	2127.0575
950.50	4668.13	0.107166		1141.015	3268.0725
950.75	4878.10	0.111986		1193.27875	4461.35125
951.00	5089.88	0.116848		1245.9975	5707.34875
951.50	5518.90	0.126697		2652.195	8359.54375
951.69	5699.65	0.130846	**2-yr**	1048.93461	9408.478362
951.75	5736.15	0.131684		360.227763	9768.706125
952.00	5955.22	0.136713		1461.42125	11230.12738
952.25	6176.11	0.141784		1516.41625	12746.54363
952.50	6398.84	0.146897		1571.86875	14318.41238
952.75	6623.40	0.152052		1627.78	15946.19238
953.00	6849.79	0.15725		1684.14875	17630.34113
953.02	6879.92	0.157941	**10-yr**	123.567381	17753.90851
953.25	7078.04	0.162489		1619.12324	19373.03175
953.50	7308.15	0.167772		1798.27375	21171.3055

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 3

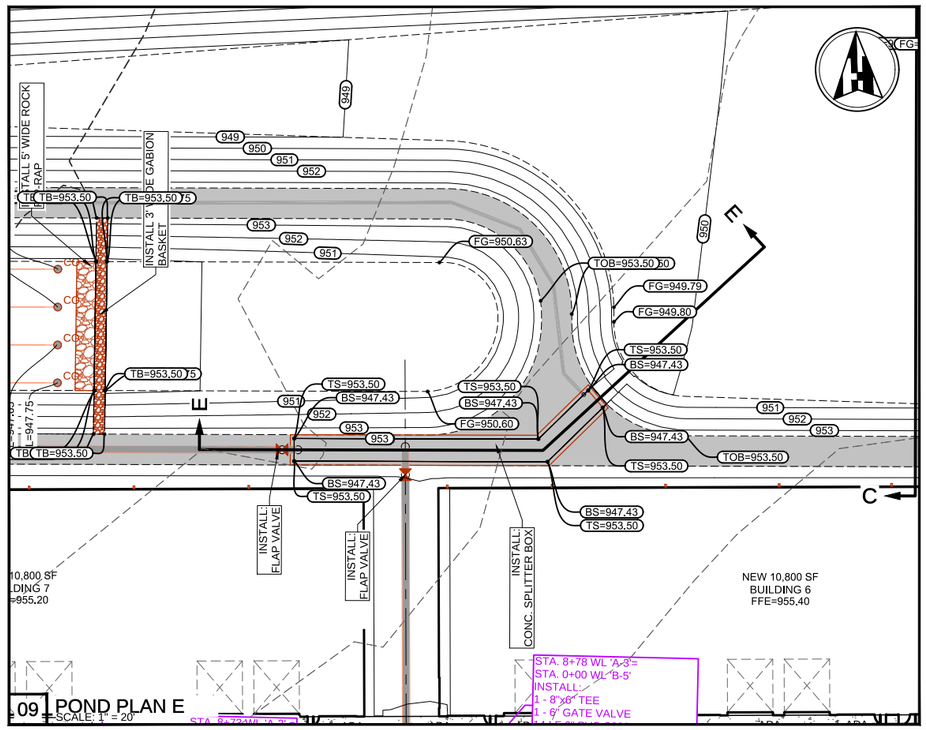
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

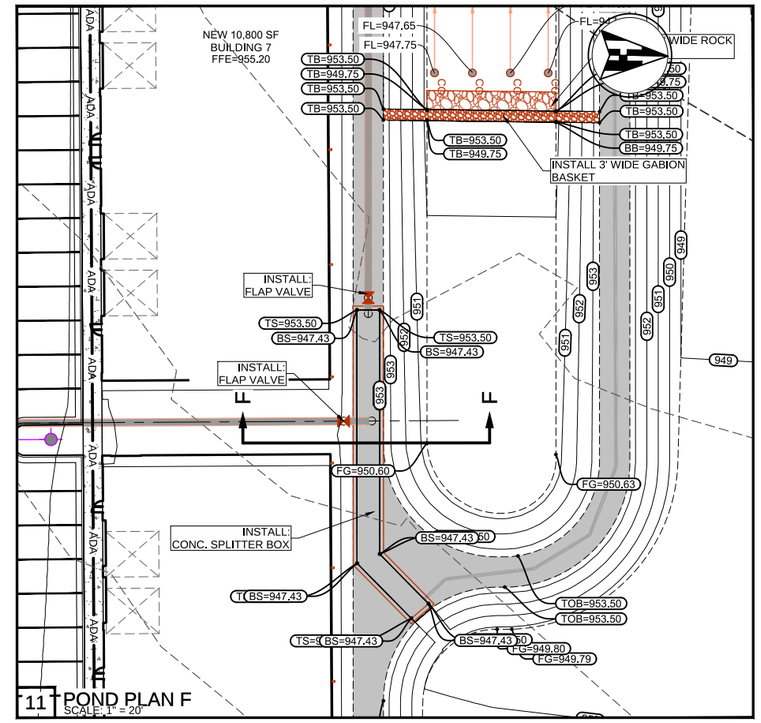
C18.03

COUNTY PERMIT NUMBER: 2024-734-COC

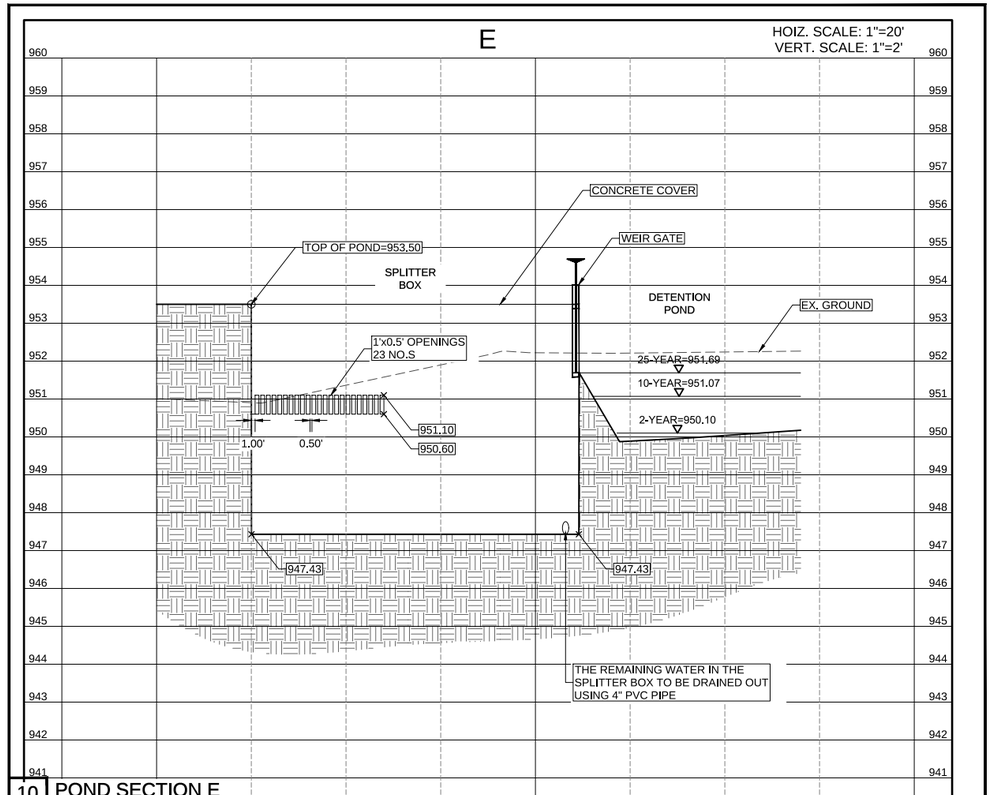
Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Loft Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg



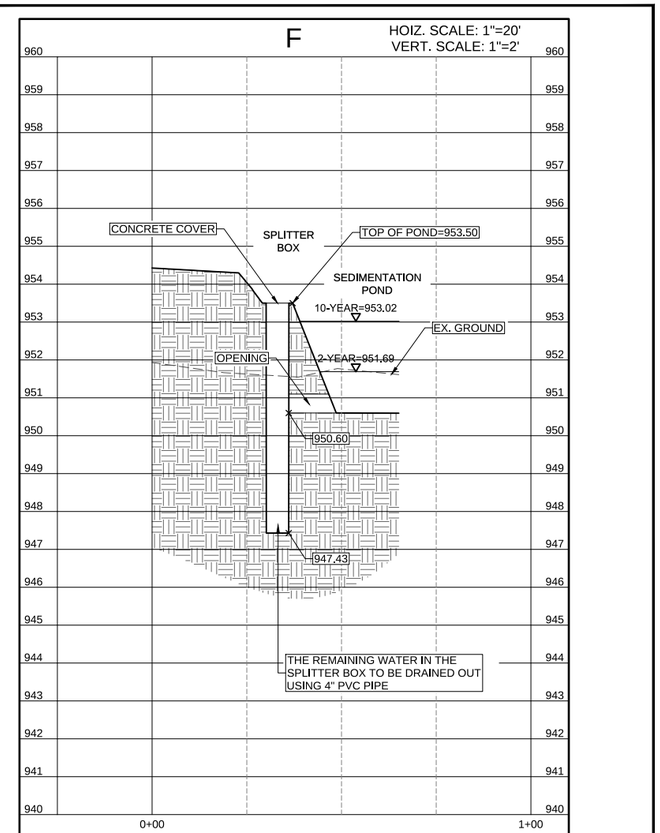
09 POND PLAN E
SCALE: 1" = 20'



11 POND PLAN F
SCALE: 1" = 20'



10 POND SECTION E
SCALE: 1" = 20'



12 POND SECTION F
SCALE: 1" = 20'

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ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
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TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	**2-yr**	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	**10-yr**	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	**25-yr**	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	**100-yr**	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

Sedimentation Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	0.00	0.0		0	-
950.00	870.65	0.019987		108.83125	108.8313
950.25	1782.41	0.040919		331.6325	440.4638
950.50	2738.46	0.062866		565.10875	1005.5725
950.75	3747.41	0.086029		810.73375	1816.3063
951.00	3956.18	0.090821		962.94875	2779.2550
951.25	4168.21	0.095689		1015.54875	3794.8038
951.50	4383.51	0.100632		1068.965	4863.7688
951.69	4565.34	0.104806	**2-yr**	836.717034	5700.4858
951.75	4602.05	0.105649		288.772636	5989.2584
952.00	4823.85	0.11074		1178.2375	7167.4959
952.25	5048.87	0.115906		1234.09	8401.5859
952.50	5277.13	0.121146		1290.75	9692.3359
952.75	5508.63	0.126461		1348.22	11040.5559
953.00	5743.38	0.13185		1406.50125	12447.0572
953.02	5774.80	0.132571	**10-yr**	103.663584	12550.7208
953.25	5981.38	0.137314		1363.71642	13914.4372
953.50	6222.65	0.142852		1525.50375	15439.9409

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 4

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C18.04

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Lott Brothers
Date Prepared: 10/10/2024

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Williamson	
Total project area included in plan * =	12.45	acres
Predevelopment impervious area within the limits of the plan * =	0.20	acres
Total post-development impervious area within the limits of the plan* =	4.37	acres
Total post-development impervious cover fraction * =	0.35	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	3627	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	5.70	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	4.17	acres
Post-development impervious fraction within drainage basin/outfall area =	0.73	
$L_{M\ THIS\ BASIN}$ =	3630	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

Sand Filter

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	5.70	acres
A_I =	4.17	acres
A_P =	1.53	acres
L_R =	4133	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	3627	lbs.
F =	0.88	

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

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.54	
On-site Water Quality Volume =	16727	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	3345	
Total Capture Volume (required water quality volume(s) x 1.20) =	20072	cubic feet

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

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

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	20072	cubic feet	
Minimum filter basin area =	1673	square feet	
Maximum sedimentation basin area =	6691	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	418	square feet	For maximum water depth of 8 feet

NOTES:
1. WATER QUALITY VOLUMES FOR PARTIAL SEDIMENTATION AND FILTRATION SYSTEM:

SEDIMENTATION BASIN = 15435.86 CUBIC FEET
FILTRATION BASIN = 21167.09 CUBIC FEET

COMBINED BASINS VOLUME = 36602.95 CUBIC FEET

2. SEDIMENTATION BASIN FLOOR AREA PRIOR TO SIDE SLOPES = 3391.18 SQUARE FEET

3. FILTRATION BASIN LEVEL FLOOR AREA = 4049.15 SQUARE FEET

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

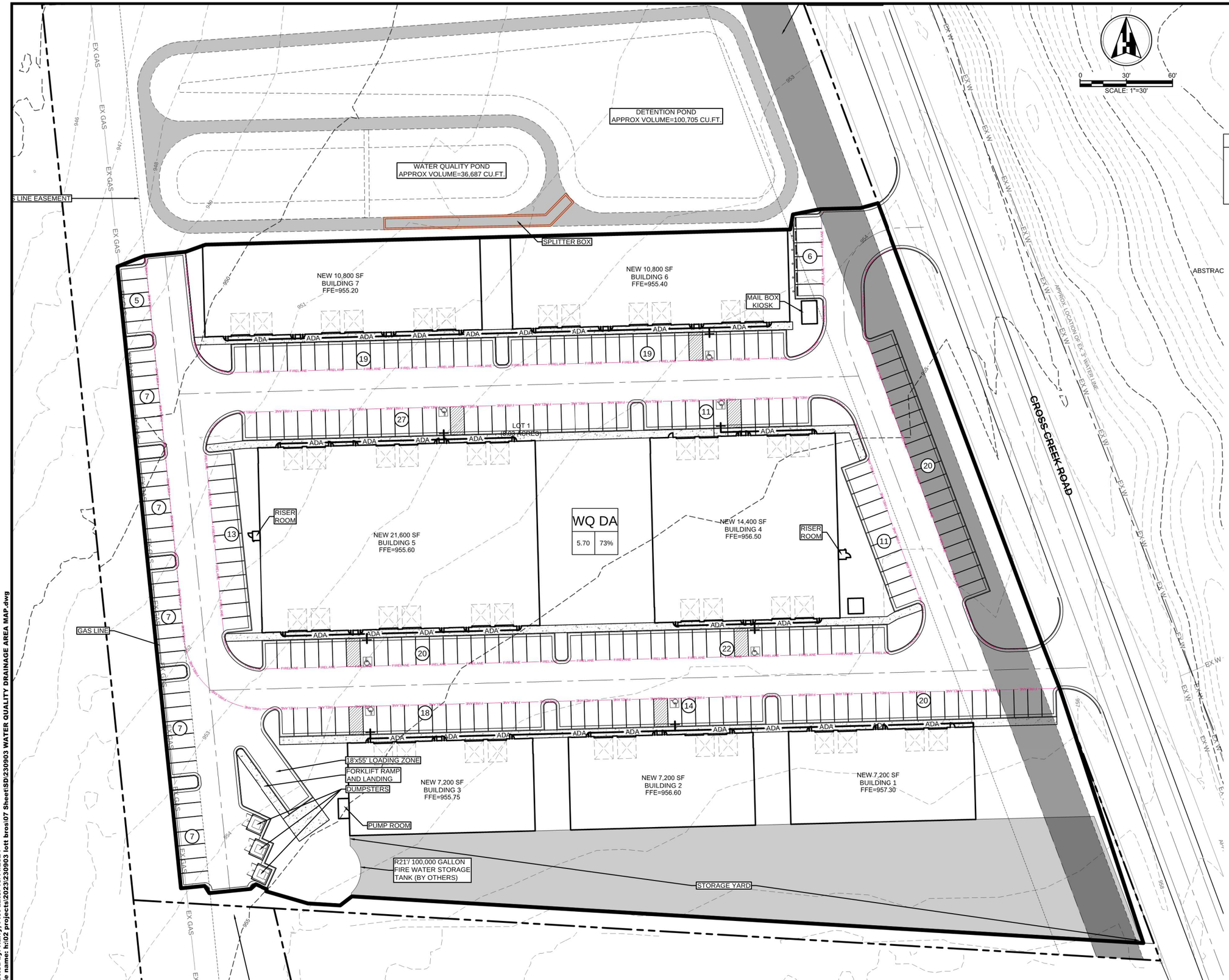
WATER QUALITY CALCULATIONS

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/15/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C18.04

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg



LEGEND	
WQ DA 0.90 0%	WATER QUALITY DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE

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ROUND ROCK, TX 78681
512.350.6228
PELS FIRM #F-22208
www.hendersonpe.com
Civil Engineering
WBE2101066 | HUB 1853873845300

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

WATER QUALITY DRAINAGE AREA MAP

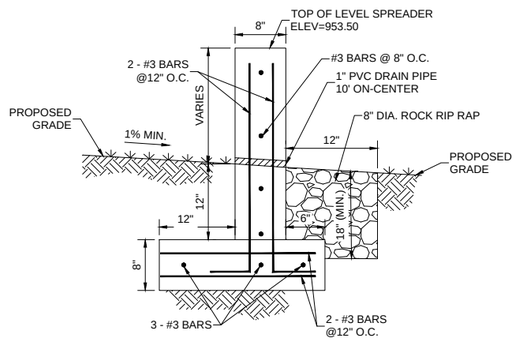
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C18.05

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 WATER QUALITY DRAINAGE AREA MAP.dwg

COUNTY PERMIT NUMBER: 2024-734-COC



CONCRETE LEVEL SPREADER

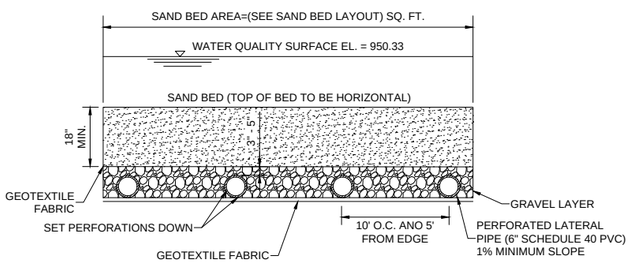
SCALE: N.T.S.

TABLE 1-9
DRAINAGE MATTING SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
MATERIAL	NONWOVEN GEOTEXTILE FABRIC		
UNIT WEIGHT		OZ/SQ. YD.	20
FLOW RATE (FABRIC)		GPM/FT2	180 (MIN.)
PERMEABILITY	ASTM D-2434	CM/SEC	12.4x10-2
GRAB STRENGTH (FABRIC)	ASTM D-1682	LB.	DRY LG. 90 DRY WD: 70 WET LG. 95 WET WD: 70
PUNCTURE STRENGTH	COE-CW-02215	LB.	42 (MIN.)
MULLEN BURST STRENGTH	ASTM D-1117	PSI	140 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	NO.	100 (70-120)
FLOW RATE (DRAINAGE CORE)	DREXEL UNIV. TEST METHOD	GPM/FT. WIDTH	14
SOURCE: CITY OF AUSTIN			

TABLE 3-6
CLAY LINER SPECIFICATIONS (COA, 2024)

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
PERMEABILITY	ASTM D-2434	CM/SEC	1×10^{-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



SAND BED PROFILE
(WITH GRAVEL FILTER)

SCALE: N.T.S.

FOR FILTRATION PONDS

THE GEOTEXTILE FABRIC (FOR PROTECTION OF GEOMEMBRANE) SHELL MEET THE FOLLOWING SPECIFICATIONS:

SAND BED AND GEOTEXTILE FABRIC

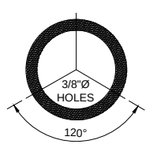
FIRST (TOP) LAYER- FINE SAND (ASTM C-33), 0.02-0.04 INCH, A MINIMUM OF EIGHTEEN (18) INCHES.

SECOND LAYER- ONE-HALF (0.5) TO ONE AND ONE-HALF (1.5) INCH DIAMETER WASHED, ROUNDED, RIVER GRAVEL. THREE (3) TO FIVE (5) INCHES OF GRAVEL IS REQUIRED UNDER THE LATERAL PIPES.

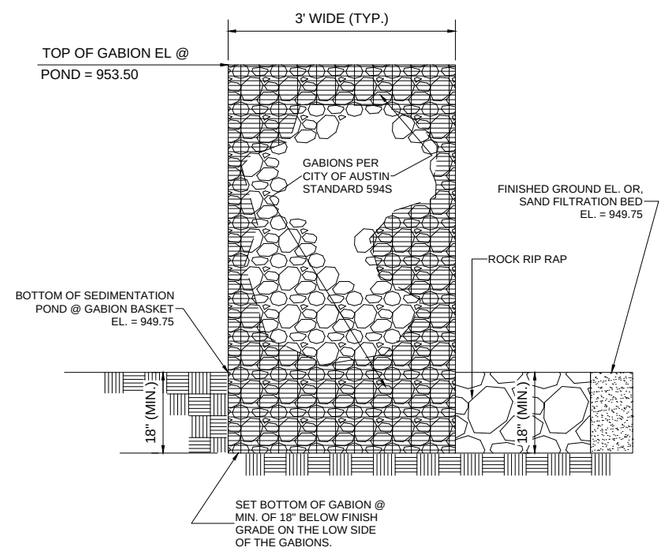
THE TWO LAYERS MUST BE SEPARATED FROM EACH OTHER USING SUITABLE GEOTEXTILE FABRIC MEETING THE FOLLOWING SPECIFICATIONS:

TABLE 1-7

PROPERTY	TEST METHOD	UNIT	SPECS.
MATERIAL	NONWOVEN GEOTEXTILE		
UNIT WEIGHT		OZ/SQ. YD.	8 (MIN.)
FILTRATION RATE		IN/SEC	0.08 (MIN.)
PUNCTURE STRENGTH	ASTM D-751(MOD.)	LB.	125 (MIN.)
MULLEN BURST STRENGTH	ASTM D-751	PSI.	400 (MIN.)
TENSILE STRENGTH	ASTM D-1682	LB.	200 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	NO.	80 (MIN.)

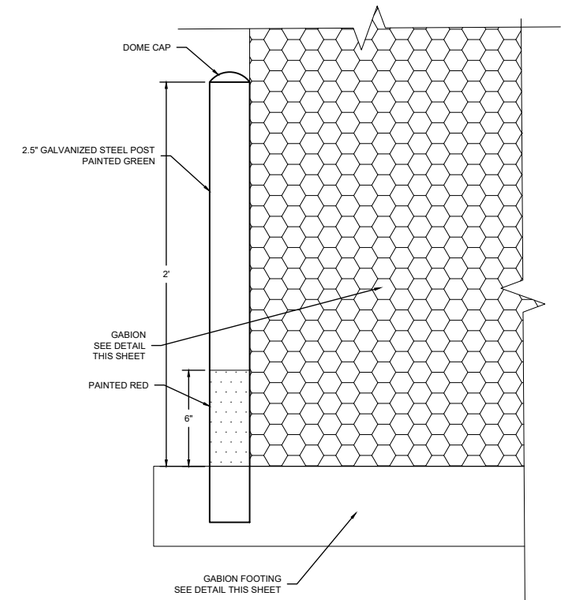


PERFORATION LAYOUT



GABION BASKET WALL

SCALE: N.T.S.



01 **SEDIMENT DEPTH MARKER**
SCALE: N.T.S.

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SITE DEVELOPMENT PLANS
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355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - GABION WALL

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C23.00

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC

Attachment F - Construction Plan

SITE DEVELOPMENT PLANS

TO SERVE

CROSS CREEK COMMERCIAL PARK

355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

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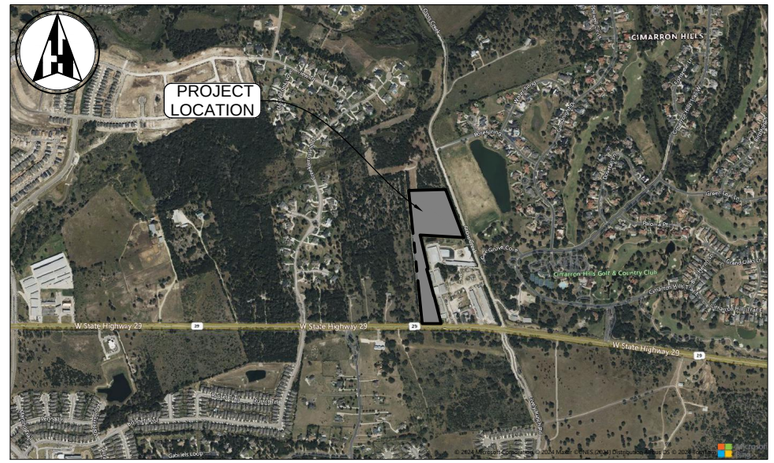
REVIEWED FOR COMPLIANCE WITH COUNTY REQUIREMENTS (WCSR 2021B)

WILLIAMSON COUNTY ENGINEER DATE

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

SHEET INDEX

NUMBER	SHEET TITLE
C00.00	COVER SHEET
C01.00	PLAT
C01.01	PLAT
C02.00	OVERALL SITE PLAN
C02.01	SITE PLAN
C02.02	SITE PLAN
C03.00	GENERAL NOTES
C03.01	CONSTRUCTION NOTES
C03.02	CONSTRUCTION NOTES
C03.03	LEGEND AND ABBREVIATIONS
C04.00	EXISTING CONDITIONS PLAN
C05.00	DEMOLITION PLAN
C06.01	CUT AND FILL EXHIBIT
C07.01	SLOPE MAP EXHIBIT
C08.01	EROSION AND SEDIMENTATION CONTROL PLAN
C09.00	PRE-DEVELOPMENT DRAINAGE AREA MAP
C10.00	POST-DEVELOPMENT DRAINAGE AREA MAP
C11.00	OVERALL UTILITY SCHEMATIC PLAN
C11.01	UTILITY SCHEMATIC PLAN
C11.02	UTILITY SCHEMATIC PLAN
C12.01	WATER PROFILES
C12.02	WATER PROFILES
C13.01	STORM SEWER PLAN
C13.02	STORM SEWER PROFILES
C13.03	STORM SEWER OUTLET PROFILES
C14.01	FIRE PROTECTION PLAN
C15.01	DIMENSION CONTROL PLAN
C16.01	PAVING AND STRIPING PLAN
C17.01	GRADING PLAN
C18.01	POND PLAN AND SECTION 1
C18.02	POND PLAN AND SECTION 2
C18.03	POND PLAN AND SECTION 3
C18.04	POND PLAN AND SECTION 4
C18.05	WATER QUALITY CALCULATIONS
C18.06	WATER QUALITY DRAINAGE AREA MAP
C19.01	TREE PRESERVATION PLAN
C20.00	STANDARD DETAILS - ESC
C20.01	STANDARD DETAILS - PAVING
C20.02	STANDARD DETAILS - DUMPSTER
C21.00	STANDARD DETAILS - WATER 1
C21.01	STANDARD DETAILS - WATER 2
C22.00	STANDARD DETAILS - STORM SEWER
C23.00	STANDARD DETAILS - GABION WALL



VICINITY MAP

SCALE: 1"=1,000'

PROJECT DATA

LEGAL DESCRIPTION:	FISK, G SUR., ACRES 12.45
LOT ACREAGE:	12.46 ACRES
COUNTY PROJECT NUMBER:	2024-734-COC
BENCHMARKS:	NO KNOWN BENCHMARKS
PROPOSED USE:	LIGHT INDUSTRIAL
ZONING DISTRICT:	WILLIAMSON COUNTY

IMPERVIOUS COVER TABLE

EXISTING IMPERVIOUS COVER	9,093 S.F.	1.68%
NEW IMPERVIOUS COVER	184,100 S.F.	33.92%
TOTAL IMPERVIOUS COVER	193,193 S.F.	35.59%

UTILITY PROVIDERS

WATER	GEORGETOWN
WASTEWATER	NONE
ELECTRIC	
GAS	

PROJECT TEAM

OWNER/DEVELOPER:	CROSS CREEK COMMERCIAL PARK, LLC 406 LEE STREET SUITE 201 ROUND ROCK, TEXAS 78664
ARCHITECT:	MICHAEL MAULDIN M A U L D I N ARCHITECTS, PLLC 909 NE LOOP 410, SUITE 636 SAN ANTONIO, TEXAS 78209 PHONE: 210-313-3197
ENGINEER:	HENDERSON PROFESSIONAL ENGINEERS FIRM # F-22208 600 ROUND ROCK WEST DRIVE, SUITE 604 ROUND ROCK, TEXAS 78681 JENNIFER L. HENDERSON, P.E. PHONE 512.350.6228 EMAIL JEN@HENDERSONPE.COM
LANDSCAPE ARCHITECT:	N/A

NOTES:
1. PROJECT SITE IS WITHIN THE CITY OF GEORGETOWN CCN AND OUTSIDE OF ANY SANITARY CCN. ON SITE DETENTION WILL BE DONE OR REQUEST FOR PARTICIPATION IN RSMP.
2. NO PORTION OF THE PROJECT SITE IS WITHIN A FLOOD HAZARD AREA AS DELINEATED ON THE FEMA FLOOD INSURANCE RATE MAP PANEL #48491C0275E FOR WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS, EFFECTIVE DATE 9/26/2008.
3. THIS SITE LOCATION IS UNDER EDWARDS AQUIFER RECHARGE ZONE.
4. A YEARLY BACKFLOW INSPECTION REPORT NEEDS TO BE SENT TO THE CITY OF GEORGETOWN.
5. AUTOMATIC IRRIGATION IS NOT ALLOWED ON SITE.
6. AS THE PROJECT WILL UTILIZE AN OSSF, THE ONSITE WASTEWATER COLLECTION AND CONVEYANCE SYSTEM IS REQUIRED TO BE DESIGNED AND CONSTRUCTED TO MEET 30 TAC CHAPTER 285 REQUIREMENTS.

GENERAL INFORMATION

BUILDING SUMMARY (# OF BLDGS)	FLOOR AREA (BLDG S.F.)	# OF STORIES/ BUILDING HEIGHT	USE & OCCUPANCY CLASSIFICATION (PER IBC)	TYPE OF CONSTRUCTION (PER IBC)	IF APPLICABLE TYPE OF AUTOMATIC FIRE SPRINKLER SYSTEM (NFPA 13R OR NFPA 13)
BUILDING #1	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #2	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #3	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #4	14,400	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #5	21,600	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #6	10,800	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #7	10,800	1 STORY - 20'	S-1	II-B	NFPA 13

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

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/03/2024

PLAN SUBMITTALS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

REVISIONS

NO.	DESCRIPTION	REVISE (R) CORRECT (C) ADD (A) VOID (V) SHEET NO'S	NET CHANGE IMPERVIOUS COVER (SQ.FT.)/%	TOTAL IMPERVIOUS COVER (SQ.FT.)/%	DESIGN ENGINEER SIGNATURE	WILLIAMSON COUNTY APPROVAL	APPROVAL DATE

SHEET C00.00

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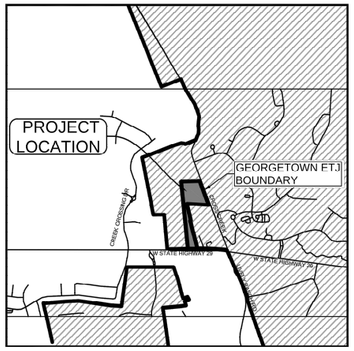
PRELIMINARY PLAT
OF
CROSS CREEK COMMERCIAL PARK



LEGEND

○	IRON ROD SET
◉	IRON ROD FOUND
◘	BENCHMARK
	PROPERTY LINE
	ADJOINING PROPERTY LINE
	DRAINAGE EASEMENT
	WATER EASEMENT
	BUILDING SETBACK LINE (BSL)
	25' OSSF SETBACK
	EXISTING ROAD CENTERLINE
ROW	RIGHT-OF-WAY
VOL./PG.	VOLUME/PAGE
DRWC	DEED RECORDS WILLIAMSON COUNTY
OPRWCT	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY
DOC	DOCUMENT
	PROPOSED LOT LINES
	GEORGETOWN ETJ BOUNDARY LINE
	CITY OF GEORGETOWN ETJ

OWNER 1: CROSS CREEK COMMERCIAL PARK, LLC
406 LEE STREET SUITE 201
ROUND ROCK, TEXAS 78664
PHONE (512) 401-8882
EMAIL TYLERH@LOTTBROTHERS.COM

OWNER 2: TBN DEVELOPMENT, LLC
406 LEE STREET SUITE 201
ROUND ROCK, TEXAS 78664
PHONE (512) 401-8882
EMAIL TYLERH@LOTTBROTHERS.COM

SURVEYOR: WILLIAM C STEWART, RPLS No. 5785
TEXAS LAND SURVEYING, INC
3613 WILLIAMS DRIVE, SUITE 903
GEORGETOWN, TEXAS 78628
PHONE (512) 930-1600
E-MAIL NICOLE@TEXAS-LS.COM

ENGINEER: JENNIFER HENDERSON, PE
HENDERSON PROFESSIONAL ENGINEERS
PELS FIRM F-22208
600 ROUND ROCK WEST DRIVE, SUITE 604
ROUND ROCK, TEXAS 78681
PHONE 512.350.6228
E-MAIL JEN@HENDERSONPE.COM

SUBMITTAL DATE: 08/06/2024
ORIGINAL SURVEY: GREENLIEF FISK SURVEY
ABSTRACT NO. 5
FEMA FLOODPLAIN: 48491C0275E
9/26/2008
WATER: CITY OF GEORGETOWN, TEXAS
WASTEWATER: OSSF
BENCHMARK: ELEV.= 528.41' (NAVD88)
TEMPORARY BENCHMARK BOX CUT ON DRAIN
REVISION DATE: 10/03/24

PROPERTY DESCRIPTION:

BEING A 12.45 ACRE TRACT, MORE OR LESS, OUT OF THE GREENLIEF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, FUTHER BEING A PORTION OF A CALLED 12.673 ACRE TRACT OF LAND AS DESCRIBED IN DEED TO LIBERTY HEIGHTS INVESTMENTS LLC, RECORDED IN DOCUMENT NO. 2021072045 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (OPRWC), AS MODIFIED BY BOUNDARY LINE AGREEMENT IN VOL. 1395, PG 826, OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SAID 12.45 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON PIN FOUND, ALONG THE NORTH RIGHT-OF-WAY LINE OF STATE HIGHWAY NO. 29, AT THE SOUTHEAST CORNER OF A CALLED 22.66 ACRE TRACT DESCRIBED IN DOCUMENT TO MRS. SAM GOLDENBERG, RECORDED IN VOLUME 1705, PAGE 793 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, AT THE SOUTHWEST CORNER OF SAID 12.673 ACRE TRACT, AND HEREOF;

THENCE ALONG THE EAST AND SOUTH LINES OF SAID 22.66 ACRE TRACT, THE FOLLOWING COURSES AND DISTANCES;
1) NORTH 05°49'52" WEST, A DISTANCE OF 1765.46' TO A 1/2" IRON PIN FOUND AT THE NORTHWEST CORNER HEREOF;
2) NORTH 88°25'06" EAST, PER SAID BOUNDARY LINE AGREEMENT, A DISTANCE OF 490.19' TO 1/2" IRON ROD SET WITH PLASTIC CAP STAMPED "CUPLIN", AT THE NORTHEAST CORNER OF SAID BLANN TRACT, AND HEREOF;

THENCE SOUTH 20°26'53" EAST, ALONG THE WEST RIGHT-OF-WAY LINE OF SAID CROSS CREEK ROAD, THE EAST LINE OF SAID BLANN TRACT, AND HEREOF, AT 30.89' PASSING A 60D NAIL FOUND IN A FENCE POST, IN ALL A DISTANCE OF 677.31', TO A 1/2" IRON PIN FOUND AT THE NORTHEAST CORNER OF LOT 2, THE RICHARDS SUBDIVISION, A SUBDIVISION LOCATED IN WILLIAMSON COUNTY, TEXAS, RECORDED IN CABINET X, SLIDE 187 OF THE PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS, WHENCE A 1/2" IRON ROD FOUND FOR REFERENCE BEARS N24°22'15"E, A DISTANCE OF 5.38';

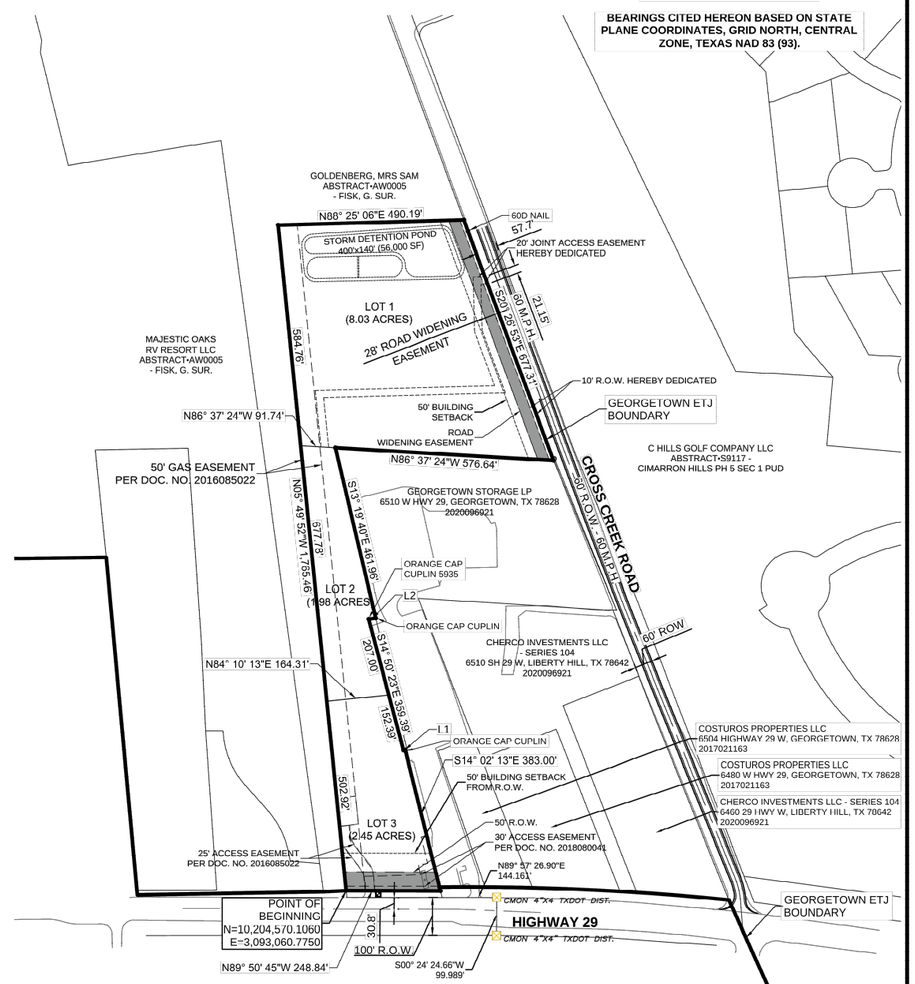
THENCE ALONG THE NORTH AND WEST LINES OF SAID LOT 2, THE EAST LINE OF SAID BLANN TRACT, AND HEREOF, THE FOLLOWING COURSES AND DISTANCES;
1) NORTH 86°37'24" WEST, A DISTANCE OF 576.64' TO A 1/2" IRON PIN FOUND FOR A REENTRANT CORNER HEREOF AND THE NORTHWEST CORNER OF SAID LOT 2,
2) SOUTH 13°19'40" EAST, A DISTANCE OF 461.96' TO A 1/2" IRON PIN WITH CAP "CUPLIN" FOUND AT THE NORTHEAST CORNER OF A CALLED 0.135 ACRE TRACT DESCRIBED IN DOCUMENT TO GEORGETOWN STORAGE, LP, RECORDED IN DOCUMENT NO. 2016061045 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS;

THENCE ALONG THE NORTH AND WEST LINES OF SAID 0.135 ACRE TRACT, AND THE EAST LINE HEREOF, THE FOLLOWING COURSES AND DISTANCES;
1) SOUTH 82°13'02" WEST, A DISTANCE OF 18.94' TO A 1/2" IRON PIN FOUND;
2) SOUTH 14°50'23" EAST, A DISTANCE OF 359.39' TO A 1/2" IRON PIN FOUND;
3) NORTH 74°58'59" EAST, A DISTANCE OF 4.70' TO A 1/2" IRON PIN WITH CAP "CUPLIN" FOUND;
4) SOUTH 14°02'13" EAST, A DISTANCE OF 383.00' TO A 1/2" IRON PIN FOUND ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID HIGHWAY 29, FOR THE SOUTHEAST CORNER OF SAID BLANN TRACT, AND HEREOF,

THENCE NORTH 89°51'05" WEST, ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID HIGHWAY NO. 29, THE SOUTH LINE OF SAID BLANN TRACT, AND HEREOF, A DISTANCE OF 248.84' TO **THE POINT OF BEGINNING**, CONTAINING 12.45 ACRES, MORE OR LESS.

0 200 400
SCALE: 1"=200'

BEARINGS CITED HEREON BASED ON STATE PLANE COORDINATES, GRID NORTH, CENTRAL ZONE, TEXAS NAD 83 (93).



LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	4.70	N74° 58' 59"E
L2	18.94	S82° 13' 02"W

LOT TABLE		
PARCEL #	AREA (AC.)	OWNER
1	8.03	CROSS CREEK COMMERCIAL PARK, LLC (PART OF CONDO ASSOCIATION)
2	1.98	CROSS CREEK COMMERCIAL PARK, LLC (PART OF CONDO ASSOCIATION)
3	2.45	TBN DEVELOPMENT, LLC

SHEET 01 OF 02

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SITE DEVELOPMENT PLANS
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CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
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PLAT

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
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12/04/2024

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11/28/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C01.00

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Harry, Plot date: 19/10/2024, File name: h:\02 projects\2023\230903 lott bros\07 Sheet\FP\230903 FINAL PLAT.dwg
Plotted by: Home PC, Plot date: 28/11/2024
File name: C:\Users\Home PC\OneDrive - Westmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 PLAT.dwg

PRELIMINARY PLAT
OF
CROSS CREEK COMMERCIAL PARK

OWNER'S DEDICATION

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON §

I, CROSS CREEK COMMERCIAL PARK, LLC SOLE OWNER OF LOT 1 (8.03 ACRES), LOT 2 (1.98 ACRES) SHOWN HEREON AND DESCRIBED IN A DEED RECORDED IN DOCUMENT NO. 2021072045 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, AND DO HEREBY SUBDIVIDE SAID TRACT AS SHOWN HEREON, AND DO HEREBY CONSENT TO ALL PLAT NOTE REQUIREMENTS SHOWN HEREON, AND DO HEREBY FOREVER DEDICATE TO THE PUBLIC THE ROADS, ALLEYS, RIGHTS-OF-WAY, EASEMENTS AND PUBLIC PLACES SHOWN HEREON FOR SUCH PUBLIC PURPOSES AS WILLIAMSON COUNTY MAY DEEM APPROPRIATE, AND DO HEREBY STATE THAT ALL PUBLIC ROADWAYS AND EASEMENTS AS SHOWN ON THIS PLAT ARE FREE OF LIENS. THIS SUBDIVISION IS TO BE KNOWN AS FINAL PLAT, CROSS CREEK COMMERCIAL PARK.

TO CERTIFY WHICH, WITNESS BY MY HAND THIS _____ DAY OF _____, 20_____.

_____
CROSS CREEK COMMERCIAL PARK, LLC
TYLER HUMES, MANAGING MEMBER
406 LEE STREET SUITE 201
ROUND ROCK, TEXAS 78664

OWNER'S DEDICATION

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON §

I, TBN DEVELOPMENT, LLC SOLE OWNER OF LOT 3 (2.45 ACRES) SHOWN HEREON AND DESCRIBED IN A DEED RECORDED IN DOCUMENT NO. 2024025099 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, AND DO HEREBY SUBDIVIDE SAID TRACT AS SHOWN HEREON, AND DO HEREBY CONSENT TO ALL PLAT NOTE REQUIREMENTS SHOWN HEREON, AND DO HEREBY FOREVER DEDICATE TO THE PUBLIC THE ROADS, ALLEYS, RIGHTS-OF-WAY, EASEMENTS AND PUBLIC PLACES SHOWN HEREON FOR SUCH PUBLIC PURPOSES AS WILLIAMSON COUNTY MAY DEEM APPROPRIATE, AND DO HEREBY STATE THAT ALL PUBLIC ROADWAYS AND EASEMENTS AS SHOWN ON THIS PLAT ARE FREE OF LIENS. THIS SUBDIVISION IS TO BE KNOWN AS FINAL PLAT, CROSS CREEK COMMERCIAL PARK.

TO CERTIFY WHICH, WITNESS BY MY HAND THIS _____ DAY OF _____, 20_____.

_____
TBN DEVELOPMENT, LLC
TYLER HUMES, MANAGING MEMBER
406 LEE STREET SUITE 201
ROUND ROCK, TEXAS 78664

ROAD WIDENING EASEMENTS

RIGHT-OF-WAY EASEMENTS FOR WIDENING ROADWAYS OR IMPROVING DRAINAGE SHALL BE MAINTAINED BY THE LANDOWNER UNTIL ROAD OR DRAINAGE IMPROVEMENTS ARE ACTUALLY CONSTRUCTED ON THE PROPERTY. THE COUNTY HAS THE RIGHT AT ANY TIME TO TAKE POSSESSION OF ANY ROAD WIDENING EASEMENT FOR THE CONSTRUCTION, IMPROVEMENT OR MAINTENANCE OF THE ADJACENT ROAD.

ROADWAY CONSTRUCTION

IN APPROVING THIS PLAT BY THE COMMISSIONERS COURT OF WILLIAMSON COUNTY, TEXAS, IT IS UNDERSTOOD THAT THE BUILDING OF ALL ROADS, AND OTHER PUBLIC THOROUGHFARES AND ANY BRIDGES OR CULVERTS NECESSARY TO BE CONSTRUCTED OR PLACED IS THE RESPONSIBILITY OF THE OWNER(S) OF THE TRACT OF LAND COVERED BY THIS PLAT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PRESCRIBED BY THE COMMISSIONERS COURT OF WILLIAMSON COUNTY, TEXAS. SAID COMMISSIONERS COURT ASSUMES NO OBLIGATION TO BUILD ANY OF THE ROADS, OR OTHER PUBLIC THOROUGHFARES SHOWN ON THIS PLAT, OR OF CONSTRUCTING ANY OF THE BRIDGES OR DRAINAGE IMPROVEMENTS IN CONNECTION THEREWITH. THE COUNTY WILL ASSUME NO RESPONSIBILITY FOR DRAINAGE WAYS OR EASEMENTS IN THE SUBDIVISION, OTHER THAN THOSE DRAINING OR PROTECTING THE ROAD SYSTEM.

OWNER'S RESPONSIBILITIES

IT IS THE RESPONSIBILITY OF THE OWNER, NOT THE COUNTY, TO ASSURE COMPLIANCE WITH THE PROVISIONS OF ALL APPLICABLE STATE, FEDERAL AND LOCAL LAWS AND REGULATIONS RELATING TO THE PLATTING AND DEVELOPMENT OF THIS PROPERTY.

THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT. FLOODPLAIN DATA, IN PARTICULAR, WILL CHANGE OVER TIME AND THE CURRENT EFFECTIVE FLOODPLAIN DATA TAKES PRECEDENCE OVER FLOODPLAIN DATA REPRESENTED ON THIS PLAT. IT IS FURTHER UNDERSTOOD THAT THE OWNERS OF THE TRACT OF LAND COVERED BY THIS PLAT MUST INSTALL AT THEIR OWN EXPENSE ALL TRAFFIC CONTROL DEVICES AND SIGNAGE THAT MAY BE REQUIRED BEFORE THE STREETS IN THE SUBDIVISION HAVE BEEN ACCEPTED FOR MAINTENANCE BY THE COUNTY.

SURVEYOR CERTIFICATION
STATE OF TEXAS §
COUNTY OF WILLIAMSON §

THAT I, WILLIAM C STEWART, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH CHAPTER 4 – SUBDIVISION DESIGN AND CONSTRUCTION, PART III – ZONING AND DEVELOPMENT CODE, CODE OF ORDINANCES, CITY OF ROUND ROCK, 2018 EDITION AS AMENDED.

_____ _____
WILLIAM C STEWART, DATE
REGISTERED PROFESSIONAL LAND SURVEYOR, NO. 5785
STATE OF TEXAS

ENGINEERS CERTIFICATION
STATE OF TEXAS §
COUNTY OF WILLIAMSON §

I, JENNIFER L. HENDERSON, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED ON THIS PLAT COMPLIES WITH CHAPTER 4 – SUBDIVISION DESIGN AND CONSTRUCTION, PART III ZONING AND DEVELOPMENT CODE, CODE OF ORDINANCES, CITY OF ROUND ROCK, 2018 EDITION AS AMENDED, AND THE DESIGN AND CONSTRUCTION STANDARDS ADOPTED BY THE CITY OF ROUND ROCK, TEXAS.

_____ _____
JENNIFER L. HENDERSON, PE F-22208 DATE
REGISTERED PROFESSIONAL ENGINEER, NO. 116883
STATE OF TEXAS

PLAT NOTES:
1. MAINTENANCE RESPONSIBILITY FOR DRAINAGE WILL NOT BE ACCEPTED BY THE COUNTY OTHER THAN THAT ACCEPTED IN CONNECTION WITH DRAINING OR PROTECTING THE ROAD SYSTEM. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS WILL REMAIN WITH THE OWNERS.
2. WATER SERVICE FOR THIS SUBDIVISION WILL BE PROVIDED BY: CITY OF GEORGETOWN. SEWER SERVICE FOR THIS SUBDIVISION WILL BE PROVIDED BY: OSSF
3. A CERTIFICATE OF COMPLIANCE IS HEREBY ISSUES FOR ALL LOTS WITHIN THIS SUBDIVISION. THIS CERTIFICATE OF COMPLIANCE IS VALID UNTIL SUCH TIME AS FEMA OR THE COUNTY REVISES OR NEWLY ADOPTS FLOODPLAIN BOUNDARIES IN THIS VICINITY.
4. RURAL MAILBOXES SHALL BE SET THREE FEET FROM THE EDGE OF THE PAVEMENT OR BEHIND CURBS, WHEN USED. ALL MAILBOXES WITHIN COUNTY ARTERIAL RIGHT-OF-WAY SHALL MEET THE CURRENT TXDOT STANDARDS. ANY MAILBOX THAT DOES NOT MEET THIS REQUIREMENT MAY BE REMOVED BY WILLIAMSON COUNTY.
5. ALL SIDEWALKS WITHIN THIS SUBDIVISION ARE TO BE MAINTAINED BY EACH OF THE ADJACENT PROPERTY OWNERS.
6. DRIVEWAY MAINTENANCE WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. IF OBSTRUCTIONS OCCUR WITHIN THE DRIVEWAY CULVERT, THE COUNTY RESERVES THE RIGHT TO CLEAR OBSTRUCTIONS THAT ARE CAUSING ADVERSE IMPACTS TO THE ROADWAY.
7. THIS TRACT IS LOCATED WITHIN THE EDWARD'S AQUIFER RECHARGE ZONE.
8. THIS SUBDIVISION IS SUBJECT TO STORM-WATER MANAGEMENT CONTROLS AS REQUIRED BY WILLIAMSON COUNTY SUBDIVISION REGULATIONS SECTION B11.1, ON NEW DEVELOPMENT THAT WOULD EVOKE SUCH CONTROLS BEYOND EXISTING CONDITIONS.
9. IMPROVEMENTS WITHIN THE COUNTY ROAD RIGHT-OF-WAY INCLUDING, BUT NOT LIMITED TO, LANDSCAPING, IRRIGATION LIGHTING, CUSTOM SIGNS, IS PROHIBITED WITHOUT FIRST OBTAINING AN EXECUTED LICENSE AGREEMENT WITH WILLIAMSON COUNTY.
10. IT IS THE RESPONSIBILITY OF THE OWNER, NOT THE COUNTY, TO ASSURE COMPLIANCE WITH THE PROVISIONS OF ALL APPLICABLE STATE, FEDERAL AND LOCAL LAWS AND REGULATIONS RELATING TO THE PLATTING AND DEVELOPMENT OF THIS PROPERTY.
THE COUNTY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT. FLOODPLAIN DATA, IN PARTICULAR, WILL CHANGE OVER TIME AND THE CURRENT EFFECTIVE FLOODPLAIN DATA TAKES PRECEDENCE OVER FLOODPLAIN DATA REPRESENTED ON THIS PLAT. IT IS FURTHER UNDERSTOOD THAT THE OWNERS OF THE TRACT OF LAND COVERED BY THIS PLAT MUST INSTALL AT THEIR OWN EXPENSE ALL TRAFFIC CONTROL DEVICES AND SIGNAGE THAT MAY BE REQUIRED BEFORE THE STREETS IN THE SUBDIVISION HAVE BEEN ACCEPTED FOR MAINTENANCE BY THE COUNTY.
11. THE LANDOWNER ASSUMES ALL RISKS ASSOCIATED WITH IMPROVEMENTS LOCATED IN THE RIGHT-OF-WAY OR ROAD WIDENING EASEMENTS. BY PLACING ANYTHING IN THE RIGHT-OF-WAY OR ROAD WIDENING EASEMENTS, THE LANDOWNER INDEMNIFIES AND HOLDS THE COUNTY, IT'S OFFICERS AND EMPLOYEES HARMLESS FROM ANY LIABILITY OWING TO PROPERTY DEFECTS OR NEGLIGENCE NOT ATTRIBUTABLE TO THEM AND ACKNOWLEDGES THAT THE IMPROVEMENTS MAY BE REMOVED BY THE COUNTY AND THAT THE OWNER OF THE IMPROVEMENT SHALL BE RESPONSIBLE FOR THE RELOCATION AND/OR REPLACEMENT OF THE IMPROVEMENT.
12. ALL PUBLIC ROADWAYS AND EASEMENTS AS SHOWN ON THIS PLAT ARE FREE OF LIENS.
13. THIS SUBDIVISION IS SUBJECT TO STORM-WATER MANAGEMENT CONTROLS AS REQUIRED BY WILLIAMSON COUNTY SUBDIVISION REGULATIONS, SECTION B10.1 <PER 2000 REGULATIONS>, SECTION B11.1 <PER 2013 REGULATIONS>, ON NEW DEVELOPMENT THAT WOULD EVOKE SUCH CONTROLS BEYOND EXISTING CONDITIONS.
14. THIS PROPERTY WAS RELEASED FROM GEORGETOWN ETJ ON 04/23/2024 PER RESOLUTION NO. 042324-5D.

ON-SITE SEWAGE FACILITY APPROVAL

BASED UPON THE ABOVE REPRESENTATIONS OF THE ENGINEER OR SURVEYOR WHOSE SEAL IS AFFIXED HERETO, AND AFTER A REVIEW OF THE SURVEY AS REPRESENTED BY THE SAID ENGINEER OR SURVEYOR, I FIND THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF EDWARDS AQUIFER REGULATIONS FOR WILLIAMSON COUNTY AND WILLIAMSON COUNTY ON-SITE SEWAGE FACILITY REGULATIONS. THIS CERTIFICATION IS MADE SOLELY UPON SUCH REPRESENTATIONS AND SHOULD NOT BE RELIED UPON FOR VERIFICATIONS OF THE FACTS ALLEGED. THE WILLIAMSON COUNTY ENGINEER'S OFFICE AND WILLIAMSON COUNTY DISCLAIM ANY RESPONSIBILITY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE, CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

_____ _____
ADAM D. BOATRIGHT, P.E. DATE
WILLIAMSON COUNTY ENGINEER

COUNTY JUDGE'S APPROVAL

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON §
I, BILL GRAVELL JR., COUNTY JUDGE OF WILLIAMSON COUNTY, TEXAS, DO HEREBY CERTIFY THAT THIS MAP OR PLAT, WITH FIELD NOTES HEREON, FOR A SUBDIVISION HAVING BEEN FULLY PRESENTED TO THE COMMISSIONER'S COURT OF WILLIAMSON COUNTY, TEXAS, AND BY THE SAID COURT DULY CONSIDERED, WERE ON THIS DAY APPROVED AND THAT THIS PLAT IS AUTHORIZED TO BE REGISTERED AND RECORDED IN THE PROPER RECORDS OF THE COUNTY CLERK OF WILLIAMSON COUNTY, TEXAS.

_____ _____
BILL GRAVELL JR., COUNTY JUDGE DATE
WILLIAMSON COUNTY, TEXAS

ROAD NAME AND ADDRESS ASSIGNMENTS VERIFIED THIS THE _____ DAY OF _____, 20_____, A.D.

_____
WILLIAMSON COUNTY ADDRESSING COORDINATOR

COUNTY CLERK'S CERTIFICATION

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON §

I, NANCY RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE ____ DAY OF_____, 20___ A.D., AT ____O'CLOCK, ___.M., AND DULY RECORDED THIS THE ____ DAY OF _____, 20___ A.D., AT___O'CLOCK, ___.M., IN THE OFFICIAL PUBLIC RECORDS OF SAID COUNTY IN INSTRUMENT NO._____.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS THE DATE LAST SHOWN ABOVE WRITTEN.

_____
NANCY RISTER, CLERK COUNTY COURT
OF WILLIAMSON COUNTY, TEXAS
BY_____DEPUTY

SHEET 02 OF 02

Henderson Professional Engineers
HPE
600 ROUND ROCK WEST
DRIVE, SUITE 604
ROUND ROCK, TX 78681
512.350.6228
PELS FIRM #F-22208
Civil Engineering www.hendersonpe.com
WBE210166 | HUB 1853873845300

COUNTY PERMIT NUMBER 2024-734-COC

WOMEN OWNED
CERTIFIED BY | WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

THE DRAWING AND WRITTEN MATERIAL HEREIN CONSTITUTE ORIGINAL WORK OF THE ENGINEER, AND AS THE INTELLECTUAL PROPERTY AND INSTRUMENTS OF SERVICE ARE SUBJECT TO COPYRIGHT AND MAY NOT BE REPRODUCED, DISTRIBUTED PUBLISHED OR USED IN ANY WAY WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ENGINEER.

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No.	REVISION
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

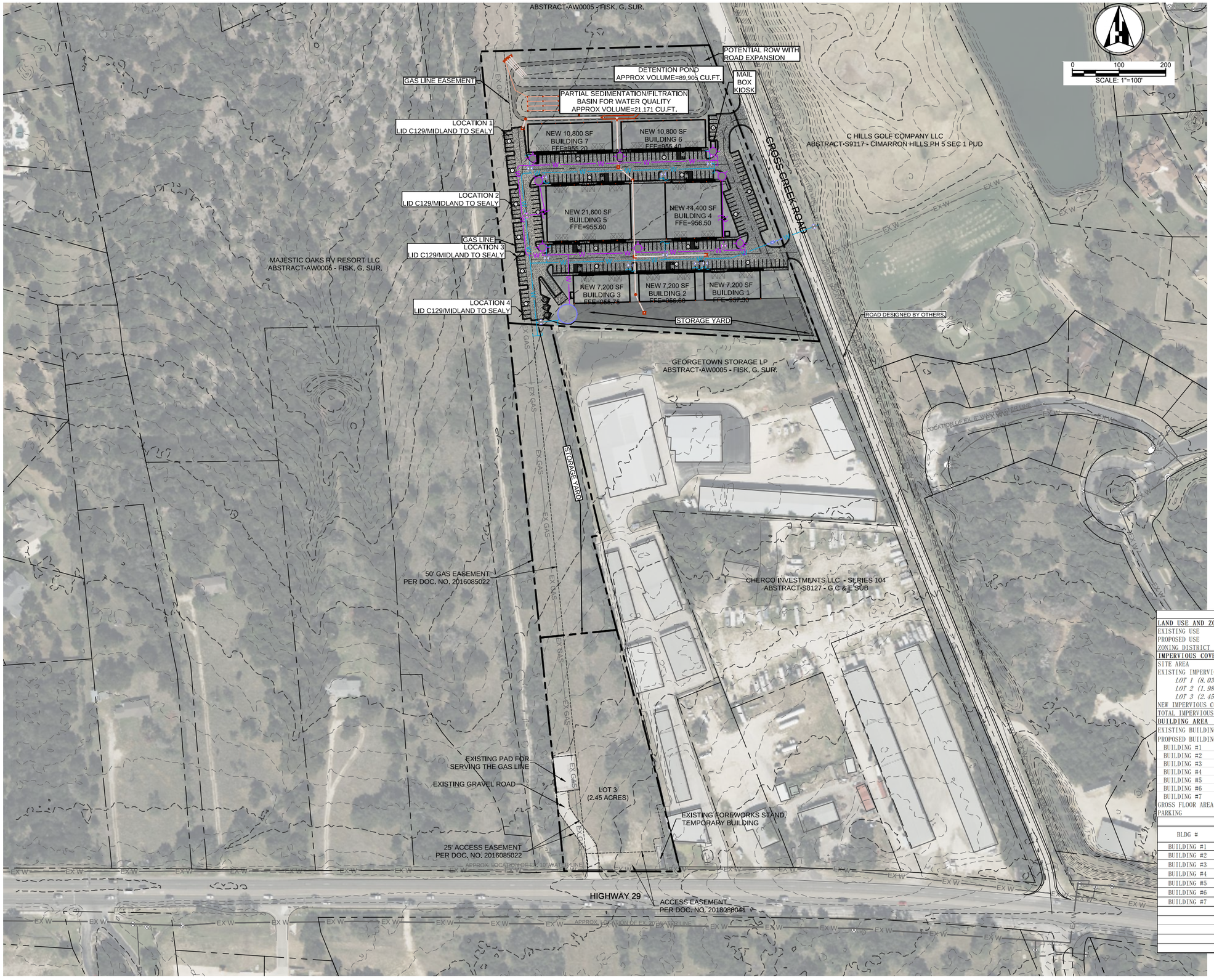
PLAT

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/28/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C01.01

Plotted by: Harry, Plot date: 19/10/2024, File name: h:\02 projects\2023\230903 lott bros\07 Sheet\FP\230903 FINAL PLAT.dwg
Plotted by: Home PC, Plot date: 28/11/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 PLAT.dwg



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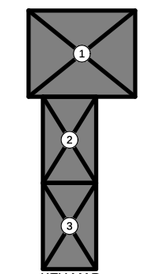
PELS FIRM #F-22208
www.hendersonpe.com
Civil Engineering
WBE210166 | HUB 1853873845300

LEGEND	
LOC	LIMITS OF CONSTRUCTION
ADA	ACCESSIBLE ROUTE OF TRAVEL
3	PARKING COUNT
FIRELANE	FIRE LANE
529	EXISTING CONTOUR
529	CONTOUR
	PROPERTY LINE
	EXISTING PROPERTY LINES
	BUILDING SETBACK LINE
	SANITARY SEWER MANHOLE
GAS	NATURAL GAS LINE
EX OE	EXISTING OVERHEAD ELECTRIC
	EXISTING FENCE



KEY MAP
(NOT TO SCALE)

NOTES:
1. ALL DIMENSIONS ARE TO THE BACK OF CURB, UNLESS OTHERWISE NOTED.
2. ALL CURB RETURN RADII ARE 2'-6" (AT BACK OF CURB), UNLESS OTHERWISE NOTED.
3. REFER TO SHEET C16.01 FOR PAVING AND STRIPING DIMENSIONS.

SITE DATA TABLE

LAND USE AND ZONING			
EXISTING USE	VACANT		
PROPOSED USE	LIGHT INDUSTRIAL		
ZONING DISTRICT	WILLIAMSON COUNTY		
IMPERVIOUS COVER	**ACRES**	**S.F.**	
SITE AREA	12.46 Ac.	###########	
EXISTING IMPERVIOUS COVER	0.000 Ac.	0 S.F.	0.00%
LOT 1 (8.03 ACRES)	*0.000 Ac.*	*0 S.F.*	*0.00%*
LOT 2 (1.98 ACRES)	*0.000 Ac.*	*0 S.F.*	*0.00%*
LOT 3 (2.45 ACRES)	*0.209 Ac.*	*9,093 S.F.*	*8.53%*
NEW IMPERVIOUS COVER	4.226 Ac.	###########	33.92%
TOTAL IMPERVIOUS COVER		#########	**35.59%**
BUILDING AREA	**ACRES**	**S.F.**	
EXISTING BUILDINGS	0.000 Ac.	0 S.F.	0.00%
PROPOSED BUILDINGS			
BUILDING #1	0.165 Ac.	7,200 S.F.	1.33%
BUILDING #2	0.165 Ac.	7,200 S.F.	1.33%
BUILDING #3	0.165 Ac.	7,200 S.F.	1.33%
BUILDING #4	0.331 Ac.	14,400 S.F.	2.65%
BUILDING #5	0.496 Ac.	21,600 S.F.	3.98%
BUILDING #6	0.248 Ac.	10,800 S.F.	1.99%
BUILDING #7	0.248 Ac.	10,800 S.F.	1.99%
GROSS FLOOR AREA	1.818 Ac.	79,200 S.F.	14.59%
PARKING	0.967 Ac.	42,120 S.F.	7.76%

PARKING TABLE

BLDG #	BUILDING (OR AREA) USE	PARKING RATIO	PARKING #'S
BUILDING #1	7,200	400	18
BUILDING #2	7,200	400	18
BUILDING #3	7,200	400	18
BUILDING #4	14,400	400	36
BUILDING #5	21,600	400	54
BUILDING #6	10,800	400	27
BUILDING #7	10,800	400	27
		TOTAL PARKING REQUIRED	198
		STANDARD PARKING PROVIDED	**253**
		ADA SPACES REQUIRED	7
		ADA SPACED PROVIDED	**7**
		TOTAL PARKING PROVIDED	**260**

REVISION	
No.	
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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

OVERALL SITE PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/29/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C02.00

Plotted by: Home PC, Plot date: 29/11/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 SITE PLAN.dwg

COUNTY PERMIT NUMBER: 2024-734-COC

0 30 60
SCALE: 1"=30'

WOMEN OWNED
CERTIFIED BY | WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

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ROUND ROCK, TX 78681
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PELS FIRM #F-22208
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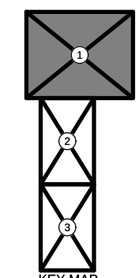
Civil Engineering
WBE210166 | HUB 1853873845300

LEGEND	
LOD	LIMITS OF CONSTRUCTION
ADA	ACCESSIBLE ROUTE OF TRAVEL
3	PARKING COUNT
FIRELANE	FIRE LANE
529	EXISTING CONTOUR
529	CONTOUR
	PROPERTY LINE
	EXISTING PROPERTY LINES
	BUILDING SETBACK LINE
GAS	NATURAL GAS LINE
EX OE	EXISTING OVERHEAD ELECTRIC
	EXISTING FENCE
SD	PERFORATED PVC PIPE



KEY MAP
(NOT TO SCALE)

NOTES:
1. ALL DIMENSIONS ARE TO THE BACK OF CURB, UNLESS OTHERWISE NOTED.
2. ALL CURB RETURN RADII ARE 2'-6" (AT BACK OF CURB), UNLESS OTHERWISE NOTED.
3. REFER TO SHEET C16.01 FOR PAVING AND STRIPING DIMENSIONS.

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
CUT FILL	full	1.00	1.00	313818.01	3623.11	14615.83	10992.72<Fill>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	313818.01	3623.11	14615.83	10992.72<Fill>

* Value adjusted by cut or fill factor other than 1.0

No.	REVISION
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

SITE PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C02.01

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmoo Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 SITE PLAN.dwg

COUNTY ROADWAY NOTES:

B4 - CONSTRUCTION – GENERAL

B4.1 A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED PRIOR TO THE START OF CONSTRUCTION. THE DESIGN ENGINEER, OWNER, CONTRACTOR, SUBCONTRACTORS, AND COUNTY ENGINEER SHALL ATTEND THIS MEETING. ALL ROADS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AS APPROVED BY THE COUNTY ENGINEER AND IN ACCORDANCE WITH THE SPECIFICATIONS FOUND IN THE CURRENT VERSION OF THE "TEXAS DEPARTMENT OF TRANSPORTATION MANUAL STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES" UNLESS OTHERWISE STATED ON THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER.

B4.2 ALL MATERIALS SHALL BE SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER. THE OWNER SHALL PAY FOR ALL TESTING SERVICES AND SHALL FURNISH THE COUNTY ENGINEER WITH CERTIFIED COPIES OF THESE TEST RESULTS. THE COUNTY ENGINEER MUST APPROVE THE TEST RESULTS PRIOR TO CONSTRUCTING THE NEXT COURSE OF THE ROADWAY STRUCTURE. ANY MATERIAL WHICH DOES NOT MEET THE MINIMUM REQUIRED TEST SPECIFICATIONS SHALL BE REMOVED AND RE-COMPACTED OR REPLACED UNLESS ALTERNATIVE REMEDIAL ACTION IS APPROVED IN WRITING FROM THE COUNTY ENGINEER.

B4.3EXCEPT FOR ELECTRICAL LINES, ALL UNDERGROUND NONFERROUS UTILITIES WITHIN A RIGHT-OF-WAY OR EASEMENT MUST BE ACCOMPANIED BY FERROUS METAL LINES TO AID IN TRACING THE LOCATION OF SAID UTILITIES THROUGH THE USE OF A METAL DETECTOR.

B4.4 ALL PROPOSED PAVEMENTS (FLEXIBLE AND RIGID) ARE TO BE SPECIFIED IN THE GEOTECH REPORT. THE GEOTECH REPORT IS TO BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. PAVEMENT DESIGNS SHALL FOLLOW THE BELOW COUNTY REQUIREMENTS BASED UPON SOIL CONDITIONS FROM SAMPLES TAKEN ALONG THE PROPOSED ROADWAYS. TEST BORINGS SHALL BE PLACED AT A MAXIMUM SPACING OF 500 FEET OR OTHER SAMPLING FREQUENCY APPROVED BY THE COUNTY ENGINEER BASED ON RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER. BORINGS SHALL BE TO A DEPTH OF TEN FT OR, IF SOLID ROCK IS ENCOUNTERED, ONE FT WILLIAMSON COUNTY, TEXAS - SUBDIVISION REGULATIONS PAGE 38
BELOW NON-FRACTURED ROCK OR 3 FT BELOW FRACTURED ROCK. THE PAVEMENT DESIGN MUST MEET AT LEAST THE MINIMUM OF ONE OF THE APPROVED COUNTY DESIGNS AND PROVIDED IN THE GEOTECHNICAL REPORT FOR REVIEW AND APPROVAL PRIOR TO THE REVIEW AND APPROVAL OF THE CONSTRUCTION PLANS. IN ADDITION TO THE BASIS OF THE PAVEMENT DESIGN, THE SOILS REPORT SHALL CONTAIN THE RESULTS OF SAMPLED AND TESTED SUBGRADE FOR PLASTICITY INDEX.

B4.5 FLEXIBLE PAVEMENT DESIGNS BASED ON ROADWAY CLASSIFICATION

MINIMUM LOCAL ROADWAY (URBAN) FLEXIBLE PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
HMA SURFACE	2"	2"	2"	TXDOT ITEM 340 D- GR HMA PG 70-22 SAC B (1)
PRIME COAT OR ONE COURSE UNDERSEAL				AEP OR TXDOT ITEM 316 (4)
FLEXIBLE BASE	12"	12"	14"	TXDOT ITEM 247 FLBS TY A GR 5(2)
LIME TREATED SUBGRADE		8"	8"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER.			

MINIMUM COLLECTOR ROADWAY (URBAN) FLEXIBLE PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
HMA SURFACE	2"	2"	2"	TXDOT ITEM 340 D- GR HMA PG 70-22 SAC B (1)
PRIME COAT OR ONE COURSE UNDERSEAL				AEP OR TXDOT ITEM 316 (4)
FLEXIBLE BASE	14"	14"	16"	TXDOT ITEM 247 FLBS TY A GR 5(2)
LIME TREATED SUBGRADE		8"	8"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER.			

MINIMUM ARTERIAL ROADWAY (URBAN) FLEXIBLE PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
HMA SURFACE	2"	2"	2"	TXDOT ITEM 340 D- GR HMA PG 70-22 SAC B (1)
PRIME COAT OR ONE COURSE UNDERSEAL				AEP OR TXDOT ITEM 316 (4)
FLEXIBLE BASE	20"	20"	22"	TXDOT ITEM 247 FLBS TY A GR 5(2)
LIME TREATED SUBGRADE		8"	10"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER. 5) SEE APPENDIX B7 FOR REQUIREMENTS ON ASPHALT AND AGGREGATE.			

B4.6 RIGID PAVEMENT DESIGNS BASED ON ROADWAY CLASSIFICATION

LOCAL ROADWAY (URBAN/ RURAL) RIGID PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
CRCP	6"	6"	8"	TXDOT ITEM 421 – CLASS P CONCRETE CRCP (1)- 13, CONTINUOUSLY REINFORCED CONCRETE PAVEMENT, ONELAYER STEEL BAR PLACEMENT
HMA BOND BREAKER	1"	1"	1"	TXDOT ITEM D- GR HMA TY D OR TY F PG 64-22
FLEXIBLE BASE	6"	8"	8"	TXDOT ITEM 247 FLBS TY A GR 4(2)
LIME TREATED SUBGRADE			8"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER.			

COLLECTOR ROADWAY (URBAN/ RURAL) RIGID PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
CRCP	6"	6"	8"	TXDOT ITEM 421 – CLASS P CONCRETE CRCP (1)- 13, CONTINUOUSLY REINFORCED CONCRETE PAVEMENT, ONELAYER STEEL BAR PLACEMENT
HMA BOND BREAKER	1"	1"	1"	TXDOT ITEM D- GR HMA TY D OR TY F PG 64-22
FLEXIBLE BASE	8"	10"	10"	TXDOT ITEM 247 FLBS TY A GR 4(2)
LIME TREATED SUBGRADE			8"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER.			

ARTERIAL ROADWAY (URBAN/ RURAL) RIGID PAVEMENT DESIGN

PLASTICITY INDEX	PI <20	PI 20-35	PI 35-55	MATERIAL REQUIREMENTS
SOIL CLASSIFICATION	CLAYEY SAND	LEAN CLAY	FAT CLAY	MATERIAL REQUIREMENTS
CRCP	11"	11"	11"	TXDOT ITEM 421 – CLASS P CONCRETE CRCP (1)- 13, CONTINUOUSLY REINFORCED CONCRETE PAVEMENT, ONELAYER STEEL BAR PLACEMENT
HMA BOND BREAKER	1"	1"	1"	TXDOT ITEM D- GR HMA TY D OR TY F PG 64-22
FLEXIBLE BASE	12"	12"	12"	TXDOT ITEM 247 FLBS TY A GR 4(2)
LIME TREATED SUBGRADE		6"	10"	TXDOT ITEM 260 (3)
NOTES:	1) SEE APPENDIX B7 FOR MATERIAL REQUIREMENTS FOR HMA. 2) SEE APPENDIX B6 FOR ADDITIONAL FLEXIBLE BASE SPECIFICATIONS. 3) PELLITIZED LIME IS NOT ALLOWED. USE HYDRATED LIME OR LIME SLURRY. CONFIRM SULFATES ARE NOT PRESENT IN SOIL. 4) FOR PI >55 ADDITIONAL PAVEMENT STRUCTURE IS NECESSARY AND SHALL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER.			

B5 - SUBGRADE

B5.1 THE PREPARATION OF THE SUBGRADE SHALL FOLLOW GOOD ENGINEERING PRACTICES AS DIRECTED BY THE COUNTY ENGINEER IN CONJUNCTION WITH RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT. WHEN THE PLASTICITY INDEX (PI) IS GREATER THAN 20, A SUFFICIENT AMOUNT OF LIME SHALL BE ADDED AS DESCRIBED IN ITEM 260 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNTIL THE PI IS LESS THAN 20. IF THE ADDITION OF LIME AS DESCRIBED IN ITEM 260 IS NOT FEASIBLE, AN ALTERNATE STABILIZING DESIGN SHALL BE PROPOSED AND SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. THE SUBGRADE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A DRY DENSITY PER TXDOT ITEM 132. IN ADDITION, PROOF ROLLING MAY BE REQUIRED BY THE COUNTY ENGINEER.

B5.2 IF LIME IS NECESSARY, THEN A SUFFICIENT AMOUNT OF LIME SHALL BE ADDED, AS DESCRIBED IN ITEM 260 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION TO PROPERLY STABILIZE SUBGRADE. THE USE OF HYDRATED LIME OR LIME SLURRY IS APPROVED; HOWEVER, THE USE OF PELLETIZED LIME IS NOT APPROVED.

B5.3 PRIOR TO LIME STABILIZATION, A SULFATE TEST OF IN SITU SOILS SHALL BE PERFORMED BY DEVELOPER TO CONFIRM THE APPROPRIATE MEANS AND METHODS OF STABILIZATION. PROVIDE SULFATE TEST TO COUNTY ENGINEER PRIOR TO STABILIZATION.

B5.4 ANY VARIATION TO THE COUNTY'S STABILIZATION REQUIREMENTS MUST BE APPROVED BY THE COUNTY ENGINEER.

B5.5 THE SUBGRADE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A DRY DENSITY PER TXDOT ITEM 132. IN ADDITION, PROOF ROLLING MAY BE REQUIRED BY THE COUNTY ENGINEER.

B5.6 THE SUBGRADE SHALL BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF ALL INSPECTION REPORTS FURNISHED TO THE COUNTY ENGINEER. THE COUNTY ENGINEER MUST APPROVE THE REPORT PRIOR TO APPLICATION OF THE BASE MATERIAL. ALL DENSITY TEST REPORTS SHALL INCLUDE A COPY OF THE WORK SHEET SHOWING THE PERCENTAGE OF THE MAXIMUM DRY (PROCTOR) DENSITY. THE NUMBER AND LOCATION OF ALL SUBGRADE TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER.

B6 - BASE MATERIAL

B6.1 BASE MATERIAL SHALL CONFORM TO ITEM 247 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, "FLEXIBLE BASE". THE BASE MATERIAL SHALL BE TYPE A GRADE 4, OR AS APPROVED BY THE COUNTY ENGINEER. GRADE 4 MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TABLE B6.1 BELOW:

TABLE B6.1: GRADATION SPECIFICATION FOR TY A, GRADE 4

MASTER GRADATION SIEVE SIZE	CUMULATIVE % RETAINED
2 ½"	-
1 ¾"	0
7/8"	10% - 35%
3/8"	30% - 65%
#4	45% - 75%
#40	70% - 90%
#200	87% - 95%

B6.2 EACH LAYER OF BASE COURSE SHALL BE TESTED FOR IN-PLACE DRY DENSITY AND MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL BASE TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.

B6.3 THE BASE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A MINIMUM OF 100% OF THE MAXIMUM (PROCTOR) DRY DENSITY OR AS APPROVED BY THE COUNTY ENGINEER UPON RECOMMENDATION BY THE TESTING LABORATORY. THE MAXIMUM LIFT SHALL NOT EXCEED SIX INCHES. THE BASE MUST BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF THE TEST RESULTS FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL. PRIOR TO THE PLACEMENT OF THE FIRST LIFT OF BASE, THE STOCKPILE SHALL BE TESTED FOR THE SPECIFICATIONS FOUND IN ITEM 247 TABLE 1 AND THE RESULT FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL.

B7 - BITUMINOUS PAVEMENT

B7.1 URBAN ROADS REQUIRE A MINIMUM 2 INCH WEARING SURFACE OF HMAC TYPE D. THE MIX SHALL BE FROM A TXDOT CERTIFIED PLANT AND THE MIX DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL.

B7.2 IF PROVIDING MIXTURE TYPE C OR D, USE PERFORMANCE GRADE (PG) BINDER 70-22. PROVIDE PG BINDER THAT DOES NOT CONTAIN RECYCLED ENGINE OIL BOTTOMS (REOBS) OR POLY PHOSPHORIC ACID (PPA). RECYCLED ASPHALT PAVEMENT (RAP) IS NOT PERMITTED FOR USE AS A COMPONENT OF THE HMACP. THE CONTRACTOR IS ALSO NOT PERMITTED THE USE RECYCLED ASPHALT SHINGLES (RAS) AS A COMPONENT OF THE HMACP.

B7.3 IF PROVIDING MIXTURE TYPE B, USE PG BINDER 64-22. PROVIDE PG BINDERS THAT DO NOT CONTAIN REOBS OR PPA. FOR SUBSURFACE COURSE TYPE B, THE USE OF TWENTY PERCENT (20%) RAP IS PERMITTED IN THE MIX DESIGN. THE CONTRACTOR IS NOT PERMITTED TO USE RAS AS A COMPONENT OF THE HMACP.

B7.4 TARGET LABORATORY MOLDED DENSITY IS 96.5% FOR ALL MIXTURES WITHOUT RAP AND WHEN USING A TEXAS GYRATORY COMPACTOR (TGC) FOR DESIGNING THE MIXTURE. WHEN USING SUPERPAVE GYRATORY COMPACTOR (SGC) TO DESIGN MIXTURES, SUBMIT THE SGC MIX DESIGN TO THE ENGINEER FOR APPROVAL.

B7.5 ALL MIXTURES MUST MEET THE HAMBURG REQUIREMENT AS STATED IN THE TABLE BELOW.

HIGH-TEMPERATURE BINDER GRADE	TEST METHOD	HAMBURG WHEEL TEST REQUIREMENTS*
		MINIMUM # OF PASSES @ 0.5" RUT DEPTH, TESTED @122°F
PG 64 OR LOWER	TEX-242-F	7,000
PG 70	TEX-242-F	15,000
PG 76 OR HIGHER	TEX-242-F	20,000

* THE COUNTY ENGINEER MAY ACCEPT HAMBURG WHEEL TEST RESULTS FOR PRODUCTION AND PLACEMENT IF NO MORE THAN 1OF THE 5 MOST RECENT TESTS IS BELOW THE SPECIFIED NUMBER OF PASSES AND THE FAILING TEST IS NO MORE THAN 2,000 PASSES BELOW THE SPECIFIED NUMBER OF PASSES.

B7.6 SUBMIT ANY PROPOSED ADJUSTMENTS OR CHANGES TO A JOB MIX FORMULA TO THE COUNTY ENGINEER BEFORE PRODUCTION OF THE NEW JOB MIX FORMULA.

B7.7 UNLESS OTHERWISE APPROVED, PROVIDE TYPE B MIXTURES THAT HAVE NO LESS THAN 4.5% ASPHALT BINDER, AND TY C AND D MIXTURES WITH NO LESS THAN 4.7% BINDER.

B7.8 FOR MIXTURE DESIGN VERIFICATION, PROVIDE THE ENGINEER WITH TWO 5-GALLON BUCKETS OF EACH AGGREGATE STOCKPILE TO BE USED ON THE PROJECT AND THREE GALLONS OF EACH PG BINDER TO BE USED ON THE PROJECT. ALSO PROVIDE SUFFICIENT QUANTITIES OF ANY OTHER ADDITIVES THAT WILL BE USED IN THE HMA MIXTURE. THIS MUST BE DONE PRIOR TO APPROVAL OF THE MIX DESIGN, UNLESS ALREADY PERFORMED WITHIN A ONE-YEAR TIME PERIOD.

B7.9 PRIOR TO ALLOWING PRODUCTION OF THE TRIAL BATCH, THE ENGINEER WILL USE THE MATERIALS PROVIDED BY THE CONTRACTOR TO PERFORM THE FOLLOWING TESTS TO VERIFY THE HMA MIXTURE DESIGN.
1. INDIRECT TENSILE TEST IN ACCORDANCE WITH TEX-226-F
2. HAMBURG WHEEL TEST IN ACCORDANCE WITH TEX-242-F
3. OVERLAY TEST IN ACCORDANCE WITH TEX-248-F
4. CANTABRO TEST IN ACCORDANCE WITH TEX-245-F

FOR MIXTURES DESIGNED WITH A TEXAS GYRATORY COMPACTOR (TGC), THE ENGINEER MAY REQUIRE THAT THE TARGET LABORATORY MOLDED DENSITY BE RAISED TO NO MORE THAN 97.5% OR MAY LOWER THE DESIGN NUMBER OF GYRATIONS TO NO LESS THAN 35 FOR MIXTURES DESIGNED WITH AN SGC IF ANY OF THE FOLLOWING CONDITIONS EXIST.
1. THE INDIRECT TENSILE TEST RESULTS IN A VALUE GREATER THAN 200 PSI
2. THE HAMBURG WHEEL TEST RESULTS IN A VALUE LESS THAN 3.0 MM
3. THE OVERLAY TEST RESULTS IN A VALUE LESS THAN 100 CYCLES
4. THE CANTABRO TEST RESULTS IN A VALUE OF MORE THAN 20% LOSS

IN LIEU OF, OR IN ADDITION TO EVALUATING THE MIXTURE DESIGN PRIOR TO ALLOWING A TRIAL BATCH TO BE PRODUCED, THE ENGINEER MAY ALSO EVALUATE THE MIXTURE PRODUCED DURING THE TRIAL BATCH FOR COMPLIANCE WITH THE 4 TESTS LISTED ABOVE.

B7.10 CONTRACTOR'S QUALITY CONTROL (CQC) TEST REPORTS SHALL BE SUBMITTED TO THE COUNTY ENGINEER ON A DAILY BASIS. AS A MINIMUM, DAILY CQC TESTING ON THE PRODUCED MIX SHALL INCLUDE: SIEVE ANALYSIS TEX-200-F, ASPHALT CONTENT TEX-236-F, HVEEM STABILITY TEX-208-F, LABORATORY COMPACTED DENSITY TEX-207-F, AND MAXIMUM SPECIFIC GRAVITY TEX-227-F. THE NUMBER AND LOCATION OF ALL HMAC TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER WITH A MINIMUM OF THREE, 6-INCH DIAMETER FIELD CORES SECURED AND TESTED BY THE CONTRACTOR FROM EACH DAY'S PAVING. EACH HMAC COURSE SHALL BE TESTED FOR IN-PLACE DENSITY, BITUMINOUS CONTENT AND AGGREGATE GRADATION, AND SHALL BE MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL HMAC TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.

B7.11 RURAL ROADS MAY USE EITHER THE SPECIFICATIONS FOUND IN SECTION B7.1 OR A TWO-COURSE SURFACE IN ACCORDANCE WITH ITEM 316, TREATMENT WEARING SURFACE, OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE TYPE AND RATE OF ASPHALT AND AGGREGATE SHALL BE INDICATED ON THE PLANS AS A BASIS OF ESTIMATE AND SHALL BE DETERMINED AT THE PRECONSTRUCTION CONFERENCE. AGGREGATE USED IN THE MIX SHALL BE ON THE TXDOT QUALITY MONITORING SCHEDULE. AGGREGATE SHALL BE TYPE B GRADE 4. GRADATION TESTS SHALL BE REQUIRED FOR EACH 300 CUBIC YARDS OF MATERIAL PLACED WITH A MINIMUM OF TWO TESTS PER EACH GRADE PER EACH PROJECT. TEST RESULTS SHALL BE REVIEWED BY THE COUNTY ENGINEER PRIOR TO APPLICATION OF THE MATERIAL.

B9 - CONCRETE - GENERAL

B9.1 UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE IN ACCORDANCE WITH ITEM 421 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND BE PLACED IN ACCORDANCE WITH THE APPLICABLE ITEM.

B9.2 ALL CONCRETE SHALL BE TESTED FOR COMPRESSIVE STRENGTH. ONE SET OF THREE CONCRETE TEST CYLINDERS SHALL BE MOLDED FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED FOR EACH CLASS OF CONCRETE PER DAY, OR AT ANY OTHER INTERVAL AS DETERMINED BY THE COUNTY ENGINEER. A SLUMP TEST SHALL BE REQUIRED WITH EACH SET OF TEST CYLINDERS. ONE CYLINDER SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT AN AGE OF SEVEN DAYS AND THE REMAINING TWO CYLINDERS SHALL BE TESTED AT 28 DAYS OF AGE.

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

GENERAL NOTES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C03.00

Plotted by Harry. Plot date:15/11/2024
File name: h:\02_projects\2023\230903 lett bros\07 Sheet\SD\230903 GENERAL NOTES.dwg

GENERAL NOTES:

1. ENGINEER OF RECORD SHALL BE NOTIFIED IN WRITING 48-HOURS PRIOR TO THE START OF CONSTRUCTION
2. BLASTING IS NOT PERMITTED ON THIS PROJECT UNDER ANY CIRCUMSTANCE. SHOULD BLASTING BE NECESSARY PLEASE NOTIFY THE ENGINEER OF RECORD.
3. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
4. THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THE WORK.
5. THE TRENCH EXCAVATION AND SHORING SAFETY SYSTEM, AS OUTLINED IN THE TECHNICAL SPECIFICATIONS, WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.
6. CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN ONLY BE ISSUED TO CONTRACTOR ARE TO BE OBTAINED AT THE CONTRACTORS EXPENSE.
7. CONTRACTOR SHALL GIVE A MINIMUM OF 48 HOURS NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
8. CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS ARE TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR TO AT LEAST THE PRE-EXISTING CONDITION AT NO ADDITIONAL COST TO OWNER.
9. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE. NO WARRANTY IS IMPLIED AS TO THE ACTUAL LOCATION OF EXISTING UTILITIES. CONTRACTOR MUST FIELD VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. WHEN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING OR A BREAK IN A LINE OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING SITE WORK OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. THE CONTRACTOR SHALL COOPERATE WITH THE APPLICABLE UTILITY COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.
11. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES TO BE COORDINATED WITH THE OWNER.
12. THE CONTRACTOR SHALL COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES WITH APPLICABLE UTILITY COMPANY OR COMPANIES. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.
13. 1THE CONTRACTOR SHALL LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, AND CONTROL POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO OWNER.
14. EXISTING PAVING, BUILDING, AND OTHER ITEMS SHOWN ON THESE PLANS NOT SPECIFICALLY RELATED TO THE WORK OF THE CONTRACTOR IS FOR INFORMATION ONLY.
15. DEMOLITION PERMITS (IF NEEDED) ARE TO BE OBTAINED BY THE CONTRACTOR.
16. EXISTING SURFACE AND SUBSURFACE STRUCTURES (GAS MAINS, WATER MAINS, STORM SEWER, TELEPHONE CABLES, ETC.) ARE SHOWN ON THE PLANS IF THEIR LOCATION HAS BEEN DETERMINED, BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID DAMAGING THESE EXISTING STRUCTURES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS OR TO SHOW THEM IN THEIR EXACT LOCATION. IF ANY STRUCTURE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE HIS RESPONSIBILITY TO REPAIR THE DAMAGE AT HIS EXPENSE AND RESTORE THE STRUCTURE TO IT'S ORIGINAL CONDITION.
17. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCE, IF REQUIRED. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTORS OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADES.
18. ALL CONCEPTS, IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS INDICATED OR REPRESENTED BY THESE INSTRUMENTS, AS OUTLINED ON THE TITLE SHEET INDEX, AND BY ANY ADDENDUM ARE OWNED BY AND ARE THE PROPERTY OF HENDERSON PROFESSIONAL ENGINEERS, L.L.C. AND WERE CREATED AND DEVELOPED FOR THE USE ON AND IN CONNECTION WITH THE SPECIFIED PROJECT. THESE CONCEPTS, IDEAS, DESIGN, ARRANGEMENTS, OR PLANS SHALL NOT BE USED BY ANY PERSON, FIRM OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION AND CONSENT OF HENDERSON PROFESSIONAL ENGINEERS WHOSE CONTACT INFO IS FOUND IN THE TITLE BLOCK OF EVERY PLAN SHEET.
19. A PRE-CONSTRUCTION CONFERENCE IS TO BE HELD PRIOR TO BEGINNING CONSTRUCTION. THE CONFERENCE SHALL TAKE PLACE EITHER VIRTUALLY OR AT A LOCATION AND TIME SELECTED BY OWNER AND ENGINEER. CONTRACTOR TO ARRANGE ENGINEER, OWNER AND PERTINENT SUB CONTRACTOR ATTENDANCE AT THIS MEETING.
20. CONTRACTOR SHALL NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO ANY CONSTRUCTION.
21. IN THE EVENT OF A DISCREPANCY WITHIN THE PLANS OR BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BE REQUIRED TO PERFORM THE MOST INVOLVED WORK TO SATISFY THE INTENT OF THE PROJECT.
22. TOPSOIL REPLACEMENT IS REQUIRED IN ALL AREAS. AREAS OF BACKFILL, EXCAVATION, OR GRADING SHALL BE BROUGHT TO WITHIN SIX INCHES OF FINAL GRADE AND BROUGHT TO GRADE WITH COMPACTED TOP SOIL. DISTURBED AREA BETWEEN ROW AND EDGE OF PAVEMENT TO BE VEGETATED ACCORDING TO COSA ITEM 516 "HYDROMULCH."
23. MAIL SERVICE SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. PAYMENT FOR REMOVAL, TEMPORARY RELOCATION AND PERMANENT LOCATION OF ALL MAILBOXES SHALL CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK.
24. EXISTING SIGNS TO BE RELOCATED TO WITHIN A MINIMUM OF SEVEN FEET FROM THE PROPOSED EDGE OF PAVEMENT.
25. SHOULD HENDERSON PROFESSIONAL ENGINEERS INSTALL SIGNAGE AT THE CONSTRUCTION SITE THEN ANY DAMAGES OR ISSUES SHOULD BE IMMEDIATELY CONVEYED TO THE ENGINEER OF RECORD FOR REMEDIATION.

GENERAL ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIALS, INCLUDING METHODS OF HANDLING AND DISPOSAL.
2. CONTRACTOR SHALL LOCATE MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
3. FUEL STORAGE IS ALLOWED ON THIS PROJECT AND SHALL BE IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS.
4. THE CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY AND IN WRITING, OF ANY FUEL OR TOXIC MATERIALS SPILLS WITHIN THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TO BE TAKEN TO REMEDY THE PROBLEM.
5. THE CONTRACTOR SHALL DISPOSE OF FUELS, HAZARDOUS MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.
6. NO OPEN BURNING IS ALLOWED ON THIS PROJECT.

PAVING NOTES / TRAFFIC CONTROL NOTES:

1. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALK DAMAGED OR REMOVED BY THE CONTRACTOR ARE TO BE REPAIRED BY THE CONTRACTOR TO AT LEAST THE PRE-EXISTING CONDITION AT HIS EXPENSE BEFORE ACCEPTANCE OF THE WORK.
2. TRAFFIC CONTROLS DURING CONSTRUCTION TO BE CONTRACTORS RESPONSIBILITY AND INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE TRAFFIC LANE OPEN AT ALL TIMES DURING CONSTRUCTION (ALL AFFECTED STREETS).

SITE GRADING NOTES:

1. THE CONTRACTOR SHALL CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF GOVERNING AUTHORITIES.
2. ALL EXCESS EXCAVATED MATERIAL IS TO BE REMOVED FROM THE SITE. THE EXCESS EXCAVATION MATERIAL SHALL NOT BE STOCKPILED.
3. ADJUST MANHOLES COVERS, VALVE BOXES, ELECTRICAL MANHOLES, ETC. TO MATCH PROPOSED FINISHED GRADE (NO SEPARATE PAY).

STORM WATER NOTES:

1. THROUGHOUT THE CONSTRUCTION, AND AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ASSURE THAT DRAINAGE OF STORM WATER RUNOFF IS NOT BLOCKED.
2. MODIFICATIONS TO ANY STORM CONVEYANCE SYSTEM MUST BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD TO ENSURE GENERAL CONFORMANCE WITH APPLICABLE PERMITS.
3. CONSTRUCTION MEANS AND METHODS SHALL BE USED TO ENSURE RUNOFF FROM THE SITE IS CONTROLLED THROUGH THE DURATION OF THE PROJECT. PONDS MAY BE ROUGH CUT WHEN NECESSARY.

CONCRETE CONSTRUCTION NOTES:

1. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS NOTED IN THE PLANS.
2. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-305 AND ASTM A-316, GRADE 60.
3. ALL CONCRETE AND REINFORCING STEEL SHALL CONFORM TO CURRENT A.C.I. CODE.
4. ALL BAR SPLICES, CORNER DOWELS, AND JOINT DOWELS SHALL HAVE A MINIMUM LAP LENGTH OF 40 BAR DIAMETERS OR 30", WHICHEVER IS GREATER.
5. NO FLY ASH ADDITIVES WILL BE PERMITTED IN STRUCTURAL CONCRETE.

UTILITY NOTES:

1. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF THE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING ALL EXISTING UTILITIES.
2. ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND VERIFIED BY THE OWNER'S TESTING PROVIDER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH MATERIAL SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER OF LOCATIONS OF REQUIRED TESTS SHALL BE DETERMINED BY THE ENGINEER, APPROVED BY THE STREET INSPECTOR AND AGREED TO AT THE PRE-CONSTRUCTION MEETING. UPON COMPLETION OF TESTING THE OWNER'S TESTING PROVIDER SHALL PROVIDE THE STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

SAFETY FENCE NOTES:

1. SAFETY FENCE, WHEN NECESSARY, SHALL BE USED TO PROTECT ALL EXCAVATIONS AND TO SEPARATE CONSTRUCTION ACTIVITIES FROM PEDESTRIAN, DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SAFETY FENCING SHALL BE PLASTIC, 4' MINIMUM HEIGHT AND ORANGE IN COLOR.
3. SAFETY FENCE USED WITHIN THE ROADWAY SHALL BE REFLECTORIZED WITH A MINIMUM OF TWO (2) STRIPS OF RETROREFLECTIVE MATERIAL. A MINIMUM OF 1' WIDE THE LENGTH OF THE FENCE OR DELINEATED BY CHANNELIZING DEVICES.
4. SAFETY FENCE USED TO SEPARATE SIDEWALKS FROM CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM ENCROACHMENT TO THE SIDEWALK.
5. FENCE MATERIAL SHALL BE SUPPORTED FROM 1/4" DIA. NYLON ROPE FROM POSTS SPACED ON A MAXIMUM 8 FT. CENTERS. POSTS SHALL EXTEND 4' ABOVE NATURAL GROUND. FENCE MATERIAL SHALL BE SECURED TO POSTS W/ PLASTIC WIRE TIES, MINIMUM 3 PER POST.
6. POST SHALL INCLUDE SUPPORT BRACES SUFFICIENT TO HANDLE ALL LOADS.
7. PAYMENT FOR SECURITY FENCE SHALL BE BASED ON A LUMP SUM FOR EACH EXTENSION INCLUDING ALL INCIDENTAL WORK (LABOR, MATERIALS, EQUIPMENT, ETC.)

TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND ANY GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SPECIAL CONDITIONS AND NOTES:

1. EXISTING UTILITIES IN THE AREA ARE SHOWN IN ACCORDANCE WITH ASCE 38-02 "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA" AS SPECIFIED IN THE SIGNED CONTRACT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO THE START OF ANY CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
2. ALL UTILITY SYMBOLS SHOWN REPRESENT APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE APPROPRIATE AGENCY'S STANDARD SPECIFICATIONS AND INSTALLATION DETAILS FOR ACTUAL LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. IN THE EVENT THESE NOTES CONTRADICT OR ARE IN CONFLICT WITH THE MUNICIPALITY NOTES, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED.
4. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE PRE-CONSTRUCTION MEETING AND A COPY SHALL BE AVAILABLE ON-SITE AT ALL TIMES.

SPECIAL CONDITIONS AND NOTES:

1. EXISTING UTILITIES IN THE AREA ARE SHOWN IN ACCORDANCE WITH ASCE 38-02 "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA" AS SPECIFIED IN THE SIGNED CONTRACT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO THE START OF ANY CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
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3. IN THE EVENT THESE NOTES CONTRADICT OR ARE IN CONFLICT WITH THE MUNICIPALITY NOTES, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED.
4. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE PRE-CONSTRUCTION MEETING AND A COPY SHALL BE AVAILABLE ON-SITE AT ALL TIMES.

ENTERPRISE ENCROACHMENT AGREEMENT NOTES:

1. 48 HOUR NOTICE OF ANY CONSTRUCTION ACTIVITY IN THE EASEMENT - CALL 811 TEXAS ONE CALL.
2. "COMPANY REPRESENTATIVE" MUST BE PRESENT DURING ANY CONSTRUCTION IN THE EASEMENT.
3. THE FOLLOWING LANGUAGE MUST BE CONSPICUOUSLY DISPLAYED ON ALL DRAWINGS DEPICTING THE PIPELINE(S): WARNING! HIGH PRESSURE PIPELINE EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM WHITEHORN PIPELINE COMPANY LLC.
4. ALL EQUIPMENT OVER THE PIPELINE MUST BE APPROVED.
5. EXCAVATORS MUST WORK PARALLEL TO THE PIPELINE AND THE BUCKETS MUST HAVE BARRED TEETH.
6. ANY EXCAVATION WITHIN 18 INCHES PLUS 1/2 DIAMETER OF THE PIPE MUST BE DONE BY HAND. NO MECHANICAL EXCAVATION WITHIN TWO FEET OF THE PIPE.
7. NO MEDIUM TO LARGE VIBRATORY COMPACTION EQUIPMENT IS ALLOWED WITHIN MINIMUM TEN (10) FEET FROM THE PIPELINE, ONLY WALK-BEHIND VIBRATORY ROLLERS/COMPACTORS ARE ALLOWED.
8. A MINIMUM OF FIVE AND ONE HALF (5.5) FEET OF STABLE SOIL COVER, OR THE EXISTING COVER IF GREATER THAN FIVE AND ONE HALF (5.5) FEET, MUST BE MAINTAINED OVER THE PIPELINE.
9. LANDOWNER WILL MAINTAIN A MINIMUM OF SEVEN (7) FEET OF COVER BETWEEN THE TOP OF THE PIPELINE AND THE TOP OF THE CONCRETE PAVEMENT PARKING LOT SURFACE.
10. ALL PARALLEL MOVEMENT OF HEAVY EQUIPMENT DURING CONSTRUCTION SHALL MAINTAIN A SAFE WORKING DISTANCE OF FIVE (5) FEET HORIZONTAL DISTANCE AWAY FROM THE EDGE OF THE PIPELINE.
11. LANDOWNER SHALL PROVIDE EXPANSION JOINTS EVERY 10-FEET TO 15-FEET OVER THE ENTIRETY OF THE PIPELINE RIGHT-OF-WAY.
12. COMPANY WILL REQUIRE A MINIMUM OF 72 HOURS WRITTEN NOTICE PRIOR TO CROSSING THE PIPELINE WITH HEAVY EQUIPMENT. WHEREVER LANDOWNER WILL CROSS THE PIPELINE AND/OR EASEMENT WITH HEAVY EQUIPMENT AND TO AVOID RUTS, LANDOWNER WILL PLACE EIGHT (8) INCH THICK TIMBER MATTING OVER THE PIPELINE AND/OR EASEMENT AS DETERMINED BY COMPANY'S FIELD REPRESENTATIVE.
13. EXCAVATED MATERIAL WILL NOT BE PLACED OVER THE PIPELINE. LANDOWNER AGREES TO CLEAN UP AND REPAIR ALL DAMAGES TO THE EASEMENT RESULTING FROM THE WORK ON OR ACROSS THE EASEMENT. ANY AND ALL DAMAGE REPAIRS AND CLEANUP OF THE EASEMENT WILL BE SUBJECT TO COMPANY'S ACCEPTANCE.
14. LARGE LANDSCAPING IS NOT PERMITTED ON THE EASEMENT, INCLUDING, BUT NOT LIMITED TO, TREES, SHRUBS, AND LARGE LANDSCAPING WITH A MATURE UNTRIMMED HEIGHT GREATER THAN EIGHTEEN (18) INCHES.
15. ANY NOTICE REQUIRED BY OR PERMITTED UNDER THIS AGREEMENT MUST BE IN WRITING. ANY SUCH NOTICE WILL BE DEEMED TO BE DELIVERED (WHETHER ACTUALLY RECEIVED OR NOT) WHEN DEPOSITED WITH THE UNITED STATES POSTAL SERVICE, POSTAGE PREPAID, CERTIFIED MAIL, RETURN RECEIPT REQUESTED, AND ADDRESSED TO THE INTENDED RECIPIENT AT THE ADDRESS SHOWN IN THE OPENING PARAGRAPH OF THIS AGREEMENT.

TCEQ WATER POLLUTION ABATEMENT PLAN:

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
    C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
CONSTRUCTION NOTES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C03.01

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 GENERAL NOTES.dwg

TCEQ ORGANIZED SEWAGE COLLECTION SYSTEM GENERAL CONSTRUCTION NOTES:

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. E SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.
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 PLAN SHEET ___OF___.
   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: _____.
    IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: _____ _____.

    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.

12. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.
    IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET __ OF __. (FOR POTENTIAL FUTURE LATERALS).
    THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET __ OF __ AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET __ OF __.
13. 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.
14. 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).
15. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:
    (a) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
    (1) LOW PRESSURE AIR TEST.
    (A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(II) OF THIS PARAGRAPH.
    (B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
    (i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.
    (ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO
2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

    EQUATION C.3 $T = \frac{0.085 \times D \times K}{Q}$

    WHERE:
    T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
    K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
    D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
    L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
    Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNA SURFACE
    (C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

PIPE DIAMETER (INCHES)	**MINIMUM TIME** (SECONDS)	**MAXIMUM LENGTH FOR MINIMUM TIME** (FEET)	**TIME FOR LONGER LENGTH** (SECONDS/FOOT)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

    (D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
    (E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
    (F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
    (G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.
    (2) INFILTRATION/EXFILTRATION TEST.
    (A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.
    (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
    (C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.
    (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN 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.
    (i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
    (ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
    (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
    (B) MANDREL DESIGN.
    (i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
    (ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.
    (iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.
    (iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.
    (C) METHOD OPTIONS.
    (i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.
    (ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
    (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
    (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
    (3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
    (4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
    (5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
    (6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
16. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
    (a) ALL MANHOLES MUST PASS A LEAKAGE TEST.
    (b) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND (B) INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
    (1) HYDROSTATIC TESTING.
    (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
    (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL 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.
17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
CONSTRUCTION NOTES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/15/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C03.02

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COUNTY PERMIT NUMBER: 2024-734-COC

LEGEND

	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
	EXISTING WIRE FENCE
	EXISTING WOOD FENCE
EX OE	EXISTING OVERHEAD ELECTRIC LINE
EX UE	EXISTING UNDERGROUND ELECTRIC LINE
EX FOC	EXISTING FIBER OPTIC LINE
EX GAS	EXISTING GAS LINE
EX WW	EXISTING WASTEWATER LINE (THICKNESS INDICATES INNER PIPE DIAMETER)
EX SD	EXISTING STORM SEWER LINE (THICKNESS INDICATES INNER PIPE DIAMETER)
EX OT	EXISTING OVERHEAD TELEPHONE LINE
EX UT	EXISTING UNDERGROUND TELEPHONE LINE
EX W	EXISTING WATER LINE (THICKNESS INDICATES INNER PIPE DIAMETER)
599 / 600	EXISTING CONTOURS, WITH ELEVATION LABELED
	EXISTING CURB AND GUTTER
	EXISTING WASTEWATER MANHOLE (DRAWN TO SCALE)
EX. CO	EXISTING WASTEWATER CLEANOUT
D	EXISTING STORM SEWER MANHOLE
D	EXISTING CURB INLET
	EXISTING FDC
	EXISTING FIRE HYDRANT
	EXISTING GATE VALVE
	EXISTING LIGHT POLE
TAG / TAG	EXISTING TREES / HERITAGE TREES (SIZE ADJUSTED PER TREE) TAG REFERS TO TREE SURVEY DATA TABLE
WM	EXISTING WATER METER
W	EXISTING WATER WELL
	EXISTING HOSE BIB/FAUCET
	EXISTING UTILITY POLE
SIGN TEXT	EXISTING SIGN (TEXT VARIES)
T	EXISTING TELEPHONE RISER
CATV	EXISTING CABLE/TV BOX
GM	EXISTING GAS METER
PB	EXISTING PULL BOX
E	EXISTING ELECTRIC METER
	EXISTING GUY WIRE
MB	EXISTING MAILBOX
	FOUND PIN
	SET PIN

W	NEW WATER LINE
W	NEW WATER FIRE LINE
	NEW WASTEWATER LINE (WIDTH REPRESENTS PIPE O.D.)
	NEW STORM SEWER LINE (WIDTH REPRESENTS PIPE O.D.)
	NEW WROUGHT IRON FENCE
	NEW CHAIN LINK FENCE
	NEW WIRE FENCE
	NEW WOOD FENCE
	NEW CURB AND GUTTER
LOC	LIMITS OF CONSTRUCTION
ADA	ACCESSIBLE ROUTE
	NEW WASTEWATER MANHOLE (DRAWN TO SCALE)
	NEW WASTEWATER CLEANOUT
	NEW WATER METER WITH VAULT
	NEW BACKFLOW PREVENTER
	BICYCLE PARKING
	NEW GATE VALVE
	NEW LIGHT POLE
	NEW FIRE DEPARTMENT CONNECTION
	NEW FIRE HYDRANT
	NEW GRATE INLET
8	PARKING LABEL
512	PROPOSED CONTOUR
	DIRECTION OF SURFACE WATER RUNOFF

ABBREVIATIONS LEGEND

EX.	EXISTING
O.C.E.W.	ON CENTER, EACH WAY
TYP.	TYPICAL
APPROX.	APPROXIMATE
O.P.R.W.C.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY
O.P.R.T.C.	OFFICIAL PUBLIC RECORDS TRAVIS COUNTY
D.R.W.C.T.	DEED RECORDS WILLIAMSON COUNTY TEXAS
A.D.A.	AMERICANS WITH DISABILITIES ACT
O.D.	OUTSIDE DIAMETER (PIPE)
R.O.W.	RIGHT-OF-WAY
DOC. NO.	DOCUMENT NUMBER
VOL/PG.	VOLUME/PAGE
A.D.T.	AVERAGE DAILY TRAFFIC
M.P.H.	MILES PER HOUR
AC.	ACRE
SQ. FT.	SQUARE FEET
L.F.	LINEAR FEET
STA.	STATION
FL	FLOWLINE
F.F.E.	FINISHED FLOOR ELEVATION
D.I.	DUCTILE IRON
CFS	CUBIC FEET PER SECOND
CMP	CORRUGATED METAL PIPE
HDPE	HIGH-DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE
SCH	SCHEDULE
P.O.B.	POINT OF BEGINNING
N.T.S.	NOT TO SCALE
HMAC	HOT-MIX ASPHALT CONCRETE
CONC.	CONCRETE
TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

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SITE DEVELOPMENT PLANS
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LEGEND AND ABBREVIATIONS

STATE OF TEXAS
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12/04/2024

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LEGEND	
LOC	LIMITS OF CONSTRUCTION
ADA	ACCESSIBLE ROUTE OF TRAVEL
3	PARKING COUNT
EX W	EXISTING WATER LINE
W	PROPOSED WATER LINE
EX WW	EXISTING WASTEWATER LINE
	PROPOSED WASTEWATER LINE
EX SD	EXISTING STORMWATER LINE
	PROPOSED STORMWATER LINE
529	EXISTING CONTOUR
529	PROPOSED CONTOUR

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EXISTING CONDITIONS PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

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DEMOLITION PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
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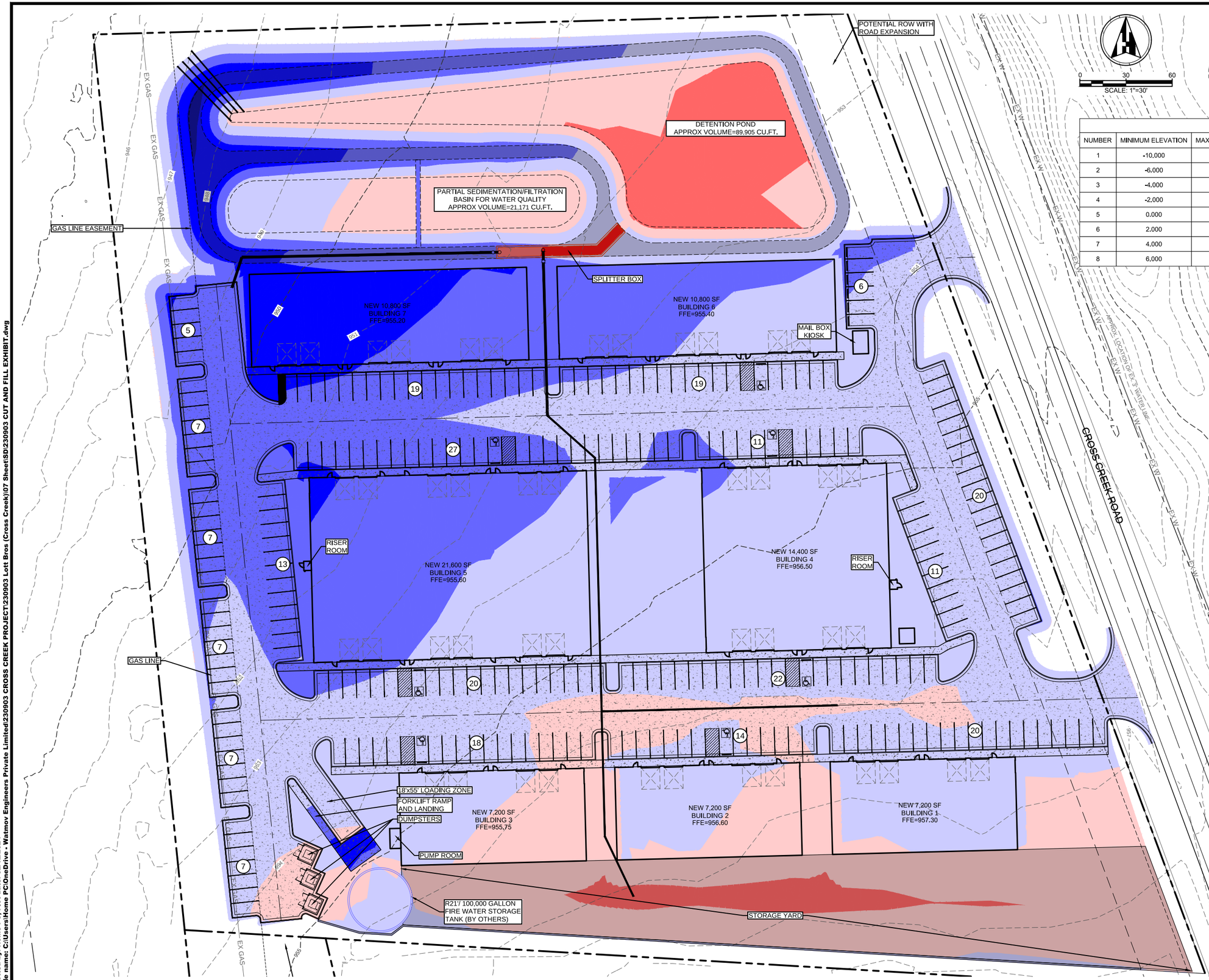

ELEVATION TABLE					
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR	AREA (SF)	VOLUME (CY)
1	-10.000	-6.000		0.00	0.00
2	-6.000	-4.000		0.00	0.00
3	-4.000	-2.000		8411.56	152.57
4	-2.000	0.000		96511.10	3776.29
5	0.000	2.000		133184.61	11047.34
6	2.000	4.000		68975.15	3716.47
7	4.000	6.000		16716.02	496.08
8	6.000	10.000		1046.93	10.45

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CUT AND FILL EXHIBIT

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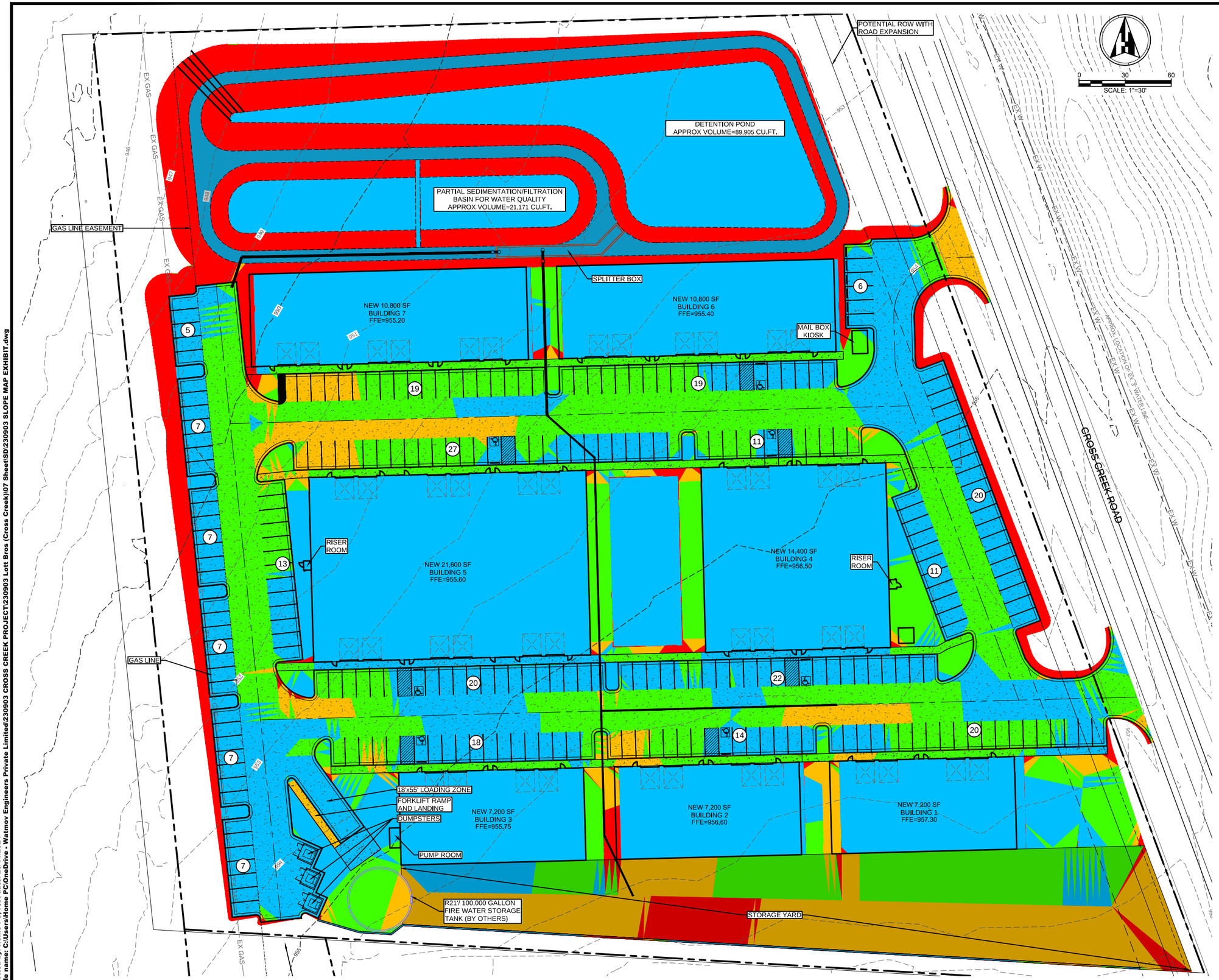

Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	0.00%	2.00%	
2	2.00%	5.00%	
3	5.00%	10.00%	
4	10.00%	99999900.00%	

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SLOPE MAP EXHIBIT

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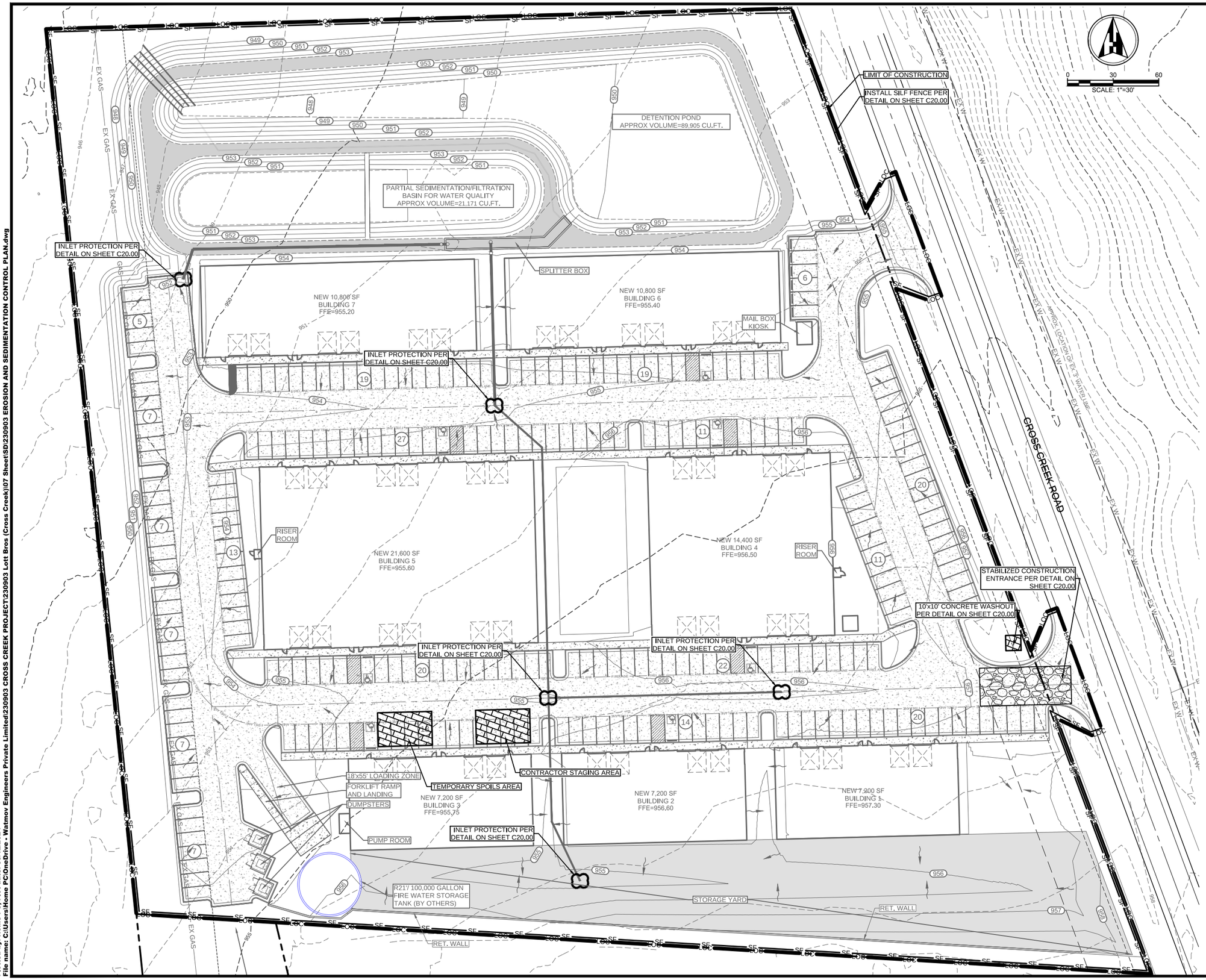

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LEGEND

LOC	LIMITS OF CONSTRUCTION (8.12 Ac.)
	ROCK CHECK DAM
	INLET PROTECTION
SF	SILT FENCE
CF	CONSTRUCTION FENCE
FD	FILTER DIKE
TP	TREE PROTECTION FENCE
	FLOW ARROW

NOTES:

1. NO ENVIRONMENTALLY SENSITIVE AREAS ARE LOCATED ON OR DOWNSTREAM OF THIS PROJECT SITE.
2. THIS PROJECT WILL NOT REQUIRE ANY FORM OF PHASING OR SLOPE STABILIZATION.
3. REFER TO LANDSCAPE PLANS FOR RESEEDING AND REVEGETATION REQUIREMENTS.
4. NO PERMANENT EROSION CONTROL MEASURES WILL BE INSTALLED WITH THIS PROJECT.
5. REFER TO SHEET C20.00 FOR STANDARD DETAILS - ESC.
6. 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.
7. 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.
8. 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.
9. ALL DISTURBED AREAS SHALL BE RE-VEGETATED TO MEET THE REQUIRMENTS OF THE CITY OF GEORGETOWN ORDINANCES.
10. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE INSPECTOR AT THE TIME OF CONSTRUCTION.

REVISION

No.	
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

EROSION AND SEDIMENTATION CONTROL PLAN

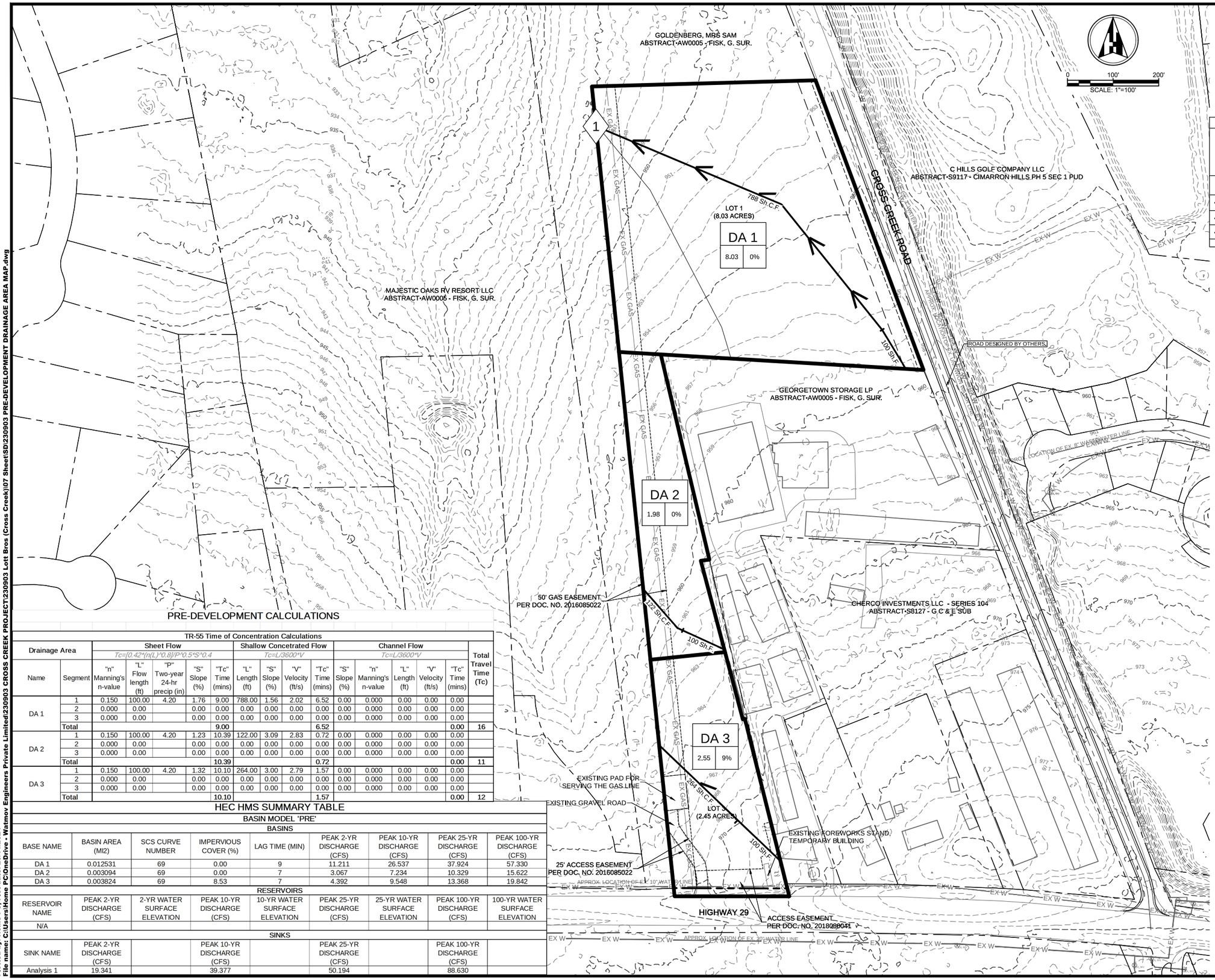
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C08.01

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Loft Bros (Cross Creek)\07 Sheet\SD\230903 EROSION AND SEDIMENTATION CONTROL PLAN.dwg



PRE-DEVELOPMENT CALCULATIONS

TR-55 Time of Concentration Calculations

Drainage Area		Sheet Flow					Shallow Concetrated Flow				Channel Flow					Total Travel Time (Tc)
		Tc=[0.42*(n(L)^0.8)/P^0.5*S^0.4					Tc=L/3600*V				Tc=L/3600*V					
Name	Segment	"n" Manning's n-value	"L" Flow length (ft)	"P" Two-year 24-hr precip (in)	"S" Slope (%)	"Tc" Time (mins)	"L" Length (ft)	"S" Slope (%)	"V" Velocity (ft/s)	"Tc" Time (mins)	"S" Slope (%)	"n" Manning's n-value	"L" Length (ft)	"V" Velocity (ft/s)	"Tc" Time (mins)	
DA 1	1	0.150	100.00	4.20	1.76	9.00	788.00	1.56	2.02	6.52	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					9.00				6.52					0.00	16
DA 2	1	0.150	100.00	4.20	1.23	10.39	122.00	3.09	2.83	0.72	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					10.39				0.72					0.00	11
DA 3	1	0.150	100.00	4.20	1.32	10.10	264.00	3.00	2.79	1.57	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					10.10				1.57					0.00	12

HEC HMS SUMMARY TABLE

BASIN MODEL 'PRE'

BASINS

BASE NAME	BASIN AREA (MI2)	SCS CURVE NUMBER	IMPERVIOUS COVER (%)	LAG TIME (MIN)	PEAK 2-YR DISCHARGE (CFS)	PEAK 10-YR DISCHARGE (CFS)	PEAK 25-YR DISCHARGE (CFS)	PEAK 100-YR DISCHARGE (CFS)
DA 1	0.012531	69	0.00	9	11.211	26.537	37.924	57.330
DA 2	0.003094	69	0.00	7	3.067	7.234	10.329	15.622
DA 3	0.003824	69	8.53	7	4.392	9.548	13.368	19.842

RESERVOIRS

RESERVOIR NAME	PEAK 2-YR DISCHARGE (CFS)	2-YR WATER SURFACE ELEVATION	PEAK 10-YR DISCHARGE (CFS)	10-YR WATER SURFACE ELEVATION	PEAK 25-YR DISCHARGE (CFS)	25-YR WATER SURFACE ELEVATION	PEAK 100-YR DISCHARGE (CFS)	100-YR WATER SURFACE ELEVATION
N/A								

SINKS

SINK NAME	PEAK 2-YR DISCHARGE (CFS)		PEAK 10-YR DISCHARGE (CFS)		PEAK 25-YR DISCHARGE (CFS)		PEAK 100-YR DISCHARGE (CFS)	
Analysis 1	19.341		39.377		50.194		88.630	

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LEGEND

DA 1 / 0.90 Ac. / 0%	DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE
X	ANALYSIS POINT
100 LF Sh.F.	SHEET FLOW SEGMENT OF TIME OF CONCENTRATION (Tc) PATH
500 LF Sh.C.F.	SHALLOW CONCENTRATED FLOW SEGMENT OF Tc PATH
500 LF Ch.F.	CHANNELIZED FLOW SEGMENT OF Tc PATH
	FLOW ARROW

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REVISION

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SITE DEVELOPMENT PLANS
TO SERVE
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355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

PRE-DEVELOPMENT DRAINAGE AREA MAP

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C09.00

COUNTY PERMIT NUMBER: 2024-734-COC

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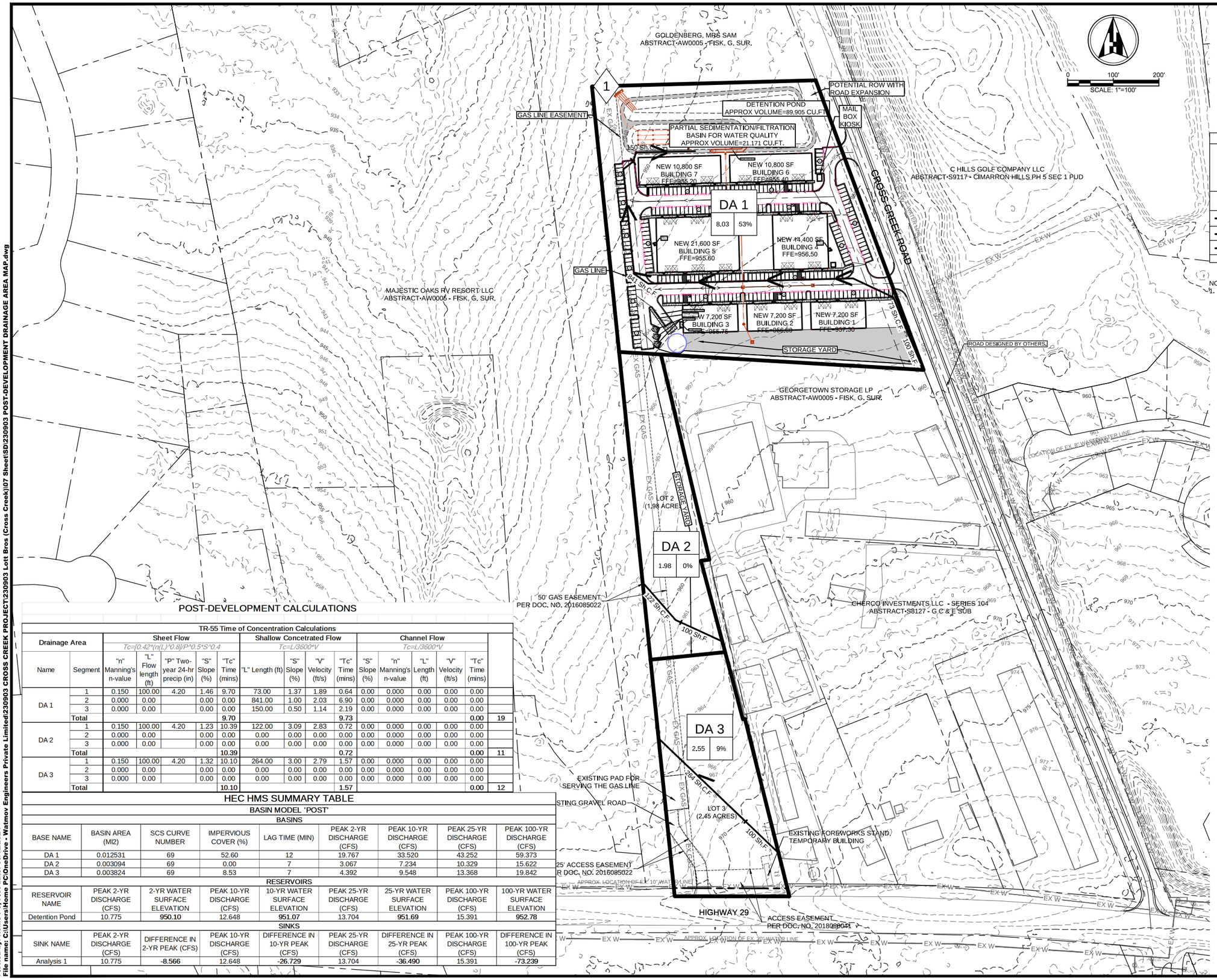

POST-DEVELOPMENT CALCULATIONS

TR-55 Time of Concentration Calculations

Drainage Area		Sheet Flow					Shallow Concetrated Flow				Channel Flow					
		Tc=[0.42*(n(L)^0.8)/P^0.5*S^0.4					Tc=L/3600*V				Tc=L/3600*V					
Name	Segment	"n" Manning's n-value	"L" Flow length (ft)	"P" Two-year 24-hr precip (in)	"S" Slope (%)	"Tc" Time (mins)	"L" Length (ft)	"S" Slope (%)	"V" Velocity (ft/s)	"Tc" Time (mins)	"S" Slope (%)	"n" Manning's n-value	"L" Length (ft)	"V" Velocity (ft/s)	"Tc" Time (mins)	
DA 1	1	0.150	100.00	4.20	1.46	9.70	73.00	1.37	1.89	0.64	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	841.00	1.00	2.03	6.90	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	150.00	0.50	1.14	2.19	0.00	0.000	0.00	0.00	0.00	
	Total					**9.70**				**9.73**					**0.00**	**19**
DA 2	1	0.150	100.00	4.20	1.23	10.39	122.00	3.09	2.83	0.72	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					**10.39**				**0.72**					**0.00**	**11**
DA 3	1	0.150	100.00	4.20	1.32	10.10	264.00	3.00	2.79	1.57	0.00	0.000	0.00	0.00	0.00	
	2	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	3	0.000	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	
	Total					**10.10**				**1.57**					**0.00**	**12**

HEC HMS SUMMARY TABLE

BASIN MODEL 'POST'

BASINS

BASE NAME	BASIN AREA (MI2)	SCS CURVE NUMBER	IMPERVIOUS COVER (%)	LAG TIME (MIN)	PEAK 2-YR DISCHARGE (CFS)	PEAK 10-YR DISCHARGE (CFS)	PEAK 25-YR DISCHARGE (CFS)	PEAK 100-YR DISCHARGE (CFS)
DA 1	0.012531	69	52.60	12	19.767	33.520	43.252	59.373
DA 2	0.003094	69	0.00	7	3.067	7.234	10.329	15.622
DA 3	0.003824	69	8.53	7	4.392	9.548	13.368	19.842

RESERVOIRS

RESERVOIR NAME	PEAK 2-YR DISCHARGE (CFS)	2-YR WATER SURFACE ELEVATION	PEAK 10-YR DISCHARGE (CFS)	10-YR WATER SURFACE ELEVATION	PEAK 25-YR DISCHARGE (CFS)	25-YR WATER SURFACE ELEVATION	PEAK 100-YR DISCHARGE (CFS)	100-YR WATER SURFACE ELEVATION
Detention Pond	10.775	**950.10**	12.648	**951.07**	13.704	**951.69**	15.391	**952.78**

SINKS

SINK NAME	PEAK 2-YR DISCHARGE (CFS)	DIFFERENCE IN 2-YR PEAK (CFS)	PEAK 10-YR DISCHARGE (CFS)	DIFFERENCE IN 10-YR PEAK (CFS)	PEAK 25-YR DISCHARGE (CFS)	DIFFERENCE IN 25-YR PEAK (CFS)	PEAK 100-YR DISCHARGE (CFS)	DIFFERENCE IN 100-YR PEAK (CFS)
Analysis 1	10.775	**-8.566**	12.648	**-26.729**	13.704	**-36.490**	15.391	**-73.239**

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LEGEND

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X	ANALYSIS POINT
100 LF Sh.F.	SHEET FLOW SEGMENT OF TIME OF CONCENTRATION (Tc) PATH
500 LF Sh.C.F.	SHALLOW CONCENTRATED FLOW SEGMENT OF Tc PATH
500 LF Ch.F.	CHANNELIZED FLOW SEGMENT OF Tc PATH
	FLOW ARROW

NOTES:
1. THE FLOW OF THE SITE HAS NOT BEEN INSCREASED FROM THE PRE-DEVELOPED CONDITION.

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REVISION

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

POST-DEVELOPMENT DRAINAGE AREA MAP

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C10.00

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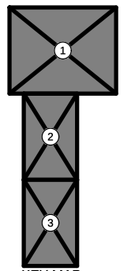
LEGEND

EX W	EXISTING WATER LINE
W	WATER LINE
W	WATER FIRE LINE
EX WW	EXISTING WASTEWATER LINE
	WASTEWATER LINE
EX SD	EXISTING STORMWATER LINE
	STORMWATER LINE
	BUILDING SETBACK
	SUBJECT PROPERTY
	EXISTING WASTEWATER MANHOLE
	WASTEWATER MANHOLE
529	EXISTING CONTOUR
	BENCHMARK
	WATER VALVE
	IRON ROD FOUND (IRF)
	FIRE HYDRANT
	FDC
	ELECTRIC POWER POLE
	UTILITY PIPE CAP
	UTILITY PIPE CONTINUATION
	BACKFLOW PREVENTER
	REDUCER
	PRV
	ONE-WAY VALVE



KEY MAP
(NOT TO SCALE)

NOTES:
1. AUTOMATIC IRRIGATION IS NOT ALLOWED ON SITE

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No.	REVISION
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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
OVERALL UTILITY SCHEMATIC PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C11.00

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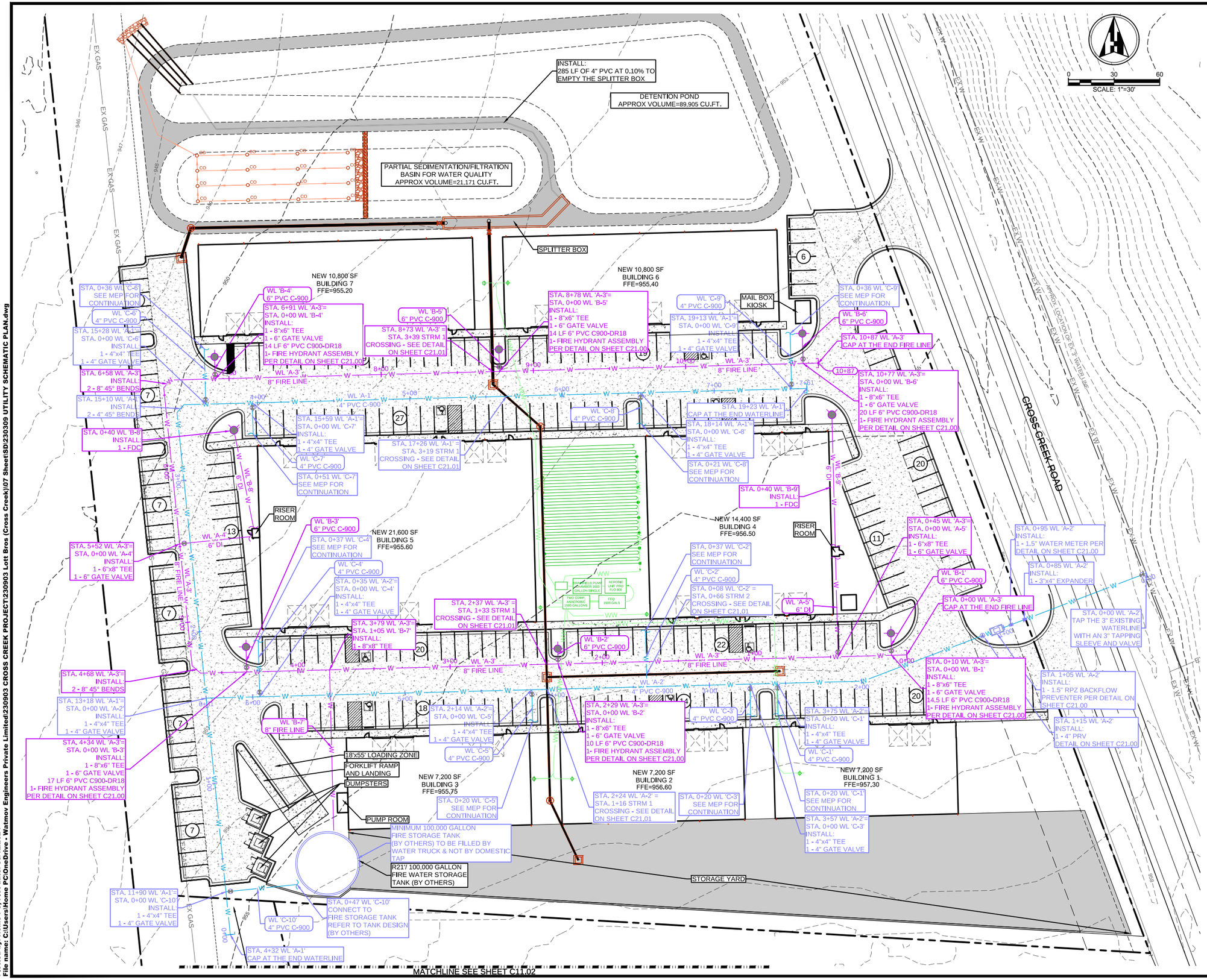
COUNTY PERMIT NUMBER: 2024-734-COC



SCALE: 1"=30'

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LEGEND

EX W	EXISTING WATER LINE
W	WATER LINE
W	WATER FIRE LINE
EX WW	EXISTING WASTEWATER LINE
	WASTEWATER LINE
EX SD	EXISTING STORMWATER LINE
	STORMWATER LINE
	BUILDING SETBACK
	SUBJECT PROPERTY
	EXISTING WASTEWATER MANHOLE
	WASTEWATER MANHOLE
529	EXISTING CONTOUR
	BENCHMARK
	WATER VALVE
	IRON ROD FOUND (IRF)
	FIRE HYDRANT
	FDC
	ELECTRIC POWER POLE
	UTILITY PIPE CAP
	UTILITY PIPE CONTINUATION
	BACKFLOW PREVENTER
	REDUCER
	PRV
	ONE-WAY VALVE

KEY MAP
(NOT TO SCALE)

NOTES:
1. THIS SITE IS WITHIN THE 1178 PRESSURE ZONE. STATIC PRESSURE IS EXPECTED TO BE 96.45 PSI.
2. SITE IS SERVED BY FIRE TANK, SIZED USING NFPA - 1142.
3. AUTOMATIC IRRIGATION IS NOT ALLOWED ON SITE.

REVISION	
No.	
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

UTILITY SCHEMATIC PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C11.01

COUNTY PERMIT NUMBER: 2024-734-COC

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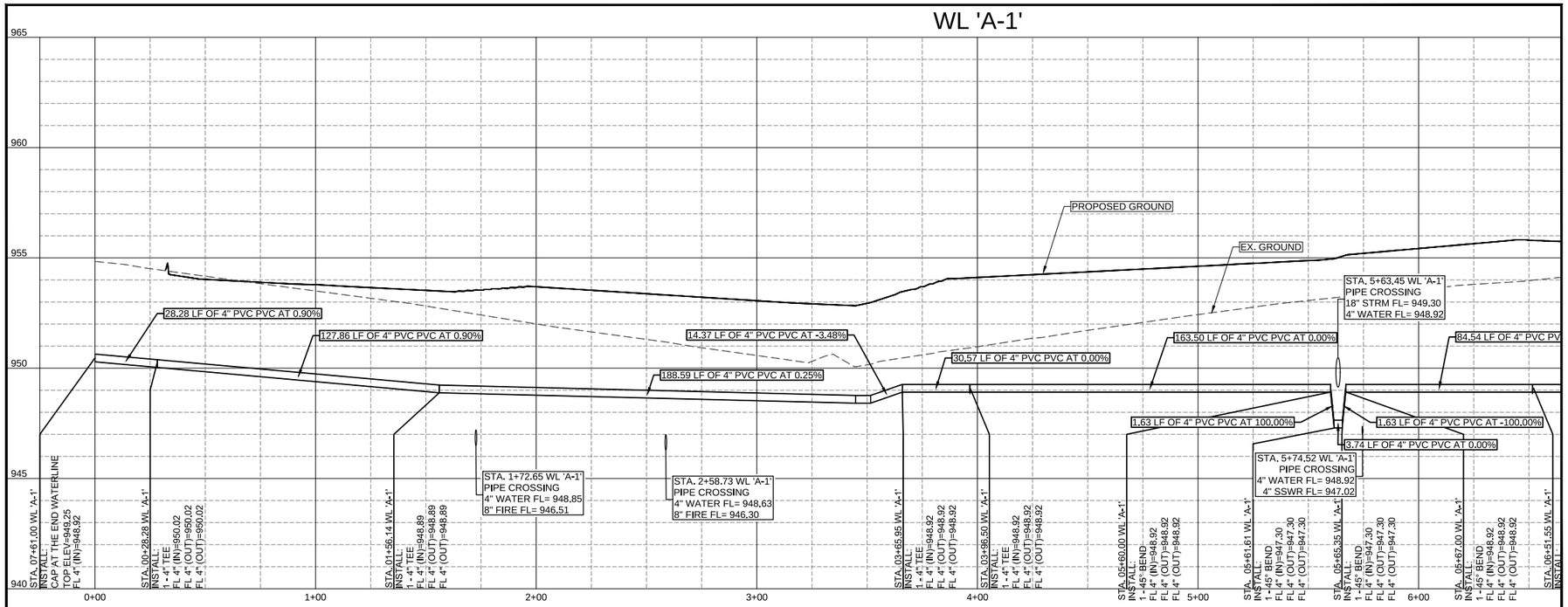
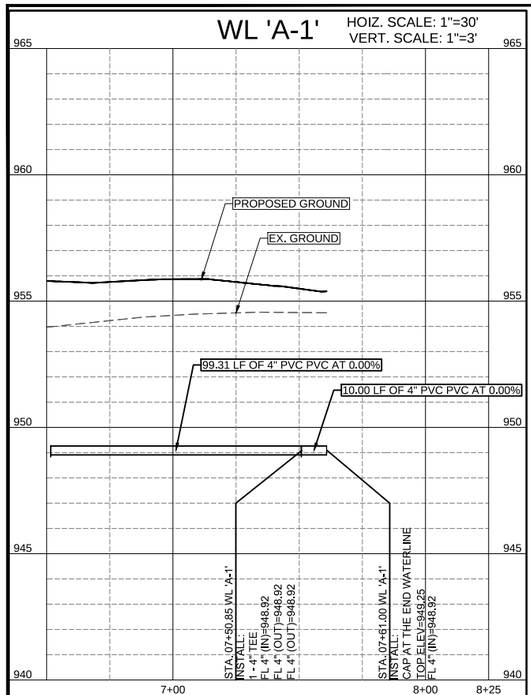


01 WATER PROFILE A-1
SCALE: 1" = 30'



02 WATER PROFILE A-1
SCALE: 1" = 30'

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No.	REVISION
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
WATER PROFILES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/29/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C12.01

CITY PERMIT NUMBER 2024-734-COC

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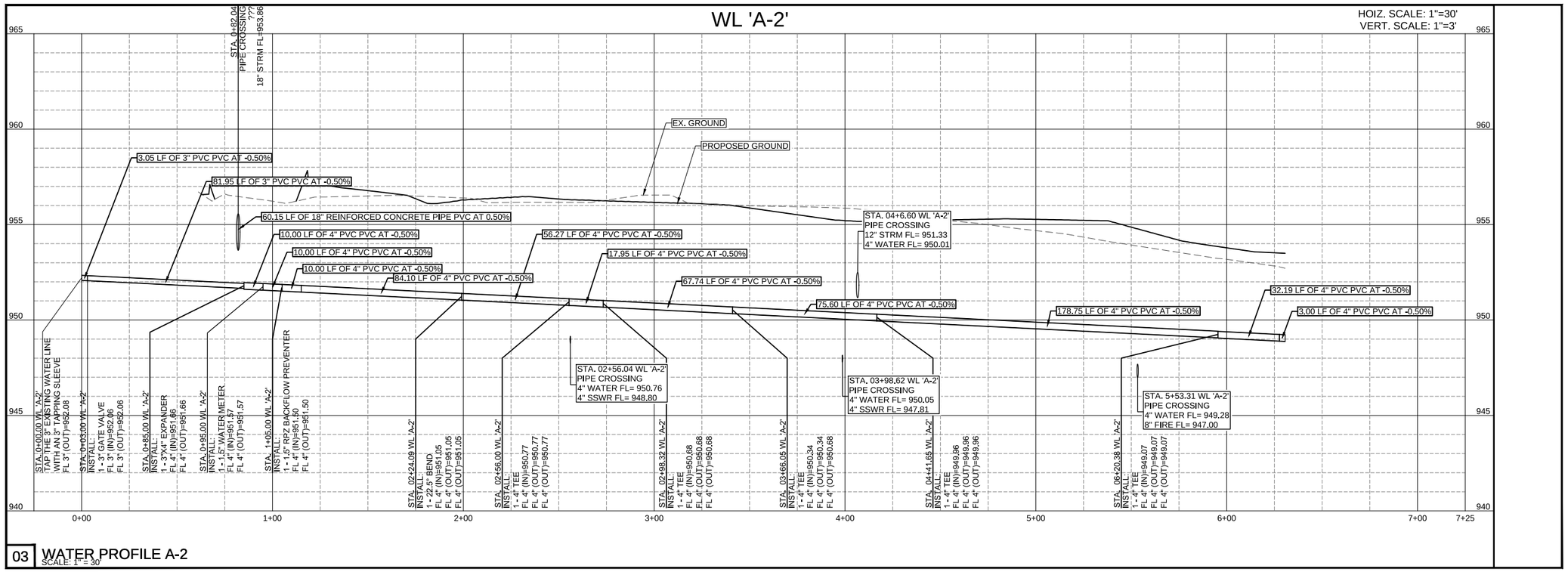

03 WATER PROFILE A-2
SCALE: 1" = 30'

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No.	REVISION
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GEORGETOWN, TEXAS 78628

WATER PROFILES

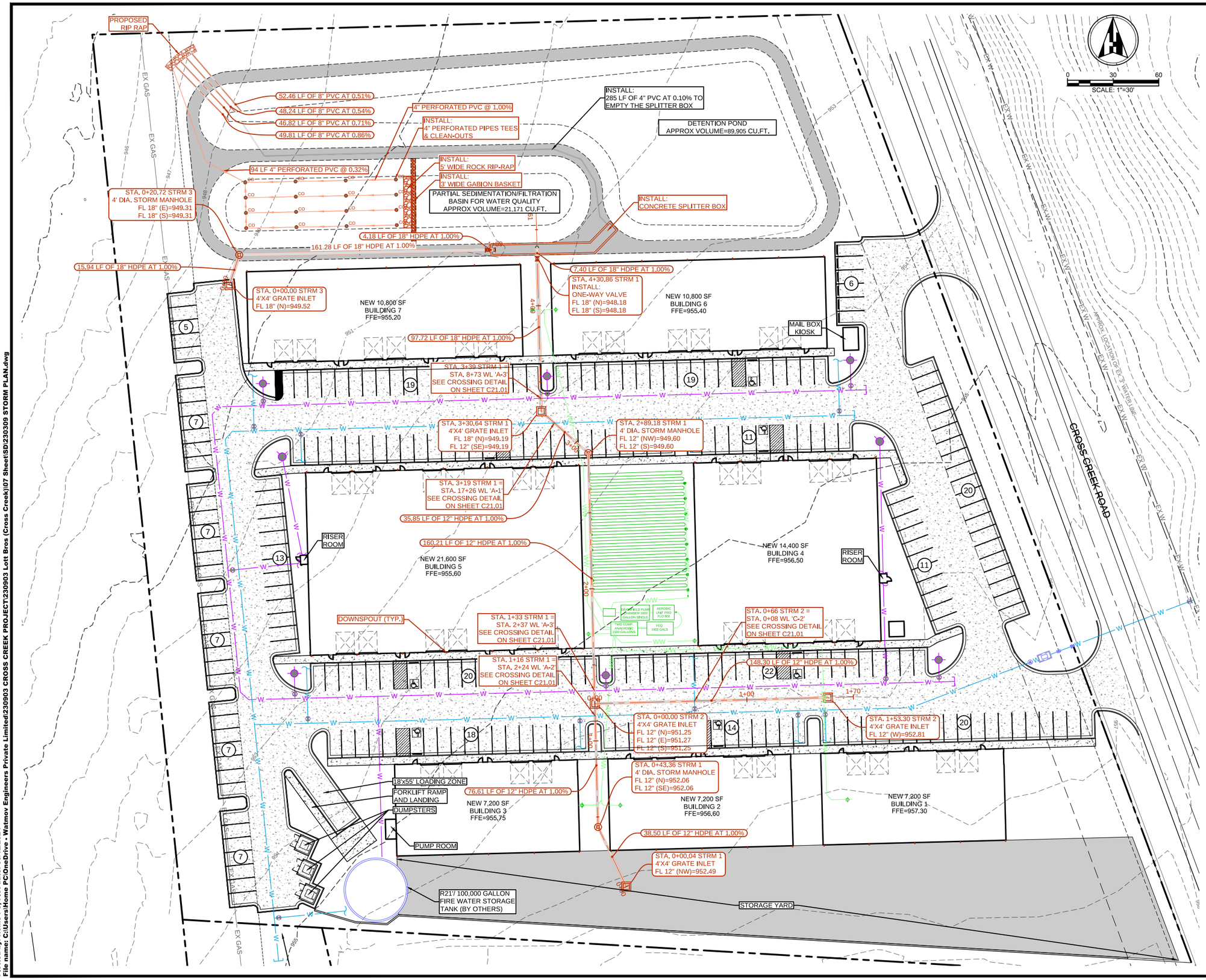
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C12.02

Plotted by: Home PC, Plot date: 29/11/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 WATER PLAN AND PROFILES.dwg

CITY PERMIT NUMBER 2024-734-COC



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LEGEND

EX W	EXISTING WATER LINE
W	WATER LINE
W	WATER FIRE LINE
EX WW	EXISTING WASTEWATER LINE
	WASTEWATER LINE
EX SD	EXISTING STORMWATER LINE
	STORMWATER LINE
	BUILDING SETBACK
	SUBJECT PROPERTY
	EXISTING WASTEWATER MANHOLE
	WASTEWATER MANHOLE
529	EXISTING CONTOUR
	BENCHMARK
	WATER VALVE
	IRON ROD FOUND (IRF)
	FIRE HYDRANT
	FDC
	ELECTRIC POWER POLE
	UTILITY PIPE CAP
	UTILITY PIPE CONTINUATION
	BACKFLOW PREVENTER
	ONE-WAY VALVE

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REVISION

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STORM SEWER PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C13.01

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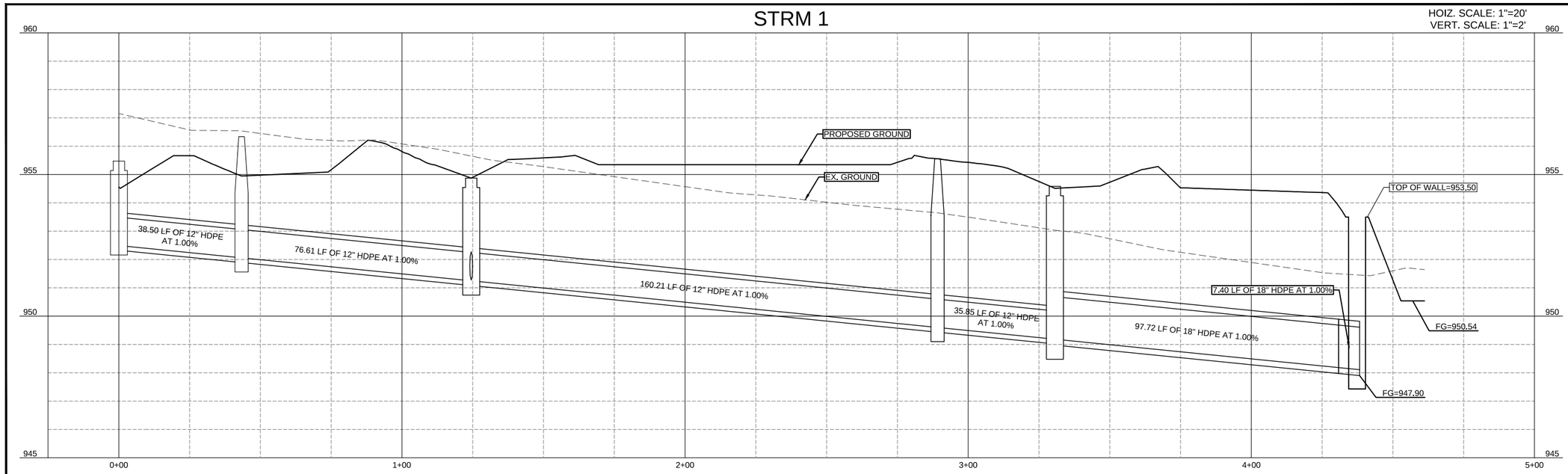
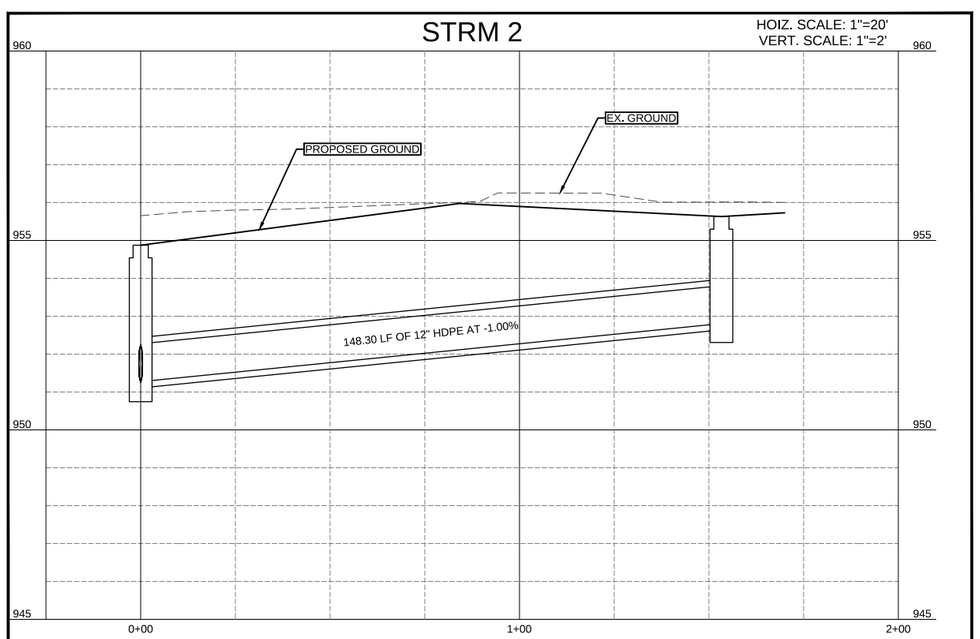
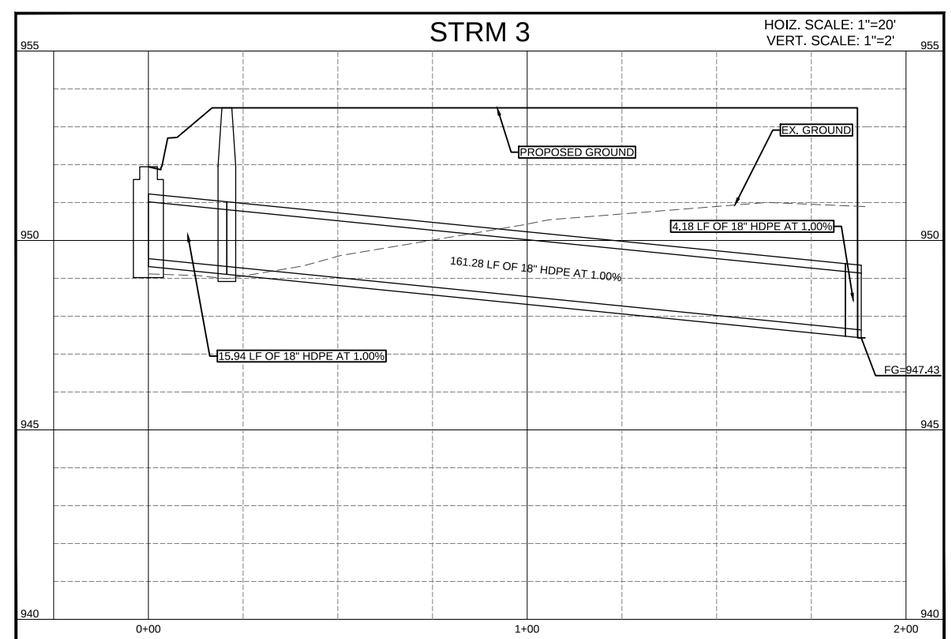
COUNTY PERMIT NUMBER: 2024-734-COC



01 STORM PROFILE A
SCALE: 1" = 20'



02 STORM PROFILE B
SCALE: 1" = 20'



03 STORM PROFILE C
SCALE: 1" = 20'

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
STORM SEWER PROFILES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C13.02

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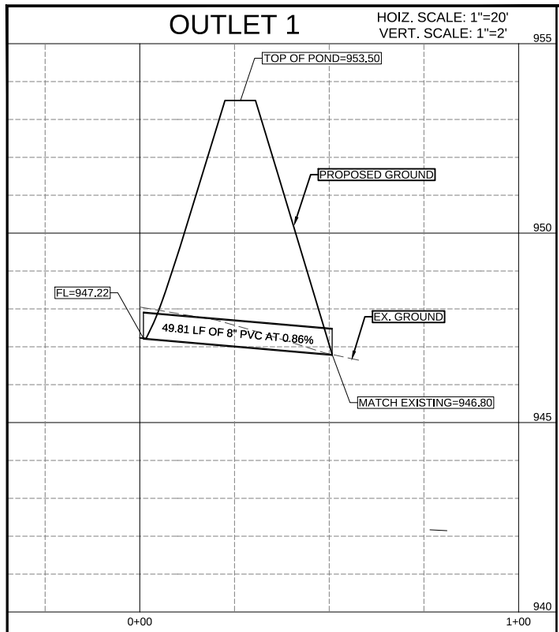
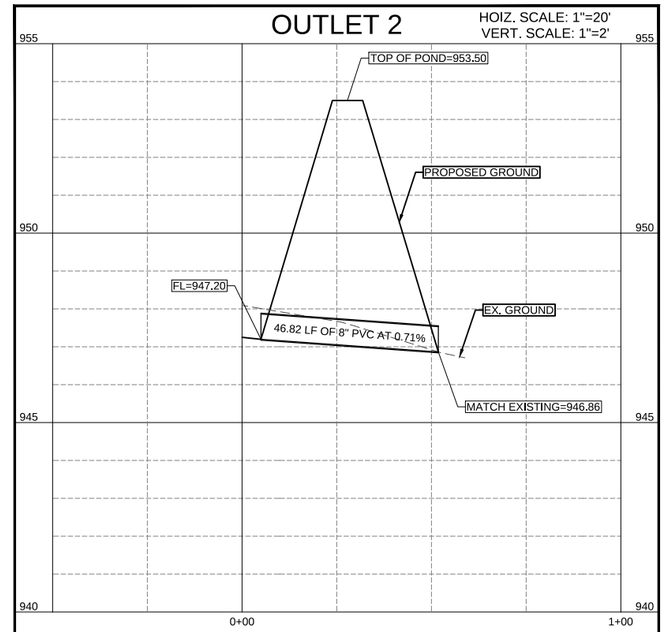
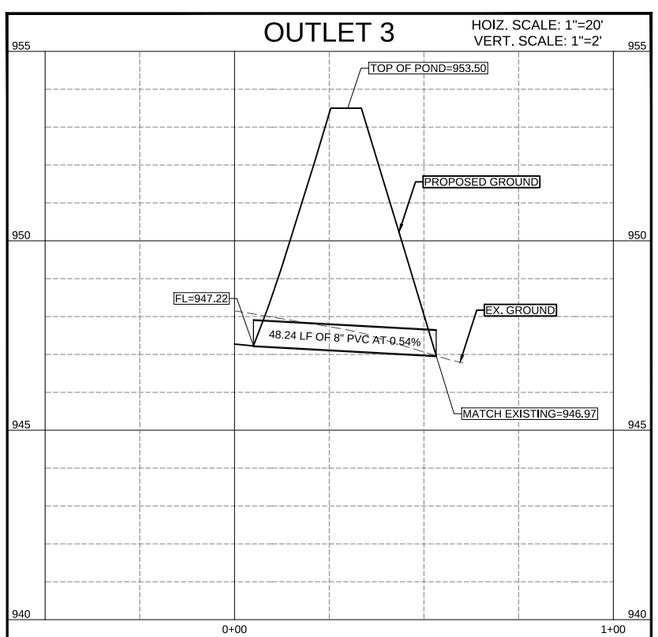
COUNTY PERMIT NUMBER: 2024-734-COC



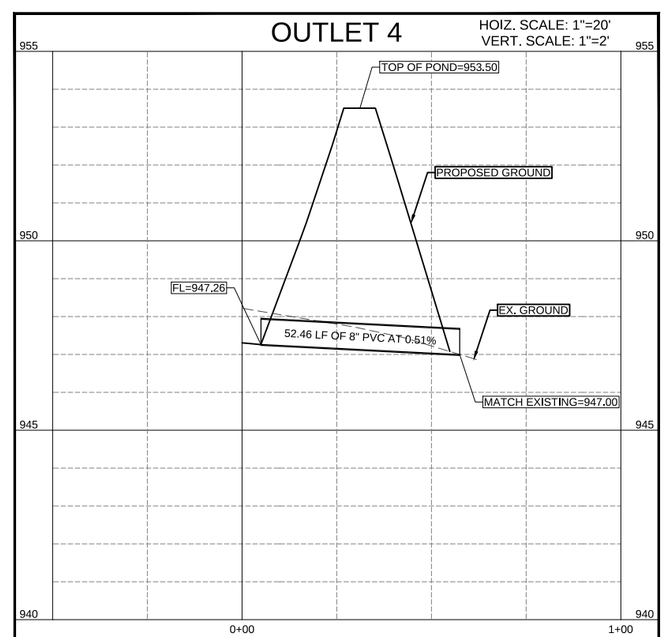
04 STORM OUTLET PROFILE 1
SCALE: 1" = 20'



05 STORM OUTLET PROFILE 2
SCALE: 1" = 20'



06 STORM OUTLET PROFILE 3
SCALE: 1" = 20'



07 STORM OUTLET PROFILE 4
SCALE: 1" = 20'

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
STORM SEWER OUTLET PROFILES

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/29/2024
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C13.03

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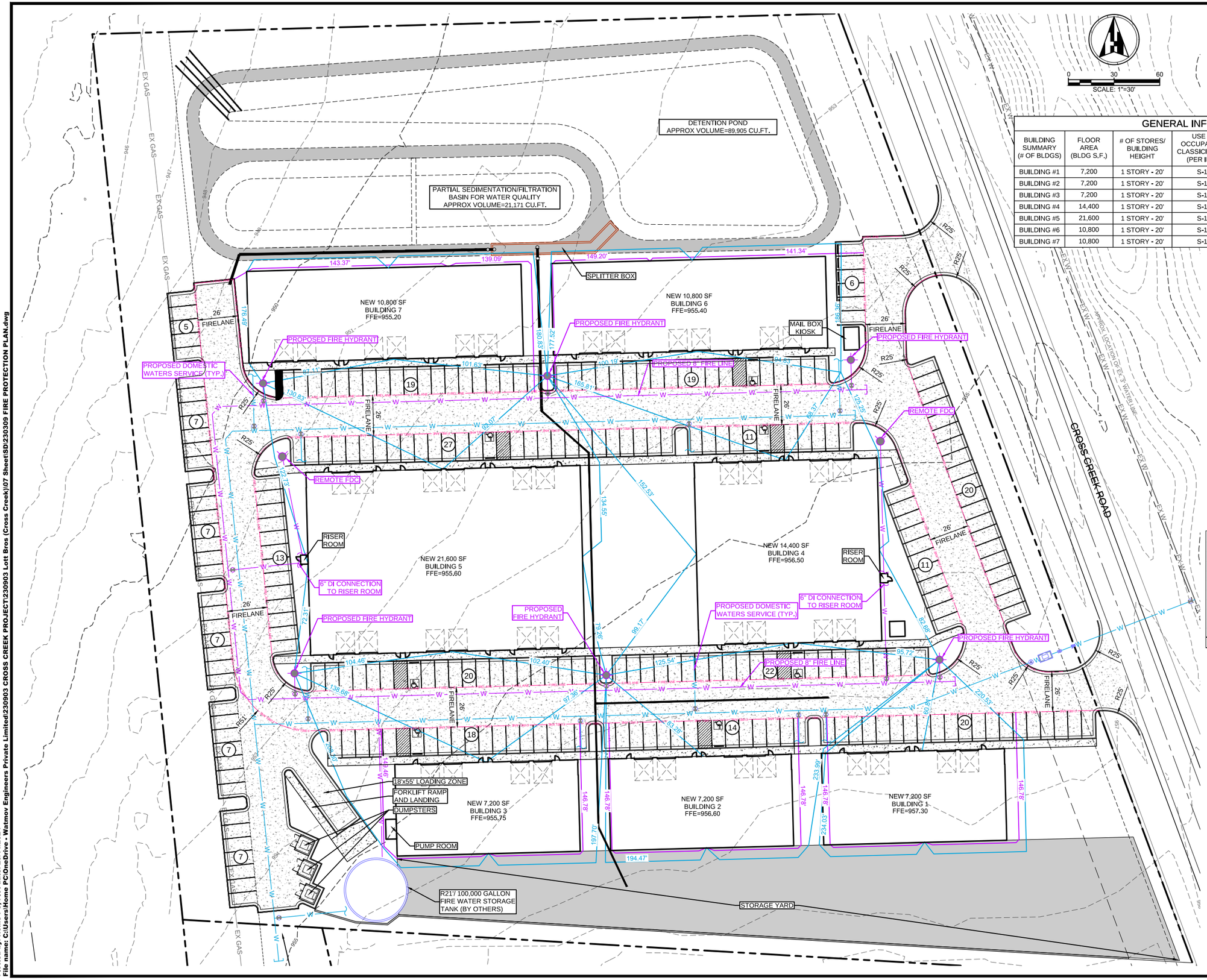

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GENERAL INFORMATION

BUILDING SUMMARY (# OF BLDGS)	FLOOR AREA (BLDG S.F.)	# OF STORES/ BUILDING HEIGHT	USE & OCCUPANCY CLASSICIATION (PER IBC)	TYPE OF CONSTRUCTION (PER IBC)	IF APPLICABLE TYPE OF AUTOMATIC FIRE SPRINKLER SYSTEM (NFPA 13R OR NFPA 13)
BUILDING #1	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #2	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #3	7,200	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #4	14,400	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #5	21,600	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #6	10,800	1 STORY - 20'	S-1	II-B	NFPA 13
BUILDING #7	10,800	1 STORY - 20'	S-1	II-B	NFPA 13

NOTES:

1. NO VERTICAL CONSTRUCTION IS TO TAKE PLACE PRIOR TO THE FIRE HYDRANTS BEING OPERATIONAL AND APPROVED BY THE FIRE CODE OFFICIAL.
2. ALL FIRE LINES ARE TO BE HYDROSTATIC TESTED TO A MINIMUM OF 200 PSI FOR A DURATION OF 2 HRS. THIS IS TO BE VERIFIED BY A FIRE CODE OFFICIAL.
3. ANY BEND IN THE FIRE LINE SHALL BE SUPPORTED BY CONCRETE THRUST BLOCKING TO BE VERIFIED BY THE FIRE CODE OFFICIAL PRIOR TO COVER UP.
4. FDC'S SHALL BE LABELED WITH A SIGN. THIS SIGN SHALL HAVE A MINIMUM OF 6" LETTERS "FDC" AND A MINIMUM OF 3" LETTERS "BLDG. NO. XX."
5. FIRE LANE IS TO BE CONSTRUCTED OF CONCRETE OR ASPHALT ONLY, AND MUST WITHSTAND AN IMPOSED LOAD OF 75,000 POUNDS.
6. THERE SHALL BE A MINIMUM OVERHEAD CLEARANCE OF NO LESS THAN 13'-6" OVER THE FIRE LANE IN ALL AREAS.
7. THE PROPOSED MINIMUM CAPACITY FOR THE FIRE TANK IS SET AT 100,000 GALLONS, WHICH EXCEEDS THE CALCULATED MINIMUM REQUIREMENT OF 81,000 GALLONS. THIS INCREASED CAPACITY IS INTENTIONALLY SPECIFIED TO PROVIDE A SAFETY MARGIN AND OPERATIONAL FLEXIBILITY, CONSIDERING THE PRESENCE OF MULTIPLE BUILDINGS ON THE SITE.

Minimum Water Supply Calculations*

Exposure Hazards?	No	
Occupancy hazard	Class 4	
Type of Construction	Type II	
Structure Dimensions		
Structure Length	180	feet
Structure Width	120	feet
Structure Height	20	feet
Structure Volume	4,32,000	cu.ft.
* - NFPA 1142		
Min. Water Supply	**81,000**	**gallons**

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SITE DEVELOPMENT PLANS TO SERVE

CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

FIRE PROTECTION PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C14.01

COUNTY PERMIT NUMBER: 2024-734-COC

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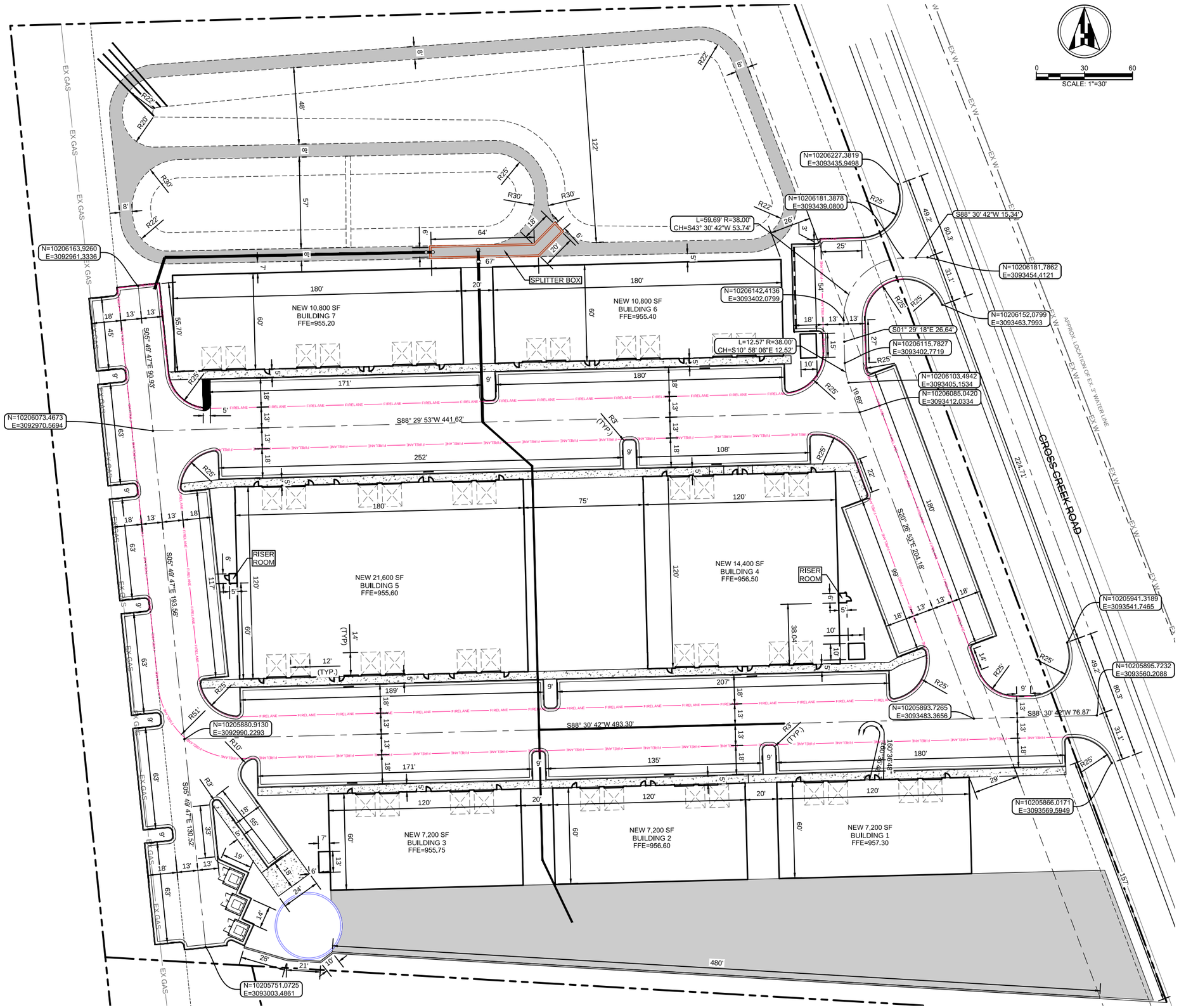

0 30 60
SCALE: 1"=30'

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LEGEND

	SUBJECT PROPERTY
	ADJOINING PROPERTY
	PROPOSED WASTEWATER EASEMENT
	EXISTING WATER VALVE
	EXISTING WASTEWATER MANHOLE
	PROPOSED WASTEWATER MANHOLE
	PROPOSED WASTEWATER LINE
EX SD	EXISTING STORM SEWER
EX OE	EXISTING OVERHEAD ELECTRIC
	EXISTING POWER POLE
	EXISTING WIRE FENCE
	EXISTING CHAIN LINK FENCE
	EXISTING METAL BEAM GUARD RAIL
	PROPOSED WOOD FENCE
529	EXISTING CONTOUR
	IRON ROD FOUND
	BENCHMARK
	"PARCEL 5 ROW"
	"PARCEL 6 ROW"
FIRELANE	FIRE LANE
5' FRONT SETBACK	SETBACK
	PEDESTRIAN ACCESS ROUTE

NOTES:
1. ALL DIMENSIONS ARE TO THE BACK OF CURB, UNLESS OTHERWISE NOTED.
2. ALL CURB RETURN RADII ARE 2'-6" (AT BACK OF CURB), UNLESS OTHERWISE NOTED.
3. REFER TO SHEET C16.01 FOR PAVING AND STRIPING DIMENSIONS.

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
DIMENSION CONTROL PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C15.01

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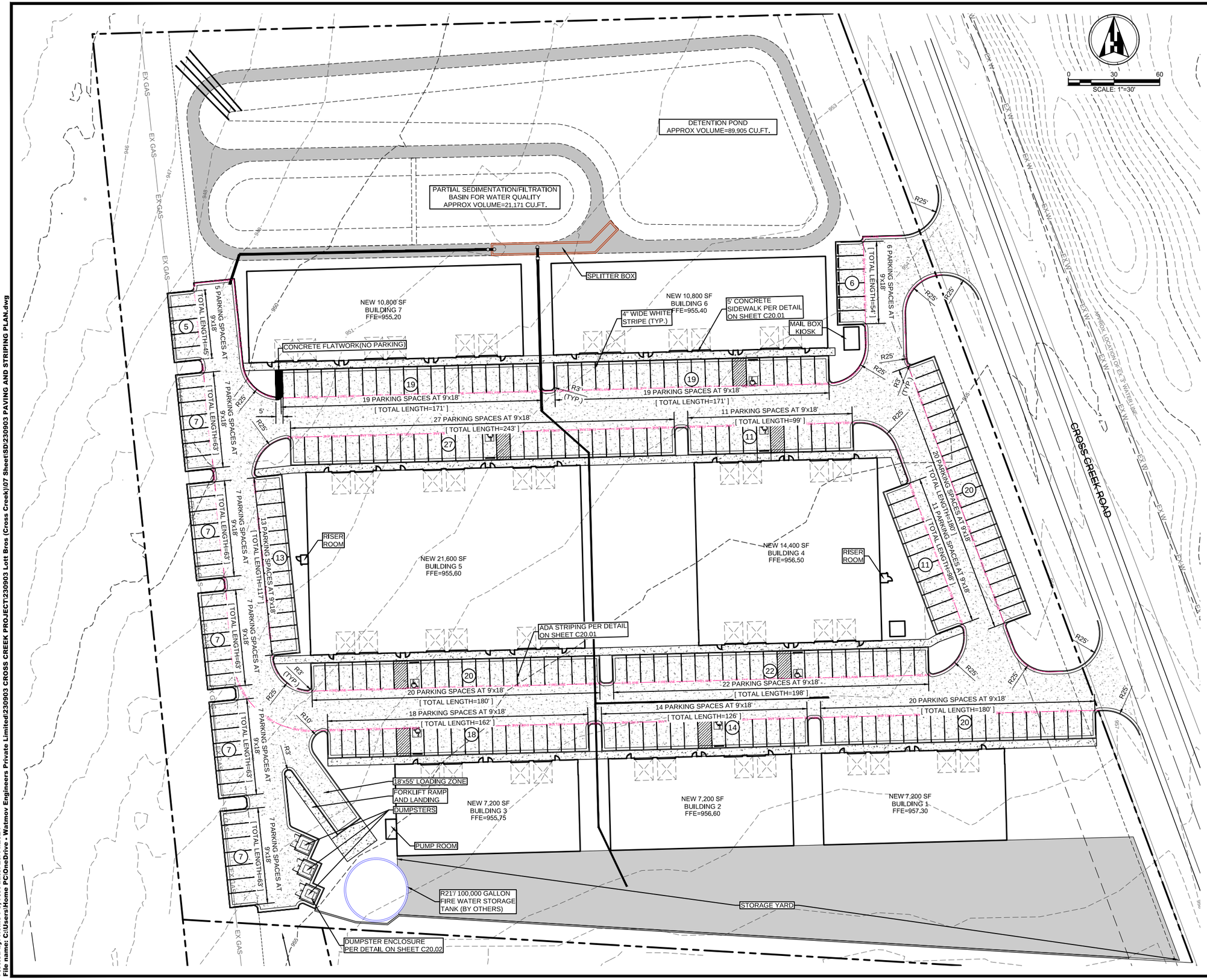

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LEGEND	
	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	CONCRETE SIDEWALK
FIRE LANE	FIRE LANE STRIPE
	SUBJECT PROPERTY

NOTES:
1. REFER TO SHEETS C20.01 FOR DETAILS.
2. ALL DIMENSIONS ARE TO THE FACE OF CURB, OR CENTER OF STRIPING (WHERE APPLICABLE), UNLESS OTHERWISE NOTED.
3. FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES.
4. REFER TO SHEET C15.01 FOR DIMENSION CONTROL PLAN.

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
PAVING AND STRIPING PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/29/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C16.01

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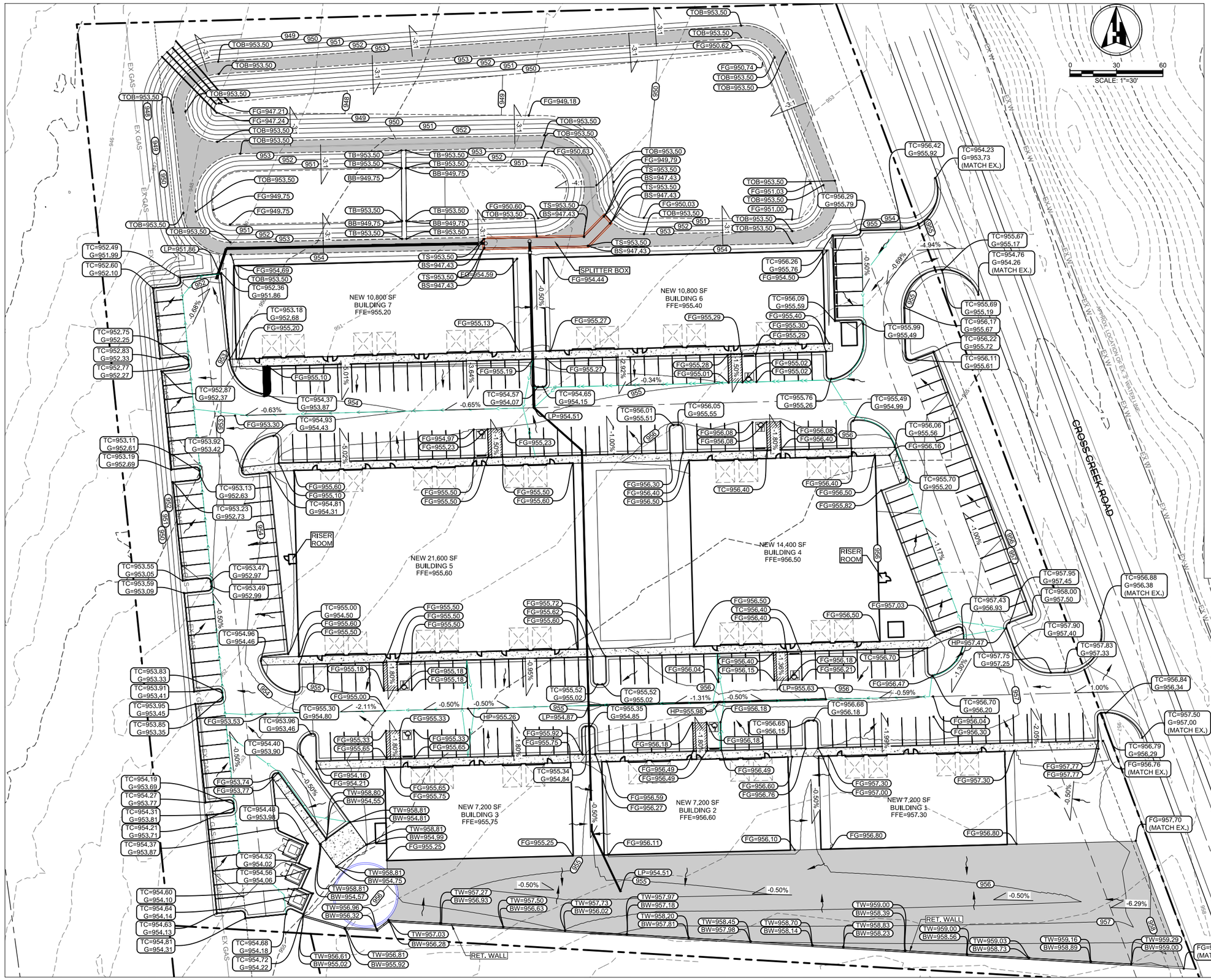

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LEGEND	
ADA	ACCESSIBLE ROUTE OF TRAVEL
TC	TOP OF CURB
G	GUTTER
TW	TOP OF WALL
BW	BOTTOM OF WALL
FG	FINISHED GRADE
FL	FLOWLINE
TP	TOP OF PAVEMENT
TI	TOP OF INLET
EG	EXISTING GRADE
HP	HIGH POINT
LP	LOW POINT
	FLOW ARROW
	FLOW LINE

NOTES:
1. SLOPES OF ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
2. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30". RAMPS SHALL BE PROVIDED WITH HANDRAILS AND GROUND SURFACE EDGE PROTECTION EACH SIDE AND ENTIRE LENGTH OF RAMP PER TDLR ADA REQUIREMENTS.
3. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50.
4. GROUND SURFACE ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM AND SLIP RESISTANT.
5. THE OVERALL MAXIMUM GRADE OF THE FIRE LANE SHALL NOT EXCEED 10%.

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

GRADING PLAN

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
12/03/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C17.01

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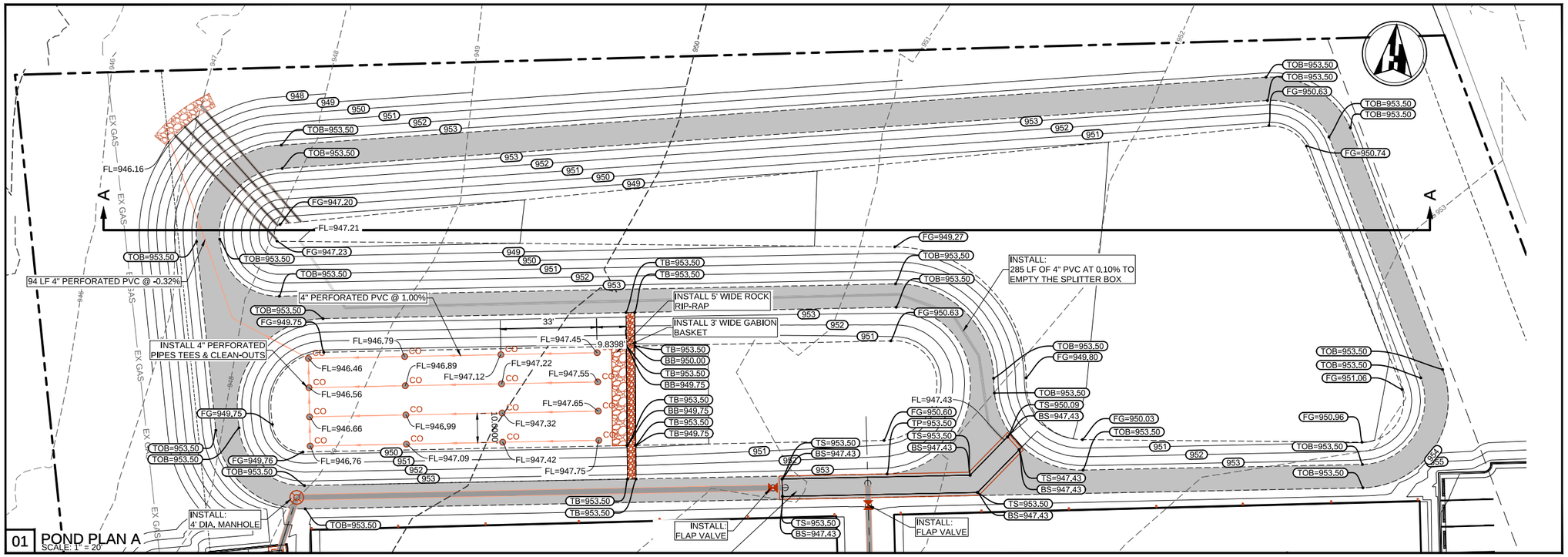
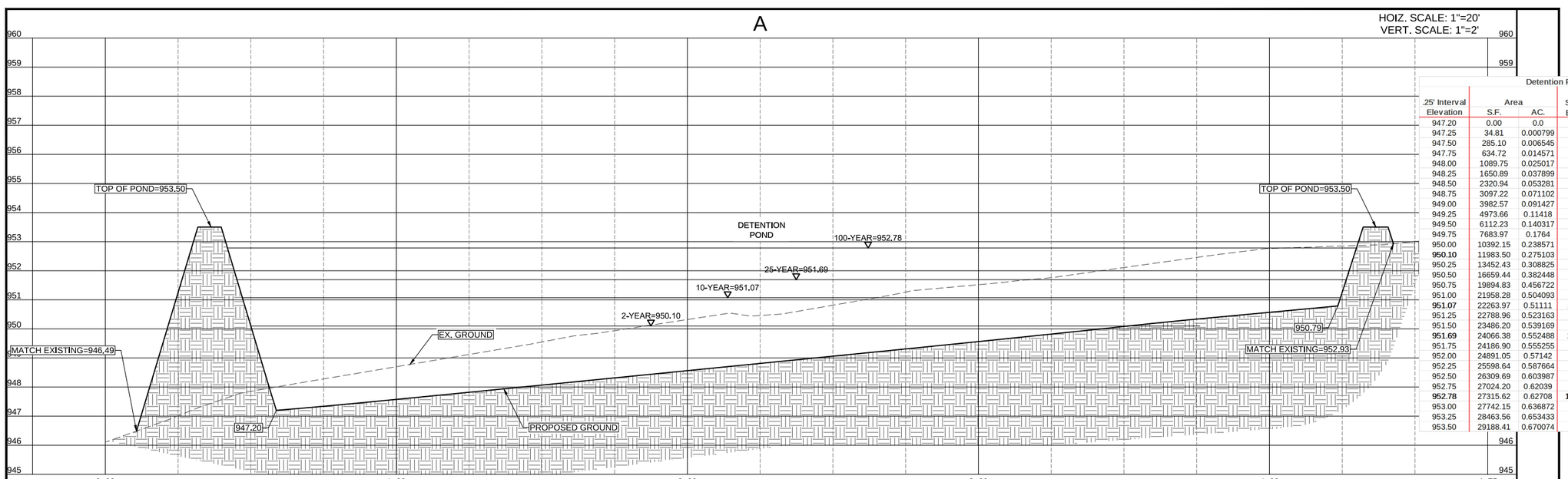


01 POND PLAN A
SCALE: 1" = 20'



02 POND SECTION A
SCALE: 1" = 20'

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	2-yr	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	10-yr	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	25-yr	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	100-yr	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

WOMEN OWNED
CERTIFIED BY | WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

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512.350.6228
PELS FIRM #F-22208
www.hendersonpe.com
Civil Engineering
WBE210166 | HUB 1853873845300

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1	
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5	

SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 1

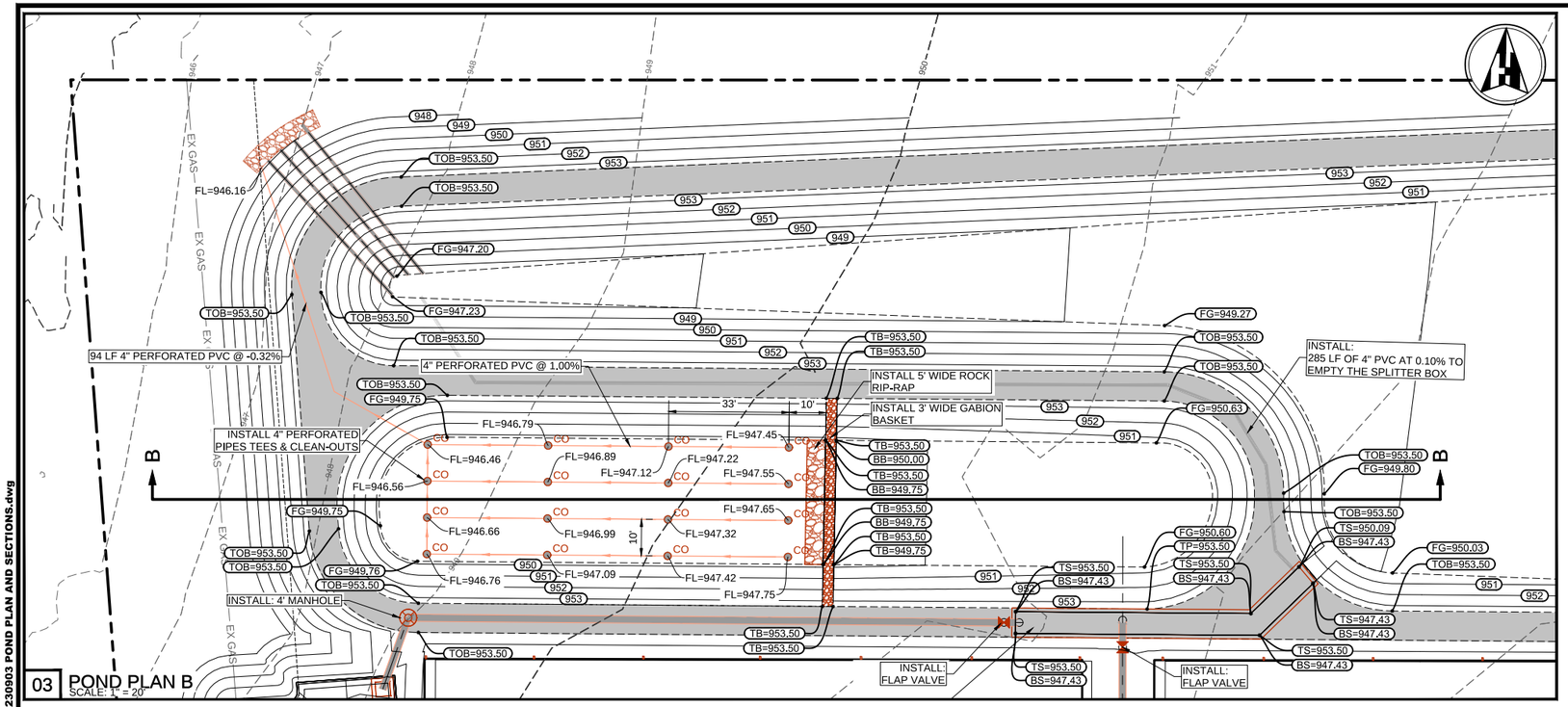
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

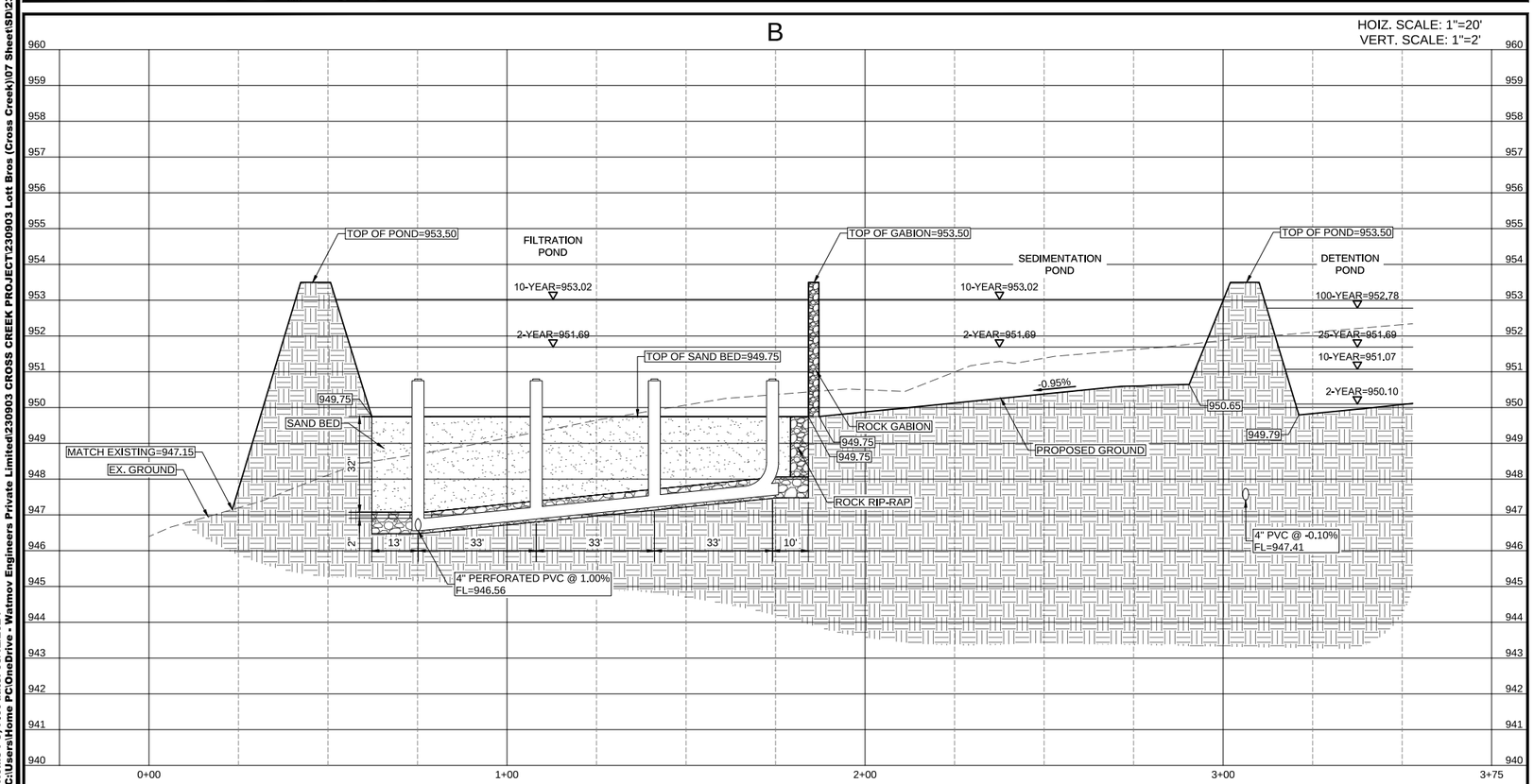
C18.01

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg



03 POND PLAN B
SCALE: 1" = 20'



04 POND SECTION B
SCALE: 1" = 20'

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WBE210166 | HUB 1853873845300

ABBREVIATIONS LEGEND

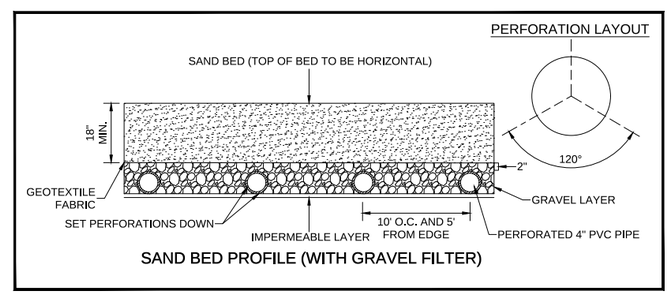
TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Sedimentation Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	0.00	0.0		0	-
950.00	870.65	0.019987		108.83125	108.8313
950.25	1782.41	0.040919		331.6325	440.4638
950.50	2738.46	0.062866		565.10875	1005.5725
950.75	3747.41	0.086029		810.73375	1816.3063
951.00	3956.18	0.090821		962.94875	2779.2550
951.25	4168.21	0.095689		1015.54875	3794.8038
951.50	4383.51	0.100632		1068.965	4863.7688
951.69	4565.34	0.104806	**2-yr**	836.717034	5700.4858
951.75	4602.05	0.105649		288.772636	5989.2584
952.00	4823.85	0.11074		1178.2375	7167.4959
952.25	5048.87	0.115906		1234.09	8401.5859
952.50	5277.13	0.121146		1290.75	9692.3359
952.75	5508.63	0.126461		1348.22	11040.5559
953.00	5743.38	0.13185		1406.50125	12447.0572
953.02	5774.80	0.132571	**10-yr**	103.663584	12550.7208
953.25	5981.38	0.137314		1363.71642	13914.4372
953.50	6222.65	0.142852		1525.50375	15439.9409

Filtration Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	4049.15	0.1		0	-
950.00	4253.66	0.097651		1037.85125	1037.85125
950.25	4459.99	0.102387		1089.20625	2127.0575
950.50	4668.13	0.107166		1141.015	3268.0725
950.75	4878.10	0.111986		1193.27875	4461.35125
951.00	5089.88	0.116848		1245.9975	5707.34875
951.50	5518.90	0.126697		2652.195	8359.54375
951.69	5699.65	0.130846	**2-yr**	1048.93461	9408.478362
951.75	5736.15	0.131684		360.227763	9768.706125
952.00	5955.22	0.136713		1461.42125	11230.12738
952.25	6176.11	0.141784		1516.41625	12746.54363
952.50	6398.84	0.146897		1571.86875	14318.41238
952.75	6623.40	0.152052		1627.78	15946.19238
953.00	6849.79	0.15725		1684.14875	17630.34113
953.02	6879.92	0.157941	**10-yr**	123.567381	17753.90851
953.25	7078.04	0.162489		1619.12324	19373.03175
953.50	7308.15	0.167772		1798.27375	21171.3055



SAND BED PROFILE (WITH GRAVEL FILTER)

No.	REVISION
1	
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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

POND PLAN AND SECTION 2

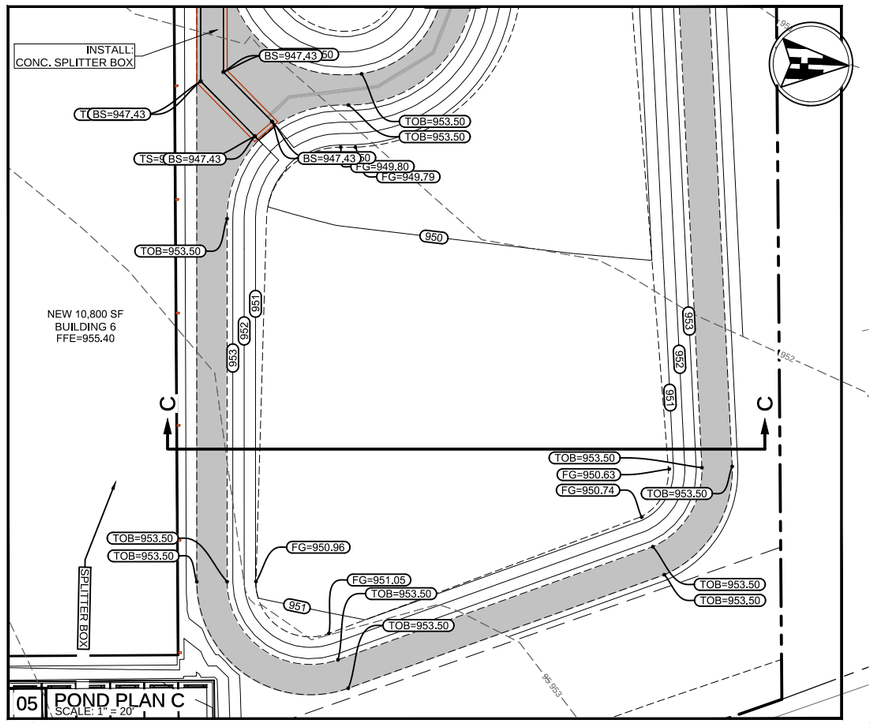
STATE OF TEXAS
JENNIFER L HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

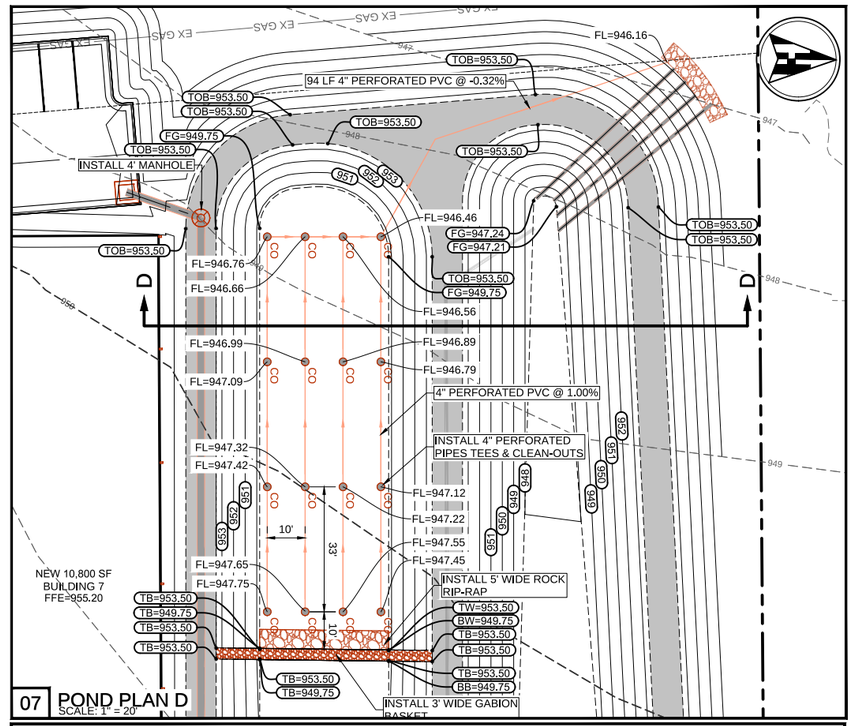
C18.02

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg

COUNTY PERMIT NUMBER: 2024-734-COC



05 POND PLAN C
SCALE: 1" = 20'



07 POND PLAN D
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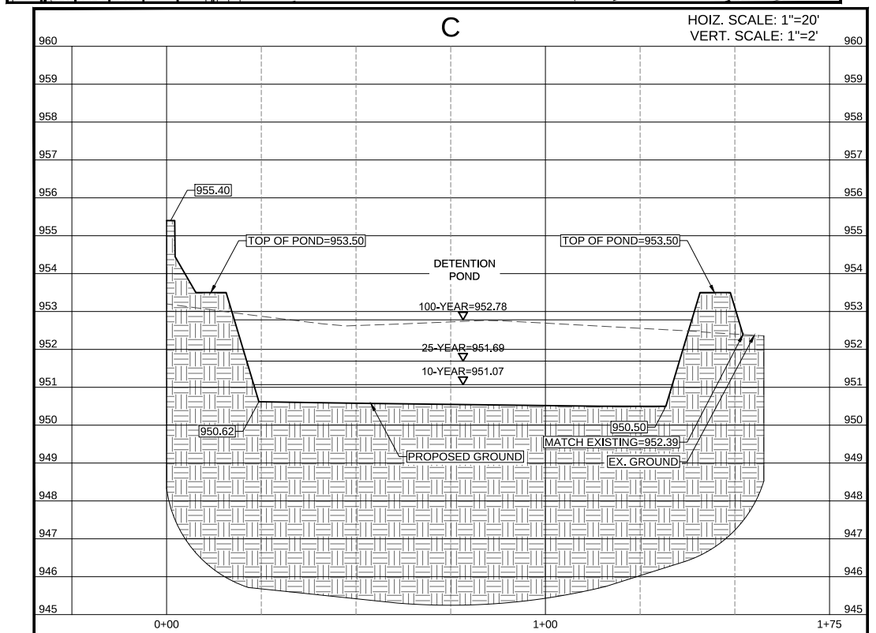

06 POND SECTION C
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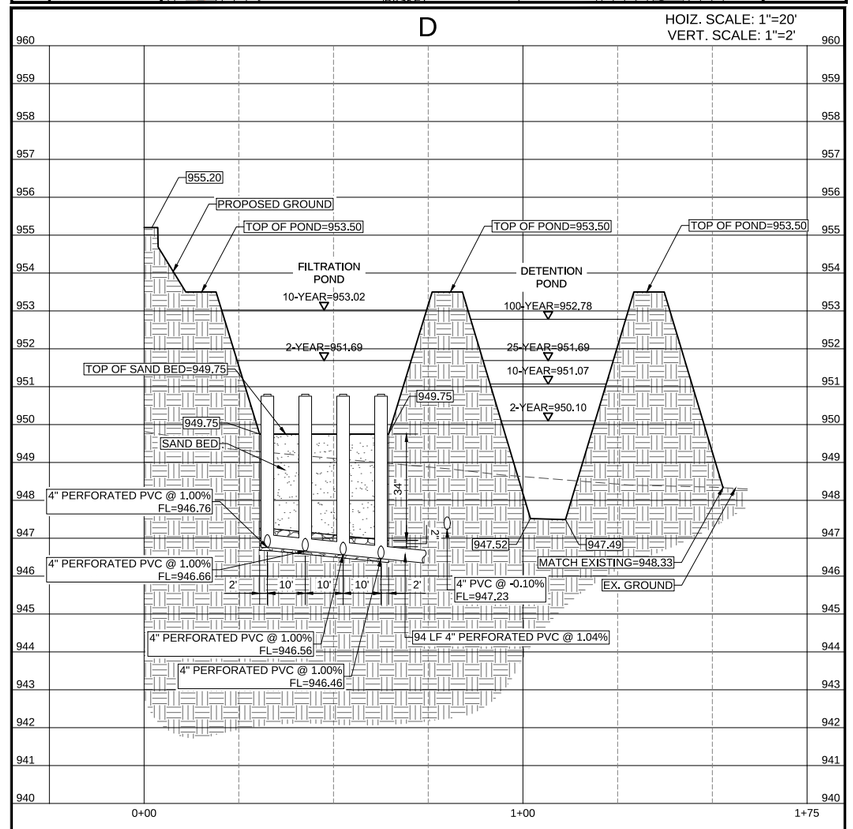

08 POND SECTION D
SCALE: 1" = 20'

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ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	**2-yr**	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	**10-yr**	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	**25-yr**	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	**100-yr**	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

Filtration Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	4049.15	0.1		0	-
950.00	4253.66	0.097651		1037.85125	1037.85125
950.25	4459.99	0.102387		1089.20625	2127.0575
950.50	4668.13	0.107166		1141.015	3268.0725
950.75	4878.10	0.111986		1193.27875	4461.35125
951.00	5089.88	0.116848		1245.9975	5707.34875
951.50	5518.90	0.126697		2652.195	8359.54375
951.69	5699.65	0.130846	**2-yr**	1048.93461	9408.478362
951.75	5736.15	0.131684		360.227763	9768.706125
952.00	5955.22	0.136713		1461.42125	11230.12738
952.25	6176.11	0.141784		1516.41625	12746.54363
952.50	6398.84	0.146897		1571.86875	14318.41238
952.75	6623.40	0.152052		1627.78	15946.19238
953.00	6849.79	0.15725		1684.14875	17630.34113
953.02	6879.92	0.157941	**10-yr**	123.567381	17753.90851
953.25	7078.04	0.162489		1619.12324	19373.03175
953.50	7308.15	0.167772		1798.27375	21171.3055

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 3

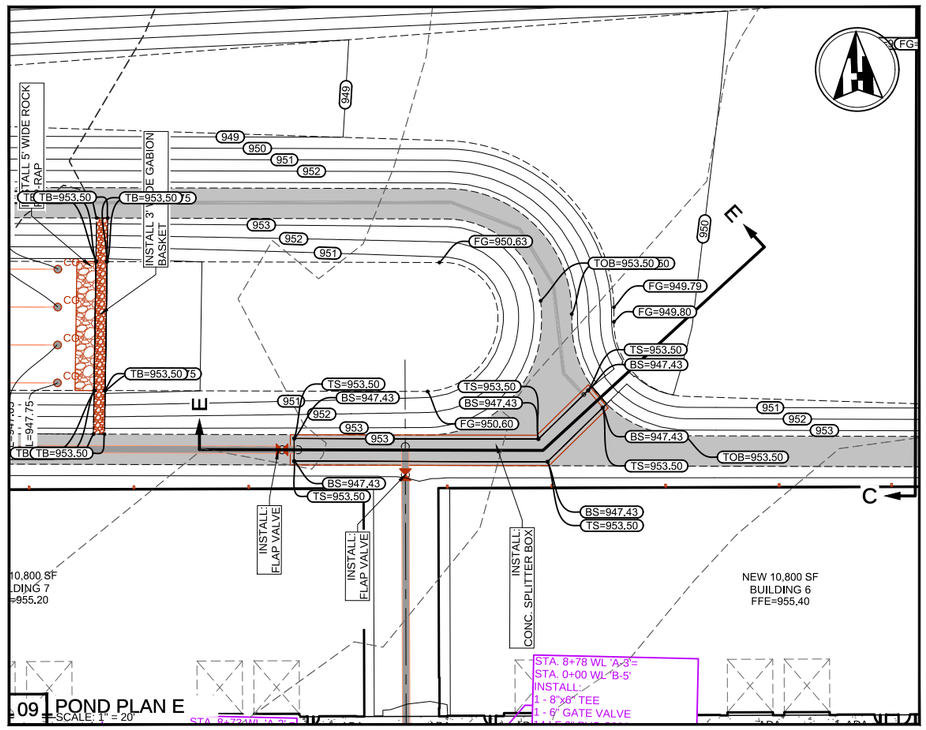
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

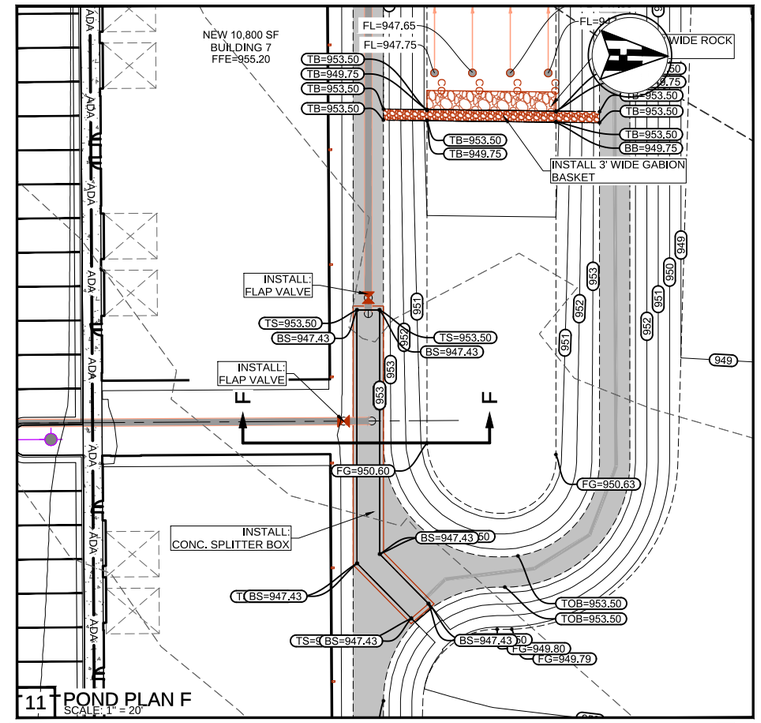
C18.03

COUNTY PERMIT NUMBER: 2024-734-COC

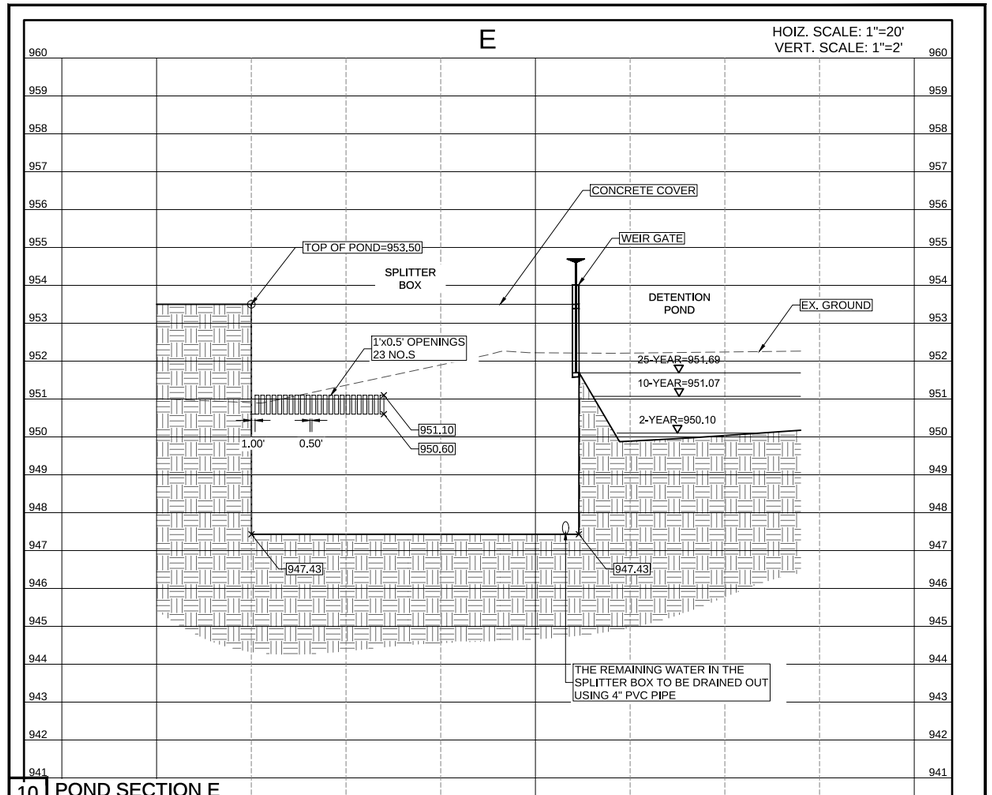
Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Loft Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg



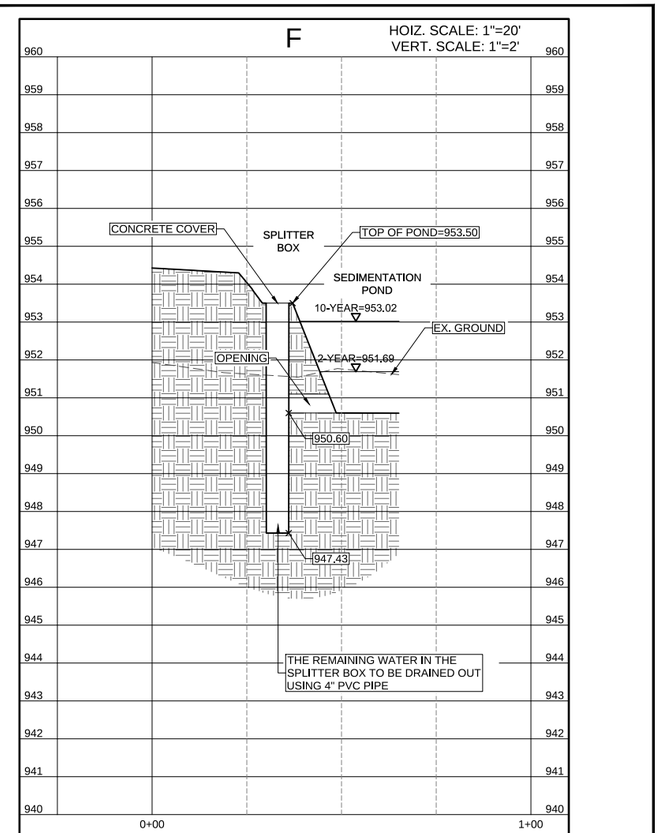
09 POND PLAN E
SCALE: 1" = 20'



11 POND PLAN F
SCALE: 1" = 20'



10 POND SECTION E
SCALE: 1" = 20'



12 POND SECTION F
SCALE: 1" = 20'

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ABBREVIATIONS LEGEND

TOB	TOP OF BERM
TB	TOP OF BASKET
BB	BOTTOM OF BASKET
TS	TOP OF SPLITTER BOX
BS	BOTTOM OF SPLITTER BOX

Detention Pond Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume	Discharge (cfs)
947.20	0.00	0.0		0	-	0
947.25	34.81	0.000799		0.87025	0.87025	0.000
947.50	285.10	0.006545		39.98875	40.859	0.000
947.75	634.72	0.014571		114.9775	155.8365	3.136
948.00	1089.75	0.025017		215.55875	371.39525	4.592
948.25	1650.89	0.037899		342.58	713.97525	5.665
948.50	2320.94	0.053281		496.47875	1210.454	6.635
948.75	3097.22	0.071102		677.27	1887.724	7.435
949.00	3982.57	0.091427		884.97375	2772.69775	8.143
949.25	4973.66	0.11418		1119.52875	3892.2265	8.837
949.50	6112.23	0.140317		1385.73625	5277.96275	9.425
949.75	7683.97	0.1764		1724.525	7002.48775	9.995
950.00	10392.15	0.238571		2259.515	9262.00275	10.570
950.10	11983.50	0.275103	**2-yr**	1152.34575	10414.3485	**10.775**
950.25	13452.43	0.308825		1869.54053	12283.88903	11.069
950.50	16659.44	0.382448		3763.98375	16047.87278	11.532
950.75	19894.83	0.456722		4569.28375	20617.15653	12.095
951.00	21958.28	0.504093		5231.63875	25848.79528	12.515
951.07	22263.97	0.51111	**10-yr**	1636.22326	27485.01854	**12.648**
951.25	22788.96	0.523163		3964.65786	31449.6764	12.95
951.50	23486.20	0.539169		5784.395	37234.0714	13.4
951.69	24066.38	0.552488	**25-yr**	4541.27135	41775.34275	**13.704**
951.75	24186.90	0.555255		1423.47175	43198.8145	13.816
952.00	24891.05	0.57142		6134.74375	49333.55825	14.349
952.25	25598.64	0.587664		6311.21125	55644.7695	14.636
952.50	26309.69	0.603987		6488.54125	62133.31075	14.969
952.75	27024.20	0.62039		6666.73625	68800.047	15.372
952.78	27315.62	0.62708	**100-yr**	733.587567	69533.63457	**15.391**
953.00	27742.15	0.636872		6138.94133	75672.5759	
953.25	28463.56	0.653433		7025.71375	82698.28965	
953.50	29188.41	0.670074		7206.49625	89904.7859	

Sedimentation Basin Stage-Storage

.25' Interval Elevation	Area S.F.	Area AC.	Storm Event	Avg. End Area Method	Accumulated Volume
949.75	0.00	0.0		0	-
950.00	870.65	0.019987		108.83125	108.8313
950.25	1782.41	0.040919		331.6325	440.4638
950.50	2738.46	0.062866		565.10875	1005.5725
950.75	3747.41	0.086029		810.73375	1816.3063
951.00	3956.18	0.090821		962.94875	2779.2550
951.25	4168.21	0.095689		1015.54875	3794.8038
951.50	4383.51	0.100632		1068.965	4863.7688
951.69	4565.34	0.104806	**2-yr**	836.717034	5700.4858
951.75	4602.05	0.105649		288.772636	5989.2584
952.00	4823.85	0.11074		1178.2375	7167.4959
952.25	5048.87	0.115906		1234.09	8401.5859
952.50	5277.13	0.121146		1290.75	9692.3359
952.75	5508.63	0.126461		1348.22	11040.5559
953.00	5743.38	0.13185		1406.50125	12447.0572
953.02	5774.80	0.132571	**10-yr**	103.663584	12550.7208
953.25	5981.38	0.137314		1363.71642	13914.4372
953.50	6222.65	0.142852		1525.50375	15439.9409

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
POND PLAN AND SECTION 4

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
12/03/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C18.04

COUNTY PERMIT NUMBER: 2024-734-COC

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 POND PLAN AND SECTIONS.dwg

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Lott Brothers
Date Prepared: 10/10/2024

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Williamson	
Total project area included in plan * =	12.45	acres
Predevelopment impervious area within the limits of the plan * =	0.20	acres
Total post-development impervious area within the limits of the plan* =	4.37	acres
Total post-development impervious cover fraction * =	0.35	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	3627	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	5.70	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	4.17	acres
Post-development impervious fraction within drainage basin/outfall area =	0.73	
$L_{M\ THIS\ BASIN}$ =	3630	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

Sand Filter

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	5.70	acres
A_I =	4.17	acres
A_P =	1.53	acres
L_R =	4133	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	3627	lbs.
F =	0.88	

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

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.54	
On-site Water Quality Volume =	16727	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	3345	
Total Capture Volume (required water quality volume(s) x 1.20) =	20072	cubic feet

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

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

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	20072	cubic feet	
Minimum filter basin area =	1673	square feet	
Maximum sedimentation basin area =	6691	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	418	square feet	For maximum water depth of 8 feet

NOTES:
1. WATER QUALITY VOLUMES FOR PARTIAL SEDIMENTATION AND FILTRATION SYSTEM:

SEDIMENTATION BASIN = 15435.86 CUBIC FEET
FILTRATION BASIN = 21167.09 CUBIC FEET

COMBINED BASINS VOLUME = 36602.95 CUBIC FEET

2. SEDIMENTATION BASIN FLOOR AREA PRIOR TO SIDE SLOPES = 3391.18 SQUARE FEET

3. FILTRATION BASIN LEVEL FLOOR AREA = 4049.15 SQUARE FEET

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SITE DEVELOPMENT PLANS
TO SERVE
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355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

WATER QUALITY CALCULATIONS

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/15/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C18.04

Plotted by: Harry, Plot date: 15/11/2024
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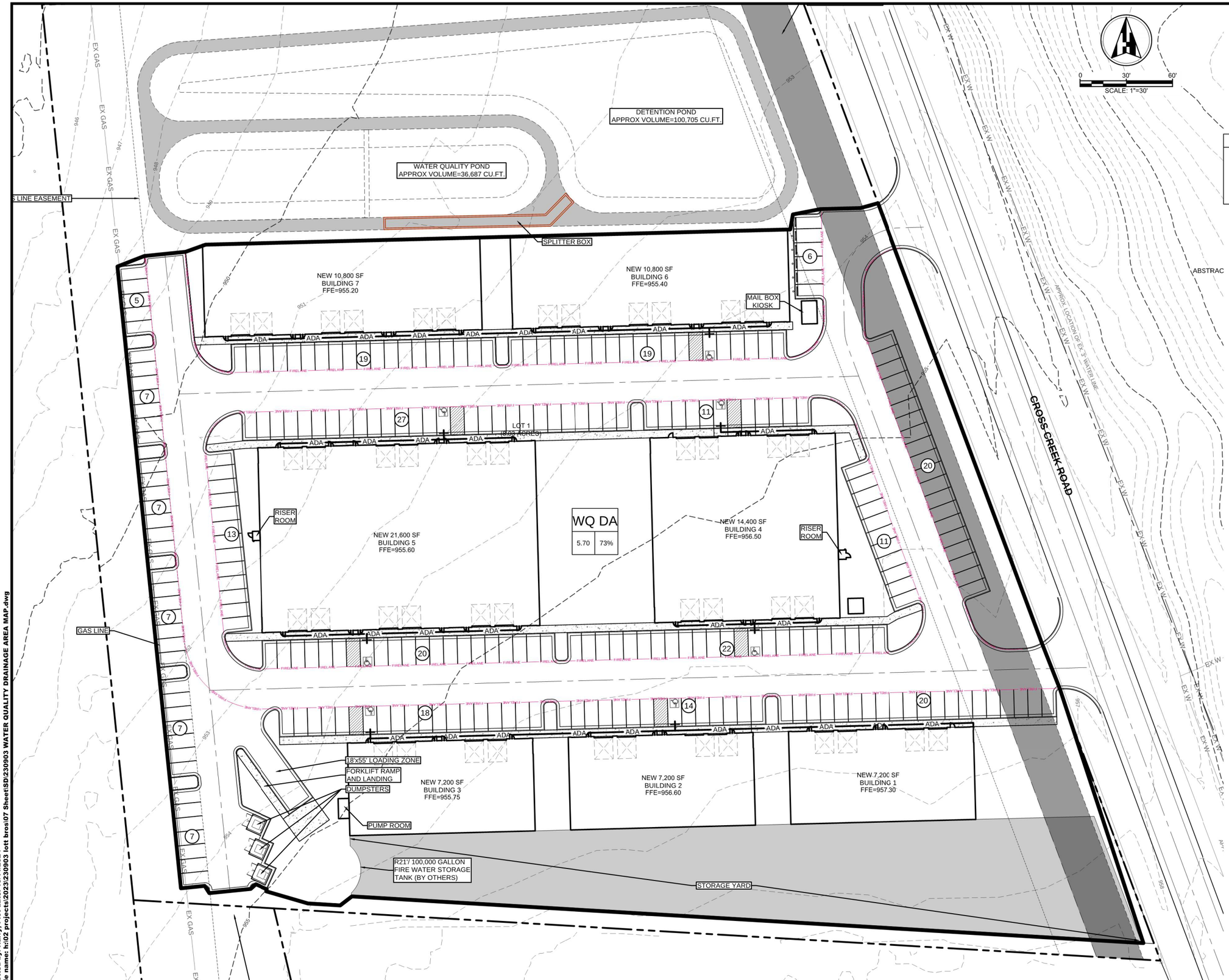

LEGEND	
WQ DA 0.90 0%	WATER QUALITY DRAINAGE AREA LABEL AREA NAME, AREA (ACRES), IMPERVIOUS COVER PERCENTAGE

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SITE DEVELOPMENT PLANS
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355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

WATER QUALITY DRAINAGE AREA MAP

STATE OF TEXAS
JENNIFER L. HENDERSON
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LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
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File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 WATER QUALITY DRAINAGE AREA MAP.dwg

COUNTY PERMIT NUMBER: 2024-734-COC

GUIDELINES FOR DESIGN AND INSTALLATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

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

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

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

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TEMPORARY EROSION AND SEDIMENTATION CONTROL GUIDELINES
DRAWING NAME: EC01
SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

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

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

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES
DRAWING NAME: EC01A
SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

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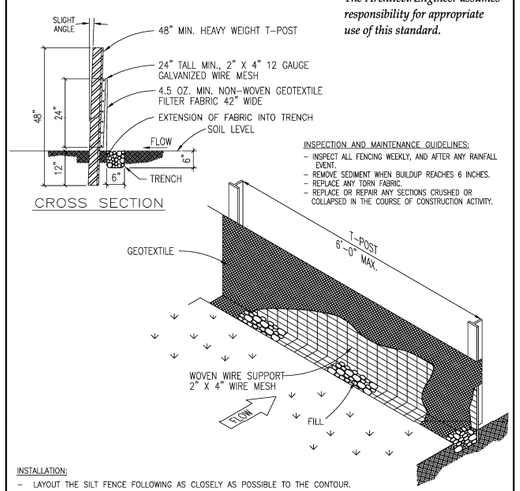

INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL EVENT.
- REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
- REPLACE ANY TORN FABRIC.
- REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY.

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
SILT FENCE DETAIL
DRAWING NAME: EC02
SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

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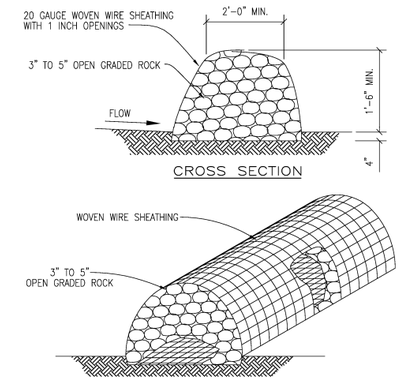

INSTALLATION:
- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCIRCLE THE FINISHED SIZE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

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

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
ROCK BERM DETAIL
DRAWING NAME: EC03
SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

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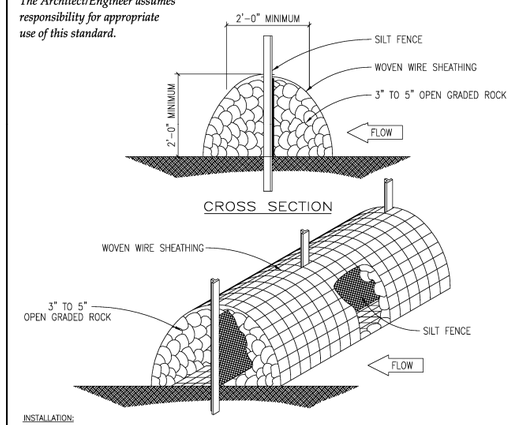

INSTALLATION:
- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCIRCLE THE FINISHED SIZE OF THE BERM.
- INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT. INSTALLATION SHOULD BE AS DESCRIBED IN DRAWING NO. EC–02 "SILT FENCE DETAIL".
- PLACE THE ROCK ALONG THE CENTER OF THE WIRE AND ON BOTH SIDES OF THE SILT FENCE TO THE DESIGNATED HEIGHT.
- WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE RETAINS IT'S SHAPE.
- SECURE WITH TIE WIRE.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
HIGH SERVICE ROCK BERM DETAIL
DRAWING NAME: EC04
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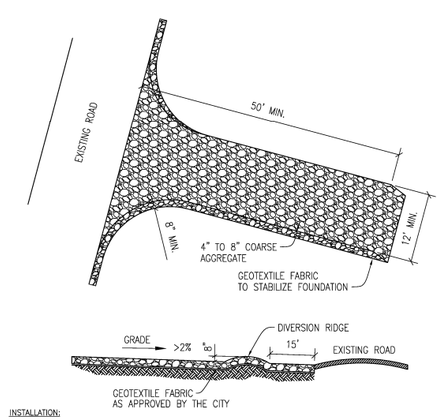


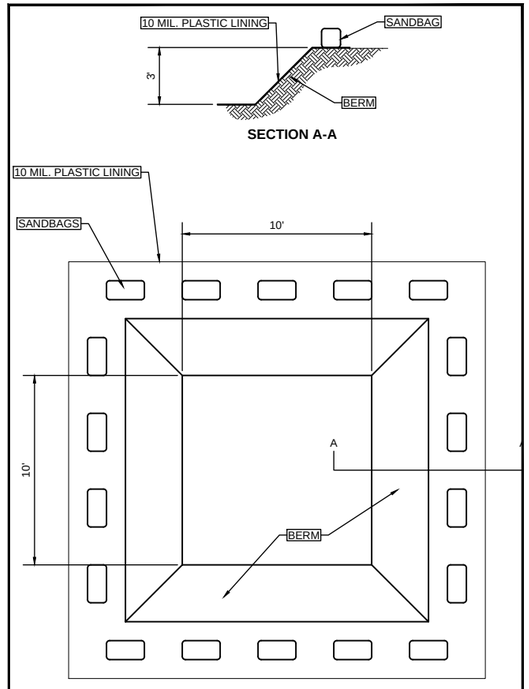
INSTALLATION:
- CLEAR THE AREA OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE STABILIZED CONSTRUCTION
- PLACE GEOTEXTILE FABRIC AS APPROVED BY THE CITY.
- PLACE ROCK AS APPROVED BY THE CITY.

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

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

REVISION NOTE: *ADOPTED 6/21/2006*

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
STABILIZED CONSTRUCTION ENTRANCE
DRAWING NAME: EC06
SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



01 CONCRETE WASHOUT
SCALE: 1/4"=1'

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512.350.6228
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Civil Engineering
WBE210166 | HUB 1853873845300

No.	REVISION
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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
STANDARD DETAILS - ESC

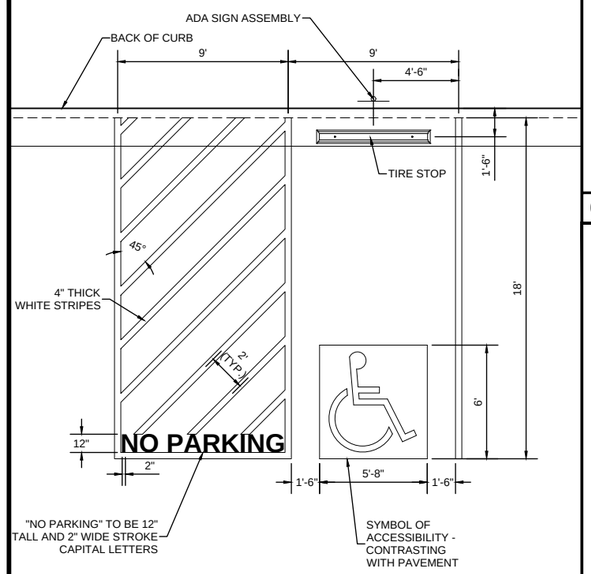
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/15/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

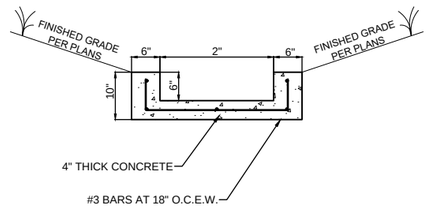
C20.00

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC



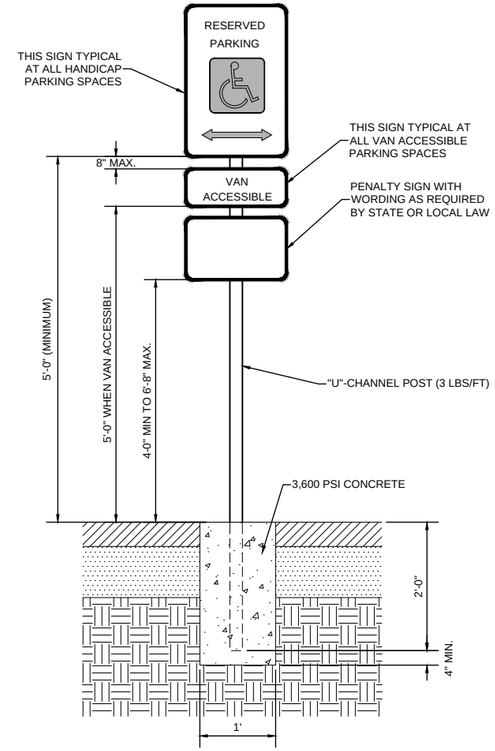
01 ADA PARKING
SCALE: 1/4" = 1'-0"



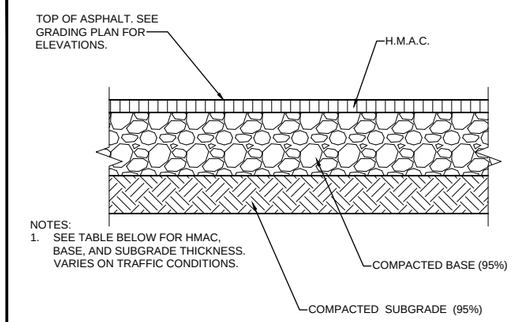
02 FLUME SECTION
SCALE: 3/4" = 1'-0"

COLORS:
- LEGEND AND BORDER - GREEN
- WHITE SYMBOL ON BLUE BACKGROUND
- BACKGROUND - WHITE

03 ADA SIGN AND SYMBOL
SCALE: 3" = 1'-0"

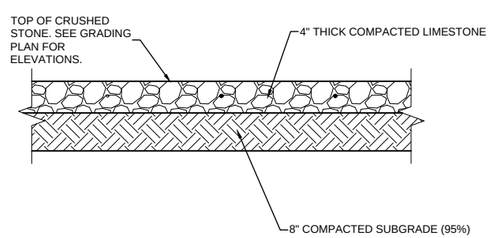


04 ADA SIGN ASSEMBLY
SCALE: 1" = 1'-0"



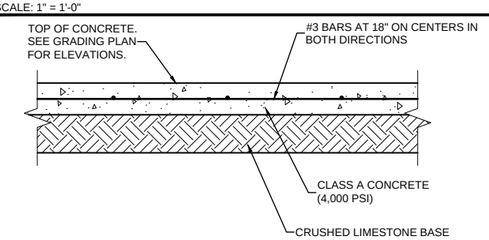
NOTES:
1. SEE TABLE BELOW FOR HMAC, BASE, AND SUBGRADE THICKNESS. VARIES ON TRAFFIC CONDITIONS.

05 ASPHALT SECTION
SCALE: 1" = 1'-0"



NOTES:
1. COMPACTED LIMESTONE IS SUITABLE FOR CONVEYING LOADS OF 75,000 LBS

06 CRUSHED GRANITE SECTION
SCALE: 1" = 1'-0"



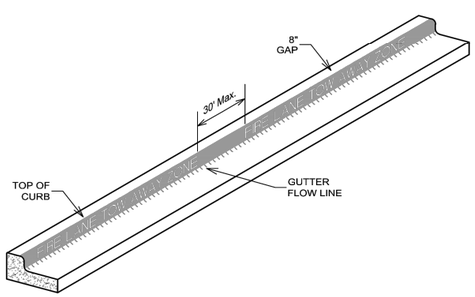
NOTES:
1. MAXIMUM CONTROL JOINT SPACING SHALL BE 12.5 FEET. IF SAWCUT, CONTROL JOINTS SHOULD BE CUT WITHIN 6-12 HOURS OF CONCRETE PLACEMENT.
2. MAXIMUM EXPANSION JOINT SPACING SHALL BE 90 FEET.
3. DOWELS AT EXPANSION JOINTS SHALL BE 3/4" BARS, 18" IN LENGTH, WITH ONE END TREATED TO SLIP, SPACED 12" ON CENTER AT EACH JOINT.
4. SEE TABLE BELOW FOR CONCRETE AND BASE THICKNESS. VARIES ON TRAFFIC CONDITIONS.

07 CONCRETE SECTION
SCALE: 1" = 1'-0"

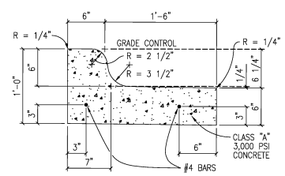
Williamson County Emergency Services District No. 4

Fire Lane Detail

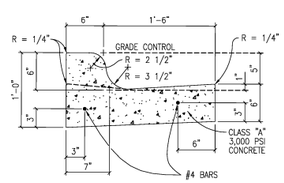
NOTES:
FIRE LANE STRIPING TO BE 6" WIDE RED PAINT WITH "FIRE LANE TOW AWAY ZONE" IN 4" TALL WHITE LETTERS. WORDING MAY NOT BE SPACED GREATER THAN 30' APART. STRIPING TO BE PAINTED ON THE FACE OF CURB WHEN PRESENT AND PAINTED FLAT ON THE PARKING SURFACE WHEN IT IS NOT.



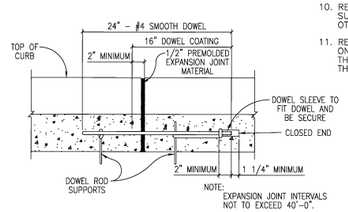
FIRE LANE STRIPING DETAIL
not to scale



SPILL CURB



CATCH AND LAYDOWN CURB



CURB DOWEL DETAIL

NOTES:
1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR THE CITY OF GEORGETOWN.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. THE FOLLOWING SCHEME OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF GEORGETOWN.
   A. ALL CURB AND CURB AND GUTTER (REINFORCED) SHALL HAVE TWO #4 LONGITUDINAL REINFORCING BARS.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.

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

Jay Engineering Company, Inc. P.O. Box 1220 Lakeway, Texas 78648-1220 Tel: (512) 266-1892 Fax: (512) 266-8018 TEXAS REGISTERED ENGINEERING FIRM F-4700	FIRE LANE STRIPING DETAIL			
ENGINEER FRANK T. PHELAN, P.E.	DATE 04 - 25 - 19	DRAWN BY JJD	PROJECT NO. 01	DRAWING NO. 1 OF 1

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CURB AND GUTTER DETAILS

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD06
SCALE: NTS
DATE:
DRAWN BY: MRS
APPROVED BY: TRB

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628
STANDARD DETAILS - PAVING

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

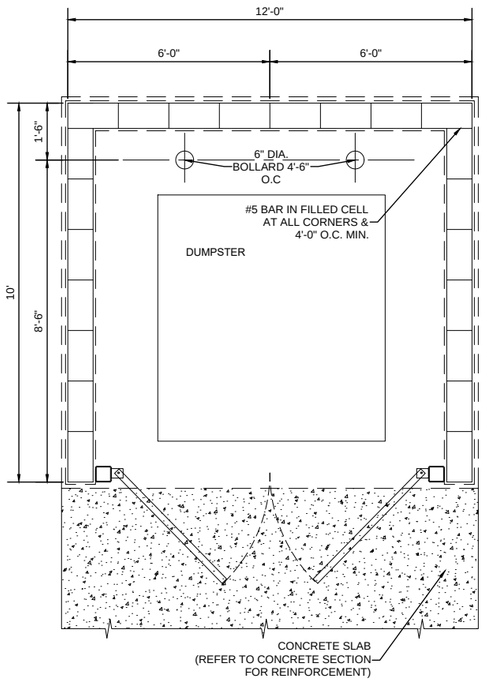
PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C20.01

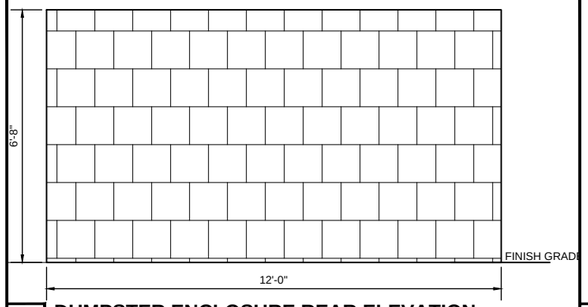
RECOMMENDED PAVEMENT SECTIONS

TRAFFIC CONDITIONS	PAVEMENT SECTION (FROM TOP TO THE SUBGRADE)
PARKING AREAS	• 5" PORTLAND CEMENT CONCRETE* • 6" FLEXIBLE BASE • 12" SCARIFIED/MOISTURE CONDITIONED SUBGRADE
	• 2" HOT-MIX ASPHALT CONCRETE (1½" TXDOT ITEM 340 TYPE D) • 10" FLEXIBLE BASE • 12" SCARIFIED/MOISTURE CONDITIONED SUBGRADE
PASSENGER VEHICLE MAIN DRIVE LANES	• 5" PORTLAND CEMENT CONCRETE* • 6" FLEXIBLE BASE • 12" SCARIFIED/MOISTURE CONDITIONED SUBGRADE
	• 2½" HOT-MIX ASPHALT CONCRETE (2" TXDOT ITEM 340 TYPE D) • 10" FLEXIBLE BASE • 12" SCARIFIED/MOISTURE CONDITIONED SUBGRADE
DELIVERY TRUCK LANES AND PARKING, FIRE APPARATUS DRIVEWAY/DRIVE AND DUMPSTER PAD AREA	• 6" PORTLAND CEMENT CONCRETE* • 8" FLEXIBLE BASE • 12" SCARIFIED/MOISTURE CONDITIONED SUBGRADE

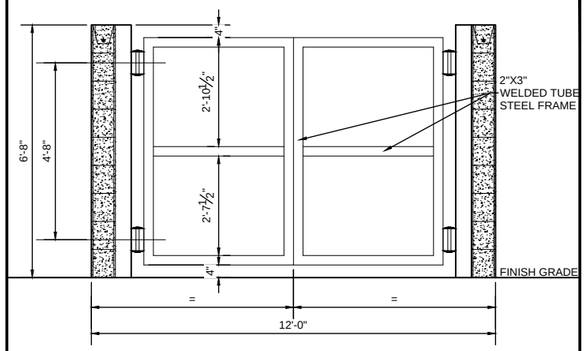
Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg



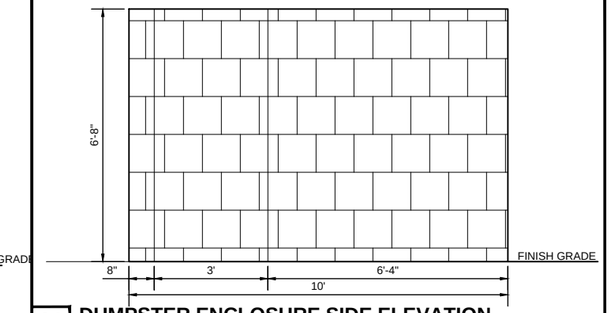
01 DUMPSTER ENCLOSURE PLAN
SCALE: 1/2" = 1'-0"



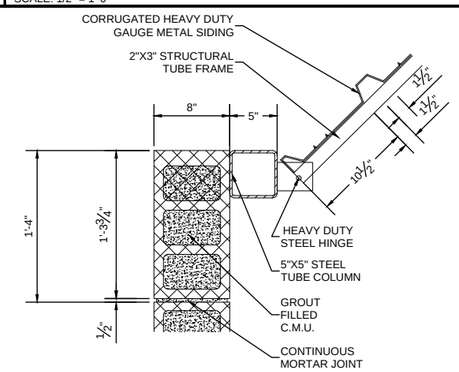
02 DUMPSTER ENCLOSURE REAR ELEVATION
SCALE: 1/2" = 1'-0"



03 DUMPSTER ENCLOSURE SECTION
SCALE: 1/2" = 1'-0"



04 DUMPSTER ENCLOSURE SIDE ELEVATION
SCALE: 1/2" = 1'-0"

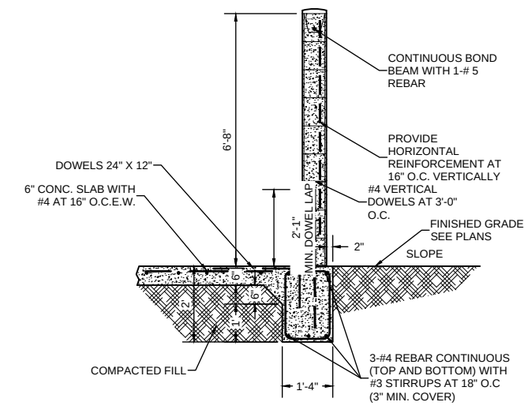


05 HINGE DETAIL
SCALE: 1 1/2" = 1'-0"

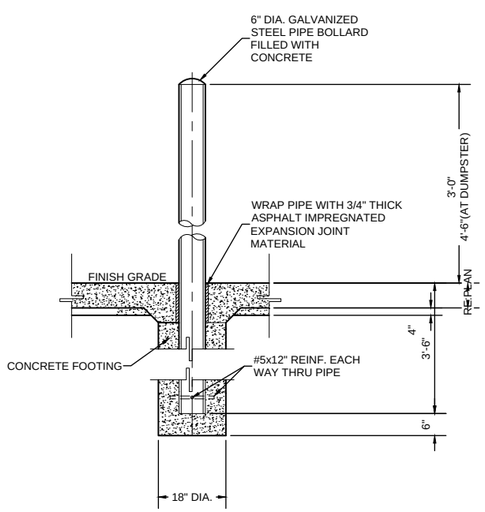
HINGE DETAIL

NOTE:
THIS STRUCTURE IS DESIGNED TO WITHSTAND 130 MPH WITH 3 SEC GUST.

DESIGN WIND:
Vult=130 (3 SEC. GUST)



06 DUMPSTER ENCLOSURE WALL SECTION
SCALE: 1/2" = 1'-0"



07 PIPE BOLLARD
SCALE: 1/2" = 1'-0"

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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - DUMPSTER

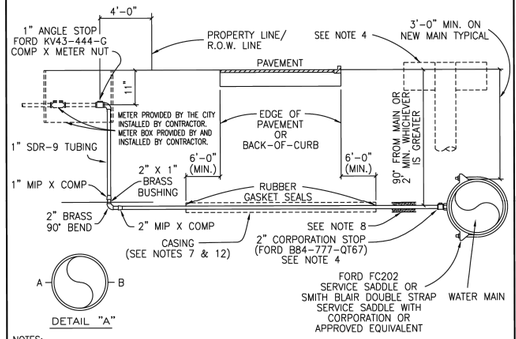
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C20.02

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02_projects\2023\230903 lett bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC



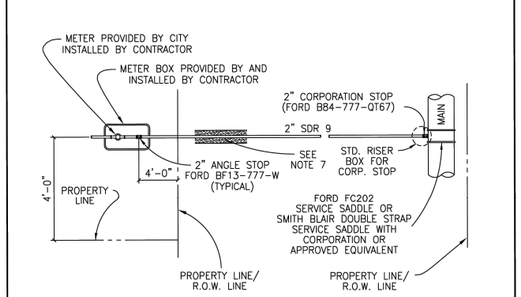
NOTES:
1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT THE CENTERLINE AS SHOWN ON DETAIL "A".
2. WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISHED GRADE.
3. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
4. ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL. SEE STD. RISER FOR CORP. STOP DETAIL, (DWG # W08).
5. SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO CORPORATION STOP WITH NO FITTINGS IN BETWEEN.
6. SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.
7. CASING REQUIRED FOR ALL PAVEMENT CROSSINGS. 4" SDR-26 REQUIRED FOR OPEN-CUT. STEEL CASING PIPE REQUIRED FOR JACK AND BORE. LIMITS OF CASING SHOULD EXTEND SIX FEET BEYOND THE EDGE OF PAVEMENT OR BACK-OF-CURB.
8. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. METER BOX TO BE CAPABLE OF HOUSING ITRON AUTOMATIC METER READING DEVICE. USE DFW-PLASTICS, INC. PART NO. 1200.SBAMR OR APPROVED EQUAL.
11. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY. SEE DETAIL W23.
12. CASING SHALL EXTEND OUT TO WITHIN 4' INSIDE OF THE R.O.W. LINE, ON BOTH SIDES.

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

REVISION NOTE: ADOPTED 01/23/2013

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TYPICAL WATER SERVICE-ELEVATION

DRAWING NAME: W03 | SCALE: NTS | DATE: 1/2013 | DRAWN BY: – | APPROVED BY: MH



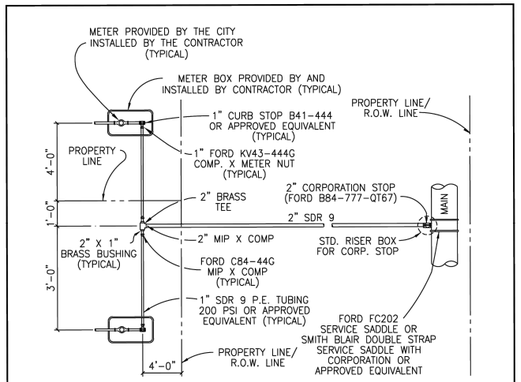
NOTES:
1. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
2. ANGLE STOP SHALL BE 1" MINIMUM.
3. 1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W-03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

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

REVISION NOTE: ADOPTED 01/23/2013

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
SINGLE WATER SERVICE PLAN

DRAWING NAME: W04 | SCALE: NTS | DATE: 1/2013 | DRAWN BY: – | APPROVED BY: MH



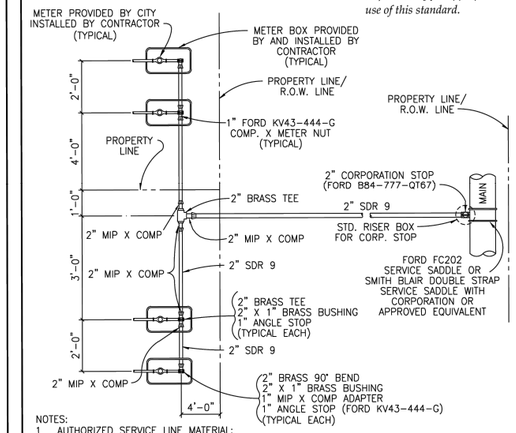
NOTES:
1. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
2. ANGLE STOP SHALL BE 1" MINIMUM.
3. 1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W-03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

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

REVISION NOTE: ADOPTED 01/23/2013

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
DOUBLE WATER SERVICE PLAN

DRAWING NAME: W05 | SCALE: NTS | DATE: 1/2013 | DRAWN BY: – | APPROVED BY: MH



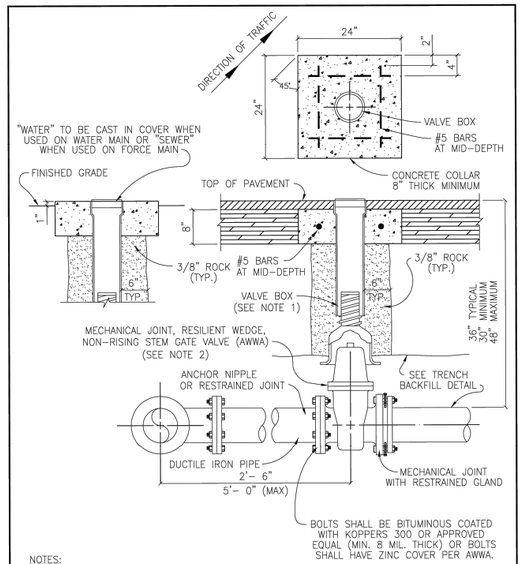
The Architect/Engineer assumes responsibility for appropriate use of this standard.

NOTES:
1. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
2. ANGLE STOP SHALL BE 1" MINIMUM.
3. 1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W-03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

REVISION NOTE: ADOPTED 01/23/2013

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
QUADRUPLE WATER SERVICE PLAN

DRAWING NAME: W06 | SCALE: NTS | DATE: 1/2013 | DRAWN BY: – | APPROVED BY: MH



NOTES:
1. VALVE BOX SHALL BE 5 1/4" CAST IRON ADJUSTABLE HAVING AN ADJUSTABLE RANGE OF + OR – 6 INCHES FROM INSTALLED FINISH GRADE.
2. ACCEPTABLE GATE VALVES ARE:
   A. AMERICAN FLOW CONTROL – SERIES 2500
   B. MUELLER – 2360 SERIES
   C. CLOW

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

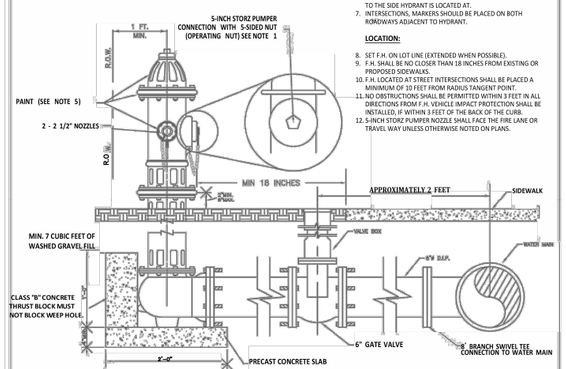
REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TYPICAL VALVE SETTING

DRAWING NAME: W07 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

FIRE HYDRANTS MUST HAVE STORZ CONNECTIONS ON 5" STEAMER (EITHER INTREGRAL OR ADAPTER)

RATED FLOW:	FIRE HYDRANT BONNET COLOR:
1,500 G.P.M. +	LIGHT BLUE
1000 - 1499 G.P.M.	GREEN
500 - 999 G.P.M.	ORANGE
BELOW 500 G.P.M.	RED



N.T.S.

NOTES:
1. FIRE HYDRANT BRAND AND MODEL SHALL BE APPROVED BY THE LOCAL WATER AUTHORITY DISTRICT. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5 INCH STORZ PUMPER NOZZLE; 1.5-INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE ORDERED SILVER IN COLOR. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY
3. ALL DUCTILE OR CAST IRON FITTINGS AND /OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. AFTER COMPLETION OF FIRE HYDRANT INSTALLTION, A FIRE FLOW TEST SHALL BE CONDUCTED BY A THIRD PARTY COMPANY. BASED ON A FIRE FLOW TEST, THE FIRE HYDRANT BONNET SHALL BE PAINTED THE APPROVED COLOR CORRESTONING WITH THE APPROPRATE FLOW RATE.
6. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6 INCHES FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED AT.
7. INTERSECTIONS, MARKERS SHOULD BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:
8. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE).
9. F.H. SHALL BE NO CLOSER THAN 18 INCHES FROM EXISTING OR PROPOSED SIDEWALKS.
10. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF 10 FEET FROM RADIUS TANGENT POINT.
11. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN 3 FEET IN ALL DIRECTIONS FROM F.H. VEHICLE IMPACT PROTECTION SHALL BE INSTALLED, IF WITHIN 3 FEET OF THE BACK OF THE CURB.
12. 5-INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED ON PLANS.

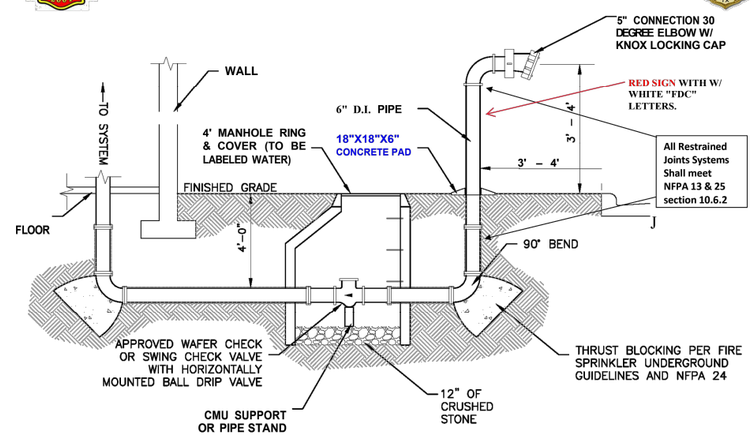
NOTE: STANDARD FIRE HYDRANT ASSEMBLY INCLUDES ALL COMPONENTS SHOWN HEREIN, EXCEPT WATER MAIN, INSTALLED COMPLETE AND IN-PLACE.

Williamson County Emergency Services District No. 4

STANDARD FIRE HYDRANT ASSEMBLY

Williamson County Emergency Services District No. 4

FDC Detail



FIRE DEPARTMENT CONNECTION

NOT TO SCALE

WOMEN OWNED
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SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - WATER 1

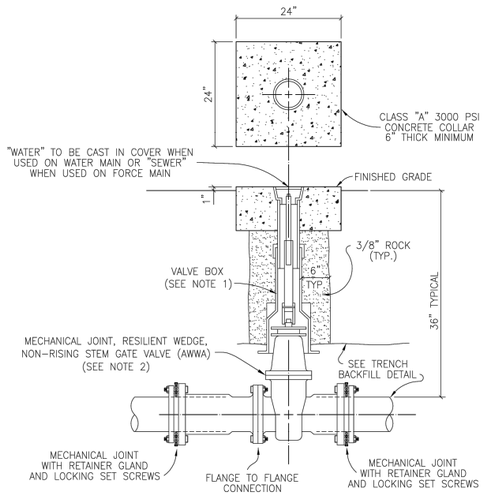
STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C21.00

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC



NOTES:

1. SEE VALVE SETTING DETAIL, DWG. #W-07.
2. ACCEPTABLE GATE VALVES ARE:
   A. MUELLER – 2360 SERIES
   B. CLOW

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

REVISION NOTE: ADOPTED 6/21/2006

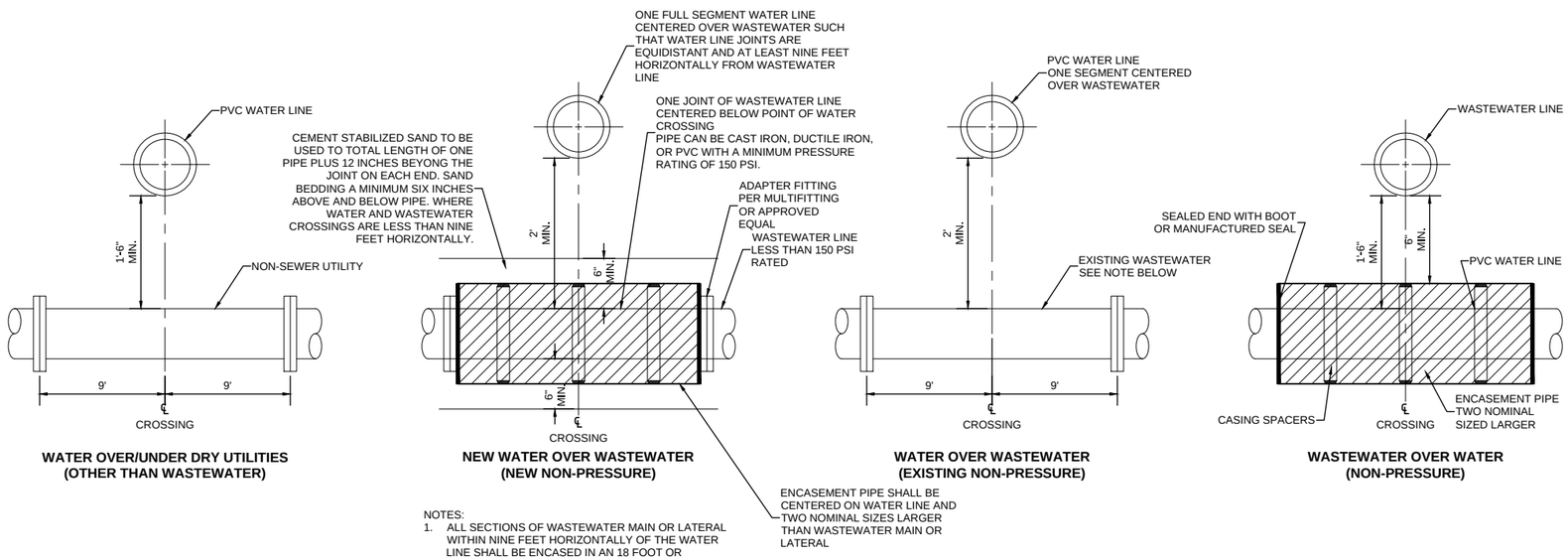
EST. 1848 GEORGETOWN TEXAS — Georgetown Utility Systems "Your Community Owned Utility"

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

INLINE VALVE INSTALLATION

DRAWING NAME: W21

SCALE:	DATE:
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB



WATER OVER/UNDER DRY UTILITIES (OTHER THAN WASTEWATER)

NEW WATER OVER WASTEWATER (NEW NON-PRESSURE)

WATER OVER WASTEWATER (EXISTING NON-PRESSURE)

WASTEWATER OVER WATER (NON-PRESSURE)

NOTE:
WHERE ANY UTILITY OTHER THAN WASTEWATER CROSSES UNDER A WATER LINE, THE SEPARATION BETWEEN THEM SHALL BE A MINIMUM OF 18".

NOTES:

1. ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATER LINE SHALL BE ENCASED IN AN 18 FOOT OR LONGER SECTION OF PIPE.
2. ENCASEMENT PIPE IS ONLY REQUIRED WHERE WASTEWATER PIPE IS LESS THAN 18 FEET IN LENGTH.
3. CENTER THE ENCASEMENT PIPE ON THE CROSSING.
4. WHERE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM 10% CEMENT PER CUBIC YARD OF STABILIZED SAND MIXTURE ON LOOSE DRY WEIGHT VOLUME (2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE).
5. ENCASED WASTEWATER LINE AND JOINTS SHALL HAVE A MINIMUM PRESSURE RATING OF 150 PSI.

NOTE:
IF THE EXISTING WASTEWATER LINE IS DISTURBED OR LEACHING, REPLACE AT LEAST NINE FEET IN EACH DIRECTION OF THE CROSSING WITH MINIMUM150 PSI PIPE.

NOTE:
THE MINIMUM LENGTH OF ENCASEMENT PIPE SHALL BE 18 FEET AND TWO NOMINAL SIZES LARGER THAN THE NEW WATER LINE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHOULD BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH NON-SHRINK CEMENT GROUT OR MANUFACTURED SEAL. ENCASEMENT PIPE SHALL BE STEEL OR PVC WITH A PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION.

01 WATER CROSSING DETAILS

SCALE: 1"=1'

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SITE DEVELOPMENT PLANS TO SERVE

CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - WATER 2

STATE OF TEXAS — JENNIFER L. HENDERSON — 116883 — LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903
11/15/2024
DRAWN BY: DB
CHECKED BY: AR
APPROVED BY: JH

C21.01

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02_projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC

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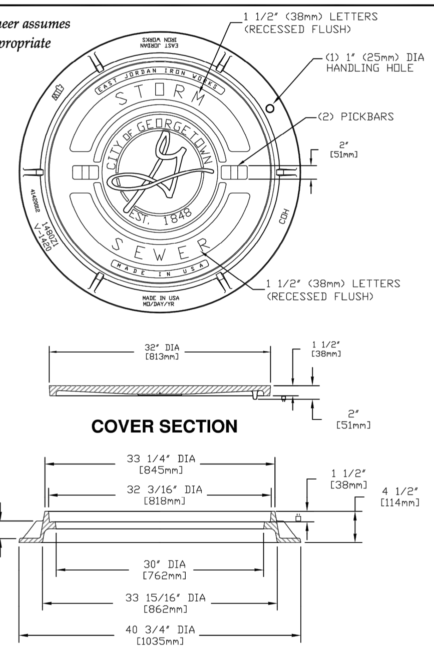

NOTES:

1. STANDARD STORM SEWER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480A V–1420\1480Z1, COVER TO BE STAMPED WITH "STORM SEWER".
2. STANDARD STORM SEWER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 41420012 00148391.
4. FOR BOLTED STORM SEWER MANHOLE SET REFER TO DETAIL SD11A.

REVISION NOTE: ADOPTED 6/21/2006

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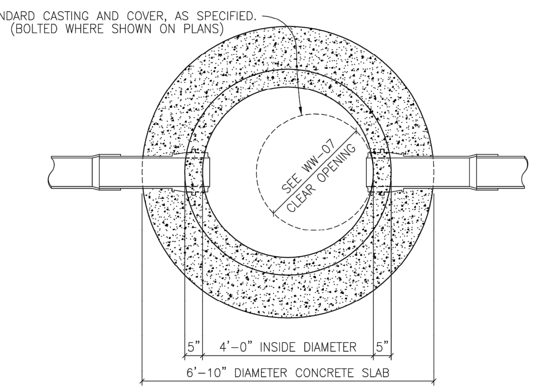
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE SET

DRAWING NAME: SD11 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



MANHOLE PLAN

CITY OF GEORGETOWN NOTES:

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

A. ALL MANHOLES SHALL BE 48" I.D., R.C.P., CLASS III, WITH RUBBER O-RING GASKET JOINTS CONFORMING TO ASTM C478, C433 AND C76.
B. ALL MANHOLES SHALL HAVE FRAME AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS (AS PER DETAIL # WW-07) OR APPROVED EQUIVALENT.
C. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON FRAME AND COVER.
D. ALL MANHOLES SHALL HAVE AN ECCENTRIC CONE.
E. MANHOLES MAY HAVE A FLAT LID, IF APPROVED BY CITY OF GEORGETOWN, BEING 12" THICK WITH A MINIMUM 30" OPENING, AS MANUFACTURED BY CALVERT CONCRETE OR APPROVED EQUAL M.F.G. CONFORMING TO ASTM C478, 5000 P.S.I. CONCRETE, TRAFFIC BEARING, AND O-RING JOINT CONFORMING TO ASTM C443.
F. INVERTS AND FLEXIBLE SEAL BOOTS, PER ASTM C-923, SHALL BE CAST INTO BASE SECTION.
G. MINIMUM DROP BETWEEN INVERTS SHALL BE ONE-TENTH OF A FOOT (0.1').
H. GRADE RINGS WITH AN I.D. TO MATCH FRAMES CLEAR OPENING WITH A MAXIMUM OF FIVE (5) GRADE RINGS ARE ALLOWED.

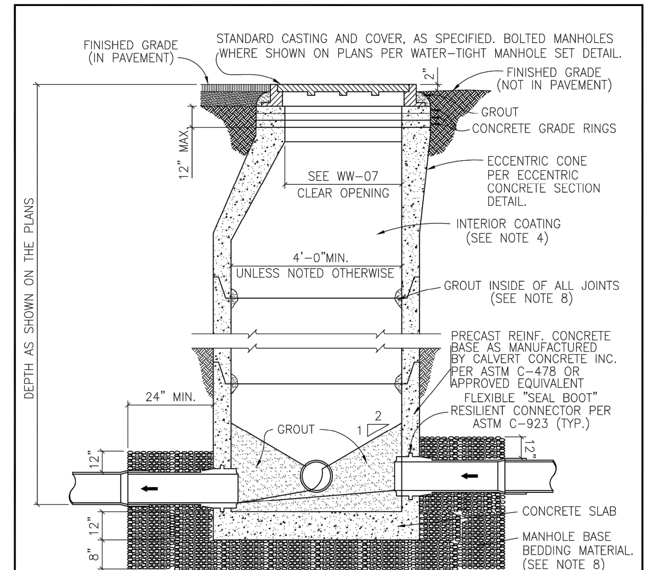
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

GEORGETOWN TEXAS EST. 1848 — Georgetown Utility Systems, Your Community Owned Utility

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE PLAN

DRAWING NAME: SD12 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



NOTES:

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

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

REVISION NOTE: ADOPTED 6/21/2006

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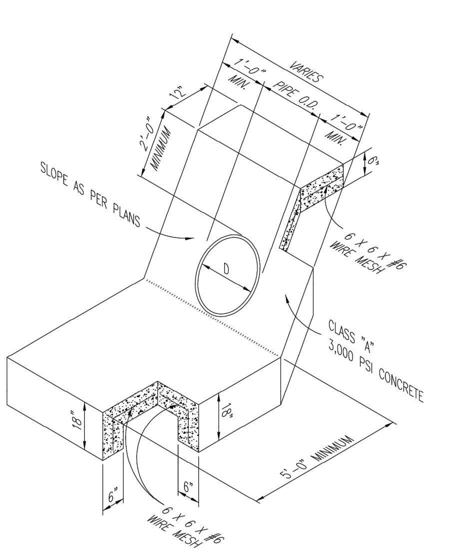
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE – SECTION

DRAWING NAME: SD13 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

MINIMUM RIP-RAP QUANTITIES	
PIPE	SQ. YDS.
18"	6.2
24"	6.9
27"	7.8
30"	9.5
36"	10.4
42"	12.0
48"	14.3
54"	16.4



NOTES:

1. WHEN HEADWALLS AND WINGWALLS ARE REQUIRED, THEY SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS, OR AS DIRECTED BY THE CITY.
2. ENERGY DISSIPATERS SHALL BE REQUIRED IF PIPE VELOCITY IS GREATER THAN 5.0 F.P.S. OR AS DIRECTED BY THE CITY OF GEORGETOWN.
3. SUPPORT REINFORCING WIRE MESH REQUIRED AS SUPPORT FOR APPROACH SLAB AND SHALL BE SUPPORTED BY REBAR CHAIRS OR OTHER APPROVED METHODS.

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

REVISION NOTE: ADOPTED 6/21/2006

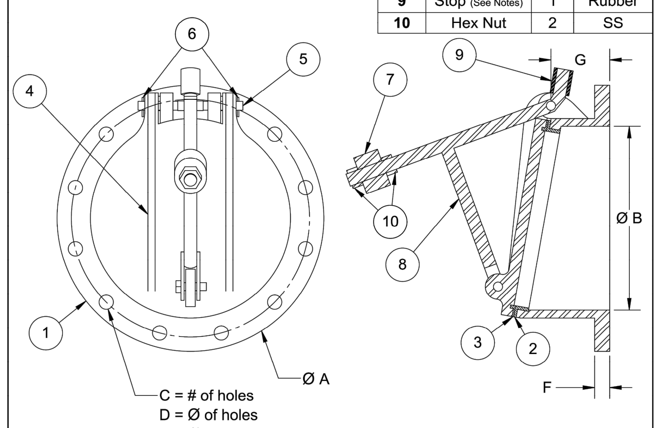
GEORGETOWN TEXAS EST. 1848 — Georgetown Utility Systems, Your Community Owned Utility

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL CONCRETE RIP-RAP AT PIPE

DRAWING NAME: SD19 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

DIMENSIONS ARE IN INCHES					
SIZE	14	16	18	20	24
A	21	23 1/2	25	27 1/2	32
B	14	16	18	20	24
C	12	16	16	20	20
D	1 1/8	1 1/8	1 1/4	1 1/4	1 3/8
E	18 3/4	21 1/4	22 3/4	25	29 1/2
F	1 3/16	1 1/4	1 1/8	1 1/8	1 3/8
G	4 5/8	4 1/2	7 1/2	6	6 9/16

Item	Description	QTY.	MAT'L
1	Body	1	CI
2	Seat Ring	1	BRZ
3	Disc Ring	1	BRZ
4	Disc	1	CI
5	Hinge Pin	1	SS
6	Cotter Pin	2	SS
7	Weight	1	SS
8	Support Rod	1	SS
9	Stop (See Notes)	1	Rubber
10	Hex Nut	2	SS



Notes:
- 125# ANSI flange
- NSF Approved Two Part Epoxy Coating
- 10° Offset from verticle
- Weight will vary based on size and application of valve
- Rod angle and length will vary based on size and application of valve
- Rubber Stop is:
  - Standard on verticle flange mount.
  - Optional on horizontal flange mount, but may not be available on all applications

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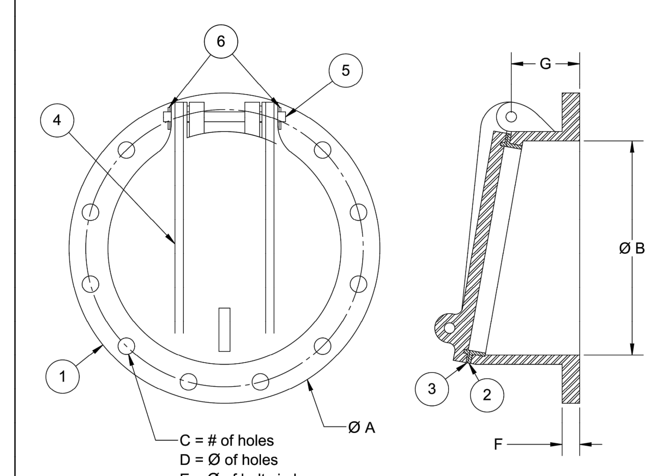
www.TroyValve.com | PHONE: 1-570-297-2125 | 1B4- DO NOT SCALE DRAWING
TITLE: 14"-24" Weighted Vert. Flap Valve | DWN. TE
MAT'L: CI | DATE: 9/3/2020 | PART NO: A25406_CW | PAGE:

DIMENSIONS ARE IN INCHES					
SIZE	14	16	18	20	24
A	21	23 1/2	25	27 1/2	32
B	14	16	18	20	24
C	12	16	16	20	20
D	1 1/8	1 1/8	1 1/4	1 1/4	1 3/8
E	18 3/4	21 1/4	22 3/4	25	29 1/2
F	1 3/16	1 1/4	1 1/8	1 1/8	1 3/8
G	4 5/8	4 1/2	7 1/2	6	6 9/16

Item	Description	QTY.	MAT'L
1	Body	1	CI-A126
2	Seat Ring	1	BRZ-B62
3	Disc Ring	1	BRZ-B62
4	Disc	1	CI-A126
5	Hinge Pin	1	304SS
6	Cotter Pin	2	18-8SS



Notes:
- 125# ANSI flange
- Two Part Epoxy Coating
- 10° Offset from verticle

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www.TroyValve.com | PHONE: 1-570-297-2125 | 151- DO NOT SCALE DRAWING
TITLE: 14"-24" Flap Valve | DWN. TE
MAT'L: CI | DATE: 5/28/2020 | PART NO: A25406 | PAGE:

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SITE DEVELOPMENT PLANS TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - STORM SEWER

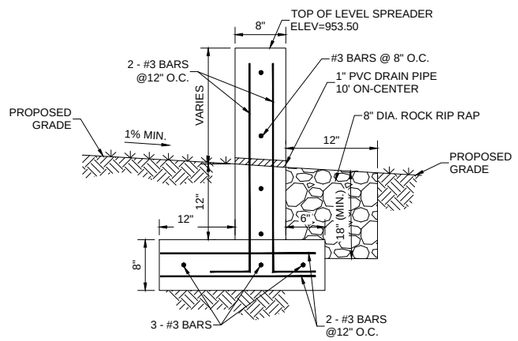
STATE OF TEXAS — JENNIFER L. HENDERSON — 116883 — LICENSED PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903 | 12/03/2024 | DRAWN BY: DB | CHECKED BY: AR | APPROVED BY: JH

C22.00

Plotted by: Home PC, Plot date: 03/12/2024
File name: C:\Users\Home PC\OneDrive - Watmov Engineers Private Limited\230903 CROSS CREEK PROJECT\230903 Lott Bros (Cross Creek)\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC



CONCRETE LEVEL SPREADER

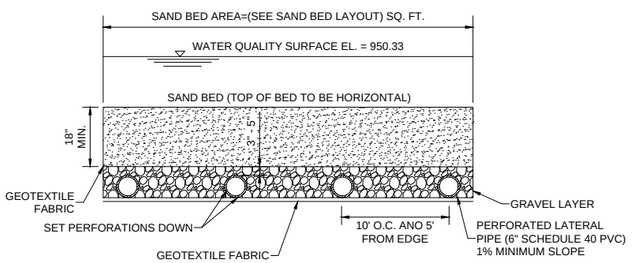
SCALE: N.T.S.

TABLE 1-9
DRAINAGE MATTING SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
MATERIAL	NONWOVEN GEOTEXTILE FABRIC		
UNIT WEIGHT		OZ/SQ. YD.	20
FLOW RATE (FABRIC)		GPM/FT2	180 (MIN.)
PERMEABILITY	ASTM D-2434	CM/SEC	12.4x10-2
GRAB STRENGTH (FABRIC)	ASTM D-1682	LB.	DRY LG. 90 DRY WD: 70 WET LG. 95 WET WD: 70
PUNCTURE STRENGTH	COE-CW-02215	LB.	42 (MIN.)
MULLEN BURST STRENGTH	ASTM D-1117	PSI	140 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	NO.	100 (70-120)
FLOW RATE (DRAINAGE CORE)	DREXEL UNIV. TEST METHOD	GPM/FT. WIDTH	14
SOURCE: CITY OF AUSTIN			

TABLE 3-6
CLAY LINER SPECIFICATIONS (COA, 2024)

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
PERMEABILITY	ASTM D-2434	CM/SEC	1×10^{-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



SAND BED PROFILE
(WITH GRAVEL FILTER)

SCALE: N.T.S.

FOR FILTRATION PONDS

THE GEOTEXTILE FABRIC (FOR PROTECTION OF GEOMEMBRANE) SHELL MEET THE FOLLOWING SPECIFICATIONS:

SAND BED AND GEOTEXTILE FABRIC

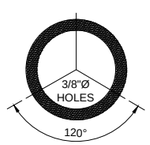
FIRST (TOP) LAYER- FINE SAND (ASTM C-33), 0.02-0.04 INCH, A MINIMUM OF EIGHTEEN (18) INCHES.

SECOND LAYER- ONE-HALF (0.5) TO ONE AND ONE-HALF (1.5) INCH DIAMETER WASHED, ROUNDED, RIVER GRAVEL. THREE (3) TO FIVE (5) INCHES OF GRAVEL IS REQUIRED UNDER THE LATERAL PIPES.

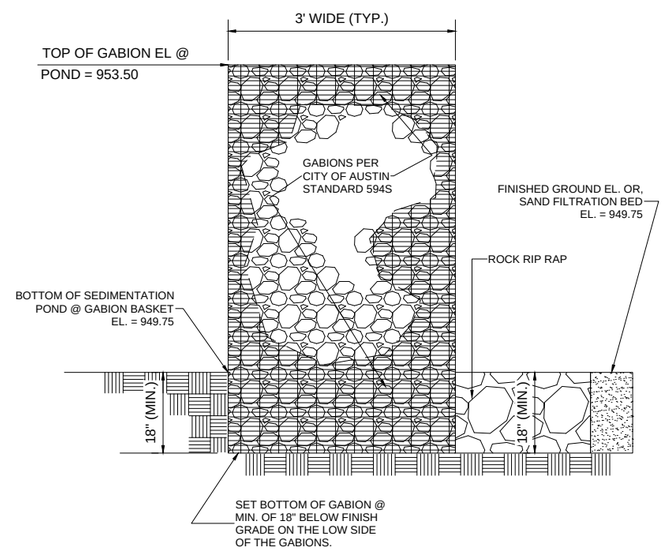
THE TWO LAYERS MUST BE SEPARATED FROM EACH OTHER USING SUITABLE GEOTEXTILE FABRIC MEETING THE FOLLOWING SPECIFICATIONS:

TABLE 1-7

PROPERTY	TEST METHOD	UNIT	SPECS.
MATERIAL	NONWOVEN GEOTEXTILE		
UNIT WEIGHT		OZ/SQ. YD.	8 (MIN.)
FILTRATION RATE		IN/SEC	0.08 (MIN.)
PUNCTURE STRENGTH	ASTM D-751(MOD.)	LB.	125 (MIN.)
MULLEN BURST STRENGTH	ASTM D-751	PSI.	400 (MIN.)
TENSILE STRENGTH	ASTM D-1682	LB.	200 (MIN.)
EQUIV. OPENING SIZE	US STANDARD SIEVE	NO.	80 (MIN.)

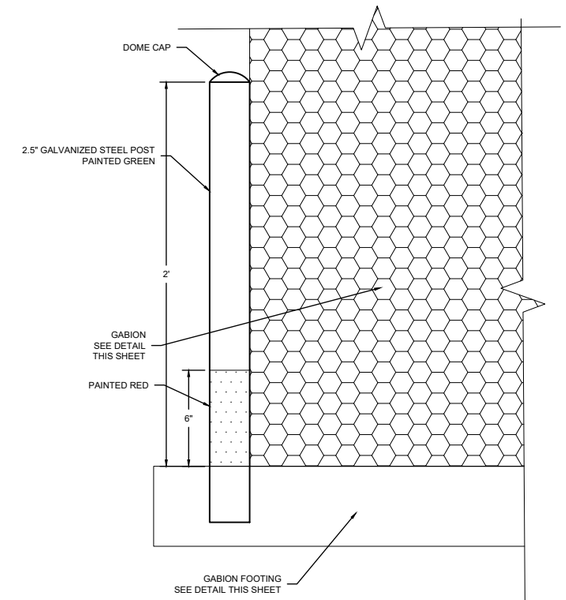


PERFORATION LAYOUT



GABION BASKET WALL

SCALE: N.T.S.



01 **SEDIMENT DEPTH MARKER**
SCALE: N.T.S.

WOMEN OWNED
CERTIFIED BY | WOMEN'S BUSINESS ENTERPRISE NATIONAL COUNCIL

THE DRAWING AND WRITTEN MATERIAL HEREIN CONSTITUTE ORIGINAL WORK OF THE ENGINEER, AND AS THE INTELLECTUAL PROPERTY AND INSTRUMENTS OF SERVICE ARE SUBJECT TO COPYRIGHT AND MAY NOT BE REPRODUCED, DISTRIBUTED PUBLISHED OR USED IN ANY WAY WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ENGINEER.

Henderson Professional Engineers
600 ROUND ROCK WEST DRIVE, SUITE 604
ROUND ROCK, TX 78681
512.350.6228
PELS FIRM #F-22208
www.hendersonpe.com
Civil Engineering
WBE210166 | HUB 1853873845300

REVISION

No.	
1	
2	
3	
4	
5	

SITE DEVELOPMENT PLANS
TO SERVE
CROSS CREEK COMMERCIAL PARK
355 CROSS CREEK RD
GEORGETOWN, TEXAS 78628

STANDARD DETAILS - GABION WALL

STATE OF TEXAS
JENNIFER L. HENDERSON
116883
LICENSED
PROFESSIONAL ENGINEER
12/04/2024

PROJECT NO. 230903	
11/15/2024	
DRAWN BY: DB	
CHECKED BY: AR	
APPROVED BY: JH	

C23.00

Plotted by: Harry, Plot date: 15/11/2024
File name: h:\02 projects\2023\230903 lott bros\07 Sheet\SD\230903 DETAILS.dwg

COUNTY PERMIT NUMBER 2024-734-COC

Attachment G - Inspection, Maintenance, Repair and Retrofit Plan

The detention pond and the sand filter basin have 3:1 side slopes as seen in the Grading Plan (Sheet C17.01), which permits access for maintenance.

HPE
Civil Engineering

Plan Prepared: October 8, 2024

Texas Commission on Environmental Quality
Cross Creek Commercial Park
PO Box 13087
Austin, TX 78711

Reference: 355 Cross Creek Rd. Georgetown, TX 78628
Stormwater Maintenance Plan

This signature form is in reference to the pages preceding which include:

- Stormwater Maintenance Plan:
  - Additional maintenance notes
  - Frequency of service
  - Service procedures
  - Reporting
- Dry Pond Inspection & Maintenance Plan

I Tyler Humes acknowledge the fore-mentioned plans and will adhere to them in accordance with the requirements as provided by the State of Texas.

Owner / Owner Representative

10/15/24
Date

I, the undersigned Notary Public, do hereby certify that the foregoing instrument was acknowledged before me this 15 day of October and the document was executed by the above named Tyler Humes of his/her own free will.

REGINA MOTT
Notary Public, State of Texas
Comm. Expires 03-04-2025
Notary ID 132956176

Witness my hand and seal this 15 day of October, 2024.

Notary Public for Texas

Commission Expires: 3-4-2025

STORMWATER MAINTENANCE PLAN

It is the responsibility of the property owner's association to maintain detention ponds and water quality basins on nonresidential property, unless otherwise approved by the City. If regular maintenance and inspections are not undertaken, the detention pond and water quality basins will not achieve its intended purposes and can create nuisance conditions for nearby residents. This page provides guidance on maintenance and inspection activities that are typically required for detention ponds and water quality basins, along with a suggested frequency for each activity.

Inspection Activities	Suggested Schedule
After several storm events or an extreme storm event, inspect for: bank stability; signs of erosion; and damage to, or clogging of, the outlet structures and pilot channels.	As Needed
Note excessive erosion of pond banks or bottom; trash and debris; clogging of the outlet structures and any pilot channels; sediment accumulation in the pond and inlet/outlet structures; tree growth on pond walls; the presence of burrowing animals; standing water where there should be none; vigor and density of the grass turf on the pond side slopes and floor; differential settlement; cracking; leakage; and slope stability.	Semi-annually
Inspect that the outlet structures, pipes, level spreaders, and downstream and pilot channels are free of debris and are operational.	Annually
Note signs of pollution, such as oil sheens, discolored water, or unpleasant odors.	Annually
Check for sediment accumulation in the facility.	Annually
Inspect sand filter and ensure that all exposed areas are stabilized and repair any damage to the structural elements of the system.	Semi-annually or As Needed

Maintenance Activities	Suggested Schedule
Mowing the facility. Mulch the grass or catch and remove the grass clippings.	Monthly or As Needed
Debris and litter removal.	Monthly or As Needed
Seed or sod to restore dead or damaged ground cover.	Annual or As Needed
Repair and revegetate eroded or undercut areas. Repair any damage to the structural elements of the pond.	As Needed
Remove vegetation that may hinder the operation of the pond.	As Needed
Monitor sediment accumulations and remove sediment when the pond volume has been reduced by 20%.	10-years or As Needed
Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.	As Needed
Remove sediment and debris build up from the inlet and outlet of the sedimentation chamber.	Annual or As Needed
Remove sediment build up from the sedimentation chamber.	5-years or As Needed
Remove and replace the upper layer of sand filter.	As Needed

Additional Maintenance Notes:

Besides the detention pond, water quality basins, outlet structures, pipes, level spreader, and channels that are mentioned in the suggested maintenance plan, any other components of stormwater management should also be checked periodically and kept in full working order. Furthermore, ensure that any potential sources of debris on the property does not contribute to the deterioration of the stormwater management structures. Failure to do so could not only cause maintenance issues to the aforementioned stormwater management structures, but negatively impact the ability of the property as a whole to handle storm events.

Recommended Frequency of Service:

Potential sources of debris on the property include, but are not limited to, the townhome building, garage, and workshop. Other components of stormwater management include, but are not limited to, roof gutters and roof leaders. Ultimately, the frequency of inspection and service cleaning of these sources and components depends on the amount of runoff, pollutant loading, and interference from debris (leaves, vegetation, trash, etc.). It is recommended that they are to be inspected and cleaned at least four times a year (especially during the fall, when leaves have fallen from the trees), both to maintain the function of those components and appearances of the property.

Suggested Service Procedures:

Roof gutters: The roof gutters of the house shall be inspected and cleared of any leaves, twigs, debris, etc. This shall be done at in the early spring, and late fall after all of the leaves have fallen from trees.

Roof Leaders: The maintenance of the roof leaders shall be in accordance with the aforementioned suggested schedule and shall include the inspection of the leaders via the cleanouts and removal of any debris, obstruction and sediment.

Reporting:

A maintenance log shall be kept of each inspection outlining the items inspected and the maintenance performed. These logs should be kept on file by the Owner and must be shared with the City upon request.

HPE
Civil Engineering

DRY POND INSPECTION AND MAINTENANCE CHECKLIST

Facility:			
Location/Address:			
Date:	**Time**:	**Weather Conditions**:	**Date of Last Inspection**:
Inspector:		**Title**:	
Rain in Last 48 Hours: ☐ **Yes** ☐ **No**	**If yes, list amount and timing**:		
Pretreatment: ☐ **vegetated filter strip** ☐ **swale** ☐ **forebay** ☐ **other, specify:**			
Site Plan or As-Built Plan Available: ☐ **Yes** ☐ **No**			

Inspection Item		Comment	Action Needed
1. PRETREATMENT			
Sediment has accumulated.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Trash and debris have accumulated.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
2. DEWATERING			
The water quality orifice is visible.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
3. INLETS			
Inlets are in poor structural condition.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Sediment has accumulated and/or is blocking the inlets.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Erosion is occurring around the inlets.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
4. EMBANKMENT			
Sinkholes or cracks are visible in the embankment.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Trees or woody vegetation present on the dam or embankment.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
5. POND AREA			
Trash and debris have accumulated.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Invasive plants are present.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Erosion is evident on the pond floor or low flow channel.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
The micro-pool has sediment accumulation.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Sinkholes or animal borrows are present.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
6. SIDE WALLS AND EMBANKMENT			
Erosion is evident.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Sinkholes, animal borrows, or instability are present.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
7. OUTLETS AND OVERFLOW STRUCTURE			
Outlets or overflow structures in poor structural condition.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Sediment, trash or debris is blocking the outlets or overflow structure.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Erosion is occurring around the outlets or overflow structure.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**
Joints are not watertight and/or leaks are visible.	☐**Yes** ☐**No** ☐**N/A**		☐**Yes** ☐**No**

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

I Tyler Humes,
Print Name

Managing Partner,
Title - Owner/President/Other

of Cross Creek Commercial Park, LLC,
Corporation/Partnership/Entity Name

have authorized Jen Henderson, P.E.
Print Name of Agent/Engineer

of Henderson Professional Engineers
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

5/10/24
Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Tyler Humes 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 10 day of May.

REGINA MOTT
Notary Public, State of Texas
Comm. Expires 03-04-2025
Notary ID 132956176

Regina Mott
NOTARY PUBLIC

Regina Mott
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 03-04-2025

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Tyler Humes of TBN Development, LLC
Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at
WCAD Parcel Identification Number: R661759 Address: W SH 29, GEORGETOWN, TX 78628
Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Jen Henderson, PE of Henderson Professional Engineers
Applicant Name (Legal Entity or Individual)

to conduct prepare and submit this plan application to TCEQ for review and approval
Description of the proposed regulated activities

at WCAD Parcel Identification Number: R661759 Address: W SH 29, GEORGETOWN, TX 78628.
Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that TBN Development, LLC
Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation 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.

Land Owner Signature

Land Owner Signature

12/3/24
Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared Tyler Humes 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 3rd day of December

NOTARY PUBLIC

SHANIQUA SHANEY DALEY
Notary ID #134015331
My Commission Expires
October 13, 2026

Shaniqua Shaney Daley
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/13/26

Attached: (Mark all that apply)

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

Applicant Acknowledgement

I, Jen Henderson of Henderson Professional Engineers
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that TBN Development LLC
Land Owner Name (Legal Entity or Individual)

has provided Jen Henderson, PE
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Henderson Professional Engineers.
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection 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 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 — Date: 12/3/2024

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared Jen Henderson 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 3rd day of December, 2024

Randi Jo Culp
NOTARY PUBLIC

RANDI JO CULP
Notary ID #124421768
My Commission Expires
July 29, 2028

Randi Jo Culp
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 7/29/2024

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Cross Creek Commercial Park
Regulated Entity Location: 355 Cross Creek Rd Georgetown, TX 78628
Name of Customer: Cross Creek Commercial Park, LLC
Contact Person: Jen Henderson, P.E. Phone: 737-203-8953
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	12.45 Acres	$ 6,500
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 5/10/2024

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 on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

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

SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	05/10/2024
☒ 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:*	
CROSS CREEK COMMERCIAL PARK, 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*)
0805307414	32092510395	99-1113356	

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship	☐ Other:

12. Number of Employees	**13. Independently Owned and Operated?**
☒ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ **Yes** ☐ **No**

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

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

15. Mailing Address:	406 N LEE ST.							
	SUITE 201							
	City	ROUND ROCK	**State**	TX	**ZIP**	78664	**ZIP + 4**	4313

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

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** (*if applicable*)

(512) 401-8882		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

CROSS CREEK COMMERCIAL PARK

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	355 CROSS CREEK RD							
	City	GEORGETOWN	**State**	TX	**ZIP**	78628	**ZIP + 4**	
24. County	WILLIAMSON							

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

25. Description to Physical Location:	1/3 MI NORTH OF SH 29, 1.8 MI EAST OF RONALD REAGAN BLVD

26. Nearest City	**State**	**Nearest ZIP Code**
GEORGETOWN	TX	78628

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

27. Latitude (N) In Decimal:	30.642247928038994,		**28. Longitude (W) In Decimal:**	-97.79878199737475	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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)
6531-04		236200	

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

PROPERTY MANAGEMENT

34. Mailing Address:	**406 N LEE ST.**							
	SUITE 201							
	City	**ROUND ROCK**	**State**	**TX**	**ZIP**	**78664**	**ZIP + 4**	**4313**
35. E-Mail Address:	**tylerh@lottbrothers.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 401-8882		**( ) -**

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

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

SECTION IV: Preparer Information

40. Name:	JEN HENDERSON	**41. Title:**	PROFESSIONAL ENGINEER
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(737 **)** 203-8953		**( ) -**	HPE@HENDERSONPE.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:	CROSS CREEK COMMERCIAL PARK, LLC	**Job Title:**	OWNER
Name *(In Print):*	TYLER HUMES	**Phone:**	**(** 512 **)** 401- **8882**
Signature:		**Date:**	5/10/2024