Sewage Collection System (SCS)

Parkside Peninsula
Phase 3

CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

September 18, 2024

HR Green Project No: 2302005

Prepared For:
HM 2243 Development, Inc.
1011 North Lamar Boulevard
Austin, Texas 78703

Prepared By:
HR Green Development TX, LLC
5508 Highway 290 West, Suite 150
Austin, Texas 78735
TBPE Firm No. F-16384

09/18/2024

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Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or 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: Parkside Peninsula Phase 3						**2. Regulated Entity No.:**			
3. Customer Name: HM 2243 Development, Inc.						**4. Customer No.: CN605986272**			
5. Project Type: (Please circle/check one)	New **X**		Modification			Extension		Exception	
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS **X**	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential **X**		Non-residential			**8. Site (acres):**		28.22	
9. Application Fee:	$2,245.50		**10. Permanent BMP(s):**			Batch Detention Ponds, Vegetative Filter Strips			
11. SCS (Linear Ft.):	4,491		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Williamson County		**14. Watershed:**			Turkey Creek-Brushy Creek			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	_X
Region (1 req.)	___	___	_X
County(ies)	___	___	_X
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. Christine Campbell
Print Name of Customer/Authorized Agent 09/18/2024
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: Christine Campbell, P.E.

Date: 09/18/2024

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Parkside Peninsula Phase 3
2. County: Williamson
3. Stream Basin: Brazos River Basin
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Blake Magee
   Entity: HM 2243 Development, Inc.
   Mailing Address: 1011 North Lamar Boulevard
   City, State: Austin, TX Zip: 78703
   Telephone: 512-481-0303 FAX: _____
   Email Address: Blake@blakemageeco.com

8. Agent/Representative (If any):

   Contact Person: Christine Campbell
   Entity: HR Green Development TX, LLC
   Mailing Address: 5508 US Highway 290 West, Suite #150
   City, State: Austin, TX Zip: 78735
   Telephone: 512-872-6696 FAX: _____
   Email Address: christine.campbell@hrgreen.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 Georgetown.
   ☐ The project site is not located within any city's limits or ETJ.

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

    Located along Cypress Paul Street. Southwest of Parkside Peninsula Sections 1 & 2.

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: August 09, 2024

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

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

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

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

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

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

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

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

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

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

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

Administrative Information

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

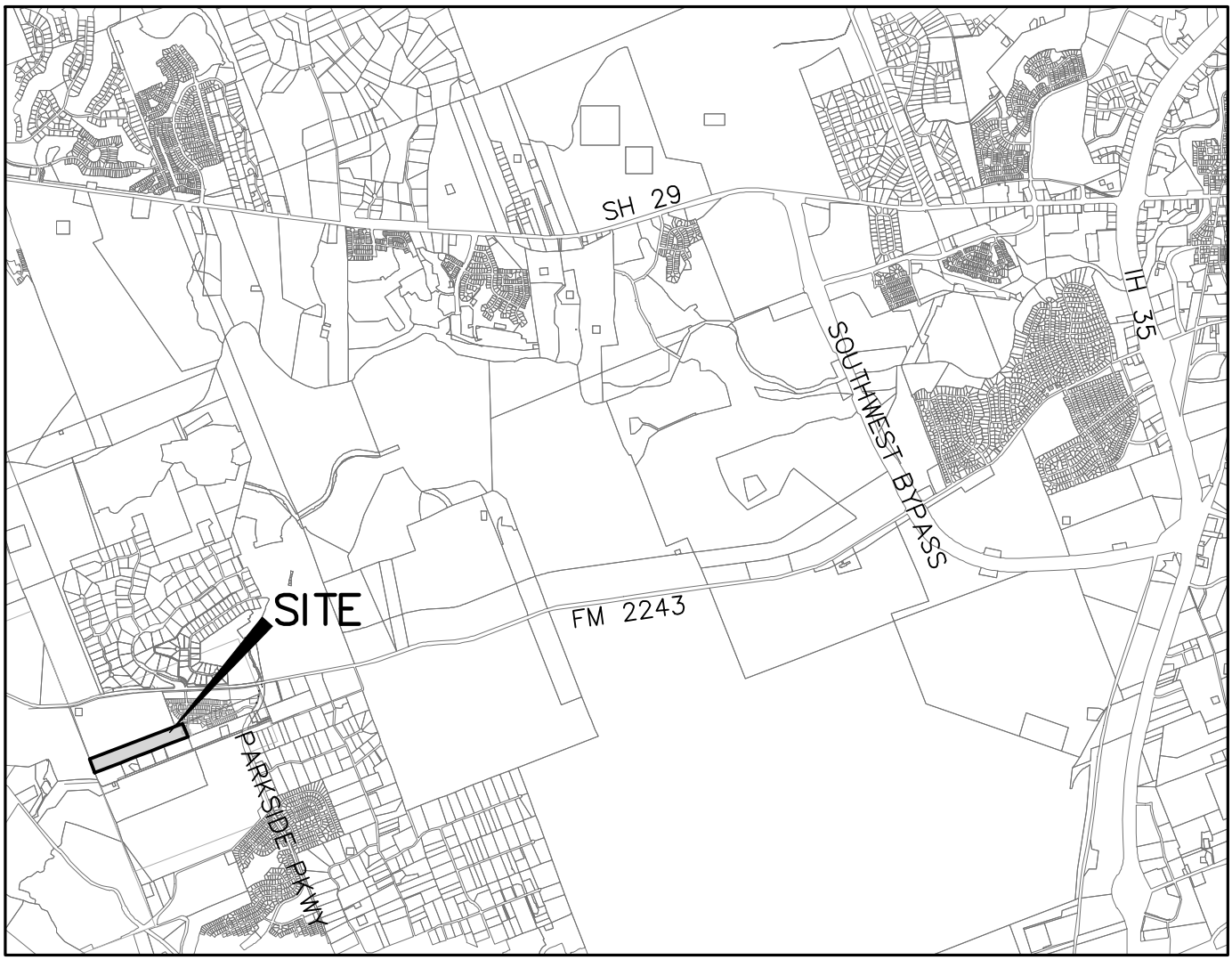
- ☐ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☒ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an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

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

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

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

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



VICINITY MAP

SCALE: 1"=5000'

HRGreen.
DEVELOPMENT TX

5508 HIGHWAY 290 WEST
SUITE 150
AUSTIN, TX 78735
512.872.6696
HRGREEN.COM

TBPE NO: 16384
TBPLS NO: 10194101

PARKSIDE PENINSULA PHASE 3

SITE LOCATION MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LEANDER QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

Edwards Aquifer Recharge Zone

Edwards Aquifer Recharge Zone

SUBJECT PROPERTY

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1963. Revised from aerial photographs taken 1985. Field checked 1986. Map edited 1987

Projection and 10,000-foot grid ticks: Texas coordinate system, central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 17 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence line

UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

3097–321

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

LEANDER, TEX.
30097–E7–TF–024

1987

DMA 6445 III SE–SERIES V882

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

ISBN 0-607-51609-7

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

Regulatory Zones

30 TAC Chapter 213- Edwards Aquifer
Effective May 1985

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

ATTACHMENT C – PROJECT NARRATIVE

The Parkside Peninsula Phase 3 development is a proposed single-family residential development tract, including associated right-of-way, drainage, and utilities located in the City of Georgetown and Williamson County. The project site is located within the Edwards Aquifer Recharge Zone, and within the San Gabriel River watershed. The overall project site encompasses a 28.22-acre tract of land located along Cypress Paul Street, southwest of Parkside Peninsula Sections 1 & 2. There will be roughly 28.22-acres of disturbed land.

The project site is primarily undeveloped wooded land with grass. Runoff flows north to south across the property. No portion of the project site is located within the 100-year floodplain as defined by FEMA FIRM Panel No. 48491C0460F, dated December 20, 2019.

The proposed site's SCS system will be composed of a total of 4,491 LF of wastewater line. There is 2,933 LF of 8-inch (8") 115 psi (ASTM D3034) gravity wastewater pipe and 1,558 LF of 6-inch (6") gravity wastewater pipe. The proposed improvements will tie into the existing 8" wastewater stub on Cypress Paul Street, constructed with Parkside Peninsula Sections 1 & 2. This line flows to the existing Lift Station constructed with Parkside Peninsula Sections 1 & 2, which is sized for 108 LUEs per the approved SCS. It then flows through the wastewater lines constructed with Parkside on the River Phase 1A, which connects to the Barton Tributary Wastewater Line project, which connects to the San Gabriel River Interceptor and ultimately flows to the Dove Springs WWTP. The Dove Springs Wastewater Treatment Plant has the capacity to adequately treat the proposed peak flow.

The proposed development results in an impervious cover of approximately 41.0% and will have the associated runoff treated by three proposed batch detention ponds, two proposed vegetative filter strips, and the existing batch detention pond approved with Parkside Peninsula Sections 1 & 2. Of the 28.22 acres of the proposed Parkside Peninsula Phase 3 property, there is approximately 11.58 acres of post-development impervious cover. Based on the 80% TSS removal requirement by TCEQ, we need to provide 10,079 lbs of TSS removal for the proposed development. As shown in the calculations, the batch detention ponds and vegetative filter strips satisfy the TSS removal requirement. The 85% TSS removal requirement by the City of Georgetown is also satisfied by the batch detention ponds.

The proposed conditions for the overall area includes approximately 27.95 acres of post-development impervious cover, of which 16.37 acres are existing from Parkside Peninsula Sections 1 & 2, and 11.58 acres are proposed with Parkside Peninsula Phase 3. Based on the 80% TSS removal requirement by TCEQ, 24,328 lbs of TSS removal need to provided in the proposed case. As shown in the calculations, the three proposed batch detention ponds, the two proposed vegetative filter strips, and the approved, existing Parkside Peninsula Sections 1 & 2 BMPs (batch detention ponds) satisfy this requirement. The 85% TSS removal requirement by the City of Georgetown is also satisfied for the batch detention ponds. In the proposed condition, the proposed batch detention pond A (BDP-A) will treat approximately 1.86 acres of impervious cover from Phase 3 and provide 1,842 lbs of TSS removal. The proposed batch detention pond B (BDP-B) will treat approximately 2.14 acres of impervious cover from Phase 3 and provide 2,095 lbs of TSS removal. The proposed batch detention pond C (BDP-C) will treat approximately 3.28 acres of impervious cover from Phase 3 and provide 3,283 lbs of TSS removal. The proposed vegetative filter strips (VFS-01 and VFS-02) will treat approximately 1.65 acres of impervious cover from Phase 3 and provide 1,581 lbs of TSS removal. The approved, existing Parkside Peninsula Sections 1 & 2 batch detention pond A (BDP-A (EX)) will treat a total of approximately 17.03 acres of impervious cover (15.30 acres of existing impervious cover from Sections 1 & 2, and 1.73 acres of proposed impervious cover from Phase 3) and provide 16,720 lbs of TSS removal. Approximately 0.92 acres of impervious cover proposed with Phase 3 is bypassing treatment. The BMPs are overtreating to account for the bypass impervious cover.

Refer to the construction plans for the water quality calculations and batch detention pond designs. Refer to the attached Parkside Peninsula Sections 1 & 2 plans for the existing batch detention pond design. Refer to the table below for the proposed sedimentation treatment breakdown provided.

A tree demolition schedule is included in the construction plans.

The associated combination of roadway, drainage, water quality, water, and wastewater improvements will be designed and built to serve this residential development.

PARKSIDE PENINSULA PHASE 3 - TSS REMOVAL SUMMARY

DRAINAGE AREA	BMP TYPE	MAX TSS REMOVAL EFFICIENCY	BASIN AREA	PRE-DEVELOPMENT I.C.	PARKSIDE PENINSULA SECTIONS 1 & 2	PROPOSED I.C. PARKSIDE PENINSULA PHASE 3	POST-DEVELOPMENT I.C.		TCEQ REQUIRED 80% TSS LOAD REMOVAL	CITY OF GEORGETOWN REQUIRED 85% POND TSS LOAD REMOVAL	PROVIDED TSS LOAD REMOVAL	VOLUME REQUIRED	VOLUME PROVIDED
			AC	AC		AC	AC	%	LB	LB	LB	CF	CF
BDP-A	BATCH DETENTION POND	91%	4.68			1.86	1.86	40%	1,619	1,720	1,842	17,447	20,209
BDP-B	BATCH DETENTION POND	91%	4.52			2.14	2.14	47%	1,863	1,979	2,095	18,926	20,681
BDP-C	BATCH DETENTION POND	91%	11.55			3.28	3.28	28%	2,855	3,033	3,283	35,193	44,784
VFS-01	VEGETATIVE FILTER STRIP	85%	1.96			0.82	0.82	42%	714		788		
VFS-02	VEGETATIVE FILTER STRIP	85%	1.62			0.83	0.83	51%	722		793		
BP-01	BY-PASS	0%	1.17			0.50	0.50	43%	435				
BP-02	BY-PASS	0%	1.11			0.08	0.08	7%	70				
BP-03	BY-PASS	0%	0.81			0.08	0.08	10%	70				
BP-04	BY-PASS	0%	0.66			0.26	0.26	39%	226				
BDP-A (EX)	BATCH DETENTION POND	91%	39.35		15.30	1.73	17.03	43%	14,823	15,749	16,720	143,844	151,783
BDP-C (EX)	BATCH DETENTION POND	91%	2.13		0.36		0.36	17%	313	333	350	2,838	3,344
BP (EX)	BY-PASS	0%	1.91		0.71		0.71	37%	618				
TOTAL:			**71.47**	**0.00**	**16.37**	**11.58**	**27.95**	**39%**	**24,328**		**25,871**		

1 - FOR THE GEORGETOWN TSS REMOVAL REQUIREMENT, WE CONSIDER 85% OF TSS REMOVAL FOR THE DRAINAGE AREA THAT DRAINS TOWARD THE BATCH DETENTION PONDS.

Narrative Description of Site Specific Geology for the Approximately 50-Acre Tract Near the Intersection of FM 2243 (Leander Road) and CR 176 in Georgetown, Williamson County, Texas

Prepared for:

Blake Magee Company

Prepared by:

Cambrian Environmental

January 2018

NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY FOR THE APPROXIMATELY 50-ACRE TRACT NEAR THE INTERSECTION OF FM 2243 (LEANDER ROAD) AND CR 176 IN GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Prepared for

BLAKE MAGEE COMPANY
1011 North Lamar Boulevard
Austin, Texas 78703

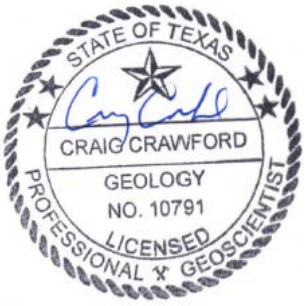
Prepared by

Ashley Wall

Craig Crawford, P.G.

CAMBRIAN ENVIRONMENTAL
4422 Pack Saddle Pass
Suite 204
Austin, Texas 78745

Texas Geoscience Firm Registration # 50484



As a licensed professional geoscientist I attest that the contents of this report are complete and accurate to the best of my knowledge.

January 10, 2018

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

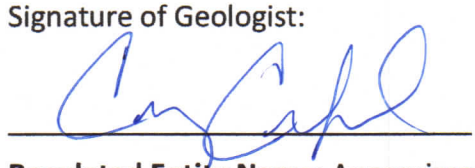
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Craig Crawford, PG Telephone: 512-705-5541

Date: 10 January 2018 Fax: _____

Representing: Cambrian Environmental (Tx Geo Firm #50484) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Approximately 50-acre Tract near the intersection of FM 2243 (Leander Road) and CR 176

Project Information

1. Date(s) Geologic Assessment was performed: 8, 9 January 2017
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Eckrant (EeB and EaD)	D	< 2
Georgetown (GsB)	D	< 4

** 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" = 100'
   Site Geologic Map Scale: 1" = 100'
   Site Soils Map Scale (if more than 1 soil type): 1" = 600'

9. Method of collecting positional data:

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

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

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

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

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

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

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

    ☐ There are _____ (#) 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.

NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY FOR THE APPROXIMATELY 50-ACRE TRACT NEAR THE INTERSECTION OF FM 2243 (LEANDER ROAD) AND CR 176 IN GEORGETOWN, WILLIAMSON COUNTY, TEXAS

PROJECT DESCRIPTION

This narrative Geologic Assessment accompanies the Texas Commission on Environmental Quality (TCEQ) Geologic Assessment form TCEQ-0585 completed for an approximately 50-acre tract located on Farm-to-Market (FM) 2243. The project area is located on the south side of FM 2243, approximately 5.5 miles west of the intersection with Interstate Highway (IH) 35 (see Site Location Map).

METHODOLOGY

A Cambrian Environmental Registered Professional Geoscientist (License # 10791) and 3 karst technicians conducted a field survey for a Geologic Assessment on 8 and 9 January 2018. The pedestrian survey was completed by walking parallel transects spaced approximately 50 feet apart as directed by the TCEQ in the Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (Rev. 10-01-04). Closer spacing was used where vegetation inhibited clear observation. All potential karst features, including depressions, holes, and animal burrows, were carefully examined for evidence of sub-surface extent. A number of techniques were used for this effort, including probing with a digging implement to determine the thickness and consistency of fill material and feeling for the presence of air flow, which may indicate the presence of a sub-surface void space. Other techniques included making observations of any notable characteristics of the feature site such as the presence of various types of vegetation or a semi-circular burrow mound produced by the activities of small mammals. The locations of any discovered features were recorded with a handheld GPS unit and were also marked on-site with pink flagging tape. We also conducted due diligence activities as called for under the City of Georgetown Edwards Aquifer Recharge Zone Water Quality Ordinance ("the Ordinance"), and related portions of the Unified Development Code (UDC).

RESULTS

Soils

Soils mapped within the project area included the Eckrant (EeB and EaD) and Georgetown (GsB) series soils (see Site Soils Map).[1] The Eckrant and Georgetown series soils are within the "D" classification of the hydrologic soil groups. Type "D" soils have a very slow infiltration rate (very high runoff potential) when thoroughly wet.

Geology

The project area is located within the Edwards Aquifer Recharge Zone. The bedrock lithology underlying the Project Area is Cretaceous in age and consists of the Edwards Limestone (Ked; see Site Geologic Map). The geology of the property has been mapped most recently at a useful scale by Collins (2005), and we find his interpretation of the geology to be generally accurate.[2]

[1] United States Department of Agriculture, Soil Conservation Service, Soil Survey of Williamson County, Texas, 1983.
[2] Collins, E.W., 2005, Geologic Map of the West Half of the Taylor 30x60 Quadrangle: Central Texas Urban Corridor, Encompassing Round Rock, Georgetown, Salado, Briggs, Liberty Hill, and Leander. Bureau of Economic Geology, The University of Texas at Austin. Austin, Texas 78713-8924.

Recharge into the aquifer primarily occurs in areas where the Edwards Group and Georgetown Formation are exposed at the surface. Most recharge is from direct infiltration via precipitation and streamflow loss. Recharge occurs predominantly along secondary porosity features such as faults, fractures, and karst features (caves, solution cavities, sinkholes, etc.). Karst features are commonly formed along joints, fractures, and bedding plane surfaces in the Edwards Group. No faults are mapped within the project area, and none were observed during the pedestrian survey.

The property appears to have undergone multiple episodes of brush and tree clearing activities, and is evidenced by numerous non-karst closed depressions located on the tract.

A review of the Texas Water Development Board online Groundwater Data Viewer[3] did not indicate that there are any documented ground water wells located on the tract, and no wells were discovered during the pedestrian survey.

City of Georgetown Ordinance

The City of Georgetown Ordinance requires buffers around regulated streams and springs, and enhanced water quality measures within the Recharge Zone within the City of Georgetown Extra-Territorial Jurisdiction (ETJ). The Ordinance also requires that the Professional Geoscientist identifies regulated streams and springs in the Geologic Assessment.

No springs or streams were identified within the project area during the pedestrian survey, and therefore no occupied site protection, or spring or stream buffer protection measures will be required for the project.

All regulated activities within the recharge zone must follow water quality best management practices, and development of the project area will need to comply with the water quality protection measures as outlined in Section 8 of the Ordinance.

Feature Descriptions

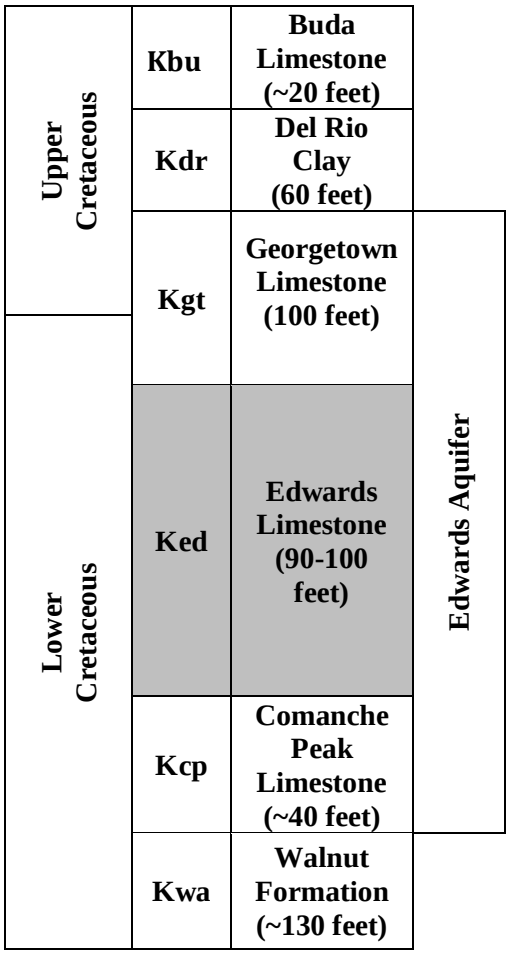
F-1 The feature consists of a sinkhole that measures approximately 8 feet by 4 feet by at least 2 feet deep. The feature is lined with loose limestone cobbles, dark brown clayey loam soil, and leaf litter. Some of the limestone cobbles and slabs in the feature appear to be stacked, so it is possible that this feature may have been backfilled at some point in the past. Although it was barely perceptible, the feature seemed to have slight air flow emitting from the feature. There was no open passage to the feature, however the detected airflow indicates that this feature is karst in origin. The feature is located in a relatively flat area, and the catchment area is less than 50 feet in all directions.

F-2 The feature consists of a non-karst closed depression that measures approximately 3 feet in diameter by 1 foot deep. The feature appears to be related to an animal burrow beneath several limestone float slabs. The feature is lined with dark brown clayey loam soil.

[3] https://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer

Stratigraphic Column for the Approximately 50-Acre Tract on FM 2243

*Shaded areas represent lithologies underlying the project area



GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: Approximately 50-acre tract at FM2243 & CR176																
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	30.59385	-97.77616	SH	20	Ked	8	4	2					C,F,O	30	50		X	X		Hilltop
F-2	30.5933	-97.77699	CD	5	Ked	3	3	1					F,O	20	25	X		X		Hilltop

* DATUM: WGS84

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

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

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

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

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

Date 10 January 2018

Sheet 1 of 1

STATE OF TEXAS
CRAIG CRAWFORD
GEOLOGY
NO. 10791
LICENSED
PROFESSIONAL GEOSCIENTIST

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

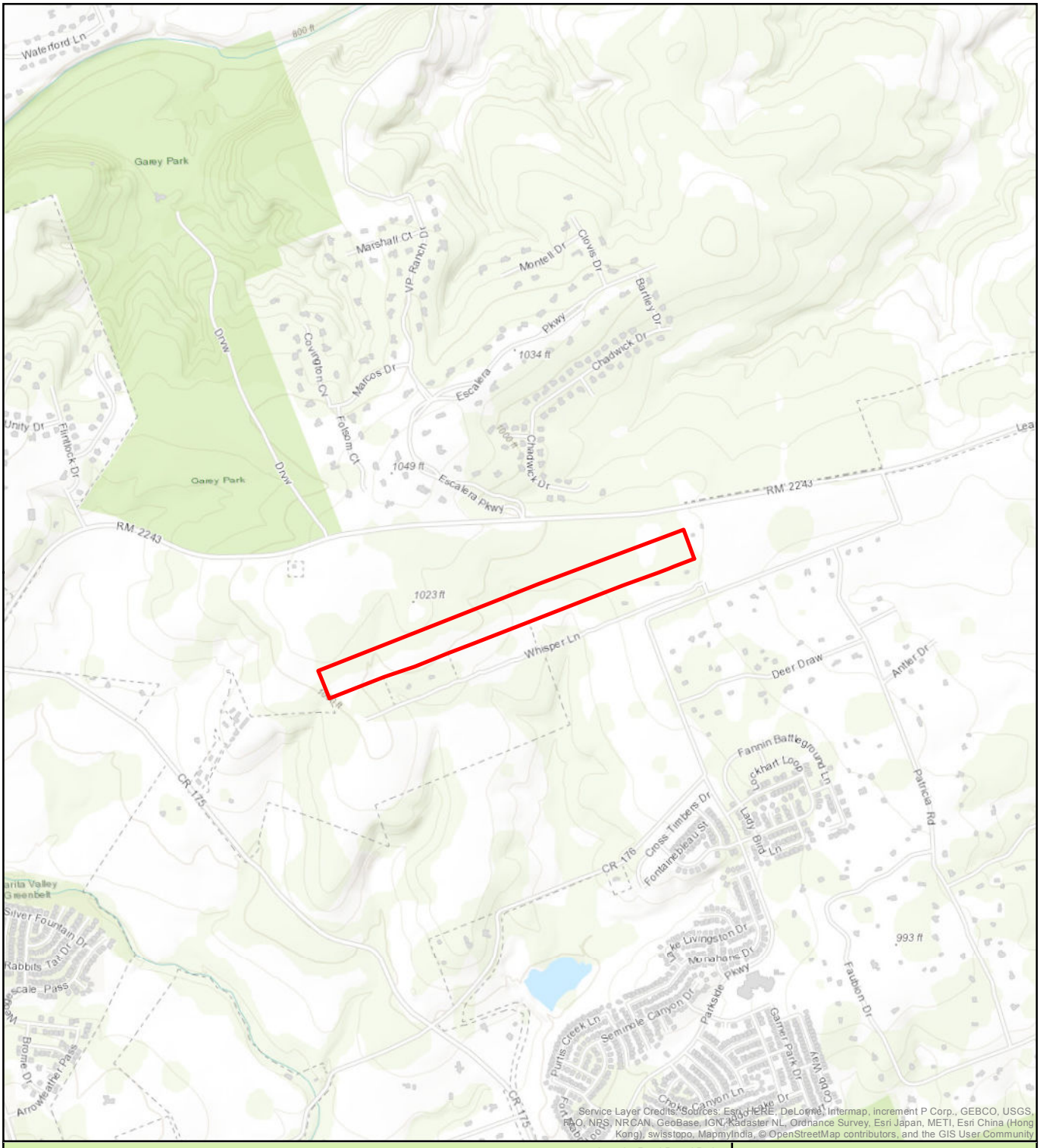


Figure 1. Project Location Map

Leander Road Parcel Project
LOM 01/03/2018

Cambrian

N
W E
S

0 2,400
Feet
0 800
Meters

Map Key

Project Area

Williamson County, Texas

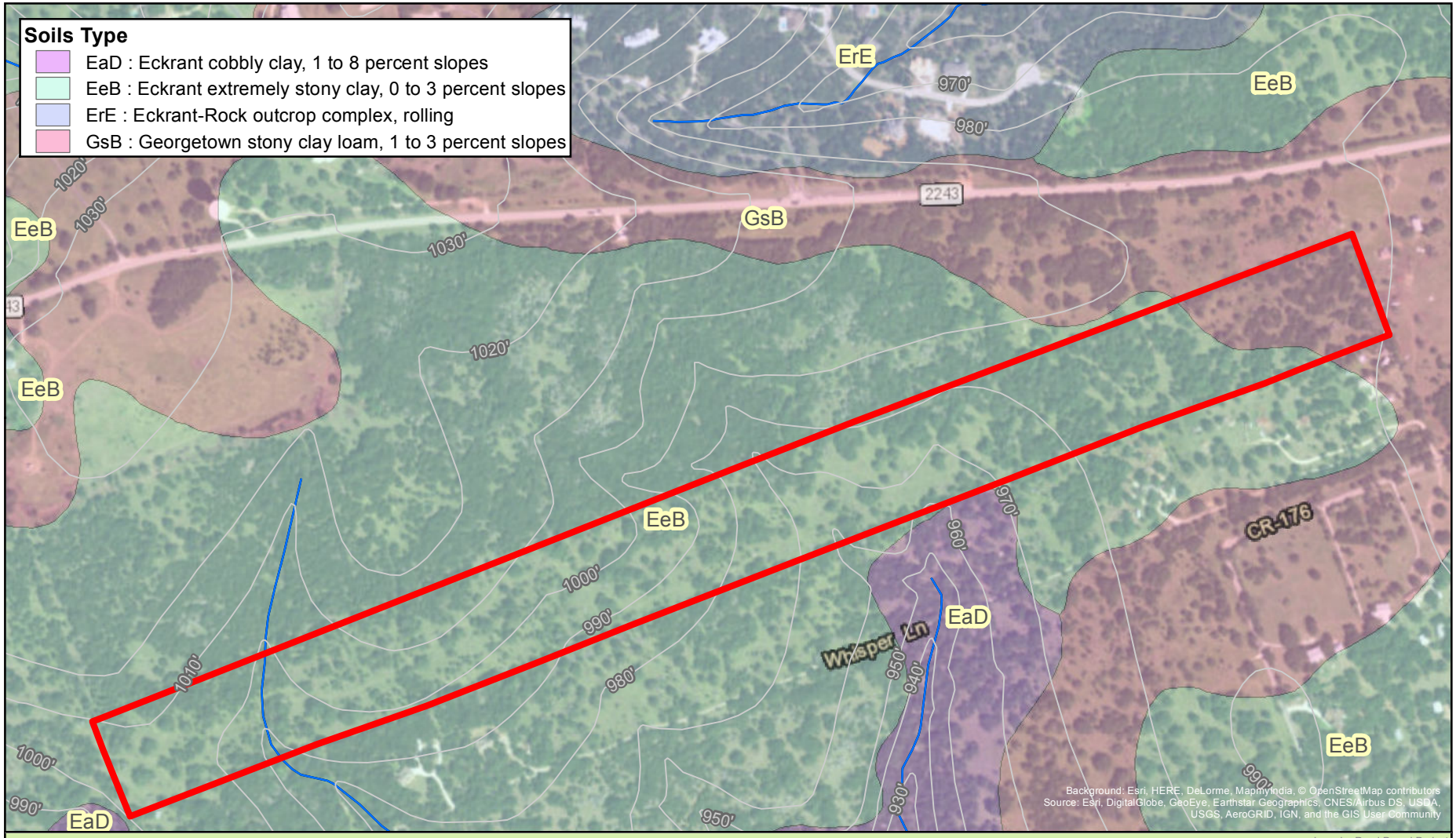


Figure 2. Soils of the Project Area

Leander Road Parcel Project
LOM 01/03/2018

Cambrian

0 600
Feet
0 150
Meters

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W E
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Map Key
- Project Area
- Stream
- Contour Line


1020
1010
1000
1010
990
1000
990
980
Ked
Edwards Aquifer
Recharge Zone
Map Sheet Index
STATE OF TEXAS
CRAIG CRAWFORD
GEOLOGY
NO. 10791
LICENSED
PROFESSIONAL GEOSCIENTIST
10 Jan 2018
Figure 3. Project Geologic Map
Cambrian
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Sheet 1 of 4
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Feet
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30
Meters
Map Key
Geologic Unit
Ked - Edwards Limestone
10-Foot Elevation Contour
Stream
1 inch = 100 feet
Background Layer Credits: Source: ESRI Aerial Imagery


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1000
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Ked
Edwards Aquifer
Recharge Zone
Map Sheet Index
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Figure 3. Project Geologic Map
Cambrian
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Sheet 2 of 4
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Meters
Map Key
Geologic Unit
Ked - Edwards Limestone
10-Foot Elevation Contour
1 inch = 100 feet
Background Layer Credits: Source: ESRI Aerial Imagery


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970
960
950
930
930
F-2
Ked
Edwards Aquifer
Recharge Zone
STATE OF TEXAS
CRAIG CRAWFORD
GEOLOGY
NO. 10791
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PROFESSIONAL GEOSCIENTIST
10 Jan 2018
Figure 3. Project Geologic Map
Map Sheet Index
Cambrian
Sheet 3 of 4
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Meters
Map Key
Geologic or Man-made Feature
Geologic Unit
Ked - Edwards Limestone
10-Foot Elevation Contour
Stream
1 inch = 100 feet
Background Layer Credits: Source: ESRI Aerial Imagery


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F-1
F-2
Ked
Edwards Aquifer
Recharge Zone
Map Sheet Index
STATE OF TEXAS
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10 Jan. 2018
Figure 3. Project Geologic Map
Cambrian
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Sheet 4 of 4
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Meters
Map Key
Geologic or Man-made Feature
Geologic Unit
Ked - Edwards Limestone
10-Foot Elevation Contour
1 inch = 100 feet
Background Layer Credits: Source: ESRI Aerial Imagery

Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), Effective June 1, 1999

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

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

Regulated Entity Name: Parkside Peninsula Phase 3

1. ☒ **Attachment A – SCS Engineering Design Report**. This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

2. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

   Contact Person: Blake Magee
   Entity: HM 2243 Development, Inc.
   Mailing Address: 1011 North Lamar Boulevard
   City, State: Austin, TX Zip: 78703
   Telephone: 512-481-0303 Fax: _____
   Email Address: Blake@blakemageeco.com
   The appropriate regional office must be informed of any changes in this information within 30 days of the change.

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

   Contact Person: Christine Campbell, P.E.
   Texas Licensed Professional Engineer's Number: 142536
   Entity: HR Green Development TX, LLC
   Mailing Address: 5508 Highway 290 West, #150
   City, State:Austin, TX Zip: 78735
   Telephone:512-872-6696 Fax:_____
   Email Address:christine.campbell@hrgreen.com

Project Information

4. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

   ☒ Residential: Number of single-family lots: 106
   ☐ Multi-family: Number of residential units: _____
   ☐ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

100% Domestic	26,500 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 26,500

6. Existing and anticipated infiltration/inflow is 28,220 (per City of Georgetown I&I calculations of 1,000 gallons/day/acre gallons/day. This will be addressed by: Using standard manholes and included in/out calculations for pipe design and flow determination.

7. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

   ☐ The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached.
   ☒ The WPAP application for this development was submitted to the TCEQ on 09/18/24, but has not been approved.
   ☐ A WPAP application is required for an associated project, but it has not been submitted.
   ☐ There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8"	2,933	PVC SDR 26	ASTM D3034
6"	1,558	PVC SDR 26	ASTM D3034

Total Linear Feet: 4,491

(1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
(2) Pipe Material - If PVC, state SDR value.

(3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

9. The sewage collection system will convey the wastewater to the Dove Springs WWTP (name) Treatment Plant. The treatment facility is:

☒ Existing
☐ Proposed

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

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

11. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.

☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

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

13. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.

☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes**. A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.

☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

14. ☒ Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 - Manholes and Cleanouts

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
A1	57 Of 68	1+06.01	MH
A2	57 Of 68	2+10.48	MH
A3	57 Of 68	4+42.46	MH
A4	57 Of 68	5+43.55	MH
A5	57 Of 68	7+57.80	MH
A6	57 Of 68	8+75.10	MH

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
A7	58 Of 68	13+52.39	MH
A8	58 Of 68	15+76.75	MH
A9	58 Of 68	18+46.81	MH
A10	59 Of 68	20+81.55	MH

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

16. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	**Max. Manhole Spacing (feet)**
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing**. The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

17. ☐ All manholes will be monolithic, cast-in-place concrete.

☒ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

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

Site Plan Scale: 1" = 40'.

19. ☒ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.

20. Lateral stub-outs:

☒ The location of all lateral stub-outs are shown and labeled.

☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

☒ The entire water distribution system for this project is shown and labeled.
☐ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
☐ There will be no water lines associated with this project.

22. 100-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
☐ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

Line	***Sheet***	***Station***
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

☒ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
☐ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

Line	***Sheet***	***Station***
	of	to
	of	to
	of	to
	of	to

24. ☒ Legal boundaries of the site are shown.

25. ☒ The ***final plans and technical specifications*** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

26. ☐ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.

☒ There will be no water line crossings.
☒ There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*
			-	
			-	
			-	
			-	
			-	
			-	
			-	

27. Vented Manholes:

☒ **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
☐ **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
☐ **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
☐ **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 - Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

☐ There are no drop manholes associated with this project.
☒ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*
WWL A	A1	1+06.01	57 OF 68

29. Sewer line stub-outs (For proposed extensions):

☐ The placement and markings of all sewer line stub-outs are shown and labeled.
☒ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

30. Lateral stub-outs (For proposed private service connections):

☒ The placement and markings of all lateral stub-outs are shown and labeled.
☐ No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

☒ Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

32. Maximum flow velocity/slopes (From Appendix A)

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*

33. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.
☐ Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.
☒ N/A

Administrative Information

34. ☒ The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

35. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	60 of 68
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	60 of 68
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	60 of 68
Typical trench cross-sections **[Required]**	61 of 68
Bolted manholes **[Required]**	60 of 68
Sewer Service lateral standard details **[Required]**	60 of 68
Clean-out at end of line **[Required, if used]**	N/A of 68
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	N/A of 68
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	61 of 68
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	N/A of 68

Standard Details	*Shown on Sheet*
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	60 of 68

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

37. ☒ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.

    ☒ Survey staking was completed on this date: August 09, 2024

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

39. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Christine Campbell, P.E.

Date: 09/18/24

Place engineer's seal here:

Signature of Licensed Professional Engineer:

Christine Campbell

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 - Slope Velocity

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

**For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.*

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)
n = Manning's roughness coefficient (0.013)
Rh = hydraulic radius (ft)
S = slope (ft/ft)

Attachment A - Engineering Design Report
Organized Sewage Collection System

Parkside Peninsula
Phase 3

CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

September 18, 2024

HR Green Project No: 2302005

Prepared For:
HM 2243 Development, Inc.
1011 North Lamar Boulevard
Austin, Texas 78703

Prepared By:
HR Green Development TX, LLC
5508 Highway 290 West, Suite 150
Austin, Texas 78735
TBPE Firm No. F-16384

09/18/2024

TABLE OF CONTENTS

INTRODUCTION

The SCS and WPAP accompanying this submittal will serve the Parkside Peninsula Phase 3 Subdivision.

Parkside is a master-planned subdivision located in Williamson County, Texas, within the City of Georgetown's ETJ. The Parkside Peninsula Phae 3 property consists of 28.22 acres and 106 single-family lots located within the Edwards Aquifer recharge zone, along Cypress Paul Street and southwest of Parkside Peninsula Sections 1 & 2.

The proposed site's SCS system will be composed of a total of 4,491 LF of wastewater line. There is 2,933 LF of 8-inch (8") 115 psi (ASTM D3034) gravity wastewater pipe and 1,558 LF of 6-inch (6") gravity wastewater pipe. The proposed improvements will tie into the existing 8" wastewater stub on Cypress Paul Street, constructed with Parkside Peninsula Sections 1 & 2. This line flows to the existing Lift Station constructed with Parkside Peninsula Sections 1 & 2, which is sized for 108 LUEs per the approved SCS. It then flows through the wastewater lines constructed with Parkside on the River Phase 1A, which connects to the Barton Tributary Wastewater Line project, which connects to the San Gabriel River Interceptor and ultimately flows to the Dove Springs WWTP. The Dove Springs Wastewater Treatment Plant has the capacity to adequately treat the proposed peak flow.

WASTEWATER COLLECTION SYSTEM DESIGN

The wastewater collection system was designed based on a wastewater flow rate of 250 gallons per day per LUE per City of Georgetown's Criteria Manual. Based on the flow rate and slopes of the system, 8-inch gravity sewer pipe was selected for the collection system.

The SCS and waterline system will maintain 9 feet of separation as required.

The gravity sewage collection system (all PVC SDR-26) in Parkside Peninsula Phase 3 will remain within the TCEQ minimums for pipe slopes: 0.33 – 8.40% for 8-inch pipe. The proposed slopes on the site range from 0.50% – 4.00% for 8-inch pipe. According to Manning's equation for an 8" pipe with a manning's coefficient of 0.013 at a 0.50% slope, the velocity at full flow is 2.44 feet per second. The velocity of an 8" pipe at a slope of 4.00% is 6.90 feet per second. All gravity sewage pipe in this project will be greater than 2.0 feet per second and less than 10 feet per second when flowing full.

The gravity sewage collection system six-inch (6") PVC SDR-26 pipe used for service laterals will remain within the TCEQ minimum 0.50% and maximum of 12.35%.

PROPOSED TYPE OF PIPE

6" SDR-26 PROPERTIES

Pipe Compliance:	ASTM D-3034
Joint Compliance:	ASTM D-3212
Minimum Tensile Strength (psi):	7,000
Minimum Modulus of Elasticity (psi):	400,000
Average Inner Diameter (inch):	5.793
Average Outer Diameter (inch):	6.275
Wall Thickness (inch):	0.241
Approximate Trenching Width (feet):	5.583
Minimum Pipe Depth (Cover) used (feet):	9.31
Maximum Pipe Depth (Cover) used (feet):	19.99'

8" SDR-26 PROPERTIES

Pipe Compliance:	ASTM D-3034
Joint Compliance:	ASTM D-3212
Minimum Tensile Strength (psi):	7,000
Minimum Modulus of Elasticity (psi):	400,000
Average Inner Diameter (inch):	7.754
Average Outer Diameter (inch):	8.400
Wall Thickness (inch):	0.323
Approximate Trenching Width (feet):	5.583
Minimum Pipe Depth (Cover) used (feet):	8.89'
Maximum Pipe Depth (Cover) used (feet):	20.43'

STRUCTURAL CALCULATIONS

Since the deepest wastewater pipe is greater than 17 feet below ground, structural calculations have been prepared for this SCS application. The structural calculations for 6" and 8" PVC pipe are as follows. Please note, most pipes proposed in the SCS application meet the following requirements listed in 30 TAC 217.53(k)(4):

(A) Open trench design – All pipe construction will be open trench.

(B) Flexible pipe with a pipe stiffness of 46 psi or greater – The pipe stiffness for 8" SDR ASTM D3034 is greater than 46 psi.

(C) Buried 17 feet or less – Gravity pipes are buried greater than 17 feet. The deepest pipes have been evaluated for structural calculations.

(D) Diameter of 12 inches or less - All proposed wastewater pipe is less than 12 inches.

(E) Modulus of soil reaction for the in-situ soil of 200 psi or greater – The modulus of soil reaction is greater than 200 psi.

(F) No effects on a pipe due to live loads – The ring deflection of flexible pipe relieves the pipe of the major portion of the vertical soil load; which is then carried by the surrounding soil through the mechanism of an arching action over the pipe.

(G) A unit weight of soil of 120 pounds per cubic foot or less – The unit weight of soil will be 120 pcf.

(H) A typical pipe trench width of 36 inches or greater - Trench width of 67 inches will be used for manhole or wastewater lines deeper than 17 feet.

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E'

TABLE 2

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E'
(For Initial Flexible Pipe Deflection)

Soil type-pipe bedding material (Unified Classification System[a]) (1)	E' for Degree of Compaction of Pipe Zone Backfill, psi			
	Loose (2)	Slight <85% Proctor, <40% relative density (3)	Moderate 85%-95% Proctor, 40%-70% relative density (4)	High >95% Proctor, >70% relative density (5)
Fine-grained Soils (LL > 50)[b] Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Fine-grained Soils (LL < 50) Soils with medium to no plasticity CL, ML ML-CL, with less than 25% coarse-grained particles	50	200	400	1,000
Fine-grained Soils (LL < 50) Soils with medium to no plasticity CL, ML, ML-CL, with more than 25% coarse-grained particles Coarse-grained Soils with Fines GM, GC, SM, SC[c] contains more than 12% fines	100	400	1,000	2,000
Coarse-grained Soils with Little or No Fines GW, GP, SW, SP[c] contains less than 12% fines	200	1,000	2,000	3,000
Crushed Rock	1,000	3,000	3,000	3,000
Accuracy in Terms of Percentage Deflection[d]	±2	±2	±1	±0.5

[a]ASTM Designation D 2487, USBR Designation E-3.
[b]LL = Liquid limit.
[c]Or any borderline soil beginning with one of these symbols (i.e., GM-GC, GC-SC).
[d]For ±1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%.
Note: Values applicable only for fills less than 50 ft (15 m). Table does not include any safety factor. For use in predicting initial deflections only, appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1 psi = 6.9 kN/m^2.

SOURCE: "Soil Reaction for Buried Flexible Pipe," by Amster K. Howard, U.S. Bureau of Reclamation, Denver, Colorado. Reprinted with Permission from American Society of Civil Engineers Journal of Geotechnical Engineering Division, January 1977, pp. 33-43.

Modulus of Soil Reaction for the in-situ soil is determined to be 200 psi based on fine-grained soils (CL) with slight to moderate proctor.

PIPE BEDDING CLASS AND MODULUS OF SOIL REACTION, E_b:

TABLE 7 - DESCRIPTION OF MATERIAL CLASSIFICATION

Class	Type	Soil Group Symbol	Description ASTM D 2487	Percentage Passing Sieve Sizes 1.5 in (40 mm)	No. 4 (4.75 mm)	No. 200 (0.075 mm)	Atterberg Limits LL	PI	Coefficients Uniformity C_u	Curvature C_c
IA	Manufactured Aggregates: open-graded, clean.	None	Angular, crushed stone or rock, crushed gravel, broken coral, crushed slag, cinders or shells; large void content, contain little or no fines	100%	≤10%	<5%	Non Plastic			
IB	Manufactured, Processed Aggregates; dense-graded, clean.	None	Angular, crushed stone (or other Class IA materials) and stone/sand mixtures with gradations selected to minimize migration of adjacent soils; contain little or no fines	100%	≤50%	<5%	Non Plastic			
II	Coarse-Grained Soils, clean	GW	Well-graded gravels and gravel-sand mixtures; little or no fines	100%	<50% of Coarse Fraction	<5%	Non Plastic		>4	1 to 3
		GP	Poorly-graded gravels and gravel-sand mixtures; little or no fines						<4	<1 or >3
		SW	Well-graded sands and gravelly sands; little or no fines		>50% of Coarse Fraction				>6	1 to 3
		SP	Poorly-graded sands and gravelly sands; little or no fines						<6	<1 or >3
	Coarse-Grained Soils, borderline clean to w/fines	e.g. GW-GC, SP-SM.	Sands and gravels which are border-line between clean and with fines	100%	Vanes	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
III	Coarse-Grained Soils With Fines	GM	Silty gravels, gravel-sand-silt mixtures	100%	<50% of Coarse Fraction	>12% to <50%		<4 or <"A" Line		
		GC	Clayey gravels, gravel-sand-clay mixtures					<7 and >"A" Line		
		SM	Silty sands, sand-silt mixtures		>50% of Coarse Fraction			>4 or <"A" Line		
		SC	Clayey sands, sand-clay mixtures					>7 and >"A" Line		
IVA[A]	Fine-Grained Soils (inorganic)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity	100%	100%	>50%	<50	<4 or <"A" Line		
		CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays					>7 and >"A" Line		
IVB	Fine-Grained Soils (inorganic)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	100%	100%	>50%	>50	<"A" Line		
		CH	Inorganic clays of high plasticity, fat clays					>"A" Line		
V	Organic Soils	OL	Organic silts and organic silty clays of low plasticity	100%	100%	>50%	<50	<4 or <"A" Line		
		OH	Organic clays of medium to high plasticity, organic silts				>50	<"A" Line		
	Highly Organic	PT	Peat and other high organic soils							

[A]Includes Test Method ASTM D 2487 borderline classifications and dual symbols depending on plasticity index and liquid limits.
NOTE: "Coarse Fraction" as used in this table is defined as material retained on a No. 200 sieve.

SOURCE: ASTM D 2321 AND AASHTO M43, AND AS PUBLISHED ON TABLE 7, IN DEFLECTION: THE PIPE/SOIL MECHANISM UNI-TR-1-97, UNI-BELL PVC PIPE ASSOCIATION, PG. 24

Per TCEQ guidelines, a contractor is allowed to use ASTM D 2321 Bedding Class 1A, 1B, II, or III at no less than 85% compaction. The calculations in this Engineering Design Report reflect the use of Bedding Class III, at 85-95% compaction with an E_b value of 1,000 psi. This represents the worst-case bedding class a contractor can choose. All other bedding class options will provide an improved value for the zeta factor as well as pipe deflection.

PRISM LOAD DETERMINATION:

TABLE 3
PRISM LOAD (LBS/IN^2)

$$P = \frac{w\,H}{144}$$

Height of Cover (ft)	Soil Wt. (lbs/ft^3) 100	110	120	130	Height of Cover (ft)	Soil Wt. (lbs/ft^3) 100	110	120	130
1	0.69	0.76	0.83	0.90	16	11.11	12.22	13.33	14.44
2	1.39	1.53	1.67	1.81	17	11.81	12.97	14.17	15.35
3	2.08	2.29	2.50	2.71	18	12.50	13.75	15.00	16.25
4	2.78	3.06	3.33	3.61	19	13.19	14.51	15.83	17.15
5	3.47	3.82	4.17	4.51	20	13.89	15.28	16.67	18.06
6	4.17	4.58	5.00	5.42	21	14.58	16.04	17.50	18.96
7	4.86	5.35	5.83	6.32	22	15.28	16.81	18.33	19.86
8	5.56	6.11	6.67	7.22	23	15.97	17.57	19.17	20.76
9	6.25	6.88	7.50	8.13	24	16.67	18.33	20.00	21.67
10	6.94	7.64	8.33	9.03	25	17.36	19.10	20.83	22.57
11	7.64	8.40	9.17	9.93	26	18.06	19.86	21.67	23.47
12	8.33	9.17	10.00	10.83	27	18.75	20.63	22.50	24.38
13	9.03	9.93	10.83	11.74	28	19.44	21.39	23.33	25.28
14	9.72	10.69	11.67	12.64	29	20.14	22.15	24.17	26.18
15	10.42	11.46	12.50	13.54	30	20.83	22.92	25.00	27.08

Prism load is the “dead load” or the pressure acting on the pipe by the weight of the soil column above a given section of the pipe. The following prism load columns are industry standards as referenced from Table 3 in Deflection: The Pipe/Soil Mechanism INI-TR-1-97, Uni-Bell Pipe Association, Pg. 13.

The prism loads are calculated using the Marston Theory of Loads and is calculated using the formula:

$$P = \frac{y_s * H}{144}$$, where y_s is the unit weight of the backfill material

6” Pipe: Based on the above table, at a maximum burial depth of 19.99’ and a backfill soil weight of 120 lbs/ft^3, the prism load is approximately 16.66 psi.

8” Pipe: Based on the above table, at a maximum burial depth of 20.43’ and a backfill soil weight of 120 lbs/ft^3, the prism load is approximately 17.03 psi.

LIVE LOAD DETERMINATIONS:

TABLE 4

LIVE LOADS ON PVC PIPE

Height of Cover (ft)	Live Load Transferred to Pipe, lb/in²			Height of Cover (ft)	Live Load Transferred to Pipe, lb/in²		
	Highway H20[1]	Railway E80[2]	Airport [3]		Highway H20[1]	Railway E80[2]	Airport [3]
1	12.50			14	*	4.17	3.06
2	5.56	26.39	13.14	16	*	3.47	2.29
3	4.17	23.61	12.28	18	*	2.78	1.91
4	2.78	18.40	11.27	20	*	2.08	1.53
5	1.74	16.67	10.09	22	*	1.91	1.14
6	1.39	15.63	8.79	24	*	1.74	1.05
7	1.22	12.15	7.85	26	*	1.39	*
8	0.69	11.11	6.93	28	*	1.04	*
10	*	7.64	6.09	30	*	0.69	*
12	*	5.56	4.76	35	*	*	*
				40	*	*	*

[1] Simulates 20 ton truck traffic + impact.
[2] Simulates 80,000 lb/ft railway load + impact.
[3] 180,000 lbs. dual tandem gear assembly. 26 inch spacing between tires and 66 inch center-to-center spacing between fore and aft tires under a rigid pavement 12 inches thick + impact.
* Negligible live load influence.

SOURCE: AASHTO H20 AND E80 LOADS AND AS PUBLISHED ON TABLE 4 IN DEFLECTION: THE PIPE/SOIL MECHANISM UNI-TR-1-197, UNI-BELL PVC PIPE ASSOCIATION PAGE 14.

The pipe depths of this project range from 8.89 feet to 20.43 feet. The streets in this project are not intended for heavy truck traffic.

Live Load for 8.89 feet (8.89') of cover is 0.38 psi in a highway condition. The roads within the subdivision are not designed or intended for highway conditions so this is considered a worst-case scenario for live loads.

The previous page discusses prism loads which is the dead load acting on the pipe due to the weight of the soil above the pipe. The deepest pipe in this system is approximately 20.43', thus, the prism load at that depth (17.03 psi) puts more pressure on the pipe than the live loading and prism loading combined (0.38 psi + 7.41 psi from Prism Load table on the previous page) at a minimum buried depth of 8.89'.

Since the pipes experience the most pressure at their deepest points, 20.43', it is not necessary to evaluate any other scenario.

ALLOWABLE BUCKLING PRESSURE (6" PVC):

Where:

q_a allowable buckling pressure, pound per inch square (psi)

h height of soil surface above top of pipe in inches (ft / in) = 19.99' / 239.88" max

B' Empirical coefficient of elastic support

E_b modulus of soil reaction for the bedding material (psi)

E modulus of elasticity for the pipe material (psi)

I moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For solid wall pipe, I can be calculated with equation 4. If the pipe used is not solid wall pipe (for example a pipe with a ribbed cross section), the proper moment of inertia formula must be obtained from the manufacturer.

t pipe structural wall thickness (in) = 0.241 in.

D mean pipe diameter (in) = 6.034 in.

Solving for the Empirical coefficient of elastic support, given by Luscher in 1966, as referenced on *Pg. 113 of Moser, A.P., Buried Pipe Design. 2nd. Ed., McGraw-Hill:*

$$B' = \frac{4(h^2+Dh)}{1.5(2h+D)^2} = \frac{4(239.88^2+6.034*239.88)}{1.5(2*239.88+6.034)^2} = 0.67$$

$$I = \frac{t^3}{12} = \frac{0.241^3}{12} in^3 = 0.001166\ in^3$$

Using the Allowable Buckling Pressure Equation as shown in *Moser, A.P., Buried Pipe Design. 2nd. Ed., McGraw-Hill, Pg. 112*, and an initial factor of safety (FS) of 2.5, the Allowable Buckling Pressure is:

$$q_a = \frac{1}{FS} * \sqrt{32 * R_w * B' * E_b * \left(E * \frac{I}{D^3}\right)}\ psi$$

where Rw = 1 – 0.33 (hw / h)

$$q_a = \frac{1}{2.5} * \sqrt{32 * 1 * 0.67 * 1000 * \left(400{,}000 * \frac{0.001166}{6.034^3}\right)}\ psi = 85.14\ psi$$

INSTALLED CONDITION BUCKLING PRESSURE (6" PVC):

Where:

q_p buckling pressure applied, pound per inch square (psi)

h height of soil surface above top of pipe in inches (ft / in) = 19.99' / 239.88" max

γ_s Specific weight of soil (pcf)

γ_w Specific weight of water = 0.0361 (pci)

W_c Vertical Soil Load on the pipe per unit length (lb/Lin)

W_L Live Load as determined from chart

h_w Height of groundwater above pipe = 0

D mean pipe diameter (in) = 6.034 in

D_o outside pipe diameter (in) = 6.275 in

The Vertical Soil Load can be calculated using Equation 6.6 of *Uni-Bell's Handbook of PVC Pipe; Ch. VI Superimposed Loads on Buried Pipe, Pg. 183.*

$$Wc = h * y_s * D_o \frac{lb}{Lin}$$

where g_s = 120 pcf

$$Wc = 239.88 * \frac{120}{1728} * 6.275 \frac{lb}{Lin} = 104.53 \frac{lb}{Lin}$$

Using the equation on *Pg. 114 of Moser, A.P., Buried Pipe Design. 3rd Ed., McGraw-Hill*, Pressure Applied to Pipe under installed conditions at its deepest installed depth:

$$q_p = (\gamma_w * h_w + R_w * \frac{W_c}{D} + \frac{W_L}{D}) psi$$

where Rw = 1 – 0.33 (hw / h)

$$q_p = 0.0361 * 0 + 1 * \frac{104.53}{6.034} + \frac{0}{6.034} psi = 17.32\ psi$$

The pressure applied to the pipe under installed conditions is less than the Allowable Buckling Pressure therefore the design is adequate for installation.

ALLOWABLE BUCKLING PRESSURE (8" PVC):

Where:

q_a allowable buckling pressure, pound per inch square (psi)

h height of soil surface above top of pipe in inches (ft / in) = 20.43' / 245.16" max

B' Empirical coefficient of elastic support

E_b modulus of soil reaction for the bedding material (psi)

E modulus of elasticity for the pipe material (psi)

I moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For solid wall pipe, I can be calculated with equation 4. If the pipe used is not solid wall pipe (for example a pipe with a ribbed cross section), the proper moment of inertia formula must be obtained from the manufacturer.

t pipe structural wall thickness (in) = 0.323 in.

D mean pipe diameter (in) = 8.077 in.

Solving for the Empirical coefficient of elastic support, given by Luscher in 1966, as referenced on *Pg. 113 of Moser, A.P., Buried Pipe Design. 2nd. Ed., McGraw-Hill:*

$$B' = \frac{4(h^2+Dh)}{1.5(2h+D)^2} = \frac{4(245.16^2+8.077*245.16)}{1.5(2*245.16+8.077)^2} = 0.67$$

$$I = \frac{t^3}{12} = \frac{0.323^3}{12}\,in^3 = 0.002808\,in^3$$

Using the Allowable Buckling Pressure Equation as shown in *Moser, A.P., Buried Pipe Design. 2nd. Ed., McGraw-Hill, Pg. 112*, and an initial factor of safety (FS) of 2.5, the Allowable Buckling Pressure is:

$$q_a = \frac{1}{FS} * \sqrt{32 * R_w * B' * E_b * \left(E * \frac{I}{D^3}\right)}\,psi$$

where Rw = 1 – 0.33 (hw / h)

$$q_a = \frac{1}{2.5} * \sqrt{32 * 1 * 0.67 * 1000 * \left(400{,}000 * \frac{0.002808}{8.077^3}\right)}\ psi = 85.29\,psi$$

INSTALLED CONDITION BUCKLING PRESSURE (8" PVC):

Where:

q_p buckling pressure applied, pound per inch square (psi)

h height of soil surface above top of pipe in inches (ft / in) = 20.43' / 245.16" max

γ_s Specific weight of soil (pcf)

γ_w Specific weight of water = 0.0361 (pci)

W_c Vertical Soil Load on the pipe per unit length (lb/Lin)

W_L Live Load as determined from chart

h_w Height of groundwater above pipe = 0

D mean pipe diameter (in) = 8.077 in

D_o outside pipe diameter (in) = 8.40 in

The Vertical Soil Load can be calculated using Equation 6.6 of *Uni-Bell's Handbook of PVC Pipe; Ch. VI Superimposed Loads on Buried Pipe, Pg. 183.*

$$Wc = h * y_s * D_o \frac{lb}{Lin}$$

where g_s = 120 pcf

$$Wc = 245.16 * \frac{120}{1728} * 8.40 \frac{lb}{Lin} = 143.01 \frac{lb}{Lin}$$

Using the equation on *Pg. 114 of Moser, A.P., Buried Pipe Design. 3rd Ed., McGraw-Hill*, Pressure Applied to Pipe under installed conditions at its deepest installed depth:

$$q_p = (\gamma_w * h_w + R_w * \frac{W_c}{D} + \frac{W_L}{D}) psi$$

where Rw = 1 – 0.33 (hw / h)

$$q_p = 0.0361 * 0 + 1 * \frac{143.01}{8.077} + \frac{0}{8.077} psi = 17.71\, psi$$

The pressure applied to the pipe under installed conditions is less than the Allowable Buckling Pressure therefore the design is adequate for installation.

WALL CRUSHING (6" PVC):

Where:

P_c Compressive stress or hydrostatic design basis (HDB). For typical PVC pipe assume 4,000 (psi)

A Surface area of the pipe wall, in^2/in = 0.241

γ_s Specific weight of soil (pcf) = 120 pcf

D_o outside pipe diameter (in) = 6.275 in

H Depth of burial (ft) from ground surface to crown of pipe

Using the Wall Crushing and Wall Thrust equations from *Plastic Pipe Design Manual published by Vylon Pipe, Pg. 14*, the wall crushing due to compressive stress can be found using the following:

P_c = T / A, where T = Thrust is calculated as T = P_y * D / 2

Substituting T into the thrust wall crushing equation:

$$P_c = \frac{P_y * D/2}{A} = \frac{P_y * D}{2 * A}$$

From the Marston equation determining the Prism Load (see previous section), substitute the equation for P_y:

$$P_c = \frac{y_s * H/144 * D}{2 * A}$$

$$288 * A * P_c = y_s * H * D$$

$$H = \frac{288 * P_c * A}{y_s * D}$$

$$H = \frac{288 * 4000 * 0.241}{120 * 6.275} = 369\ ft$$

The wall crushing depth of 369 feet far exceeds the maximum burial depth of 19.99 feet proposed in this project. Design is adequate for wall crushing.

Wall Crushing Depth for 6" Pipe = 369 feet

WALL CRUSHING (8" PVC):

Where:

P_c Compressive stress or hydrostatic design basis (HDB). For typical PVC pipe assume 4,000 (psi)

A Surface area of the pipe wall, in^2/in = 0.323

γ_s Specific weight of soil (pcf) = 120 pcf

D_o outside pipe diameter (in) = 8.40 in

H Depth of burial (ft) from ground surface to crown of pipe

Using the Wall Crushing and Wall Thrust equations from *Plastic Pipe Design Manual published by Vylon Pipe, Pg. 14*, the wall crushing due to compressive stress can be found using the following:

P_c = T / A, where T = Thrust is calculated as T = P_y * D / 2

Substituting T into the thrust wall crushing equation:

$$P_c = \frac{P_y * D/2}{A} = \frac{P_y * D}{2 * A}$$

From the Marston equation determining the Prism Load (see previous section), substitute the equation for P_y:

$$P_c = \frac{y_s * H/144 * D}{2 * A}$$

$$288 * A * P_c = y_s * H * D$$

$$H = \frac{288 * P_c * A}{y_s * D}$$

$$H = \frac{288 * 4000 * 0.323}{120 * 8.40} = 369\ ft$$

The wall crushing depth of 369 feet far exceeds the maximum burial depth of 20.43 feet proposed in this project. Design is adequate for wall crushing.

Wall Crushing Depth for 8" Pipe = 369 feet

LEONHARDT'S ZETA FACTOR – DEFLECTION ANALYSIS:

6" PIPE

The Leonhardt's Zeta Factor Equation can be calculated using Equation 7.37 of *Uni-Bell's Handbook of PVC Pipe, Ch. VII, Design of Buried PVC Pipe, Pg. 239.*

Where:

E' Modulus of soil reaction for in-situ material (psi) = 200 psi

E_b modulus of soil reaction for the bedding material (psi) = 1000 psi

B Trench Width, in = 67 in

D_o outside pipe diameter (in) = 6.275 in

$$zeta = \frac{1.44}{\mathcal{F} + [1.44 - \mathcal{F}] * \frac{E_b}{E'}}$$

$$\text{where } \mathcal{F} = \frac{\frac{B}{D_o} - 1}{1.154 + 0.4448[\frac{B}{D_o} - 1]} = 1.773$$

$$zeta = \frac{1.44}{1.773 + [1.44 - 1.773] * \frac{1000}{200}} = 13.28$$

8" PIPE

The Leonhardt's Zeta Factor Equation can be calculated using Equation 7.37 of *Uni-Bell's Handbook of PVC Pipe, Ch. VII, Design of Buried PVC Pipe, Pg. 239.*

Where:

E' Modulus of soil reaction for in-situ material (psi) = 200 psi

E_b modulus of soil reaction for the bedding material (psi) = 1000 psi

B Trench Width, in = 67 in

D_o outside pipe diameter (in) = 8.40 in

$$zeta = \frac{1.44}{\mathcal{F} + [1.44 - \mathcal{F}] * \frac{E_b}{E'}}$$

$$\text{where } \mathcal{F} = \frac{\frac{B}{D_o} - 1}{1.154 + 0.4448[\frac{B}{D_o} - 1]} = 1.639$$

$$zeta = \frac{1.44}{1.639 + [1.44 - 1.639] * \frac{1000}{200}} = 2.23$$

PIPE STIFFNESS:

6" PIPE

Using Equation B.1 in 30 TAC 217.53(k)(3), to calculate pipe stiffness:

Where:

PS Pipe Stiffness in lbs per in^2 (psi); for SDR26, pipe stiffness = 115

C Conversion factor; 0.80

RCS Ring Stiffness constant

D mean pipe diameter (in) = 6.034 in.

$$PS = C * RSC * \frac{8.337}{D}$$

$$RSC = \frac{PS}{C * \frac{8.337}{D}} = \frac{115}{0.80 * \frac{8.337}{6.034}} = 104.04$$

8" PIPE

Using Equation B.1 in 30 TAC 217.53(k)(3), to calculate pipe stiffness:

Where:

PS Pipe Stiffness in lbs per in^2 (psi); for SDR26, pipe stiffness = 115

C Conversion factor; 0.80

RCS Ring Stiffness constant

D mean pipe diameter (in) = 8.077 in.

$$PS = C * RSC * \frac{8.337}{D}$$

$$RSC = \frac{PS}{C * \frac{8.337}{D}} = \frac{115}{0.80 * \frac{8.337}{8.077}} = 139.27$$

PREDICTED PIPE DEFLECTION

6" PIPE

Using the Modified Iowa Equation, referenced in the *Uni-Bell PVC Pipe Association as Equation 14 of Deflection: The Pipe/Soil Mechanism UNI-TR-1-97*, the predicted pipe deflection can be calculated as follows:

Where:

%ΔY/D Predicted % vertical deflection under load

P Prism load, psi = 16.66 psi

K Bedding angle constant, assumed to = 0.096

W' Live Load, psi = 0 at max depth (negligible per table)

DR Dimension Ration = 26

E Modulus of tensile elasticity of the pipe material, psi = 400,000

E' Modulus of soil Reaction (zeta x Eb) = 13,283 psi

DL Deflection Lag Factor = 1.5

Using the Modified Iowa Equation:

$$(\%)\frac{\Delta Y}{D} = \frac{DL * K * P + K * W') * 100}{\left[\frac{2E}{3 * (DR-1)^3}\right] + 0.061 * E'}\%$$

$$(\%)\frac{\Delta Y}{D} = \frac{(1.5 * 0.096 * 16.66 + 0.096 * 0) * 100}{\left[\frac{2 * 400{,}000}{3 * (26-1)^3}\right] + 0.061 * 13{,}283}\% = 0.290\%$$

The anticipated deflection of 0.290% is less than the industry standard of 5%, therefore the pipe design is acceptable.

A deflection factor of 1.0 is typically used for new pipes. A deflection factor of 1.5 represents a conservative factor to take into account its 50-year life.

8" PIPE

Using the Modified Iowa Equation, referenced in the *Uni-Bell PVC Pipe Association as Equation 14 of Deflection: The Pipe/Soil Mechanism UNI-TR-1-97*, the predicted pipe deflection can be calculated as follows:

Where:

%ΔY/D Predicted % vertical deflection under load

P Prism load, psi = 17.03 psi

K Bedding angle constant, assumed to = 0.096

W' Live Load, psi = 0 at max depth (negligible per table)

DR Dimension Ration = 26

E Modulus of tensile elasticity of the pipe material, psi = 400,000

E' Modulus of soil Reaction (zeta x Eb) = 2,233 psi

DL Deflection Lag Factor = 1.5

Using the Modified Iowa Equation:

$$(\%)\frac{\Delta Y}{D} = \frac{DL * K * P + K * W') * 100}{\left[\frac{2E}{3 * (DR - 1)^3}\right] + 0.061 * E'}\%$$

$$(\%)\frac{\Delta Y}{D} = \frac{(1.5 * 0.096 * 17.03 + 0.096 * 0) * 100}{\left[\frac{2 * 400{,}000}{3 * (26 - 1)^3}\right] + 0.061 * 2{,}233}\% = 1.60\%$$

The anticipated deflection of 1.60% is less than the industry standard of 5%, therefore the pipe design is acceptable.

A deflection factor of 1.0 is typically used for new pipes. A deflection factor of 1.5 represents a conservative factor to take into account its 50-year life.

PIPE STRAIN

6" PIPE

Pipe strain is the elongation of the pipe over the original length of the pipe. Under normal loading conditions, the variable that affects the elongation or straining of the pipe stems from either the flexure or deflection of the pipe within the bedding material or hoop stress within the pipe wall. These are calculated below using Equation 15 and 16 found in *Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, referenced by Uni-Bell PVC Pipe Association:*

Where:

ε_h Max. Pipe strain due to Hoop Stress, in/in

ε_f Max. Pipe strain due to Ring Deflection, in/in

ΔY Vertical decrease in diameter from previous deflection equation, 0.01819 in

P Pressure on the pipe (Live + Prism Loads), psi = 16.66 psi

t pipe structural wall thickness (in) = 0.241 in.

E Modulus of tensile elasticity of the pipe material, psi = 400,000

Do outside pipe diameter (in) = 6.275 in

DR Dimension Ration = 26

Hoop Stress

$$\varepsilon_h = \frac{P * D}{2 * t * E} = \frac{16.66 * 6.275}{2 * 0.241 * 400{,}000} in/in = 5.4E^{-4}\ in/in$$

Ring Deflection

$$\varepsilon_f = \frac{t}{D}\left[\frac{3 * {\Delta Y}/{D}}{1 - 2 * {\Delta Y}/{D}}\right] in/in = \frac{1}{DR}\left[\frac{3 * \Delta Y}{D - 2 * \Delta Y}\right] in/in$$

$$\varepsilon_f = \frac{1}{26}\left[\frac{3 * 0.01819}{6.275 - 2 * 0.01819}\right] = 3.24\ in/in$$

8" PIPE

Pipe strain is the elongation of the pipe over the original length of the pipe. Under normal loading conditions, the variable that affects the elongation or straining of the pipe stems from either the flexure or deflection of the pipe within the bedding material or hoop stress within the pipe wall. These are calculated below using Equation 15 and 16 found in *Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, referenced by Uni-Bell PVC Pipe Association:*

Where:

ε_h Max. Pipe strain due to Hoop Stress, in/in

ε_f Max. Pipe strain due to Ring Deflection, in/in

ΔY Vertical decrease in diameter from previous deflection equation, 0.13437 in

P Pressure on the pipe (Live + Prism Loads), psi = 17.03 psi

t pipe structural wall thickness (in) = 0.323 in.

E Modulus of tensile elasticity of the pipe material, psi = 400,000

Do outside pipe diameter (in) = 8.40 in

DR Dimension Ration = 26

Hoop Stress

$$\varepsilon_h = \frac{P * D}{2 * t * E} = \frac{17.03 * 8.40}{2 * 0.323 * 400{,}000} in/in = 5.5E^{-4}\ in/in$$

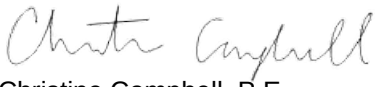
Ring Deflection

$$\varepsilon_f = \frac{t}{D}\left[\frac{3 * {\Delta Y}/{D}}{1 - 2 * {\Delta Y}/{D}}\right] in/in = \frac{1}{DR}\left[\frac{3 * \Delta Y}{D - 2 * \Delta Y}\right] in/in$$

$$\varepsilon_f = \frac{1}{26}\left[\frac{3 * 0.13437}{8.40 - 2 * 0.13437}\right] in/in = 1.91E^{-3}\ in/in$$

Should you have any questions regarding this submittal, please email me at christine.campbell@hrgreen.com or call at 512-872-6696.

Sincerely,



Christine Campbell, P.E.
HR Green Development TX, LLC
TBPE FIRM #16384

TABLE 2 – MANHOLES AND CLEANOUTS (CONTINUED)

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
A11	59 OF 68	24+59.65	MH
A12	59 OF 68	28+32.10	MH
A13	59 OF 68	30+33.14	MH

*continued from table on scs application

Parkside Peninsula Phase 3 - Wastewater Line - Flow Calculation & Pipe Sizing

WASTEWATER FLOWS

Project Name: Parkside Peninsula Phase 3

Project Number: 2302005

Date Prepared: 09/17/2024

Design Parameters		
SF Residents per Unit	2.5	per
Consumption Per Capita	70	gpd
Dry Weather Infiltration	30	gpcd
Wet Weather Infiltration	1000	gpd/acre
Manning Coefficient	0.013	

Line	Manhole		Comments	LUE's		Cumulative LUE's	Population	Cumulative Population	Area (ac)		Cumulative Area (ac)	Dry Weather Flow							Wet Weather Flow				Design Flow			Pipe		Full Capacity		Peak Wastewater Flow Condition (WWF)					
												Average Dry Weather Flow (AvgDWF)			Dry Weather Factor	Peak Dry Weather Flow (DWF)			Rainfall dependent Infiltration & Inflow (RDII)	Peak Wet Weather Flow (WWF)				MAX WW	TRIBUTARY	TOTAL	Pipe Size	Pipe Slope	Full Pipe Velocity	Full Pipe Flow						
				OWN	TRIBUTARY				OWN	TRIBUTARY		gpd	gpm	cfs		gpd	gpm	cfs	gpd	gpd	gpm	cfs	cfs	cfs	cfs	in	%	fps	cfs	q/Q	v/V	y/D	Depth	Velocity	Efficiency
																																	in	fps	%
A	A13	A12	6 LOTS OF PHASE 3	6		6	15	15	1.54		1.54	1,500	1.0	0.00	4.51	6,760	4.7	0.01	1,540	8,300	5.8	0.01	0.01		0.01	8	0.67	2.84	0.99	0.02	0.40	0.10	0.8	1.12	10%
	A12	A11	14 LOTS OF PHASE 3	14		20	35	50	2.73		4.27	5,000	3.5	0.01	4.13	20,633	14.3	0.03	4,270	24,903	17.3	0.04	0.04		0.04	8	0.67	2.84	0.99	0.04	0.49	0.14	1.1	1.38	14%
	A11	A10	9 LOTS OF PHASE 3	9		29	23	73	1.74		6.01	7,300	5.1	0.01	4.01	29,301	20.3	0.04	6,010	35,311	24.5	0.05	0.05		0.05	8	0.50	2.45	0.86	0.07	0.58	0.18	1.4	1.41	18%
	A10	A9	12 LOTS OF PHASE 3	12		41	30	103	2.30		8.31	10,300	7.2	0.02	3.91	40,314	28.0	0.06	8,310	48,624	33.8	0.07	0.07		0.07	8	0.50	2.45	0.86	0.09	0.62	0.20	1.6	1.52	20%
	A9	A8	8 LOTS OF PHASE 3	8		49	20	123	1.87		10.18	12,300	8.5	0.02	3.86	47,521	33.0	0.07	10,180	57,701	40.1	0.09	0.09		0.09	8	0.50	2.45	0.86	0.11	0.66	0.22	1.8	1.61	22%
	A8	A7	10 LOTS OF PHASE 3	10		59	25	148	1.99		12.17	14,800	10.3	0.02	3.81	56,410	39.2	0.09	12,170	68,580	47.6	0.10	0.10		0.10	8	0.50	2.45	0.86	0.13	0.69	0.24	1.9	1.69	24%
	A7	A6	17 LOTS OF PHASE 3	17		76	43	190	3.12		15.29	19,000	13.2	0.03	3.74	71,106	49.4	0.11	15,290	86,396	60.0	0.13	0.13		0.13	8	0.50	2.45	0.86	0.16	0.73	0.27	2.2	1.80	27%
	A6	A5	4 LOTS OF PHASE 3	4		80	10	200	0.77		16.06	20,000	13.9	0.03	3.73	74,568	51.8	0.11	16,060	90,628	62.9	0.14	0.14		0.14	8	0.50	2.45	0.86	0.17	0.75	0.28	2.2	1.83	28%
	A5	A4	8 LOTS OF PHASE 3	8		88	20	220	1.73		17.79	22,000	15.3	0.03	3.70	81,455	56.6	0.12	17,790	99,245	68.9	0.15	0.15		0.15	8	0.52	2.50	0.87	0.18	0.76	0.29	2.3	1.90	29%
	A4	A3	4 LOTS OF PHASE 3	4		92	10	230	0.94		18.73	23,000	16.0	0.03	3.69	84,880	58.9	0.13	18,730	103,610	72.0	0.16	0.16		0.16	8	4.00	6.94	2.42	0.07	0.58	0.18	1.4	3.99	18%
	A3	A2	10 LOTS OF PHASE 3	10		102	25	255	2.17		20.90	25,500	17.7	0.04	3.66	93,398	64.9	0.14	20,900	114,298	79.4	0.17	0.17		0.17	8	3.75	6.72	2.35	0.08	0.60	0.19	1.5	4.02	19%
	A2	A1	4 LOTS OF PHASE 3	4		106	10	265	0.85		21.75	26,500	18.4	0.04	3.65	96,788	67.2	0.15	21,750	118,538	82.3	0.18	0.18		0.18	8	2.75	5.76	2.01	0.09	0.62	0.20	1.6	3.57	20%
	A1	EX-A	0 LOTS OF PHASE 3	0		106	0	265	0.05		21.80	26,500	18.4	0.04	3.65	96,788	67.2	0.15	21,800	118,588	82.4	0.18	0.18		0.18	8	0.59	2.67	0.93	0.20	0.78	0.30	2.4	2.08	30%

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.

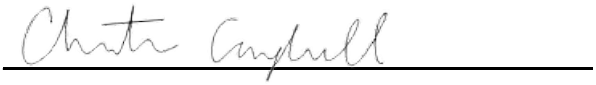
Signature

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: Christine Campbell, P.E.

Date: 09/18/2024

Signature of Customer/Agent:



Regulated Entity Name: Parkside Peninsula Phase 3

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 River

Temporary Best Management Practices (TBMPs)

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

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

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☒ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☒ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☐ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

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

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A – SPILL RESPONSE ACTIONS

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses. Measures include reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the Owner and to the appropriate State or local government agency, regardless of the size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.
- Any reportable quantity hydrocarbon or hazardous material spill should be reported to the TCEQ at the following 24-hour toll free number 1-800-832-8224.

For a spill of Reportable Quantity:

- Initial notification. Upon the determination that a reportable discharge or spill has occurred, the responsible person shall notify the agency as soon as possible but not later than 24 hours after the discovery of the spill or discharge.
- Method of notification. The responsible person shall notify the agency in any reasonable manner including by telephone, in person, or by any other method approved by the agency. In all cases, the initial notification shall provide, to the extent known, the information listed in subsection (d) of Title 30, Part I, Chapter 327, Rule §327.3. Notice provided under this section satisfies the federal requirement to notify the State Emergency Response Commission in the State of Texas.
- Notification of local government authorities. If the discharge or spill creates an imminent health threat, the responsible person shall immediately notify and cooperate with local emergency authorities. The responsible party will cooperate with the local emergency authority in providing support to implement appropriate notification and response actions. The local emergency authority, as necessary, will implement its emergency management plan, which may include notifying and evacuating affected persons. In the absence of a local emergency authority, the responsible person shall take reasonable measures to notify potentially affected persons of the imminent health threat.
- As soon as possible, but no later than two (2) weeks after discovery of the spill or discharge, the Contractor shall reasonably attempt to notify the Owner (if identifiable) or Occupant of the property upon which the discharge or spill occurred as well as the occupants of any property that the Contractor believes is adversely affected.

More information on spill rules and appropriate responses is available on the TCEQ website at:
http://www.tceq.texas.gov /response/

Vehicle and Equipment Maintenance:

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
  - Place drip pans or absorbent materials under paving equipment when not in use.
  - Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
  - Promptly transfer used fluids to the proper waste or recycling drums. Do not leave full drip pans or other containers lying around.
  - Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over the waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
  - Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all of the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

ATTACHMENT B – POTENTIAL SOURCES OF CONTAMINATION

Once grading activities begin, erosion of bare soil during rainfall events is the most common source of contamination. Silt fences will be installed at the beginning of the grading operation to minimize the potential for transport of the soil offsite.

Asphalt products will be used on this project. After placement of asphalt, emulsion, or coatings, the applicant will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt curing time, the applicant should maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur.

During construction activities, potential sources of contamination would include petroleum products leaking from construction equipment. The contractor will be advised to keep the equipment in working order and report any spills per the spill response plan.

Other potential sources of contamination include hydraulic fluid and diesel fuel from mechanical equipment and vehicles, as well as paints and chemicals used on site. Any spills shall be handled according to the Spill Response Actions in Attachment A.

ATTACHMENT C – SEQUENCE OF MAJOR ACTIVITIES

The first activity of construction will be to install the erosion control measures, consisting of silt fences, tree protection, storm drains, inlet protection, rock berms, and a stabilized construction entrance. Temporary erosion control measures will remain in place throughout the duration of construction and will be required to be maintained by the contractor to ensure proper functionality, especially after storm events. All disturbed areas to remain pervious will be vegetated using the procedures detailed in the construction plans and all temporary erosion control measures will be removed upon revegetation. Construction activities associated with this application are expected to disturb approximately 28.22 acres of the site.

Major Construction Activities and Sequencing:

The major construction activities for this project will include and be sequenced as follows:

1. Established Best Management Practices shall consist of the following: silt fencing, rock berms, a temporary spoils area, a concrete truck washout pit, and a temporary construction entrance (Estimated area to be disturbed = 0.45 Acres). These items are to remain and be maintained throughout all construction activities.

2. Initial site mass grading operation including right-of-way and first grading. (Estimated area to be disturbed = 14.41 Acres)
3. Installation of utilities including storm, water, and wastewater (Estimated area to be disturbed = 0.47 Acres)
4. Construction of street/driveway pavement including backfill behind curbs (estimated area to be disturbed = 2.50 Acres)
5. Total Construction (estimated area to be disturbed = 28.22 Acres)
6. Final soil stabilization for the site and removal of temporary BMPs once the soil has been stabilized.

The contractor is responsible for implementing and maintaining the storm water pollution prevention plan which includes maintaining all the necessary erosion controls throughout construction.

ATTACHMENT D – TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

As shown on the Construction Erosion Control Plans, temporary BMP practices and measures will include installing silt fences, inlet protection, rock berms, a stabilized construction entrance, a concrete truck washout, and a temporary spoils area prior to beginning grading operations on the site. Temporary measures are intended to provide a method of slowing the upgradient flow, onsite flow or runoff from the construction site in order to allow sediment and suspended solids to settle out of the water. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features. As a temporary BMP, silt fences will be installed to reduce pollutants. BMP measures utilized in this plan are intended to allow storm water to continue downstream after passing through for treatment.

Site Preparation:
The methodology for pollution prevention of all on-site stormwater will include a) the erection of silt fences along the downgradient boundary of the construction activities, b) installation of inlet protection at all inlets, c) installation of a stabilized construction entrance to reduce the dispersion of sediment from the site, and d) installation of a construction staging area.

Construction:
All installed erosion control measure will be inspected, and if necessary, repaired before any additional construction begins, as well as periodically throughout the construction process. The contractor will be responsible for all maintenance of erosion control measures, as well as the installation of all remaining on-site control measures, including the concrete truck washout, as necessary.

ATTACHMENT E – REQUEST TO TEMPORARILY SEAL A FEATURE

There are no sensitive features on-site within Parkside Peninsula Phase 3 as shown in the geologic assessment and construction plans. There will be no sealing of sensitive features on the site.

ATTACHMENT F – STRUCTURAL PRACTICES

Most of the site flows and upgradient run off will encounter a batch detention pond. There is roughly 0.92 acres of impervious cover in Parkside Peninsula Phase 3 that will bypass treatment. The BMPs are overtreating to account for the bypass impervious cover.

ATTACHMENT G – DRAINAGE AREA MAPS

Refer to the construction plans attached.

ATTACHMENT H – TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

The batch detention ponds will act as temporary and permanent sedimentation ponds. Batch detention pond A (BDP-A) provides 20,209 CF of water quality volume. Batch detention pond B (BDP-B) provides 20,681 CF of water quality volume. Batch detention pond C (BDP-C) provides 44,784 CF of water quality volume. The Sections 1 & 2 batch detention pond (BDP-A (EX)) provides 151,783 CF of water quality volume.

The calculated temporary sedimentation pond volume required is calculated below.
Calculation: Required Volume = (Rainfall Depth*Runoff Coefficient*Drainage Area*120%)
= 2.80 in. * 0.31 * 28.22 acres * 120%
= 106,700 CF

ATTACHMENT I – INSPECTION AND MAINTENANCE FOR BMPS

See construction plans included with this application submittal.

Temporary Best Management Practices (BMPs) and measures will be used during construction to prevent pollution of groundwater, surface water and naturally occurring environmental features. Silt fences, inlet protection, a stabilized construction entrance, tree protection, concrete washout area, and a temporary spoils area will be installed prior to beginning construction and prior to commencement of any of the activities defined in the sequence of construction as Attachment C. Inspection and maintenance of the on-site controls shall be performed during the site clearing and rough grading process. Weekly inspections will be documented in an inspection report. The inspection reports will document maintenance activities, sediment removal, and any modifications to the erosion and sedimentation controls. The perimeter fence shall be regularly monitored to ensure that the buffers remain no-construction zones until the site work has been completed and authorization has been granted by the engineer. Refer to the construction plans attached for specific controls and details.

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 run-off from the site, and through the use of silt fences placed immediately downstream of disturbed areas and inlet protection at all inlets. To minimize destruction to any portion of the Recharge Zone, on-site perimeter silt fence will also be implemented for pertinent areas throughout the entirety of construction. The Contractor is expected to inspect the controls weekly and after significant rainfalls to ensure proper function. When silt accumulates six (6) inches in depth the Contractor shall promptly remove the silt from the controls.

BMPs and measures will prevent pollutants from entering surface streams or the aquifer by intercepting stormwater potentially carrying sediment and other pollutants. BMPs and measures will implement stabilized construction entrances, a construction stockpiling/staging area, and a concrete washout area to help minimize pollutant run-off and erosion generated during construction. Paved streets and driveways adjacent to these sites will be cleaned regularly to remove excess mud, dirt or rock tracked from the site. Sedimentation will be concentrated only in these areas for efficient maintenance. Water trucks will be on-site as necessary to aid be cleaned regularly to remove excess mud, dirt or rock tracked from the site. Sedimentation will be concentrated only in these areas for efficient maintenance. Water trucks will be on-site as necessary to aid in controlling dust. BMPs will be implemented to limit/prevent contaminated inflow from entering surface streams or the aquifer. These practices are to include the following measures: the use of silt fence and inlet protection. The fabricated silt fence barricade will provide help to reduce the likelihood of contaminated runoff from entering the aquifer. If any sensitive features are identified by TCEQ inspections, or during excavation or construction, measures appropriate to the sensitivity of the discovered feature will be enacted. No blasting is proposed.

<u>Temporary Erosion and Sedimentation Notes:</u>

1. The Contractor shall maintain, install erosion/sedimentation controls and tree/natural protective fencing prior to any site preparation work (clearing, grubbing or excavation).
2. The placement of erosion/sedimentation controls and tree/natural area protective fencing shall be in accordance with the TCEQ Technical Guidance Manual and the approved Erosion and Sedimentation Control Plan. No erosion controls shall be placed beyond the property lines of the site unless written permission has been obtained from adjacent property owners.
3. A pre-construction conference shall be held on-site with the Contractor, design engineer/permit applicant and Environmental Inspector after installation of the erosion/sedimentation and tree/natural area protection measures and prior to beginning any site preparation work. The Contractor shall notify the Environmental Inspector at least three (3) days prior to the meeting date.

4. Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the reviewing engineer, environmental specialist or city arborist as appropriate. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Environmental Inspector during the course of construction to correct control inadequacies.
5. The Contractor is required to inspect the controls at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The person(s) responsible for maintenance of controls shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.
6. Prior to final acceptance by the City, haul roads and waterway crossing constructed for temporary Contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved soil disposal sites.
7. All work must stop if a void in the rock substrate is discovered, which is one (1) square foot in total area, blows air from within the substrate, and/or consistently received water during any rain event. At this time it is the responsibility of the project manager to immediately contact an Environmental Inspector for further investigation.
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. Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Such installation shall be regularly inspected for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.
10. 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.
11. Any dirt, mud, rocks, debris, etc., that is spilled, tracked, or otherwise deposited on any existing paved street shall be cleaned up immediately.

Dewatering Operations

1. Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP area under way, inspect weekly to verify continued BMP implementation.
2. Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
3. Unit-specific maintenance requirements are included with the description of each technology.
4. Sediment removed during the maintenance of a dewatering device may be either spread onsite and stabilized, or disposed of at a disposal site.
5. Sediment that is commingled with other pollutants must be disposed of in accordance with all applicable laws and regulations.

ATTACHMENT J – SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Contractors will ensure that existing vegetation is preserved where attainable and that disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to temporary seeding, permanent seeding, mulching, geotextiles, sodding, tree protection, preservation of natural vegetation and other appropriate measures. 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. Except as noted below, stabilization shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the activity has temporarily or permanently ceased. Refer to the construction plans attached for the TCEQ Notes, the Existing Conditions & Tree Survey, and the Erosion & Sedimentation Control Plan.

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

I Blake Magee,
Print Name

President,
Title - Owner/President/Other

of HM 2243 Development, Inc.,
Corporation/Partnership/Entity Name

have authorized Christine Campbell, P.E.
Print Name of Agent/Engineer

of HR Green Development TX, LLC
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:

Blake Magee
Applicant's Signature

9/3/24
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Blake Magee 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 September 2024

Amy Lynn Payne
NOTARY PUBLIC

AMY LYNN PAYNE
Notary ID #124190357
My Commission Expires
August 18, 2027

Amy Lynn Payne
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 8/18/27

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Parkside Peninsula Phase 3

Regulated Entity Location: Located along Cypress Paul Street. Southwest of Parkside Peninsula Sections 1 & 2.

Name of Customer: HM 2243 Development, Inc.

Contact Person: Blake Magee Phone: 512-481-0303

Customer Reference Number (if issued):CN 605986272

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	Acres	$
Sewage Collection System	4,491 L.F.	$ 2,245.50
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Christie Caldwell Date: 09/18/2024

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 Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 605986272		RN

SECTION II: Customer Information

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

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

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

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

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

HM 2243 Development, Inc.

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0802923262	32066111579		

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

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

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

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

☒ Owner ☐ Operator ☐ Owner & Operator

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

15. Mailing Address:

1011 North Lamar Boulevard

City	State	ZIP	ZIP + 4
Austin	TX	78703	

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 481-0303		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Parkside Peninsula Phase 3

23. Street Address of the Regulated Entity: *(No PO Boxes)*	Located along Cypress Paul Street.							
	Southwest of Parkside Peninsula Sections 1 & 2.							
	City	Georgetown	**State**	TX	**ZIP**	78628	**ZIP + 4**	
24. County	Williamson County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Located along Cypress Paul Street. Southwest of Parkside Peninsula Sections 1 & 2.

26. Nearest City	**State**	**Nearest ZIP Code**
Georgetown	TX	78628

27. Latitude (N) In Decimal:	30.590922		**28. Longitude (W) In Decimal:**	-97.784763	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	35	27.32N	97	47	5.15W

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)
1521		236115	

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

Land Development - Single Family Residential

34. Mailing Address:	**1011 North Lamar Boulevard**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78703**	**ZIP + 4**	

35. E-Mail Address:	**blake@blakemageeco.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 481-0303		**( ) -**

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

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

SECTION IV: Preparer Information

40. Name:	Christine Campbell	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 872-6696		( ) -	christine.campbell@hrgreen.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:	HR Green Development TX, LLC	**Job Title:**	Project Manager
Name*(In Print)* **:**	Christine Campbell	**Phone:**	(512) 872-6696
Signature:	Christine Campbell	**Date:**	8/30/2024

CIVIL CONSTRUCTION PLANS
WILLIAMSON COUNTY MUNICIPAL UTILITY DISTRICT NO. 25
PARKSIDE PENINSULA
PHASE 3
GEORGETOWN, WILLIAMSON COUNTY, TEXAS
2024-XX-CON
INITIAL SUBMITTAL DATE: 08/30/2024

OWNER/DEVELOPER:

HM 2243 DEVELOPMENT, INC.
1011 NORTH LAMAR BLVD.
AUSTIN, TX 78703
(512) 481-0303
BLAKE@BLAKEMAGEECO.COM

ENGINEER/SURVEYOR:

HR GREEN DEVELOPMENT TX, LLC
5508 HIGHWAY 290 WEST, SUITE 150
AUSTIN, TEXAS 78735
512.872.6696
CHRISTINE.CAMPBELL@HRGREEN.COM

WATERSHED STATUS:

THIS SITE IS LOCATED IN THE TURKEY CREEK - BRUSHY CREEK WATERSHED.
THIS SITE IS LOCATED OVER THE EDWARDS AQUIFER RECHARGE ZONE.

FLOODPLAIN INFORMATION:

NO LOTS WITHIN THIS SUBDIVISION ARE ENCROACHED BY A SPECIAL FLOOD HAZARD AREAS INUNDATED BY THE 100 YEAR FLOOD AS IDENTIFIED BY THE U.S. FEDERAL EMERGENCY MANAGEMENT AGENCY BOUNDARY MAP NUMBER 48491C0460F, EFFECTIVE DATE DECEMBER 20, 2019.

LEGAL DESCRIPTION:

28.22 ACRES OF LAND IN THE JOHN T. CHURCH SURVEY, ABSTRACT NO. 140, WILLIAMSON COUNTY, TEXAS; BEING A PORTION OF A CERTAIN CALLED 49.556 ACRE TRACT OF LAND (EXHIBIT A-2) DESCRIBED IN THE ASSUMPTION SPECIAL WARRANTY DEED TO HM 2243 DEVELOPMENT, INC. OF RECORD IN DOCUMENT NO. 2021190010, OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

BENCHMARK NOTE:

DATUM NAVD 88 (GEOID 18B)
GPS INFORMATION (2 DAYS OF STATIC) DERIVED FROM NATIONAL GEODETIC SURVEY (NGS) ONLINE POSITIONING USER SERVICE (OPUS)

BM: 1463_05:
3" BRASS DISC ON CONCRETE CURB ON TIP OF CENTERLINE MEDIAN ON ESCALERA PARKWAY, ALONG THE NORTH RIGHT-OF-WAY LINE OF R. M. 2243. REPORTED RECORD ELEVATION IS 1003.72 FEET (NAVD 88) AS SHOWN ON PLAT DOCUMENT NO. 2022134745, O.P.R.W.C.TX.
FOUND BENCHMARK ELEVATION TO BE SAME, 1003.72 FEET, BASED UPON GPS RTK TIES AND DIFFERENTIAL LEVEL LOOP.

BM: 1463_02:
MAG NAIL W/ WASHER STAMPED "HR GREEN" SET ON TOP OF CURB.
ELEVATION = 808.64'

UTILITY PROVIDERS:

WATER & WASTEWATER:	GEORGETOWN UTILITY SYSTEMS 300-1 INDUSTRIAL AVENUE, GEORGETOWN TX 78626 (512) 930-3555 GUS@GEORGETOWN.ORG
ELECTRIC:	PEDERNALES ELECTRIC COOPERATIVE (877) 372-0391

NO LIABILITY NOTE:

LIMITATION OF LIABILITY – HR GREEN DEVELOPMENT TX, LLC ASSUMES NO LIABILITY FOR ANY DESIGN OR DRAWINGS IN THESE PLANS, THAT ARE NOT SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED WITH THE TEXAS BOARD OF PROFESSIONAL ENGINEERS AS A MEMBER OF THIS FIRM (#F-16384). OTHER CONSULTANTS WORK SHOWN IN THESE PLANS IS THE RESPONSIBILITY OF THE CONSULTANT WHO PREPARED SUCH WORK, AND IS INCLUDED IN THIS PLAN SET FOR REVIEW REQUIREMENTS ONLY.

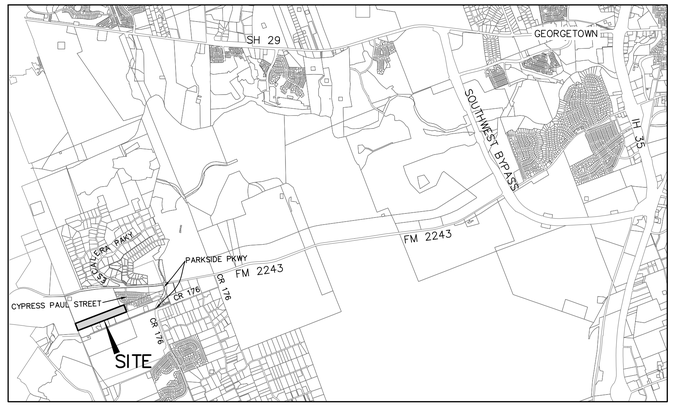
SITE PLAN COMPONENTS – ALL BUILDING AND STRUCTURAL IMPROVEMENTS SHOWN HEREON ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY. HR GREEN DEVELOPMENT TX, LLC IS NOT RESPONSIBLE OR LIABLE FOR THE DESIGN OF BUILDING OR STRUCTURAL IMPROVEMENTS BY OTHERS.

STRUCTURAL COMPONENTS - ALL STRUCTURAL DESIGN IS THE RESPONSIBILITY OF THE OWNER'S STRUCTURAL ENGINEER. STRUCTURAL DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S STRUCTURAL ENGINEER.

PAVEMENT DESIGN – PAVEMENT DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S GEOTECHNICAL CONSULTANT. HR GREEN DEVELOPMENT TX, LLC MAKES NO WARRANTY OR GUARANTEE AS TO ITS SUITABILITY, AND ASSUMES NO LIABILITY THEREFORE.

NOTES:

1. THESE PLANS WERE PREPARED, SEALED, SIGNED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
3. THE PROPERTY SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN
4. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON JANUARY 2018. ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN HEREIN.
5. THIS PROJECT IS SUBJECT TO THE 2011 UDC AND THE PARKSIDE ON THE RIVER DEVELOPMENT AGREEMENT (ORDINANCE NOS. 2019-69, 2020-84, 2021-40, 2024-18 AND RESPECTIVE DOCUMENT NOS. 2019117041, 2020162167, 2021082512, 2024031828).
6. ALL ELECTRIC DISTRIBUTION LINES AND INDIVIDUAL SERVICE LINES SHALL BE INSTALLED UNDERGROUND. IF OVERHEAD LINES EXISTED PRIOR TO UNDERGROUND INSTALLATION, SUCH POLES, GUY WIRES, AND RELATED STRUCTURES SHALL BE REMOVED FOLLOWING CONSTRUCTION OF THE UNDERGROUND INFRASTRUCTURE.



VICINITY MAP
SCALE: 1"=4000'

I, CHRISTINE CAMPBELL, P.E., CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.

SUBMITTED BY: Christine Campbell 08/30/2024

CHRISTINE CAMPBELL, P.E. DATE
HR GREEN DEVELOPMENT TX, LLC
5508 HIGHWAY 290 WEST, SUITE 150
AUSTIN, TEXAS 78735
512.872.6696

STATE OF TEXAS · CHRISTINE N CAMPBELL · 142536 · LICENSED PROFESSIONAL ENGINEER

REVIEWED FOR COMPLIANCE WITH

WILLIAMSON COUNTY M.U.D. NO. 25 DATE

REVISIONS

Number	Date	Description

SHEET INDEX

NO | REVISION | BY | DATE

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

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STATE OF TEXAS · CHRISTINE N. CAMPBELL · 142536 · LICENSED PROFESSIONAL ENGINEER
Christine Campbell
08/30/2024

COVER SHEET

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 1 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\03_ACAD\Permit\20250906 COVR.dwg, COVER SHEET, August 30, 2024, 10:39 AM, malak.mohammed

GENERAL CONSTRUCTION NOTES

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. CONTRACTOR SHALL NOTIFY GEORGETOWN UTILITIES AT 512-930-3555 AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET R.O.W. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S R.O.W. MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
3. FOR SLOPES OR TRENCHES GREATER THAN FIVE (5) FEET IN DEPTH, A NOTE MUST BE ADDED STATING THAT CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 E. 6TH STREET, AUSTIN, TEXAS.
4. ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
5. CONTRACTOR INFORMATION

   CONTRACTOR: UNKNOWN AT TIME OF SUBMITTAL

   CONTRACTOR ADDRESS:: N/A PHONE # N/A

   DEVELOPER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:

   HR GREEN DEVELOPMENT TX, LLC. PHONE# (512) 872-6696

   PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDMENTATION CONTROL MAINTENANCE:

   HM 2243 DEVELOPMENT INC. PHONE# 512-481-0303

   PERSON OF FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE:

   HM 2243 DEVELOPMENT INC. PHONE# 512-481-0303
6. TOPOGRAPHIC DATA SHOWN HEREON BASED ON GROUND TOPO SURVEY BY RJ SURVEYING & ASSOCIATES ON SEPTEMBER-OCTOBER 2020 AND AS-BUILT SURVEY BY HR GREEN ON FEBRUARY 2023.
7. IF CONTRACTOR FINDS A DISCREPANCY WITH THE TOPOGRAPHIC INFORMATION ON THESE PLANS, HE/SHE SHOULD CONTACT THE ENGINEER/SURVEYOR IMMEDIATELY.
8. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED AND GRADED TO DRAIN.
9. ANY TEMPORARY SPOILS STOCKPILE MUST BE LOCATED OUTSIDE OF ANY TREE DRIPLINES AND IN THE TEMPORARY SPOILS AREA DESIGNATED ON THE APPROVED PLANS. ALL SURPLUS MATERIAL WILL BE DISPOSED OF OFFSITE.
10. ALL DEBRIS AND EXCESS MATERIAL SHALL BE REMOVED FROM THE SITE IN A MANNER NOT TO DAMAGE THE OWNER'S PROPERTY PRIOR TO ACCEPTANCE OF THE PROJECT.
11. IF CONTRACTOR ENCOUNTERS A VOID ON THE PROJECT, CONTRACTOR IS TO CONTACT ENGINEER AT (512) 633-6256 OR STAN REECE AT ACI CONSULTING AT (512) 347-9000 FOR EVALUATION OF THE FEATURE. ONCE ACI CONSULTING HAS VERIFIED THAT THE FEATURE IS NOT AN ENDANGERED SPECIES HABITAT, CONTRACTOR MAY PROCEED AS DIRECTED BY THE DETAILS ON THESE PLANS.
12. ALL WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATION (MOST CURRENT EDITION).

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDED BY THE CONTRACTOR.
2. IN ACCORDANCE WITH THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
3. CONSTRUCTION SHALL NOT PROCEED UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF GEORGETOWN.

SEQUENCE OF CONSTRUCTION

1. INSTALL TREE PROTECTION AND INITIATE TREE MITIGATION MEASURES.
2. INSTALL EROSION CONTROLS AND OFF-SITE EROSION CONTROLS AS INDICATED ON APPROVED PLANS.
3. CONTACT CITY OF GEORGETOWN AND WILLIAMSON COUNTY TO SCHEDULE PRE-CONSTRUCTION COORDINATION MEETING
4. EVALUATE TEMPORARY EROSION CONTROL INSTALLATION. REVIEW CONSTRUCTION SCHEDULE WITH THE EROSION CONTROL PLAN.
5. BEGIN SITE CLEARING AND GRADING. INSPECT AND MAINTAIN ALL CONTROLS AS PER GENERAL NOTES.
6. CONSTRUCT UTILITY LINES I.E. WATER, WASTEWATER, STORM DRAINAGE & PONDS.
7. CONSTRUCT SIDEWALK RAMPS.
8. CONSTRUCT PAVING/STREETS.
9. REVEGETATE DISTURBED AREAS OR COMPLETE A DEVELOPERS CONTRACT FOR THE REVEGETATION ALONG WITH THE ENGINEERS CONCURRENCE LETTER.
10. PROJECT ENGINEER INSPECTS JOB AND WRITES CONCURRENCE LETTER TO THE CITY. FINAL INSPECTION IS SCHEDULED UPON RECEIPT OF LETTER.
11. REMOVE TEMPORARY EROSION/SEDIMENTATION CONTROLS AT GRASS GROWTH.

CITY OF GEORGETOWN NOTES:

1. THESE CONSTRUCTION PLANS WERE PREPARED, SEALED, SIGNED, AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE, AND FEDERAL REQUIREMENTS AND CODES.
2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
3. THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED SITE PLAN.
4. WASTEWATER MAINS AND SERVICE LINES SHALL BE SDR 26 PVC.
5. WASTEWATER MAINS SHALL BE INSTALLED WITHOUT HORIZONTAL OR VERTICAL BENDS.
6. MAXIMUM DISTANCE BETWEEN WASTEWATER MANHOLES IS 500 FEET.
7. WASTEWATER MAINS SHALL BE LOW PRESSURE AIR TESTED AND MANDREL TESTED BY THE CONTRACTOR ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.
8. WASTEWATER MANHOLES SHALL BE VACUUM TESTED AND COATED BY THE CONTRACTOR ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.
9. WASTEWATER MAINS SHALL BE CAMERA TESTED BY THE CONTRACTOR AND SUBMITTED TO THE CITY ON DVD FORMAT PRIOR TO PAVING THE STREETS.
10. PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2 HOURS.
11. PRIVATE WATER SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE BUILDING SPRINKLER SYSTEM, AND 200 PSI C900 FOR ALL OTHERS.
12. PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 PVC AND TESTED BY THE CONTRACTOR AT 200 PSI FOR 15 MINUTES AND 150 PSI FOR 2 HOURS.
13. ALL BEND AND CHANGES IN DIRECTION ON WATER MAINS SHALL BE RESTRAINED AND THRUST BLOCKED.
14. LONG FIRE HYDRANT LEADS SHALL BE RESTRAINED.
15. ALL WATER LINES ARE TO BE BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO THE CITY STANDARDS AND SPECIFICATIONS.
16. WATER AND SEWER MAIN CROSSINGS SHALL MEET ALL REQUIREMENTS OF THE TCEQ AND THE CITY.
17. FLEXIBLE BASE MATERIAL FOR PUBLIC STREETS SHALL BE TXDOT TYPE A GRADE 1.
18. HOT MIX ASPHALT CONCRETE PAVEMENT SHALL BE TYPE D UNLESS OTHERWISE SPECIFIED AND SHALL BE A MINIMUM OF 2 INCHES THICK ON PUBLIC STREETS AND ROADWAYS.
19. ALL SIDEWALK RAMPS ARE TO BE INSTALLED WITH THE PUBLIC INFRASTRUCTURE.
20. A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF HTE PUBLIC IMPROVEMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEAR IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
21. RECORD DRAWINGS OF PUBLIC IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT. THESE DRAWINGS SHALL BE A PDF EMAILED TO THE CITY DEVELOPMENT ENGINEER.

WATER AND WASTEWATER NOTES:

1. PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 200), OR DUCTILE IRON (C-115, MIN. CLASS 200) UNLESS SPECIFIED OTHERWISE.
2. PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC (ASTM D3034, SDR-26) UNLESS SPECIFIED OTHERWISE.
3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR TO COORDINATE UTILITY TIE-INS AND NOTIFY HIM AT LEAST 48 HOURS PRIOR TO CONNECTING TO EXISTING LINES.
4. ALL MANHOLES SHALL HAVE ECCENTRIC CONES AND SHALL BE CONCRETE WITH CAST IRON RING AND COVER. ALL MANHOLES LOCATED OUTSIDE OF THE PAVEMENT SHALL HAVE BOLTED COVERS. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.
5. THE CONTRACTOR MUST OBTAIN A BULK WATER PERMIT OR PURCHASE AND INSTALL A WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER. CONTRACTOR TO INSTALL ABOVE GROUND WATER TANK WITH SUPPLY LINE AS INDICATD ON PLANS.
6. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE SCHEDULED WITH THE CITY INSPECTOR.
7. THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL WASTEWATER PIPE INSTALLED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY CITY OF GEORGETOWN PERSONNEL.
8. THE CONTRACTOR SHALL COORDINATE TESTING WITH THE CITY OF INSPECTOR AND PROVIDE NO LESS THAN 24 HOURS NOTICE PRIOR TO PERFORMING STERILIZATION, QUALITY TESTING OR PRESSURE TESTING.
9. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF GEORGETOWN.
10. ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
11. TOOLS FOR MARKING THE CURB SHALL BE PROVIDED BY THE CONTRACTOR. OTHER APPROPRIATE MEANS OF MARKING SERVICE AND VALVE LOCATIONS SHALL BE PROVIDED IN AREAS WITHOUT CURBS. SUCH MEANS OF MARKING SHALL BE AS SPECIFIED BY THE ENGINEER AND ACCEPTED BY THE CITY OF GEORGETOWN.
12. CONTACT CITY OF GEORGETOWN INSPECTION DEPARTMENT FOR ASSISTANCE IN OBTAINING EXISTING WATER AND WASTEWATER LOCATIONS.
13. SAND, AS DESCRIBED IN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

15. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 A.M. AND 6 A.M.
16. ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS, 30 TAC CHAPTER 313 AND 317, AS APPLICABLE. WHENEVER TCEQ AND CITY OF GEORGETOWN SPECIFICATIONS CONFLICT, THE MORE STRINGENT SHALL APPLY.
17. THE CONTRACTOR SHALL CONTACT THE "DIG TESS" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF GEORGETOWN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.
18. ALL MANHOLES IN UNPAVED AREAS PROVIDING DIRECT ACCESS TO A WASTEWATER LINE SHALL BE WATERTIGHT AND BEAR THE WORDING AND INSIGNIA FOR THE CITY OF GEORGETOWN.
19. THE OWNER IS RESPONSIBLE FOR ALL COST OF RELOCATION OR DAMAGE TO UTILITIES.
20. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO HIS/HER FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.
21. THE ENGINEER, IN PREPARING THESE PLANS HAS ATTEMPTED TO LOCATE ALL EXISTING UTILITIES IN THE AREAS OF EXPANSION OR NEW CONSTRUCTION. HOWEVER, THERE MAY BE UTILITIES THAT COULD NOT BE OR WERE NOT LOCATED. UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL CALL APPROPRIATE UTILITY COMPANIES FOR LOCATIONS OF THEIR UTILITIES AT LEAST 48 HOURS BEFORE COMMENCING EXCAVATION. IN THE EVENT THAT A UTILITY IS SITUATED SUCH THAT CONSTRUCTION CANNOT PROCEED AS SHOWN ON THE PLANS, THE CONSTRUCTION MANAGER/SUPERVISOR SHALL BE NOTIFIED IMMEDIATELY.
22. CONTRACTOR TO COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES AS DESIGNATED ON PLANS.
23. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER AND ASSOCIATED VALVING AND SEWER LINES AND ASSOCIATED MANHOLES, IS NINE (9) FEET OUTSIDE DIAMETER TO OUTSIDE DIAMETER. THE MINIMUM VERTICAL SEPARATION BETWEEN WATER AND SEWER LINES IS EIGHTEEN (18) INCHES.
24. THE TOP ELEVATION OF MANHOLES IN PAVED AREAS SHALL MATCH FINISH GRADE. THE TOP ELEVATION OF MANHOLES IN UNPAVED AREAS SHALL BE 3" (MIN.) ABOVE FINISH GRADE, UNLESS OTHERWISE NOTED ON PLANS.
25. CONTRACTOR SHALL COORDINATE INSPECTION OF UTILITY LINES WITH APPROPRIATE AUTHORITIES PRIOR TO BACKFILLING TRENCHES.
26. ALL WATER AND WASTEWATER LINES IN CITY R.O.W. AND EASEMENTS WILL MEET THE CITY OF GEORGETOWN WATER AND WASTEWATER DEPARTMENT DESIGN CRITERIA, AT A MINIMUM.
27. CITY MAINTENANCE OF UTILITIES ENDS AT THE PROPERTY LINE UNLESS IN AN EASEMENT.
28. EXTEND ALL EXISTING UTILITY MANHOLES, BOXES, COVERS, ETC. TO PROPOSED FINISH GRADE, UNLESS APPROVED OTHERWISE.
29. ALL UNDERGROUND UTILITY CONSTRUCTION WITHIN CITY R.O.W. OR PUBLIC EASEMENTS MUST BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS.
30. AN 80 MIL COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
31. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED AS FOLLOWS:

WATER SERVICE	"W" ON TOP OF CURB
WASTEWATER SERVICE	"S" ON TOP OF CURB
VALVE	"V" ON FACE OF CURB
DRY UTILITIES	"DU" ON FACE OF CURB

32. CENTER ONE 20-FOOT 150 PSI PRESSURE RATED WASTEWATER PIPE SECTION AT ALL WATERLINE CROSSINGS.
33. 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 CHAPTER 217 (DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS) OR 30 TAC CHAPTER 290 (PUBLIC DRINKING WATER).

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND CITY INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY OF GEORGETOWN, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE.
5. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
6. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD CONSTRUCTION SPECIFICATIONS AS ADOPTED AND AMENDED UNLESS OTHERWISE SPECIFIED.
2. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
3. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.
4. THE CONTRACTOR SHALL GIVE THE CITY OF GEORGETOWN 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
5. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND CITY OF GEORGETOWN STANDARD SPECIFICATIONS. REVEGETATION OF ALL DISTURBED OR EXPOSED AREAS SHALL CONSIST OF SODDING OR SEEDING, AT THE CONTRACTOR'S OPTION. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION UNLESS OTHERWISE REQUESTED BY THE OWNER.
6. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONVENE A PRECONSTRUCTION CONFERENCE BETWEEN THE CITY OF GEORGETOWN, HIMSELF, THE ENGINEER, THE OWNER, THE ENVIRONMENTAL ENGINEER, GEOTECHNICAL ENGINEER, UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE COUNTY OR ENGINEER MAY REQUIRE.
7. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER.
8. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
9. AVAILABLE BENCHMARK(S) THAT MAY BE UTILIZED FOR THE CONSTRUCTION OF THIS PROJECT ARE DESCRIBED AS FOLLOWS:

   DATUM NAVD 88 (GEOID 18B)
   GPS INFORMATION (2 DAYS OF STATIC) DERIVED FROM NATIONAL GEODETIC SURVEY (NGS) ONLINE POSITIONING USER SERVICE (OPUS)

   BM: 1463_05:
   3" BRASS DISC ON CONCRETE CURB ON TIP OF CENTERLINE MEDIAN ON ESCALERA PARKWAY, ALONG THE NORTH RIGHT-OF-WAY LINE OF R. M. 2243.
   REPORTED RECORD ELEVATION IS 1003.72 FEET (NAVD 88) AS SHOWN ON PLAT DOCUMENT NO. 2022134745, O.P.R.W.C.TX.
   FOUND BENCHMARK ELEVATION TO BE SAME, 1003.72 FEET, BASED UPON GPS RTK TIES AND DIFFERENTIAL LEVEL LOOP.

   BM: 1463_02:
   MAG NAIL W/ WASHER STAMPED "HR GREEN" SET ON TOP OF CURB.
   ELEVATION = 808.64'
10. SIDE WALK RAMPS AND SIDEWALKS LOCATED IN FRONT OF COMMON AREAS TO BE INSTALLED WITH INFRASTRUCTURE CONSTRUCTION
11. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITY OR IMPROVEMENTS.
12. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT TITLED "GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS – REVISED PARKSIDE PENINSULA PHASE 3", DATED AUGUST 2024 BY MLA GEOTECHNICAL, ENGINEER'S JOB# 24101123.001 FOR PAVEMENT DESIGN RECOMMENDATIONS. ANY CONFLICT BETWEEN THESE CONSTRUCTION PLANS AND THE GEOTECHNICAL REPORT SHALL BE RESOLVED IN FAVOR OF THE GEOTECHNICAL REPORT.
13. THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PH: 512-989-2200) SHALL BE CONTACTED 48 HOURS PRIOR TO THE FOLLOWING:
    1) PRE-CONSTRUCTION MEETINGS
    2) BEGINNING EACH PHASE OF CONSTRUCTION
    3) TESTING OF WATER AND/OR WASTEWATER LINES
    4) FINAL WALK-THROUGH OF FACILITIES
14. WHEN REQUIRED, CONTRACTOR SHALL REMOVE PAVEMENT IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF HIGHWAY AND PUBLIC TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION.
15. ALL PAVEMENT REMOVED SHALL BE DONE SUCH THAT THE REMAINING PAVEMENT IS LEFT WITH A CLEAN STRAIGHT EDGE.
16. WHEN REQUIRED, CONTRACTOR SHALL REMOVE EXISTING PAVEMENT STRIPING BY SAND BLASTING FROM EXISTING PAVEMENT IN ACCORDANCE WITH ITEM 678 OF THE TxDOT LATEST EDITION.
17. ALL WORK IN STATE R.O.W. AND EASEMENTS SHALL BE IN ACCORDANCE WITH THE TxDOT LATEST EDITION.
18. EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS AND THE GEOTECHNICAL STUDY.
19. IF THE CONTRACTOR FINDS A DISCREPANCY WITH THE TOPOGRAPHIC INFORMATION ON THESE PLANS HE/SHE SHOULD CONTACT THE ENGINEER OR OWNER IMMEDIATELY.
20. CONTRACTOR SHALL PROTECT ALL BENCHMARKS AND PROPERTY MONUMENTATION DISTURBED DURING CONSTRUCTION.
21. DESIGN OF MAJOR DRAINAGE WAYS THROUGH A SUBDIVISION AND MAJOR STRUCTURES SUCH AS BOX CULVERTS OR BRIDGES ACROSS A MAJOR DRAINAGE CHANNEL SHALL BE COORDINATED WITH THE REQUIREMENTS OF THE WILLIAMSON COUNTY HEALTH DISTRICT WHEN ANY PORTION OF THE SUBDIVISION LIES OUTSIDE THE CITY LIMITS, AND WHEN APPLICABLE, A LETTER REQUESTING A LOCAL FLOOD PLAIN MAP AMENDMENT FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) SHALL BE PROVIDED PRIOR TO FINAL CONSTRUCTION PLAN APPROVAL.

TRAFFIC MARKING NOTE

1. ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
2. ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.

ADDITIONAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOWING AND THE REMOVAL OF ALL LITTER WITHIN THE PROJECT LIMITS SO AS TO KEEP THE SITE OF THE WORK IN A NEAT AND PRESENTABLE CONDITION AT ALL TIMES. THIS WORK WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
2. THE CONTRACTOR SHALL PROTECT ALL AREAS WHICH ARE NOT INCLUDED IN THE ACTUAL LIMITS OF THE PROPOSED CONSTRUCTION AREAS FROM DESTRUCTION. CARE SHALL BE EXERCISED TO PREVENT DAMAGE TO TREES, VEGETATION, FENCES, POWER POLES, AND OTHER NATURAL SURROUNDINGS. THE AREAS NOT TO BE DISTURBED INCLUDE ALL GOLF COURSE AREAS, UNLESS SPECIFIED OTHERWISE. THE CONTRACTOR SHALL, AT HIS EXPENSE, RESTORE ANY AREA DISTURBED AS A RESULT OF HIS OPERATIONS TO A CONDITION AS GOOD AS, OR BETTER THAN, THAT PRESENT PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING EVERY 100 FOOT ROAD STATION, AND SHALL MAINTAIN THE MARKINGS FOR THE DURATION OF THE PROJECT. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE ITEMIZED CONSTRUCTION CONTRACT.
4. THE SUPERINTENDENT SHALL BE AVAILABLE ON THE PROJECT AT ALL TIMES WHEN WORK IS BEING PERFORMED.
5. NO BLASTING IS ALLOWED ON THIS PROJECT.
6. NO STORAGE OF HYDROCARBON OR HAZARDOUS MATERIAL IS ALLOWED ON SITE.

WILLIAMSON COUNTY M.U.D. No. 25 NOTES

1. THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PH: 512-989-2200) SHALL BE CONTACTED 48 HOURS PRIOR TO:
   i) PRE-CONSTRUCTION MEETINGS;
   ii) BEGINNING EACH PHASE OF CONSTRUCTION
   iii) TESTING OF WATER AND/OR WASTEWATER LINES; AND,
   iv) FINAL WALK-THROUGH OF FACILITIES
2. REVIEW OF THE PLANS BY THE DISTRICT IS LIMITED TO WATER, WASTEWATER, AND DRAINAGE, AND DOES NOT INDICATE A REVIEW OF THE ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

GEORGETOWN FIRE DEPARTMENT NOTES

1. 1,500 GPM FIRE FLOW SHALL BE PROVIDED FOR THIS PROJECT.
2. AT THE CONCLUSION OF CONSTRUCTION AND AS PART OF THE PROCESS FOR THE CITY TO ACCEPT THIS PHASE:
   - THE FIRE HYDRANTS SHALL BE FLOWED AND TESTED
   - A COPY OF THE REPORT SHALL BE EMAILED INTO THE FIRE DEPARTMENT
   - THE HYDRANTS SHALL BE PAINTED AND COLOR CODED.

*** CAUTION :IF PRESSURE REDUCING VALVES WERE INSTALLED IN THIS PHASING THEY MUST BE SET PRIOR TO FIRE HYDRANT FLOW TESTING.

3. PER CITY ORDINANCE SEC. 13.15.120, HYDRANT FLOW CODING STANDARDS. PUBLIC HYDRANTS WILL HAVE THE BONNETS PAINED SILVER, THE HYDRANTS WILL BE FLOW TESTED, AND THE BONNET PAINTED USING THE HYDRANT FLOW STANDARD IN PARAGRAPH C.
   FLOW COLOR:
   - GREATER THAN 1500 GPM BLUE
   - 1000 TO 1500 GPM GREEN
   - 500 – 999 GPM ORANGE
   - LASS THAN 500 GPM RED
   - NOT WORKING BLACK OR BAGGED

NO	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

GENERAL NOTES

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 2 OF 68

2024-XX-CON

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ORGANIZED SEWAGE COLLECTION SYSTEM (SCS)
GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §§213.5(C) AND 217.51 – 217.70 AND 30 TAC CHAPTER 217, SUBCHAPTER D, AND THE CITY OF ROUND ROCK STANDARD SPECIFICATIONS.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SEWAGE COLLECTION SYSTEM PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON–SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

3. NO LATER THAN 48 HOURS PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE TCEQ AUSTIN REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.

6. THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON PLAN SHEET 80 OF 124 OF THESE PLANS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §§217.53(C) AN 217.65.

   GRAVITY LINES MUST HAVE A SDR 35 OR LESS. PRESSURIZED SEWER SYSTEMS MUST HAVE PIPE WITH A MINIMUM WORKING PRESSURE RATING OF 150 PSI.

   THE ASTM, ANSI, OR AWWA SPECIFICATION NUMBERS FOR THE PIPE(S) AND JOINTS ARE ASTM–D3034.

   THE PIPE MATERIAL, THE PRESSURE CLASSES, AND THE SDR AND/OR DR DESIGNATIONS ARE SDR–26.

7. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING WITHIN TWO WORKING DAYS. THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

8. SEWER LINES LOCATED WITHIN OR CROSSING THE 5–YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES.

9. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

10. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100–YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

    THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET 75 & 77 OF 124.

    IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

11. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).

12. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: N/A.

    IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: N/A.

    SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

13. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB–OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB–OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

14. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D–2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

15. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN–OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN–OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).

16. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:
    (A) OR 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 INTERNAL SURFACE

(C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING

TABLE C.3:

PIPE DIAMETER (INCHES)	MINIMUM TIME (SECONDS)	MAXIMUM LENGTH FOR MINIMUM TIME (FEET)	TIME FOR LONGER LENGTH (SECONDS/FOOT)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
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 SUBPARGRAPH (C) OF THIS PARAGRAPH.
(E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.
(F) 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.

17. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

18. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

SUPPLEMENTAL TCEQ NOTES:

1. WATERTIGHT, SIZE ON SIZE RESILIENT CONNECTORS CONFORMING TO ASTM C–923 ARE REQUIRED FOR CONNECTING PIPE TO MANHOLES.

2. IF FAULTS, CAVERNS, OR SUBSIDENCE ARE DISCOVERED DURING CONSTRUCTION, CONSTRUCTION SHOULD BE HALTED TO ALLOW THE FEATURES TO BE INSPECTED BY THE DESIGN ENGINEER OR GEOLOGICAL OR GEOTECHNICAL PROFESSIONAL.

3. TRENCH WALLS MUST BE VERTICAL TO AT LEAST ONE FOOT ABOVE THE PIPE. TRENCH BACKFILL MUST BE FREE OF STONES GREATER THAN 6–INCHES AND FREE OF ORGANIC OR ANY OTHER UNSTABLE MATERIAL.

4. ALL WASTEWATER PIPE MATERIAL PVC SDR26–ASTM–3034 USED MUST HAVE A MINIMUM ALLOWABLE TENSILE.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."

2. All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI [§290.44(a)(1)].

3. Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF–pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less [§290.44(a)(2)].

4. No pipe which has been used for any purpose other than the conveyance of drinking water shall be accepted or relocated for use in any public drinking water supply [§290.44(a)(3)].

5. All water line crossings of wastewater mains shall be perpendicular [§290.44(e)(4)(B)].

6. Water transmission and distribution lines shall be installed in accordance with the manufacturer's instructions. However, the top of the water line must be located below the frost line and in no case shall the top of the water line be less than 24 inches below ground surface [§290.44(a)(4)].

7. The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent [§290.44(b)].

8. The contractor shall install appropriate air release devices with vent openings to the atmosphere covered with 16–mesh or finer, corrosion resistant screening material or an acceptable equivalent [§290.44(d)(1)].

9. The contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation [§290.44(f)(1)].

10. When waterlines are laid under any flowing or intermittent stream or semi–permanent body of water the waterline shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested [§290.44(f)(2)].

11. Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.
    - The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C–605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

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

    Where:
      - Q = the quantity of makeup water in gallons per hour,
      - L = the length of the pipe section being tested, in feet,
      - D = the nominal diameter of the pipe in inches, and
      - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).
    - The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C–600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

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

    Where:
      - L = the quantity of makeup water in gallons per hour,
      - S = the length of the pipe section being tested, in feet,
      - D = the nominal diameter of the pipe in inches, and
      - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).

12. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)–(4).

13. The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine–foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five–foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].

14. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].

15. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].

16. Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].

17. The contractor shall disinfect the new waterlines in accordance with AWWA Standard C–651–14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].

18. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655–09 or most recent.

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

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

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.

2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.

3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.

4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.

5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.

6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.

7. Sediment must be removed from the sediment traps or sedimentation basins not later than when it occupies 50% of the basin's design capacity.

8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.

9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.

10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.

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

12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

    A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office	San Antonio Regional Office
12100 Park 35 Circle, Building A	14250 Judson Road
Austin, Texas 78753-1808	San Antonio, Texas 78233-4480
Phone (512) 339-2929	Phone (210) 490-3096
Fax (512) 339-3795	Fax (210) 545-4329

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

NO.	REVISION	BY	DATE

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TBPLS NO: 10194101

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

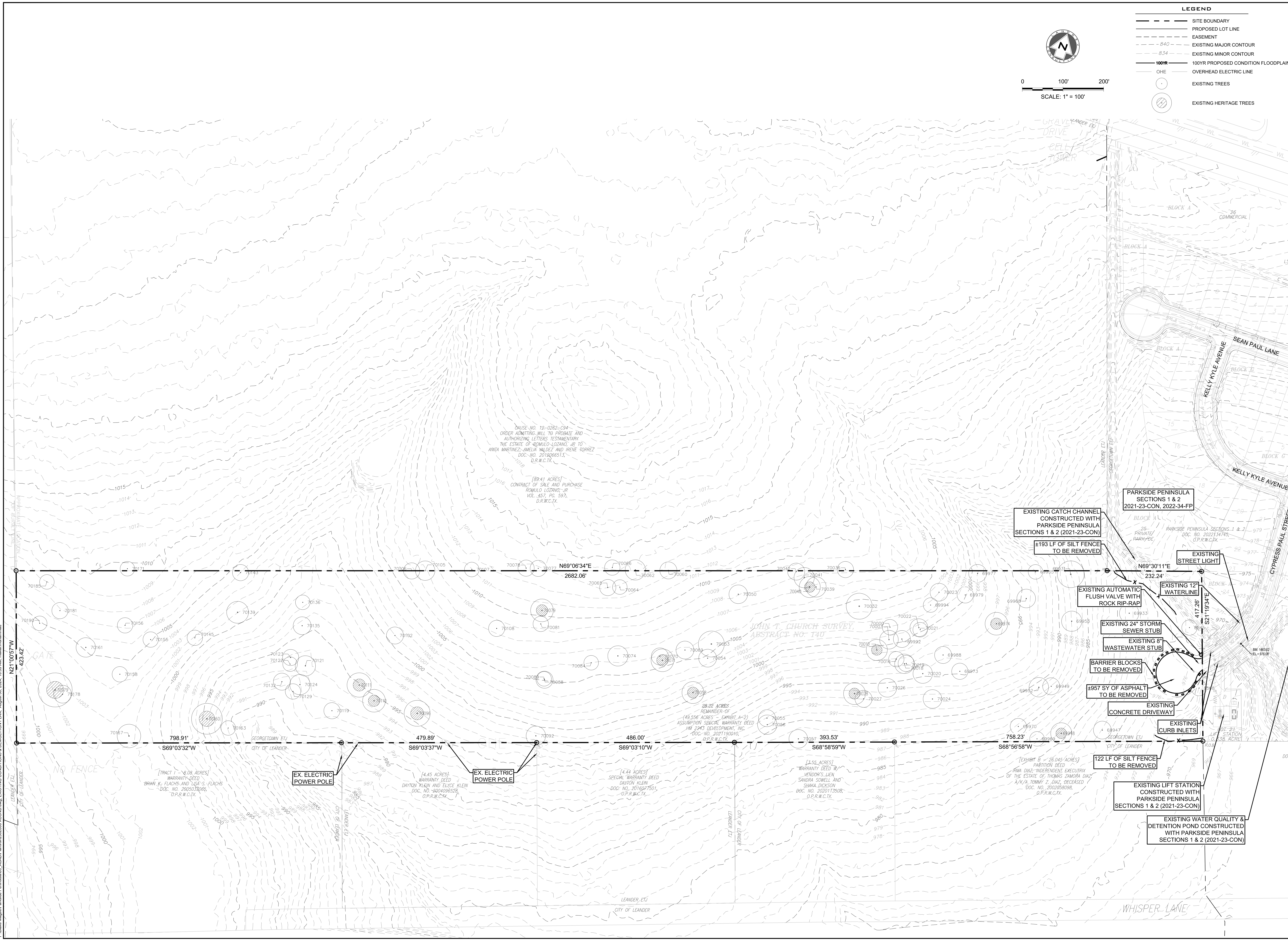
TCEQ NOTES

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 3 OF 68

2024-XX-CON



LEGEND
SITE BOUNDARY
PROPOSED LOT LINE
EASEMENT
EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
100YR PROPOSED CONDITION FLOODPLAIN
OVERHEAD ELECTRIC LINE
EXISTING TREES
EXISTING HERITAGE TREES
0 100' 200'
SCALE: 1" = 100'
N69°06'34"E
2682.06'
N69°30'11"E
232.24'
N21°00'57"W
423.42'
417.26'
S21°19'34"E
798.91'
S69°03'32"W
479.89'
S69°03'37"W
486.00'
S69°03'10"W
393.53'
S68°58'59"W
758.23'
S68°56'58"W
EX. ELECTRIC POWER POLE
EX. ELECTRIC POWER POLE
PARKSIDE PENINSULA SECTIONS 1 & 2 2021-23-CON, 2022-34-FP
EXISTING CATCH CHANNEL CONSTRUCTED WITH PARKSIDE PENINSULA SECTIONS 1 & 2 (2021-23-CON)
±193 LF OF SILT FENCE TO BE REMOVED
EXISTING AUTOMATIC FLUSH VALVE WITH ROCK RIP-RAP
EXISTING STREET LIGHT
EXISTING 12" WATERLINE
EXISTING 24" STORM SEWER STUB
EXISTING 8" WASTEWATER STUB
BARRIER BLOCKS TO BE REMOVED
±957 SY OF ASPHALT TO BE REMOVED
EXISTING CONCRETE DRIVEWAY
EXISTING CURB INLETS
122 LF OF SILT FENCE TO BE REMOVED
EXISTING LIFT STATION CONSTRUCTED WITH PARKSIDE PENINSULA SECTIONS 1 & 2 (2021-23-CON)
EXISTING WATER QUALITY & DETENTION POND CONSTRUCTED WITH PARKSIDE PENINSULA SECTIONS 1 & 2 (2021-23-CON)
SEAN PAUL LANE
KELLY KYLE AVENUE
KELLY KYLE AVENUE
CYPRESS PAUL STREET
WHISPER LANE
JOHN T. CHURCH SURVEY, ABSTRACT NO. 140
GEORGETOWN ETJ
CITY OF LEANDER
LEANDER ETJ
NO FENCE

Plot Style: LandDev Global.ctb
Template: LDC_C3D2020.DWT
P:\Blake Magee\Parkside Peninsula\03_ACAD\Plans\dn2302006 XCOND.dwg, EXISTING CONDITIONS & DEMOLITION PLAN, August 30, 2024, 10:39 AM, makai.muhammad

NO.	REVISION	BY	DATE

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TBPLS NO: 10194101

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED
PROFESSIONAL ENGINEER
08/30/2024

EXISTING CONDITIONS & DEMOLITION PLAN

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

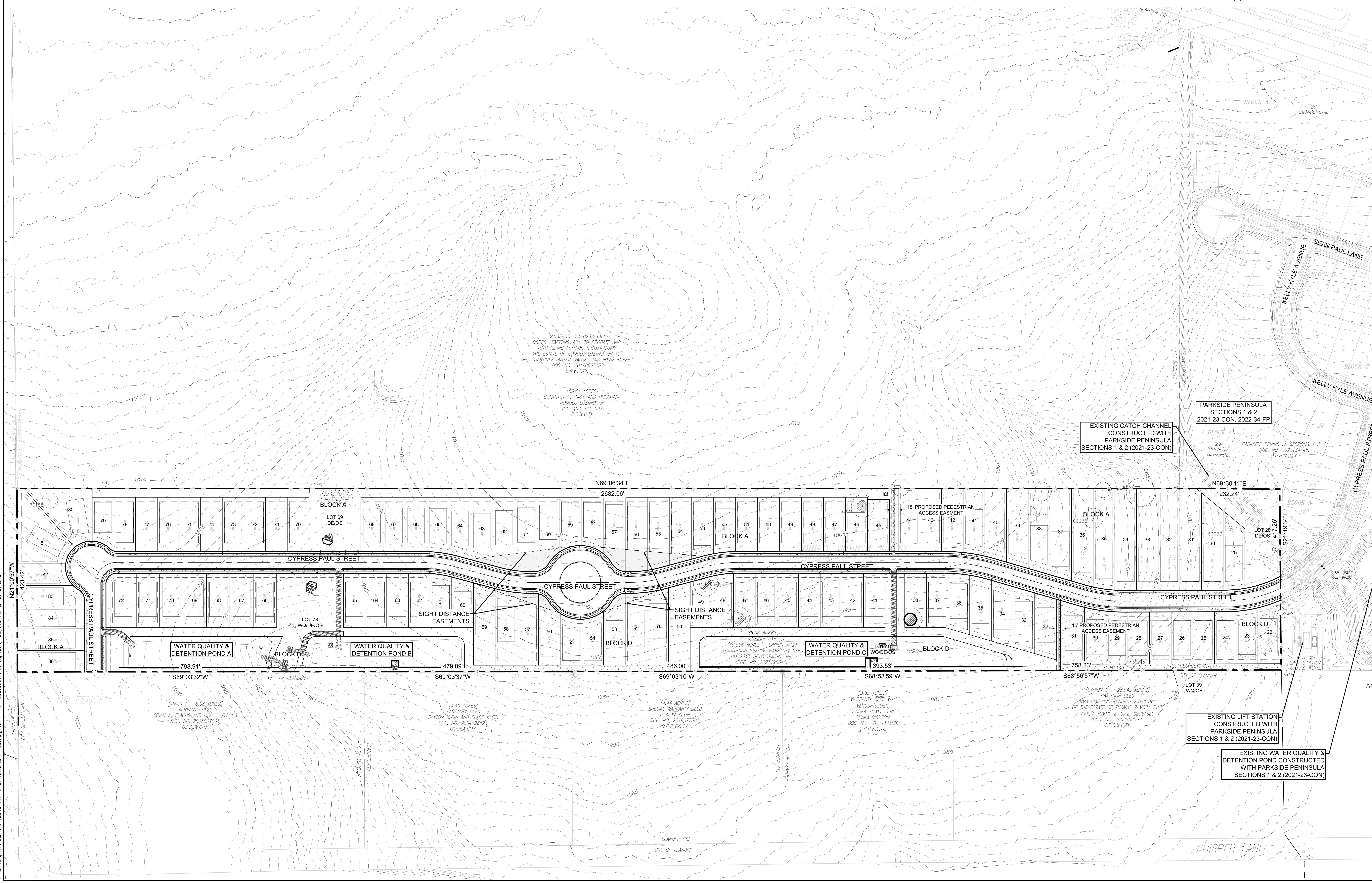
SHEET 6 OF 68

2024-XX-CON

LEGEND

- SITE BOUNDARY
- PROPOSED LOT LINE
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- 834 EXISTING MINOR CONTOUR
- 100YR PROPOSED CONDITION FLOODPLAIN
- OHE OVERHEAD ELECTRIC LINE
- EXISTING TREES
- EXISTING HERITAGE TREES

0 100' 200'
SCALE: 1" = 100'



NO	REVISION	BY	DATE

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HRGreen DEVELOPMENT TX

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

PROPOSED CONDITIONS PLAN

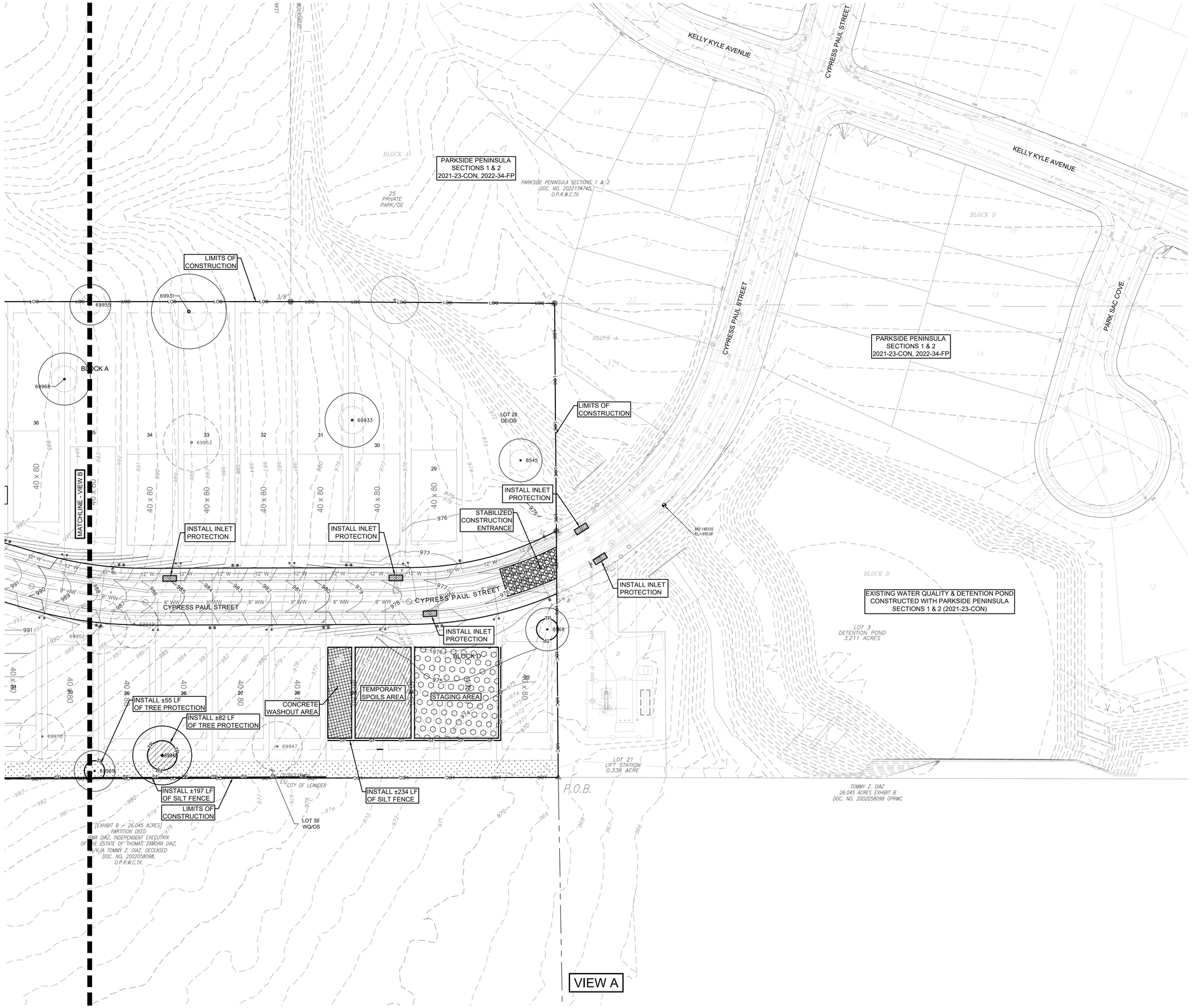
PARKSIDE PENINSULA PHASE 3 CONSTUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 7 OF 68

2024-XX-CON



0 40' 80'

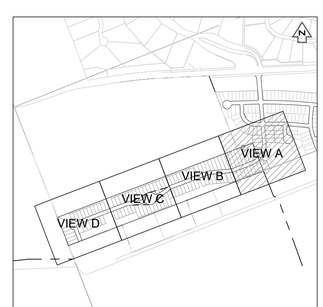
SCALE: 1" = 40'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- 834 EXISTING MINOR CONTOUR
- 940 PROPOSED MAJOR CONTOUR
- 934 PROPOSED MINOR CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- TP TREE PROTECTION FENCE
- TREES TO REMAIN - HERITAGE
- TREES TO BE REMOVED - HERITAGE
- TREES TO REMAIN - NON HERITAGE
- TREES TO BE REMOVED - NON HERITAGE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- TEMPORARY SPOILS AREA
- CONCRETE WASHOUT AREA
- STAGING AREA
- ROCK BERM

SEQUENCE OF MAJOR ACTIVITIES:

1. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO INCLUDE SILT FENCE, ROCK BERMS, AND STABILIZED CONSTRUCTION ENTRANCES WILL BE INSTALLED ACCORDING TO CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. TREE PROTECTION MEASURES WILL ALSO BE INSTALLED FOR ALL TREES WITH CONSTRUCTION ACTIVITIES WITHIN CRITICAL ROOT ZONE.
3. TEMPORARY SPOILS, CONSTRUCTION STAGING AND CONCRETE WASHOUT AREA WILL BE CONSTRUCTED.
4. THE SEDIMENTATION TRAP LOCATED AT THE SOUTHEAST CORNER OF THE SITE WILL BE EXCAVATED AND THE OUTFALL STRUCTURE CONSTRUCTED.
5. FILTER FABRIC WILL BE USED TO COVER THE OVERFLOW WEIR TO PREVENT UNFILTERED RUNOFF FROM ENTERING THE LAND DOWNSTREAM.
6. AFTER THE SITE IS MASS GRADED, THE ONSITE DRAINAGE, UTILITIES, AND PAVING WILL BE INSTALLED.
7. INLET PROTECTION BARRIERS WILL BE INSTALLED AS CONSTRUCTION OF STORM SEWER TAKES PLACE IN ORDER TO PREVENT SEDIMENTS FROM ENTERING THE SYSTEM.
8. TEMPORARY SEDIMENTATION BASINS WILL BE CONVERTED TO PERMANENT WATER QUALITY PONDS.
9. SEDIMENTATION TRAPS SHALL BE CLEANED OUT AND FILTER MEDIUM INSTALLED CONCURRENT WITH RE-VEGETATION.
10. THE DISTURBED AREA TO REMAIN PERVIOUS WILL BE VEGETATED USING THE PROCEDURES DETAILED IN THE CONSTRUCTION PLANS AND ALL TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED UPON RE-VEGETATION.



KEY MAP (N.T.S.)

NO.	REVISION	BY	DATE

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LICENSED PROFESSIONAL ENGINEER

08/30/2024

EROSION & SEDIMENTATION CONTROL PLAN A

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 9 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Baker Mulgan\Parkside Peninsula\03_ACAD\Parkside\2023\06 EROS.dwg, EROSION & SEDIMENTATION CONTROL PLAN A, August 30, 2024, 10:47 AM, malak.mohammad

LIMITS OF CONSTRUCTION

INSTALL ±63 LF OF TREE PROTECTION

INSTALL INLET PROTECTION

15' PROPOSED PEDESTRIAN ACCESS EASEMENT

MATCHLINE - VIEW C

BLOCK A

INSTALL INLET PROTECTION

CYPRESS PAUL STREET

INSTALL ±88 LF OF TREE PROTECTION

INSTALL ±85 LF OF TREE PROTECTION

TREE WELL

INSTALL ±16 LF OF ROCK BERM

WQ/DE/OS

BLOCK D

WATER QUALITY & DETENTION POND C

28.22 ACRES
REMAINDER OF
(49.556 ACRES – EXHIBIT A–2)
ASSUMPTION SPECIAL WARRANTY DEED
HM-2243 DEVELOPMENT, INC.
DOC. NO. 2021190010,
O.P.R.W.C.TX.

[3.55 ACRES]
WARRANTY DEED W/
VENDOR'S LIEN—
SANDRA SOWELL AND
SHAKA DICKSON
DOC.–NO. 2020113508,
O.P.R.W.C.TX.

INSTALL ±2,288 LF OF SILT FENCE

LIMITS OF CONSTRUCTION

INSTALL ±20 LF OF ROCK BERM

LIMITS OF CONSTRUCTION

INSTALL ±2,288 LF OF SILT FENCE

MATCHLINE - VIEW A

INSTALL ±55 LF OF TREE PRO

[EXHIBIT B – 26.045 ACRES]
PARTITION DEED
MA DIAZ, INDEPENDENT EXECUTRIX
HE ESTATE OF THOMAS ZAMORA DIAZ
K/A TOMMY Z. DIAZ, DECEASED
DOC. NO. 2002058098,
O.P.R.W.C.TX.

VIEW B

CITY OF LEANDER

0 40' 80'

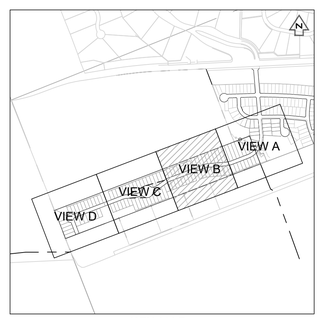
SCALE: 1" = 40'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- 834 EXISTING MINOR CONTOUR
- 940 PROPOSED MAJOR CONTOUR
- 934 PROPOSED MINOR CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- TP TREE PROTECTION FENCE
- TREES TO REMAIN - HERITAGE
- TREES TO BE REMOVED - HERITAGE
- TREES TO REMAIN - NON HERITAGE
- TREES TO BE REMOVED - NON HERITAGE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- TEMPORARY SPOILS AREA
- CONCRETE WASHOUT AREA
- STAGING AREA
- ROCK BERM

SEQUENCE OF MAJOR ACTIVITIES:

1. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO INCLUDE SILT FENCE, ROCK BERMS, AND STABILIZED CONSTRUCTION ENTRANCES WILL BE INSTALLED ACCORDING TO CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. TREE PROTECTION MEASURES WILL ALSO BE INSTALLED FOR ALL TREES WITH CONSTRUCTION ACTIVITIES WITHIN CRITICAL ROOT ZONE.
3. TEMPORARY SPOILS, CONSTRUCTION STAGING AND CONCRETE WASHOUT AREA WILL BE CONSTRUCTED.
4. THE SEDIMENTATION TRAP LOCATED AT THE SOUTHEAST CORNER OF THE SITE WILL BE EXCAVATED AND THE OUTFALL STRUCTURE CONSTRUCTED.
5. FILTER FABRIC WILL BE USED TO COVER THE OVERFLOW WEIR TO PREVENT UNFILTERED RUNOFF FROM ENTERING THE LAND DOWNSTREAM.
6. AFTER THE SITE IS MASS GRADED, THE ONSITE DRAINAGE, UTILITIES, AND PAVING WILL BE INSTALLED.
7. INLET PROTECTION BARRIERS WILL BE INSTALLED AS CONSTRUCTION OF STORM SEWER TAKES PLACE IN ORDER TO PREVENT SEDIMENTS FROM ENTERING THE SYSTEM.
8. TEMPORARY SEDIMENTATION BASINS WILL BE CONVERTED TO PERMANENT WATER QUALITY PONDS.
9. SEDIMENTATION TRAPS SHALL BE CLEANED OUT AND FILTER MEDIUM INSTALLED CONCURRENT WITH RE-VEGETATION.
10. THE DISTURBED AREA TO REMAIN PERVIOUS WILL BE VEGETATED USING THE PROCEDURES DETAILED IN THE CONSTRUCTION PLANS AND ALL TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED UPON RE-VEGETATION.



KEY MAP
(N.T.S.)

NO.	REVISION	BY	DATE

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LICENSED PROFESSIONAL ENGINEER
08/30/2024

EROSION & SEDIMENTATION CONTROL PLAN B

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 10 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Blake Magee\Parkside Peninsula\03_ACAD\Planset\230200S EROS.dwg, EROSION & SEDIMENTATION CONTROL PLAN B, August 30, 2024, 10:48 AM, malal.muhammad

[89.41 ACRES]
CONTRACT OF SALE AND PURCHASE
ROMULO LOZANO, JR
VOL. 457, PG. 597,
D.R.W.C.TX.

LIMITS OF CONSTRUCTION

BLOCK A

LOT 68
OE/OS

INSTALL ±10 LF OF ROCK BERM

INSTALL INLET PROTECTION

CYPRESS PAUL STREET

INSTALL INLET PROTECTION

SIGHT DISTANCE EASEMENT

INSTALL INLET PROTECTION

INSTALL INLET PROTECTION

MATCHLINE - VIEW D

LOT 73
WQ/DE/OS

INSTALL ±11 LF OF ROCK BERM

WATER QUALITY & DETENTION POND B

INSTALL ±20 LF OF ROCK BERM

INSTALL ±2,288 LF OF SILT FENCE

LIMITS OF CONSTRUCTION

[4.45 ACRES]
WARRANTY DEED
DAYTON KLEIN AND ELYCE KLEIN
DOC. NO. 2004096528,
O.P.R.W.C.TX.

CYPRESS PAUL STREET

SIGHT DISTANCE EASEMENT

INSTALL ±88 LF OF TREE PROTECTION

BLOCK D

INSTALL ±2,288 LF OF SILT FENCE

LIMITS OF CONSTRUCTION

[4.44 ACRES]
SPECIAL WARRANTY DEED
DAYTON-KLEIN
DOC. NO. 2016077501,
O.P.R.W.C.TX.

MATCHLINE - VIEW B

BLOCK A

VIEW C

CITY OF LEANDER

0 40' 80'

SCALE: 1" = 40'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- 834 EXISTING MINOR CONTOUR
- 940 PROPOSED MAJOR CONTOUR
- 934 PROPOSED MINOR CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- TP TREE PROTECTION FENCE
- TREES TO REMAIN - HERITAGE
- TREES TO BE REMOVED - HERITAGE
- TREES TO REMAIN - NON HERITAGE
- TREES TO BE REMOVED - NON HERITAGE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- TEMPORARY SPOILS AREA
- CONCRETE WASHOUT AREA
- STAGING AREA
- ROCK BERM

SEQUENCE OF MAJOR ACTIVITIES:

1. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO INCLUDE SILT FENCE, ROCK BERMS, AND STABILIZED CONSTRUCTION ENTRANCES WILL BE INSTALLED ACCORDING TO CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
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4. THE SEDIMENTATION TRAP LOCATED AT THE SOUTHEAST CORNER OF THE SITE WILL BE EXCAVATED AND THE OUTFALL STRUCTURE CONSTRUCTED.
5. FILTER FABRIC WILL BE USED TO COVER THE OVERFLOW WEIR TO PREVENT UNFILTERED RUNOFF FROM ENTERING THE LAND DOWNSTREAM.
6. AFTER THE SITE IS MASS GRADED, THE ONSITE DRAINAGE, UTILITIES, AND PAVING WILL BE INSTALLED.
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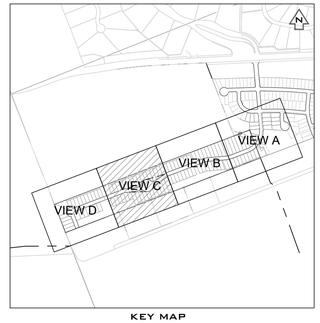
9. SEDIMENTATION TRAPS SHALL BE CLEANED OUT AND FILTER MEDIUM INSTALLED CONCURRENT WITH RE-VEGETATION.
10. THE DISTURBED AREA TO REMAIN PERVIOUS WILL BE VEGETATED USING THE PROCEDURES DETAILED IN THE CONSTRUCTION PLANS AND ALL TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED UPON RE-VEGETATION.



KEY MAP
(N.T.S.)

NO.	REVISION	BY	DATE

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

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5508 HIGHWAY 290 WEST
SUITE 150
AUSTIN, TX 78735
512.872.6696
HRGREEN.COM
TBPE NO: 16384
TBPLS NO: 10194101

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

EROSION & SEDIMENTATION CONTROL PLAN C

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

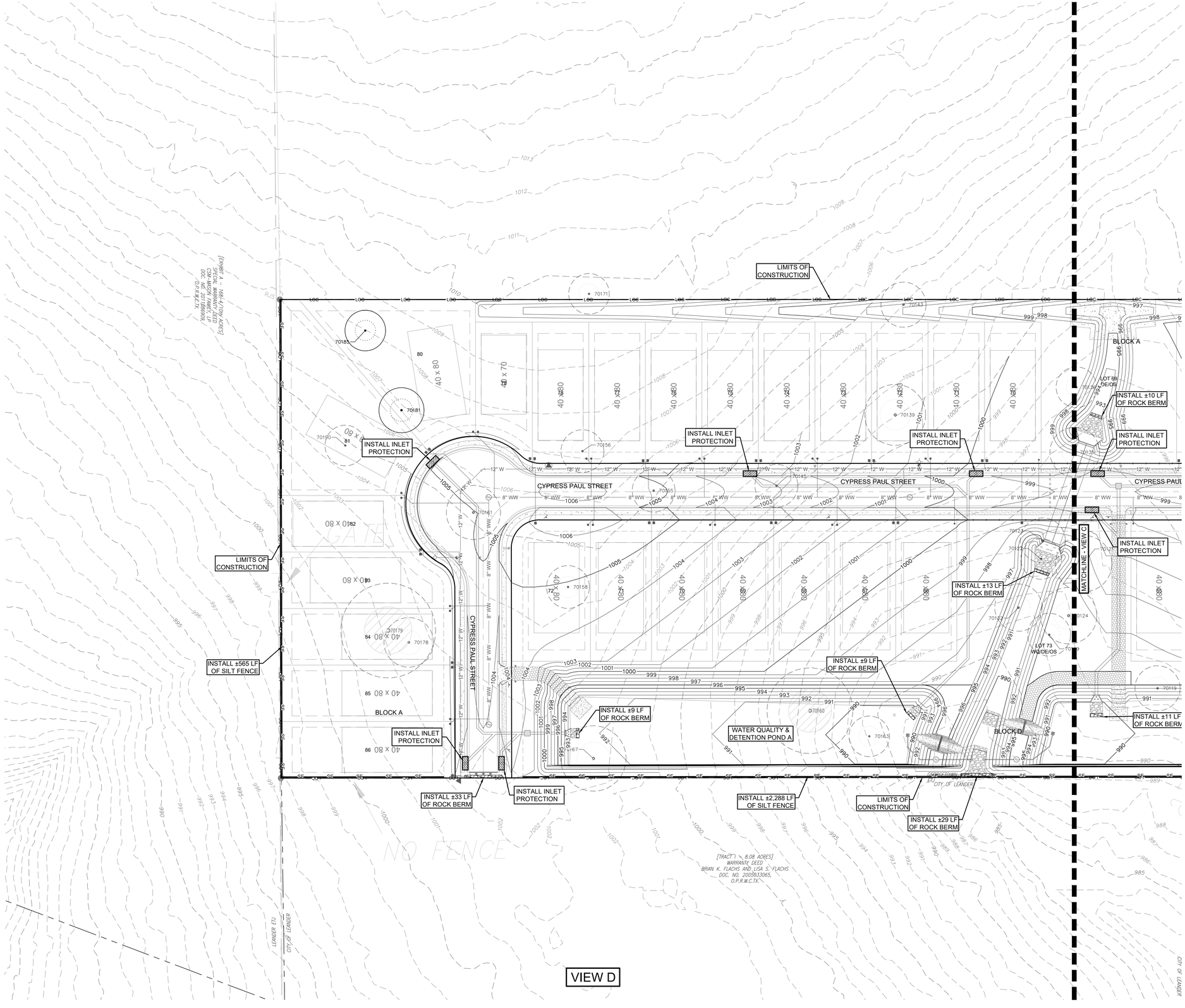
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 11 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Blue Mayer\Parkside Peninsula\03_ACAD\Parkside\2302005 EROS (key) EROSION & SEDIMENTATION CONTROL PLAN C, September 18, 2024, 10:37 AM, mmuhammad



0 40' 80'

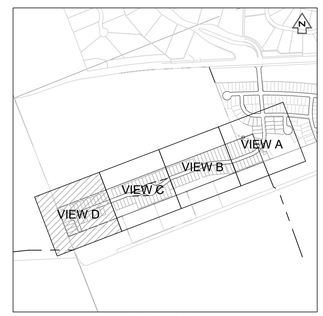
SCALE: 1" = 40'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- 834 EXISTING MINOR CONTOUR
- 940 PROPOSED MAJOR CONTOUR
- 934 PROPOSED MINOR CONTOUR
- LOC LIMITS OF CONSTRUCTION
- SF SILT FENCE
- TP TREE PROTECTION FENCE
- TREES TO REMAIN - HERITAGE
- TREES TO BE REMOVED - HERITAGE
- TREES TO REMAIN - NON HERITAGE
- TREES TO BE REMOVED - NON HERITAGE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- TEMPORARY SPOILS AREA
- CONCRETE WASHOUT AREA
- STAGING AREA
- ROCK BERM

SEQUENCE OF MAJOR ACTIVITIES:

1. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO INCLUDE SILT FENCE, ROCK BERMS, AND STABILIZED CONSTRUCTION ENTRANCES WILL BE INSTALLED ACCORDING TO CONSTRUCTION PLANS AND IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. TREE PROTECTION MEASURES WILL ALSO BE INSTALLED FOR ALL TREES WITH CONSTRUCTION ACTIVITIES WITHIN CRITICAL ROOT ZONE.
3. TEMPORARY SPOILS, CONSTRUCTION STAGING AND CONCRETE WASHOUT AREA WILL BE CONSTRUCTED.
4. THE SEDIMENTATION TRAP LOCATED AT THE SOUTHEAST CORNER OF THE SITE WILL BE EXCAVATED AND THE OUTFALL STRUCTURE CONSTRUCTED.
5. FILTER FABRIC WILL BE USED TO COVER THE OVERFLOW WEIR TO PREVENT UNFILTERED RUNOFF FROM ENTERING THE LAND DOWNSTREAM.
6. AFTER THE SITE IS MASS GRADED, THE ONSITE DRAINAGE, UTILITIES, AND PAVING WILL BE INSTALLED.
7. INLET PROTECTION BARRIERS WILL BE INSTALLED AS CONSTRUCTION OF STORM SEWER TAKES PLACE IN ORDER TO PREVENT SEDIMENTS FROM ENTERING THE SYSTEM.
8. TEMPORARY SEDIMENTATION BASINS WILL BE CONVERTED TO PERMANENT WATER QUALITY PONDS.
9. SEDIMENTATION TRAPS SHALL BE CLEANED OUT AND FILTER MEDIUM INSTALLED CONCURRENT WITH RE-VEGETATION.
10. THE DISTURBED AREA TO REMAIN PERVIOUS WILL BE VEGETATED USING THE PROCEDURES DETAILED IN THE CONSTRUCTION PLANS AND ALL TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED UPON RE-VEGETATION.



KEY MAP (N.T.S.)

NO.	REVISION	BY	DATE

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TBPLS NO: 10194101

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

EROSION & SEDIMENTATION CONTROL PLAN D

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 12 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Blue Mage\Parkside Peninsula\03_ACAD\Panels\03020005 EROS.dwg, EROSION & SEDIMENTATION CONTROL PLAN D, August 30, 2024, 10:48 AM, mstai.muhammad

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.

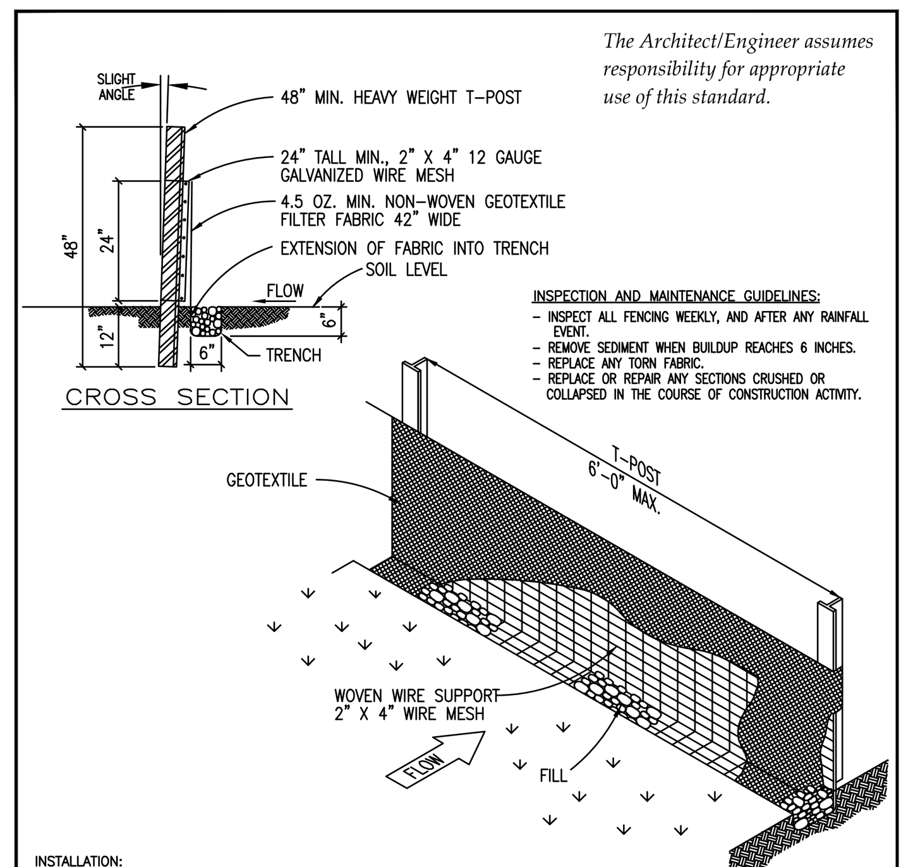
The Architect/Engineer assumes responsibility for appropriate use of this standard.

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 (SWPPP) THAT COMPLY WITH FEDERAL, STATE AND/OR LOCAL STORM WATER REGULATIONS.

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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES — EC01A



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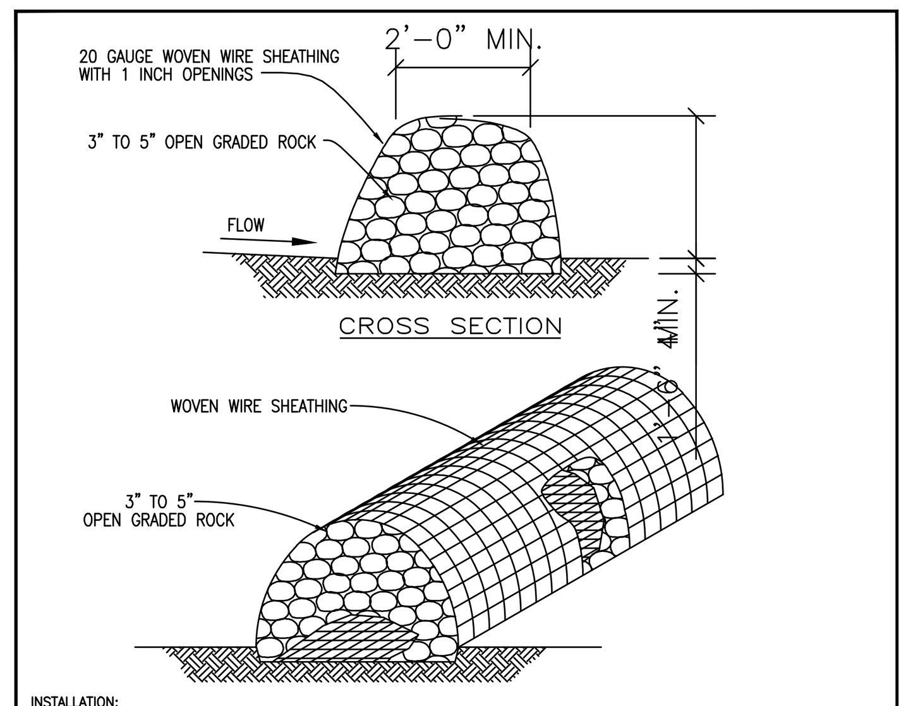
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SILT FENCE DETAIL — EC02



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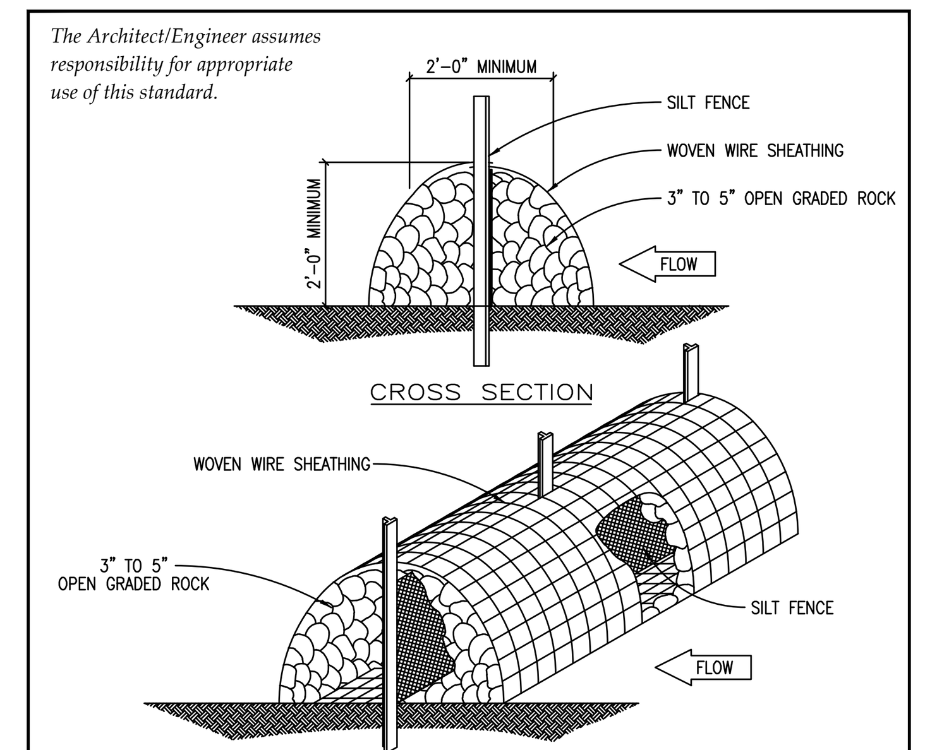
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
ROCK BERM DETAIL — EC03



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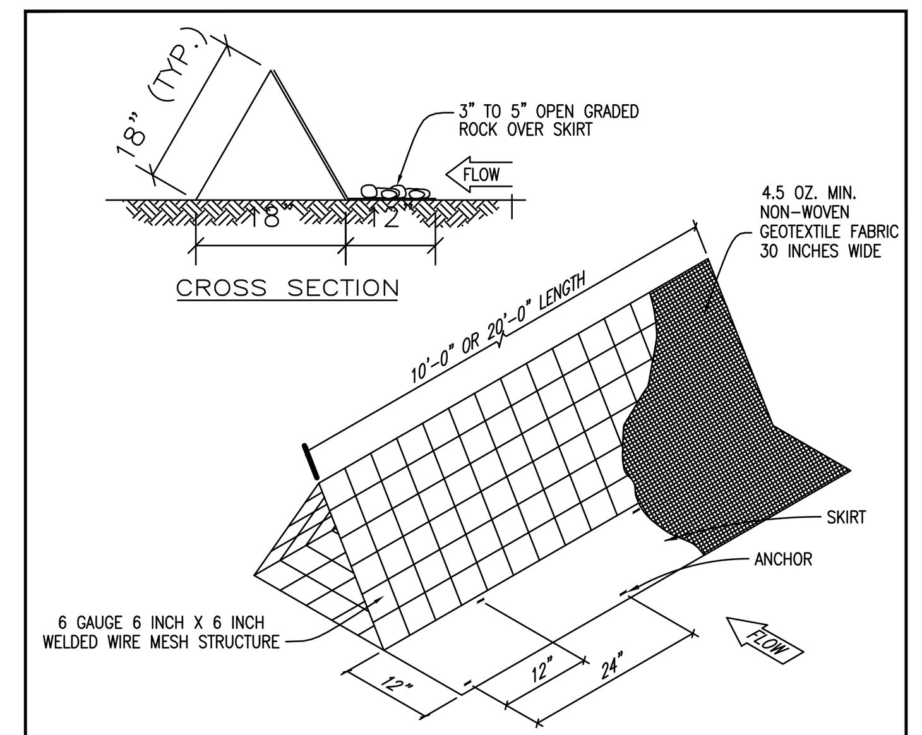
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
HIGH SERVICE ROCK BERM DETAIL — EC04



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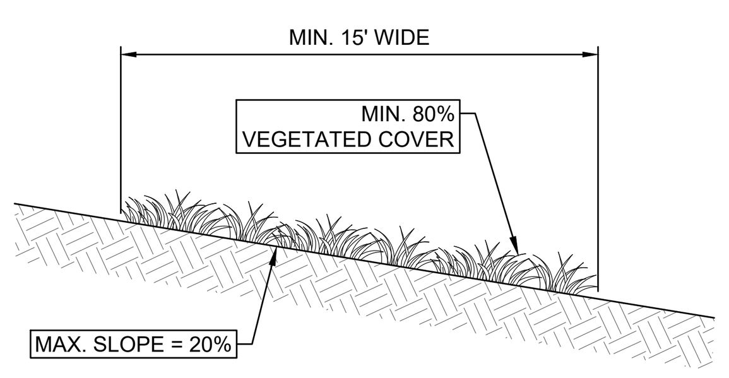
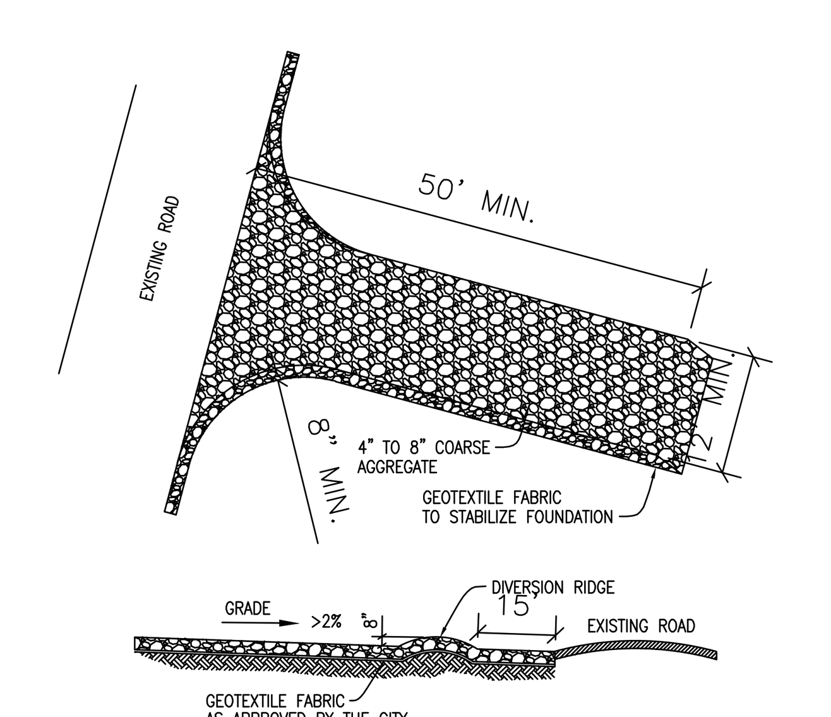
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRIANGULAR FILTER DIKE — EC05



ENGINEERED VEGETATIVE FILTER STRIP DETAIL

N.T.S.



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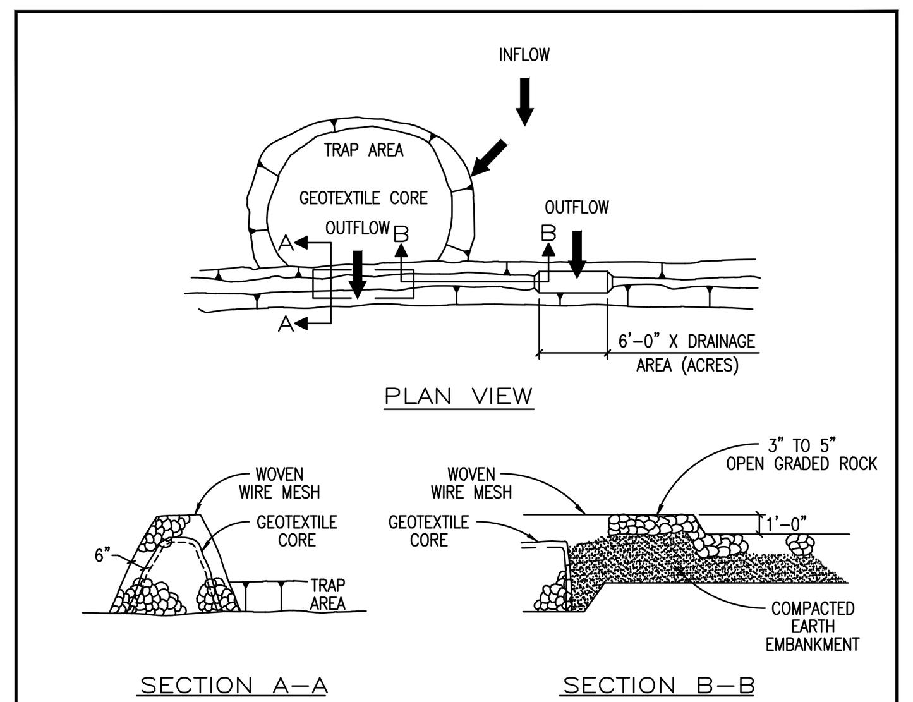
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STABILIZED CONSTRUCTION ENTRANCE — EC06



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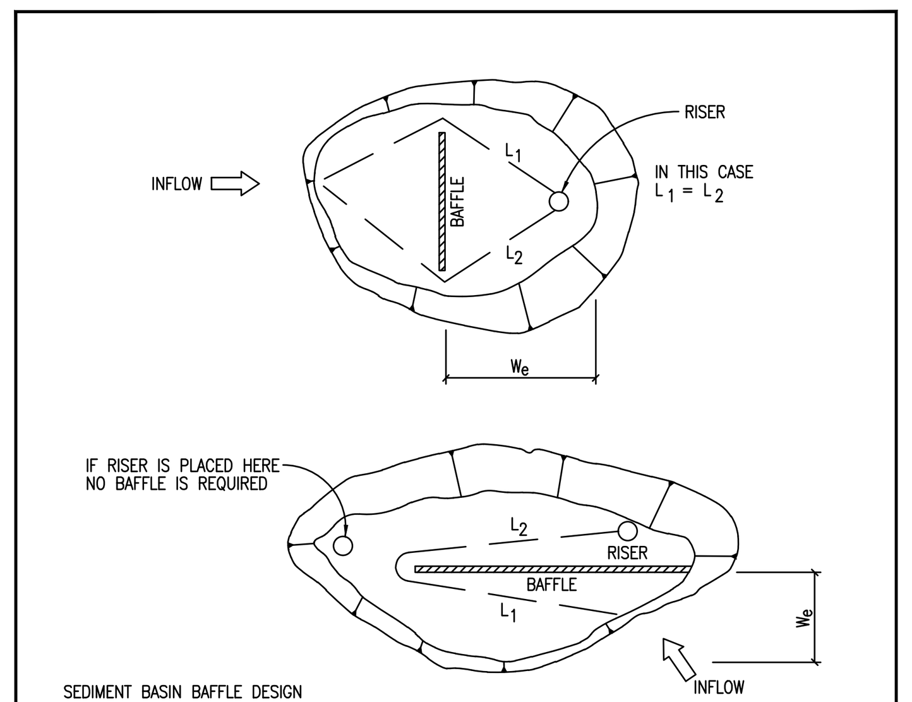
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEDIMENT TRAP DETAIL — EC07



SEDIMENT BASIN BAFFLE DESIGN
$W_e = A / (L_1 + L_2)$
W_e = EFFECTIVE WIDTH OF BASIN
A = SURFACE AREA OF BASIN WHEN FILLED TO RISER CREST
L_1, L_2 = SHORTEST TRAVEL DISTANCE AROUND THE BAFFLE FROM INLET TO OUTLET

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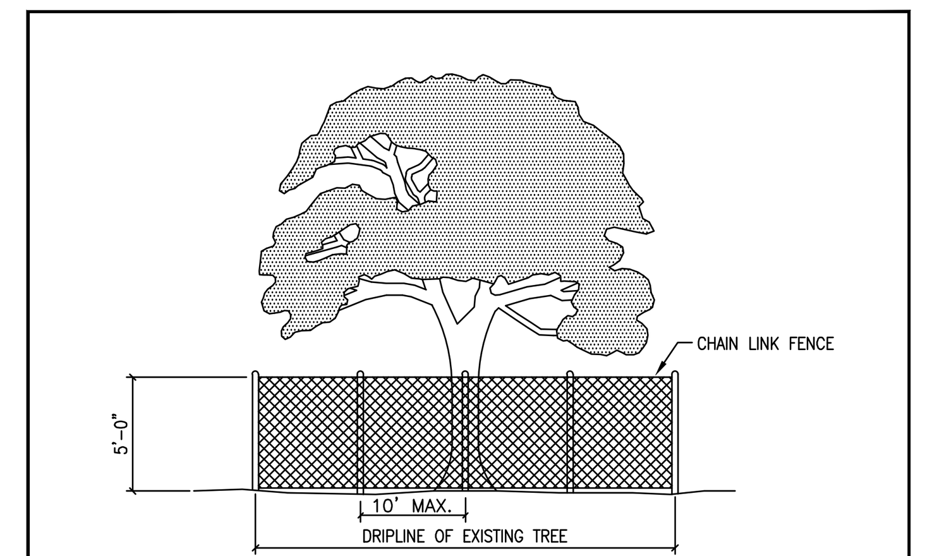
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEDIMENT BASIN BAFFLE DESIGN — EC08



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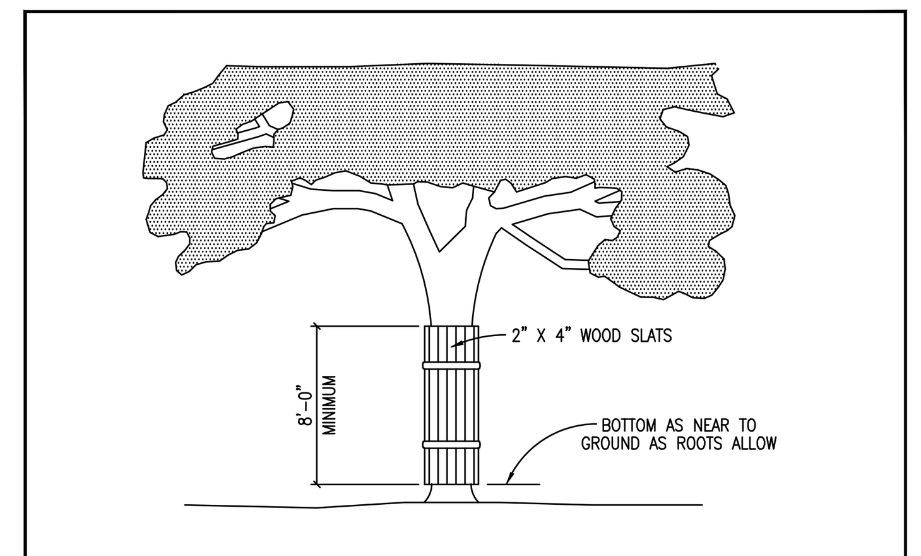
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION – CHAIN LINK FENCE — EC09



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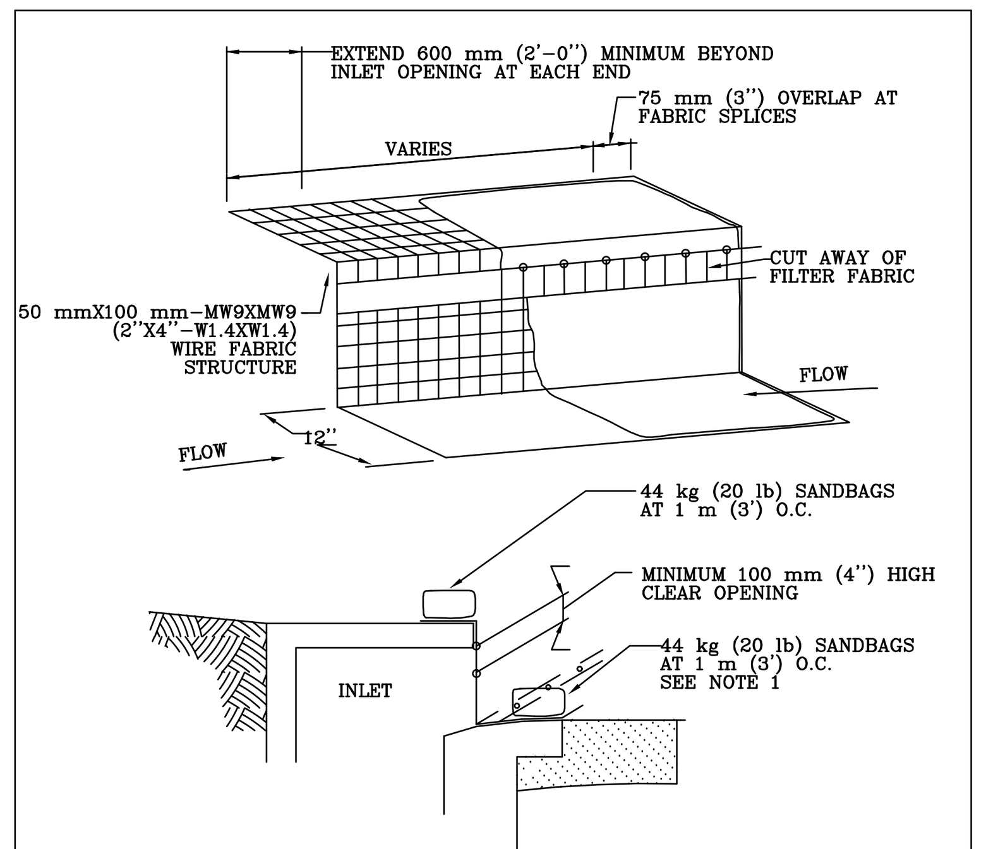
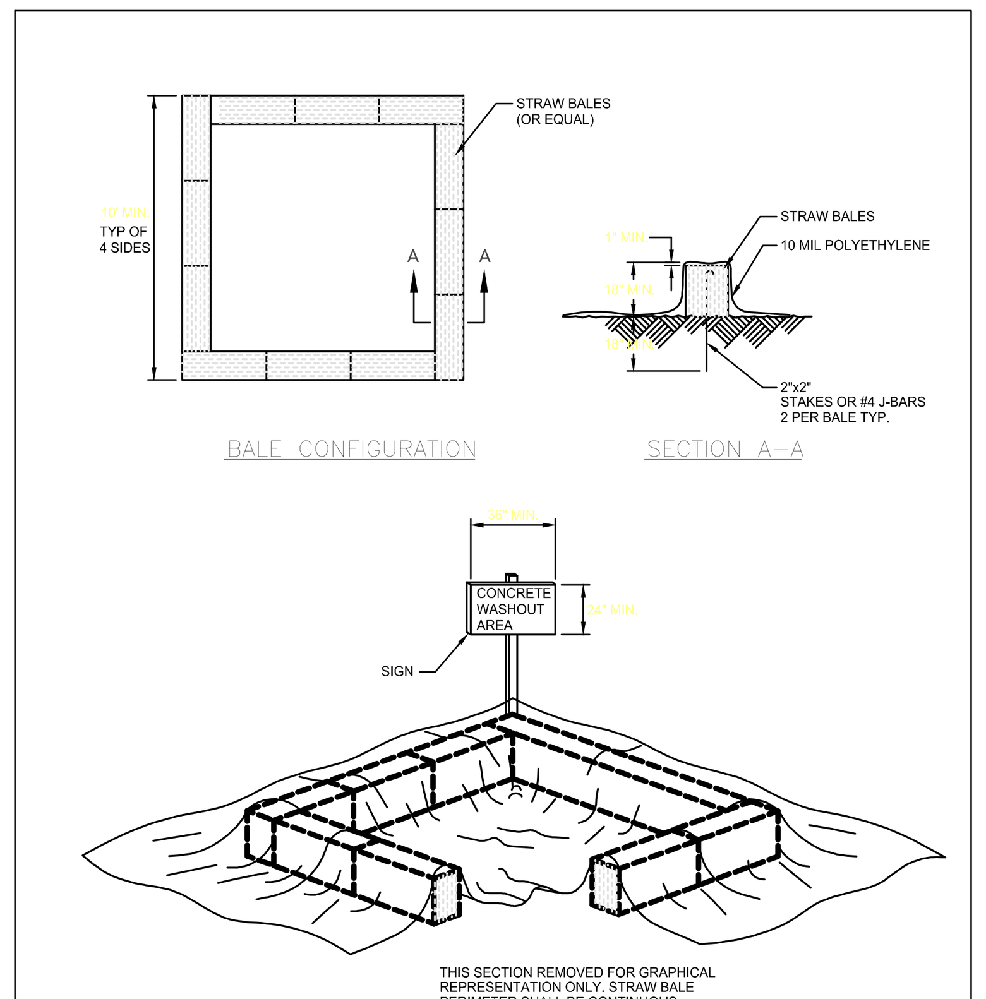
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION – WOOD SLATS — EC10



NOTES:
1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 25 mm X 100 mm (1"x4") BOARD SECURED WITH CONCRETE NAILS 1 m (3') O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS. APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 50 mm (2").
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

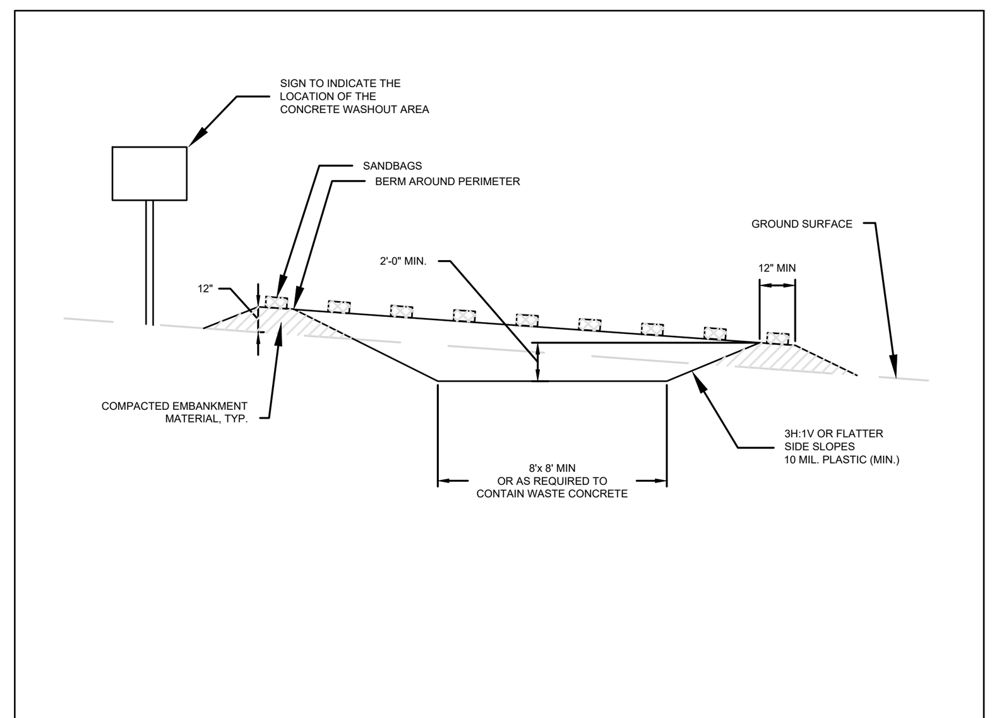
FILTER DIKE CURB INLET PROTECTION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



NOTES:
1.- FACE SIGN TOWARD NEAREST STREET OR ACCESS POINT.
2.- CONCRETE WASHOUT SHALL BE LOCATED BEHIND CURB AND 50 FT. MINIMUM FROM DRAINAGE INLETS OR WATERCOURSES

Concrete Washout Area



CONCRETE WASHOUT AREA

Figure 1.4-F Silt Fence Typical Placement – Two Slopes

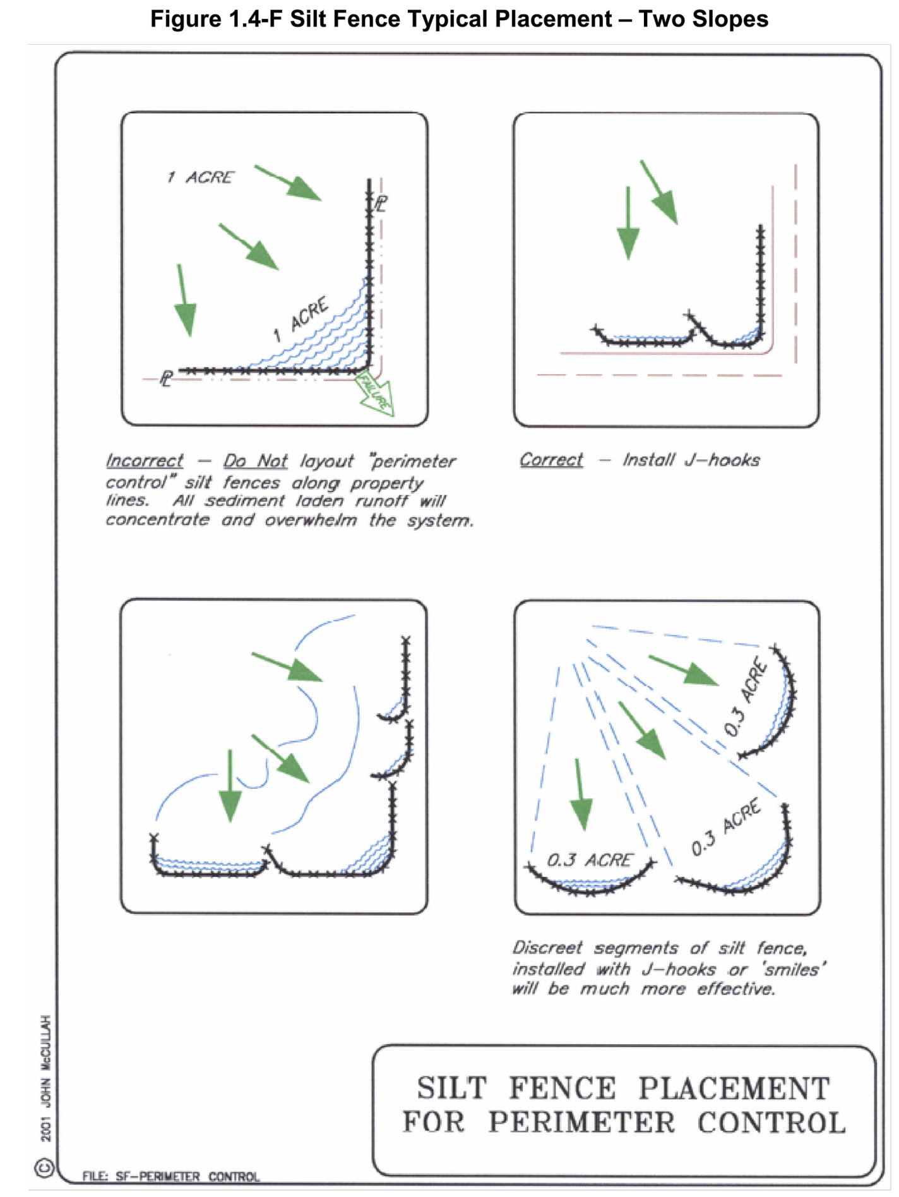


Figure 1.4-G Silt Fence Placement for Perimeter Control

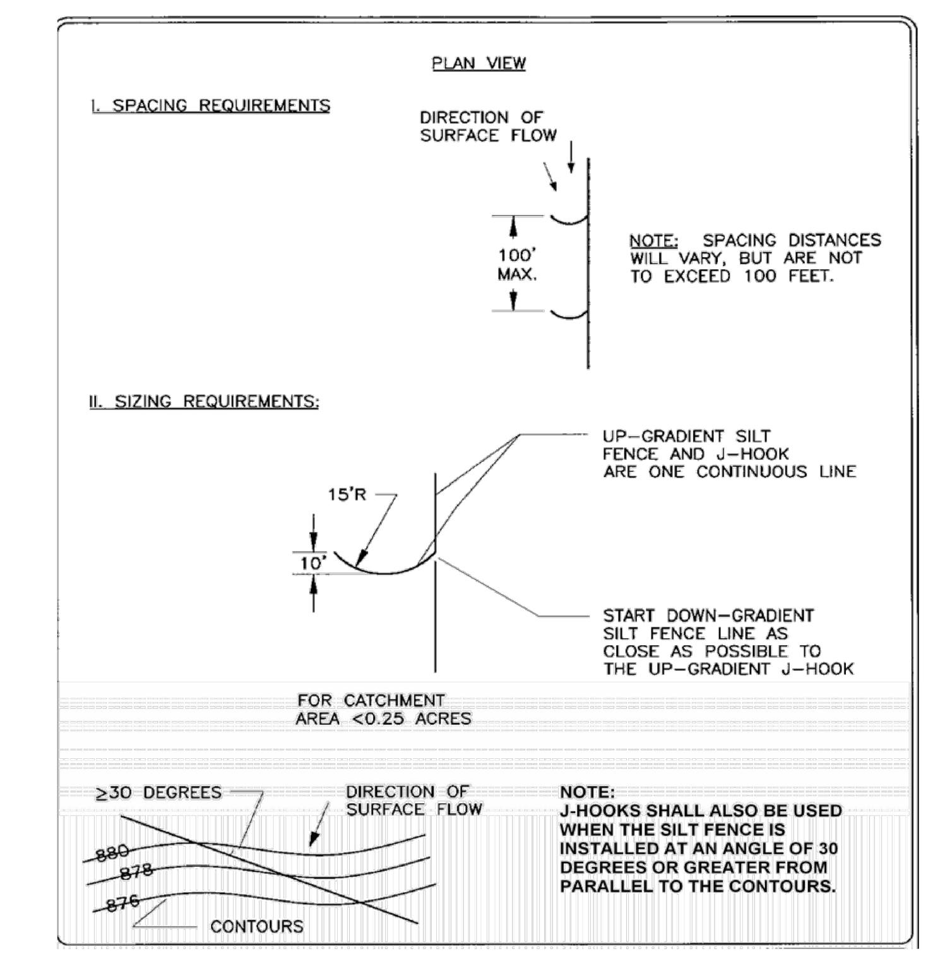


Figure 1.4-H Silt Fence J - Hook Detail (N.T.S.)

H. Triangular Sediment Filter Dikes.

(See Standard Specifications manual item 648S and Specifications manual item 648S for detail)

1. **Description.**

A temporary barrier constructed of wire mesh and geotextile fabric, installed along a flat area.

2. **Purpose.**

The purpose of a triangular sediment filter dike is to intercept and detain water-borne sediment from a stabilized construction entrance, roadway

---

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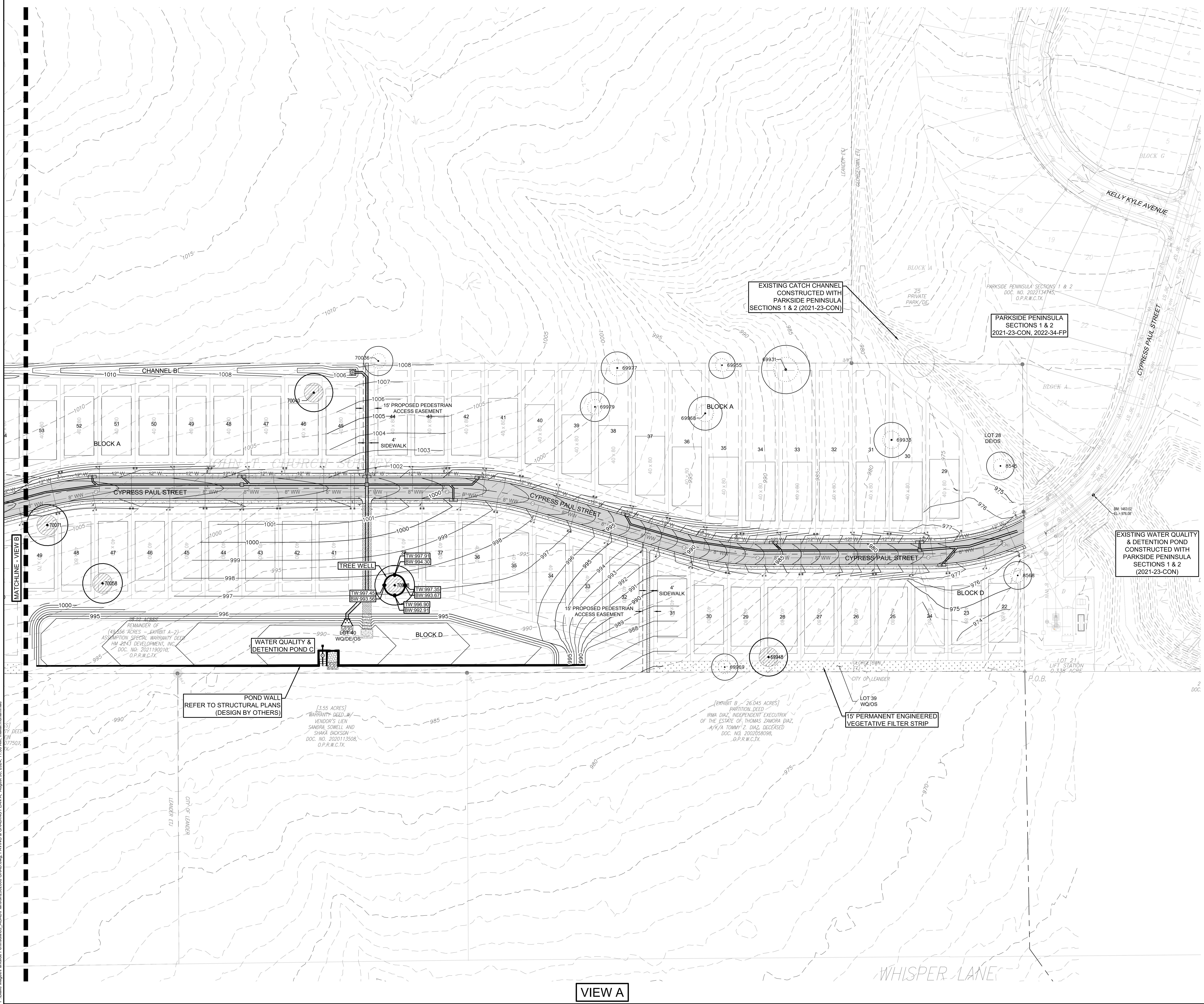
STATE OF TEXAS — CHRISTINE N. CAMPBELL — 142536 — LICENSED PROFESSIONAL ENGINEER
08/30/2024

REVISION | NO. | BY | DATE

EROSION & SEDIMENTATION CONTROL DETAILS

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:
SHEET 13 OF 68
2024-XX-CON



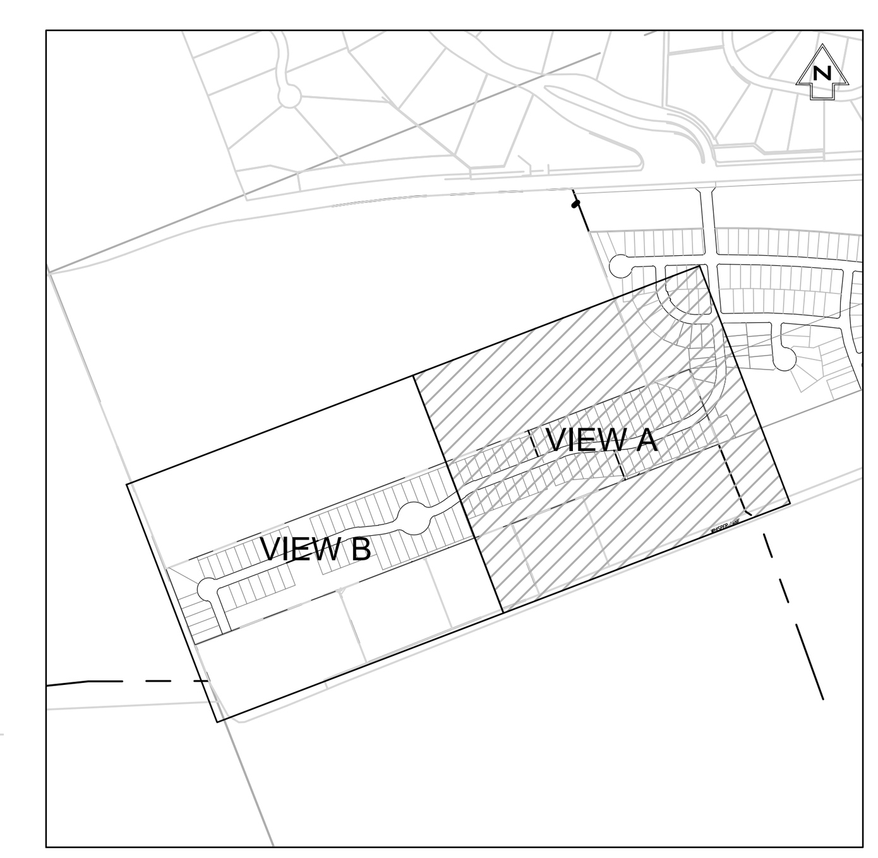
0 60' 120'
SCALE: 1" = 60'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EXISTING MAJOR CONTOUR (840)
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR (940)
- PROPOSED MINOR CONTOUR
- SIDEWALK (BY DEVELOPER)
- SIDEWALK (BY BUILDER)
- TREES TO REMAIN - HERITAGE
- TREES TO REMAIN - NON-HERITAGE
- ASPHALT PAVING (REFER TO SHEET 26 FOR PAVEMENT DESIGN SECTIONS)
- VEGETATIVE FILTER STRIP

NOTES:

1. FILL SHOULD BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY TxDOT - 114 - E, AND PER GEOTECHNICAL ENGINEERS RECOMMENDATION.
2. FILL WITHIN THE RESIDENTIAL LOT AREAS SHALL BE PLACED ACCORDING TO THE HUD 79G REQUIREMENTS SPECIFICATIONS
3. VEGETATE ALL DISTURBED AREAS WITHIN THE ROW AND OPEN SPACE LOT AREAS PER CITY OF GEORGETOWN SPECIFICATIONS.



KEY MAP
(N.T.S.)

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

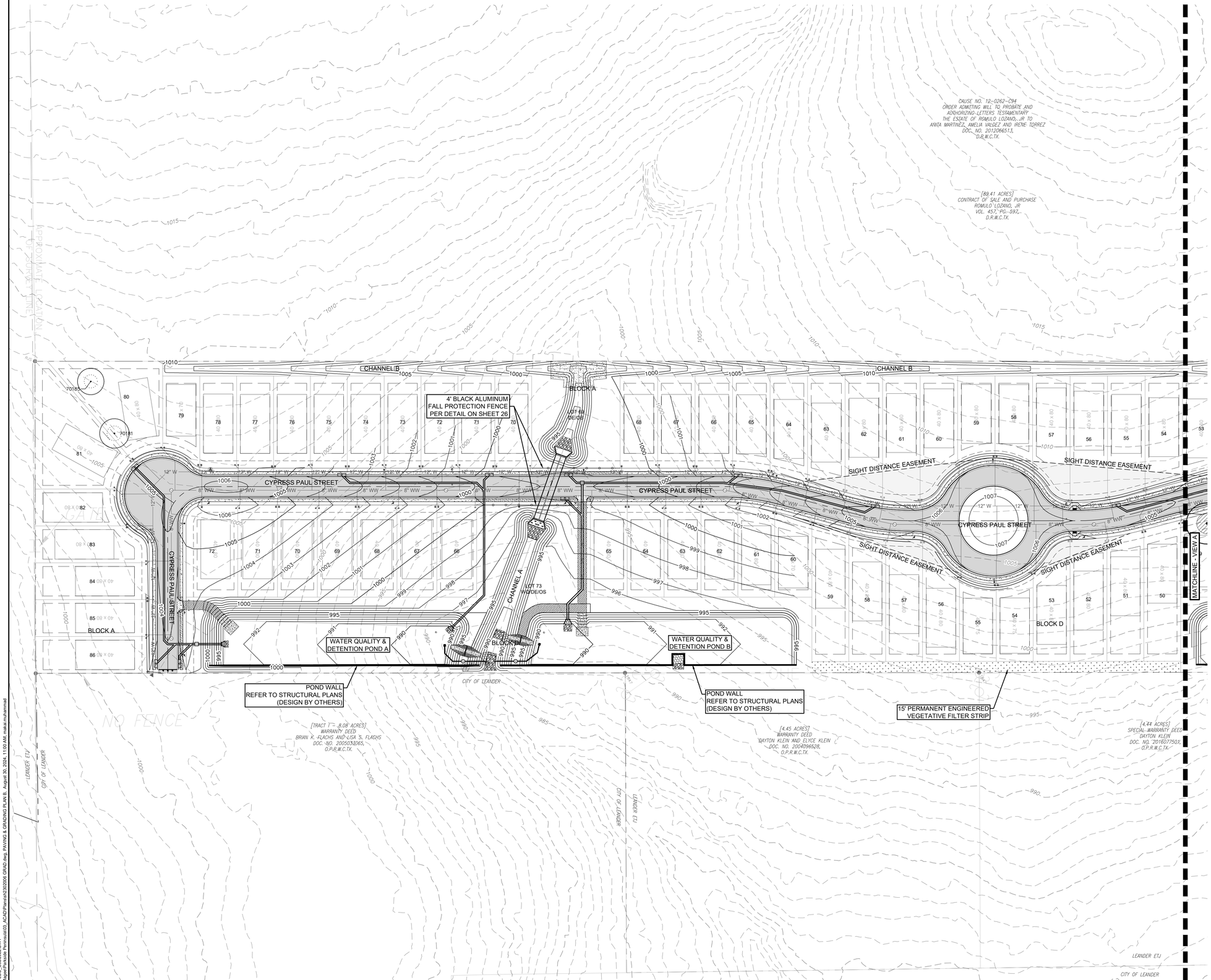
PAVING & GRADING PLAN A

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 23 OF 68

2024-XX-CON



0 60' 120'

SCALE: 1" = 60'

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- 840 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 940 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- SIDEWALK (BY DEVELOPER)
- SIDEWALK (BY BUILDER)
- 10539 TREES TO REMAIN - HERITAGE
- 10538 TREES TO REMAIN - NON-HERITAGE
- ASPHALT PAVING (REFER TO SHEET 26 FOR PAVEMENT DESIGN SECTIONS)
- VEGETATIVE FILTER STRIP

NOTES:

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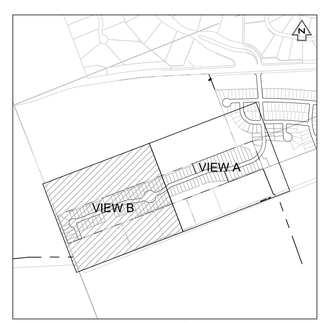
2. FILL WITHIN THE RESIDENTIAL LOT AREAS SHALL BE PLACED ACCORDING TO THE HUD 79G REQUIREMENTS SPECIFICATIONS.
3. VEGETATE ALL DISTURBED AREAS WITHIN THE ROW AND OPEN SPACE LOT AREAS PER CITY OF GEORGETOWN SPECIFICATIONS.



KEY MAP (N.T.S.)

NO.	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER

08/30/2024

PAVING & GRADING PLAN B

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 24 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
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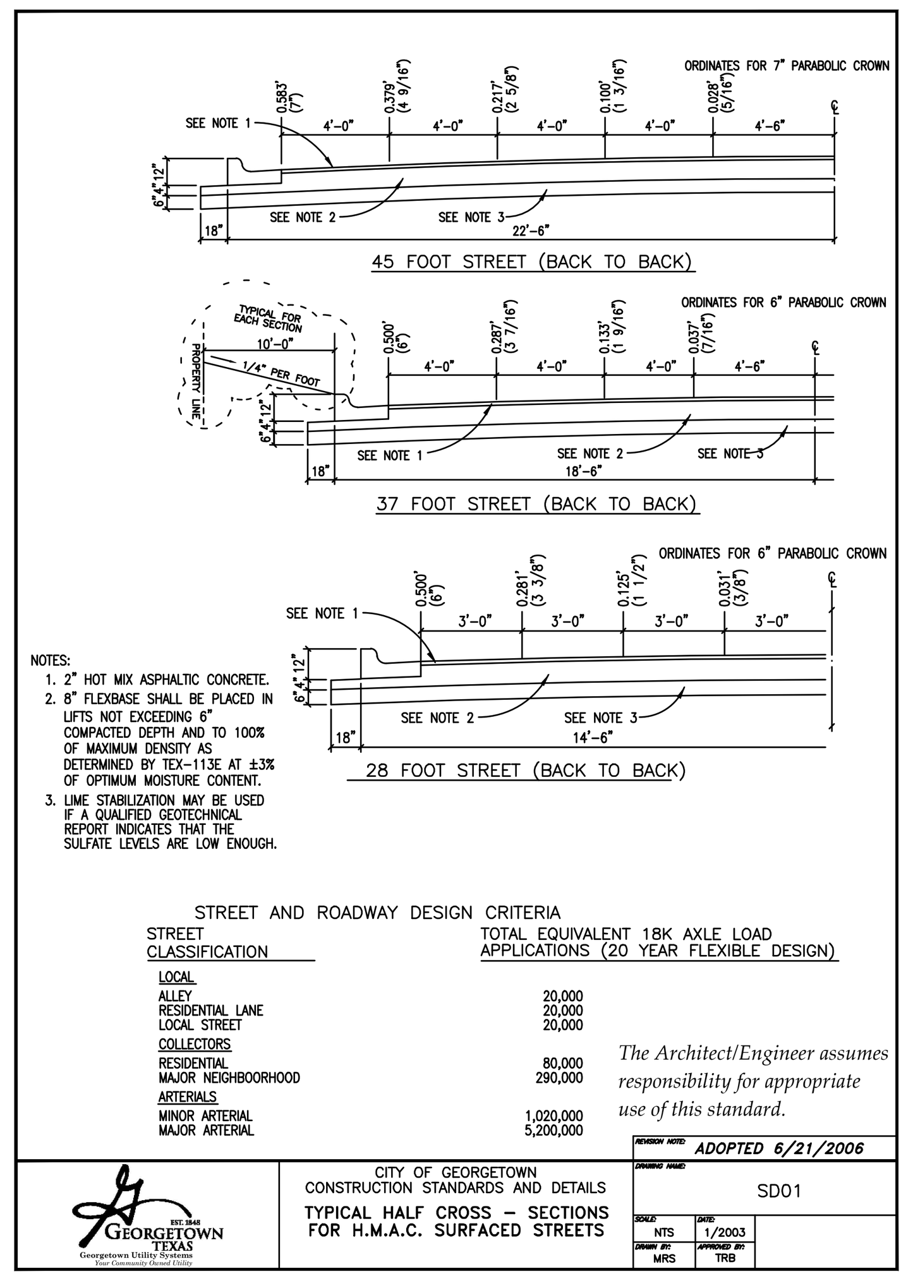
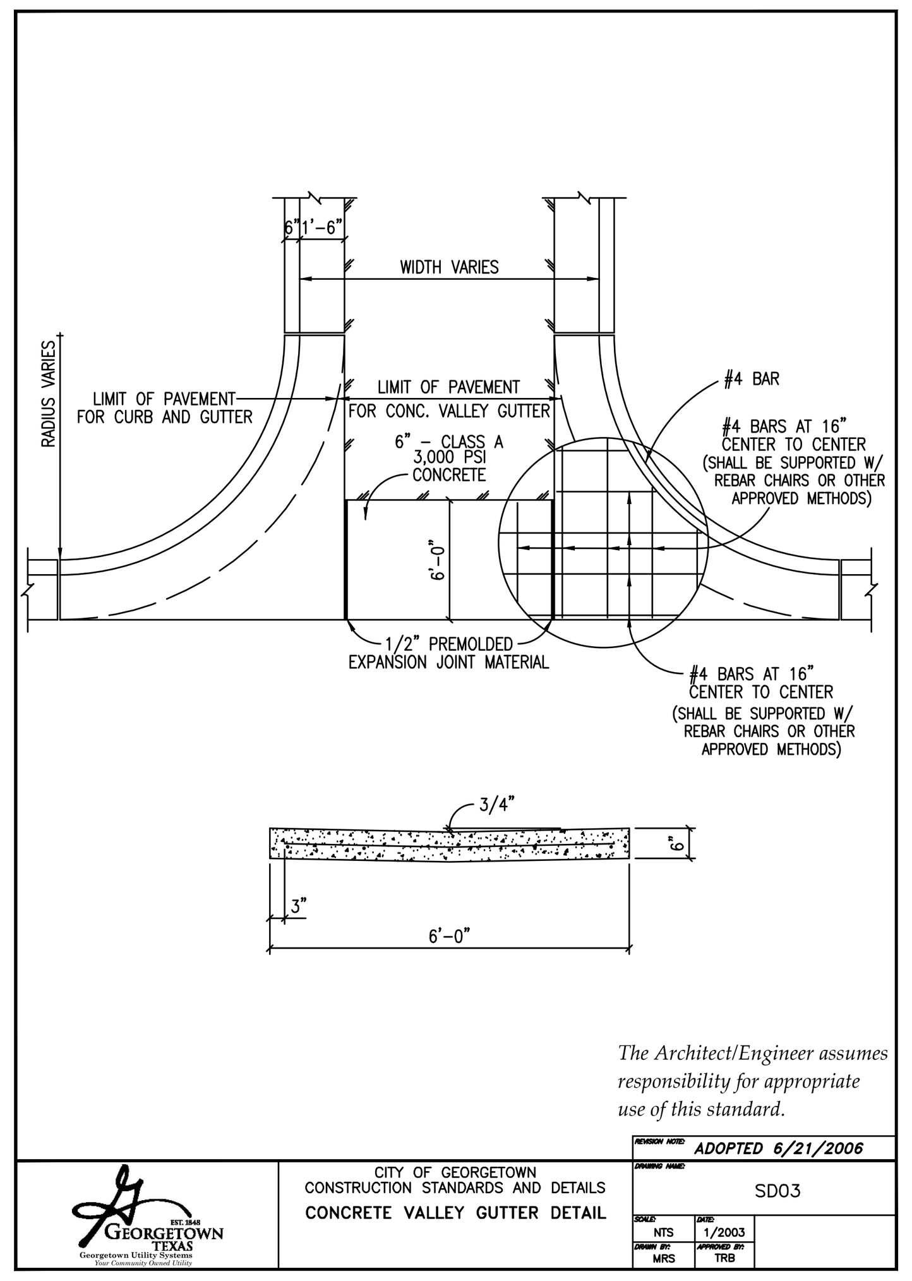
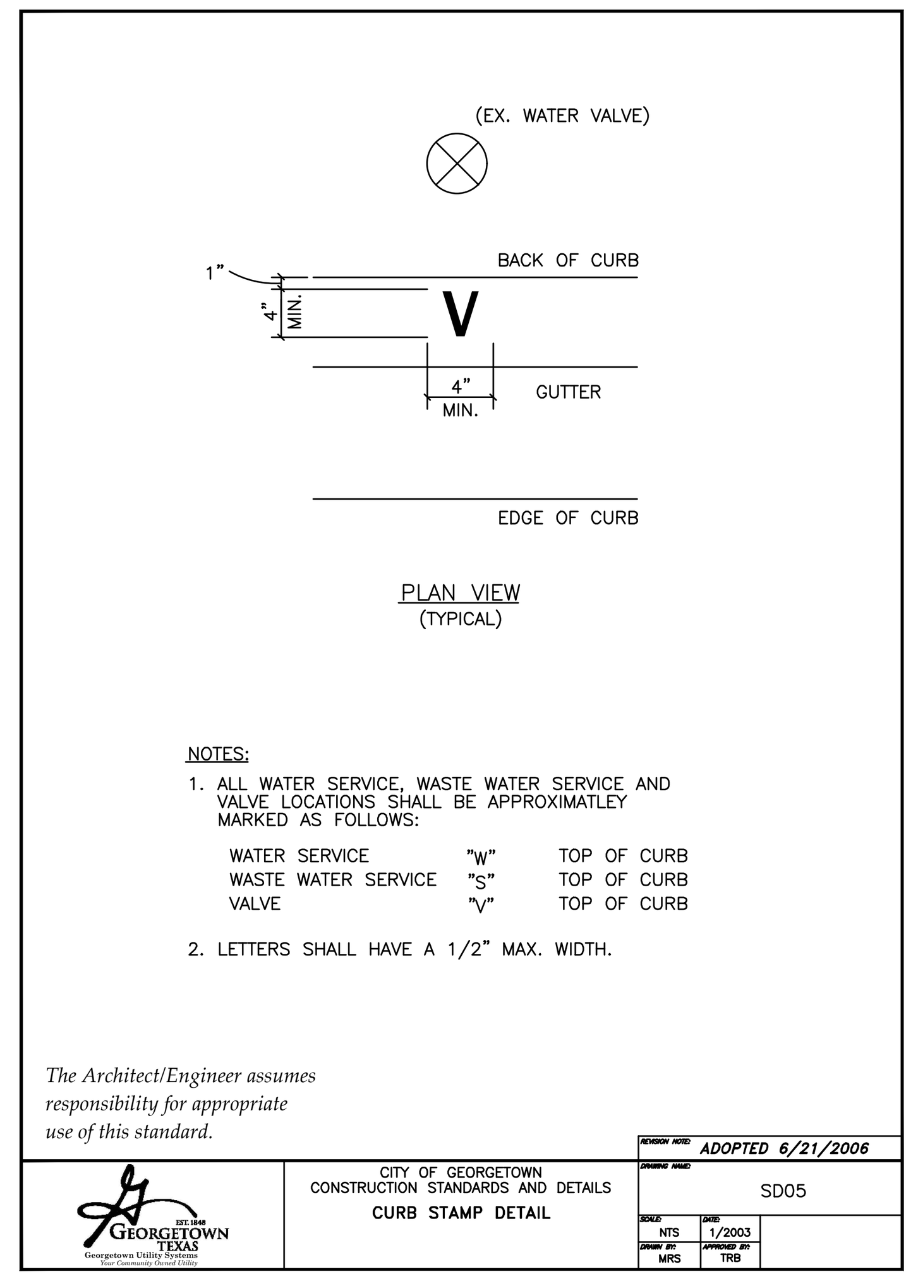
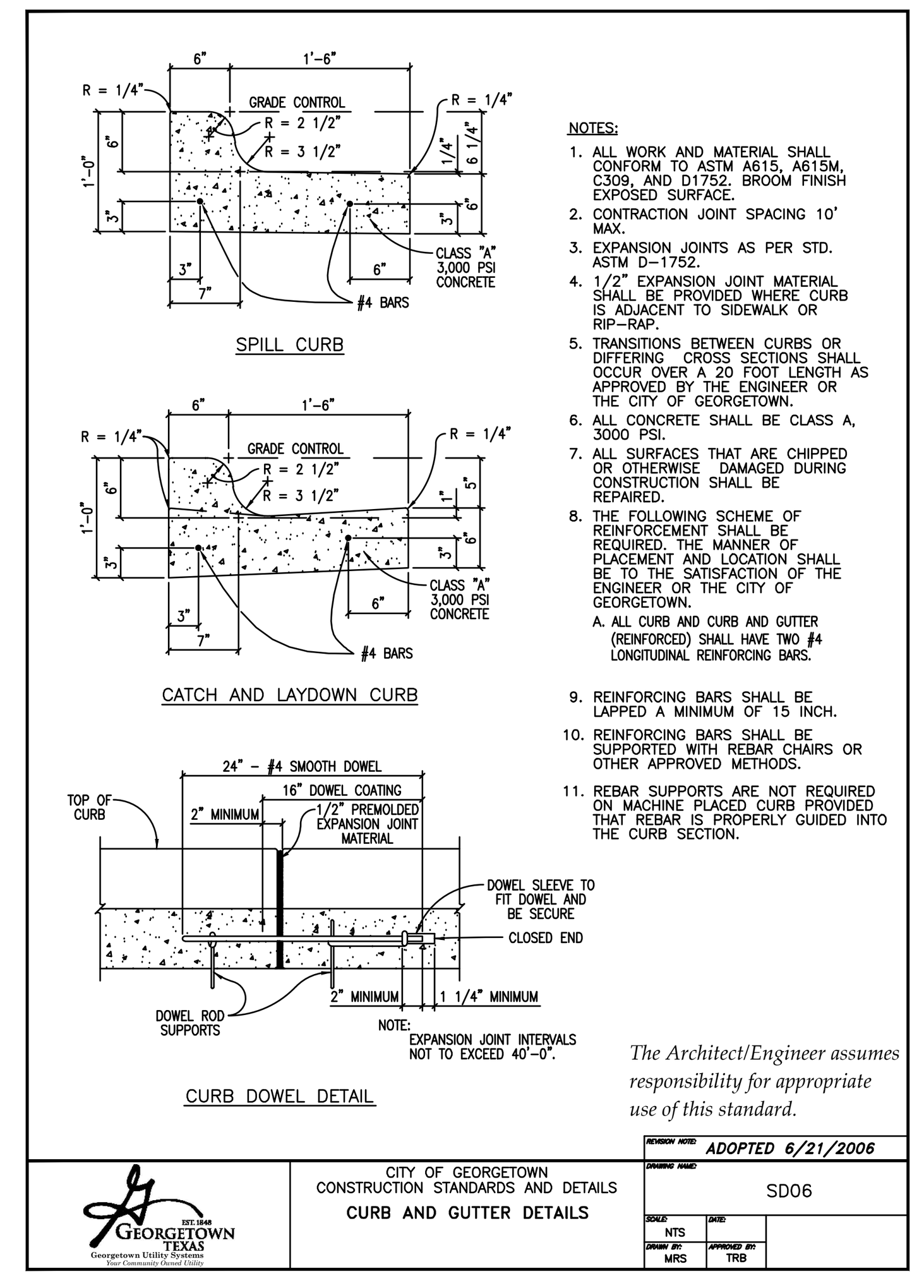
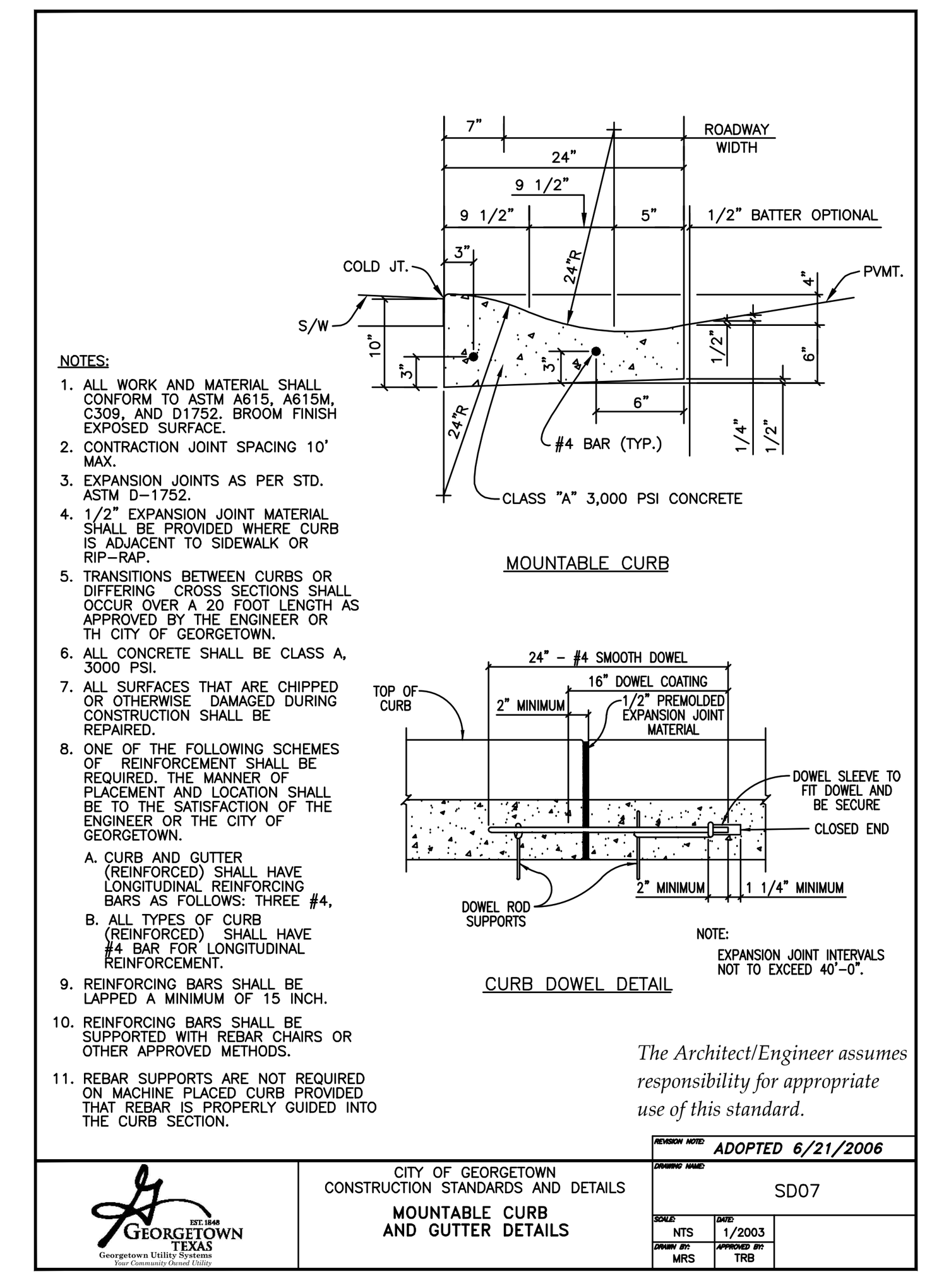
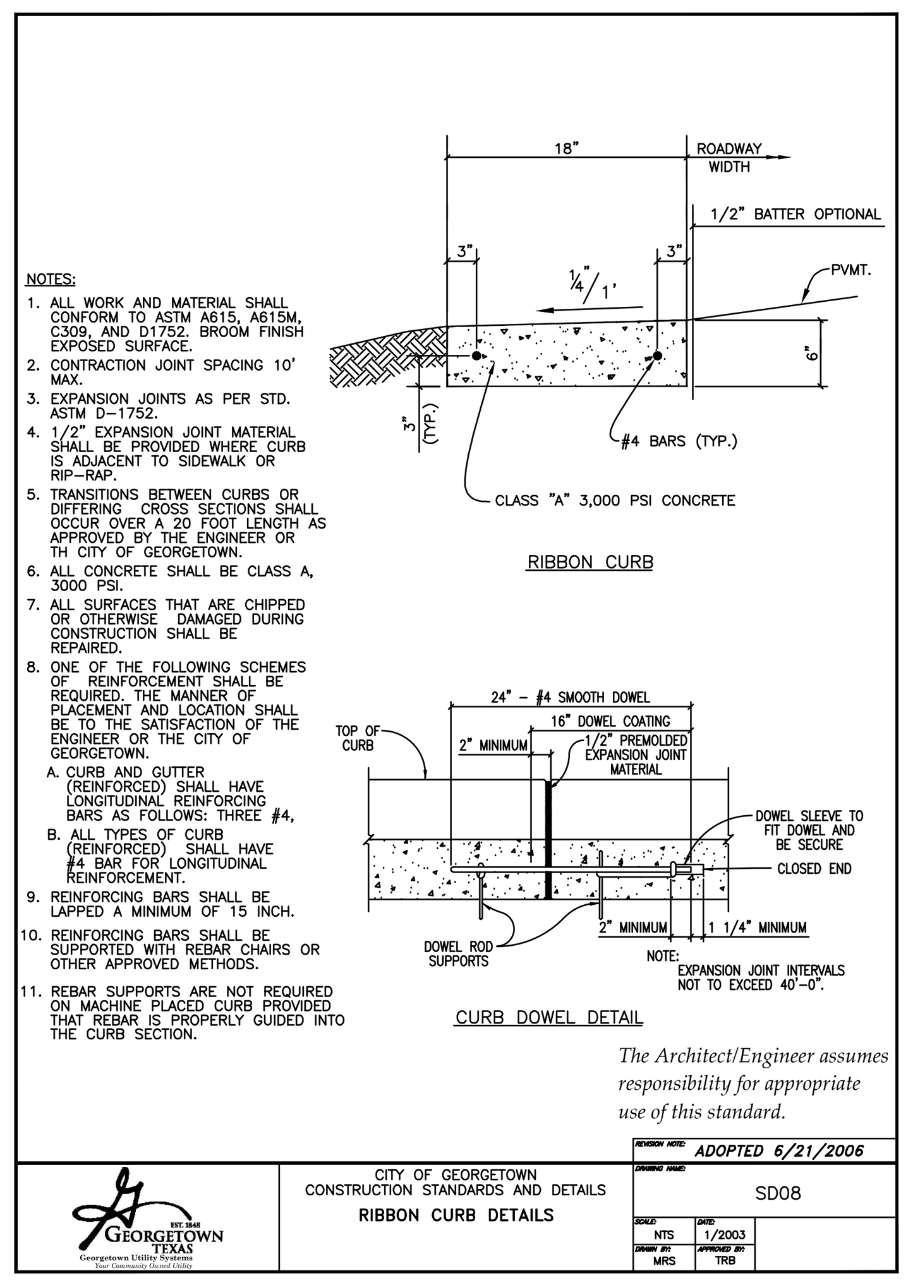


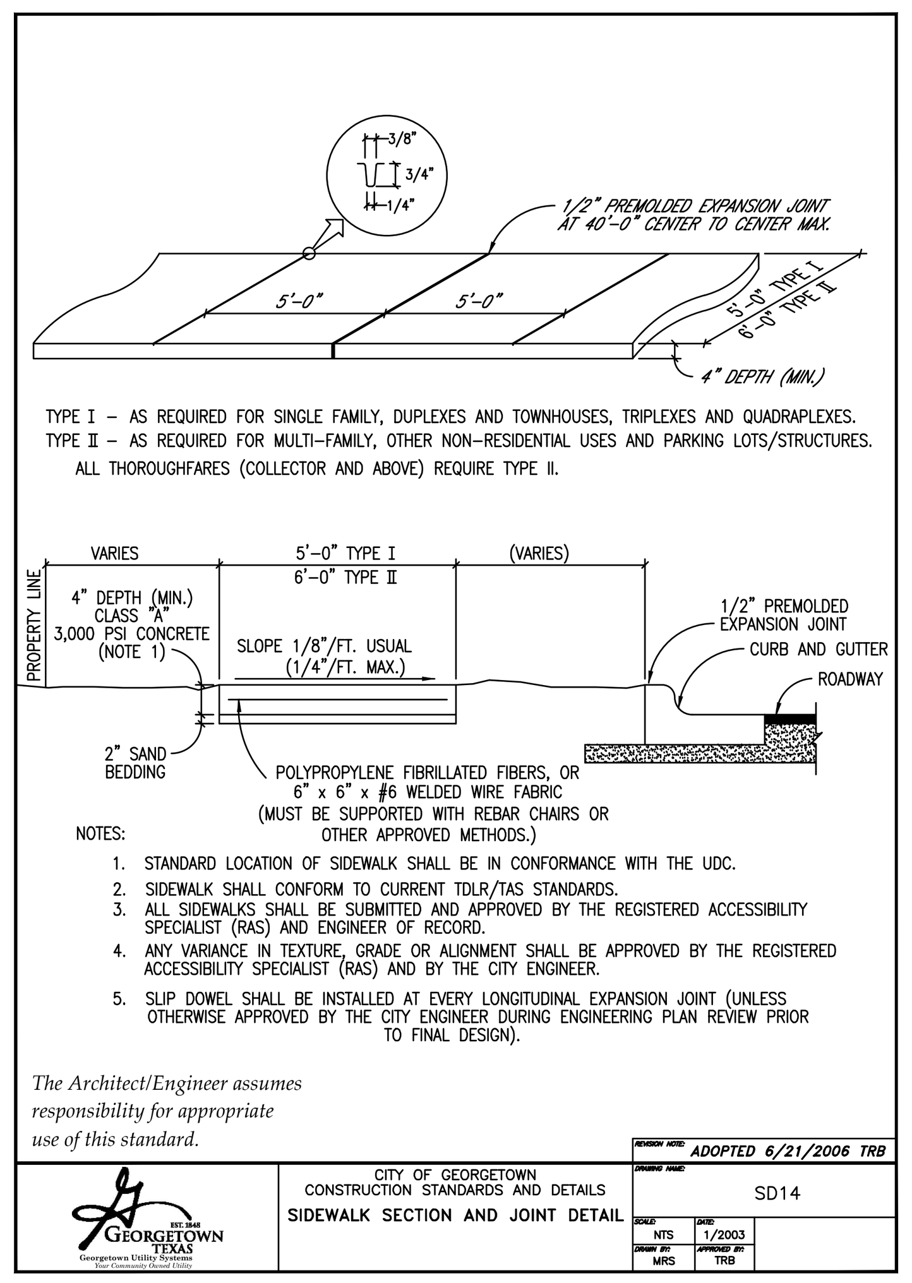


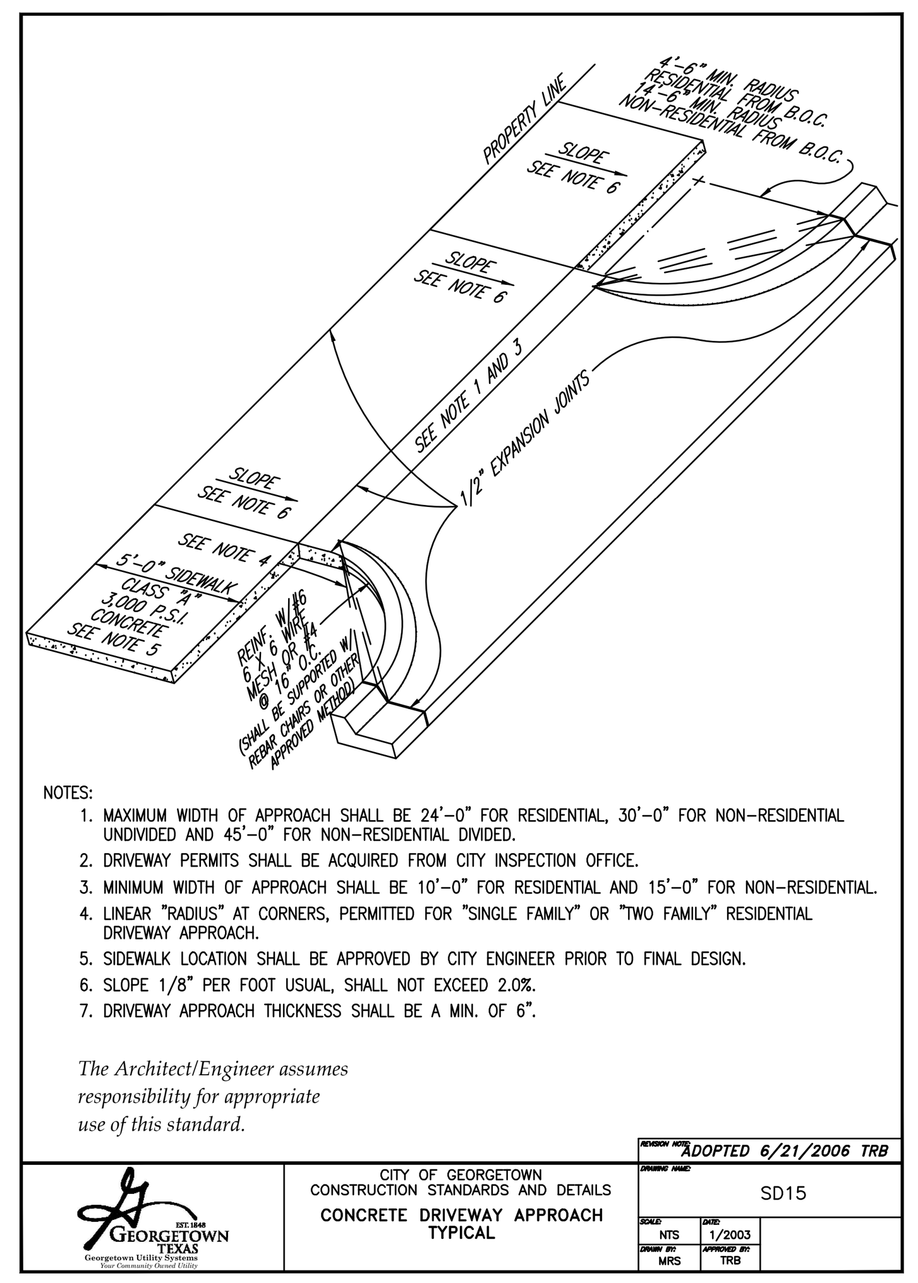


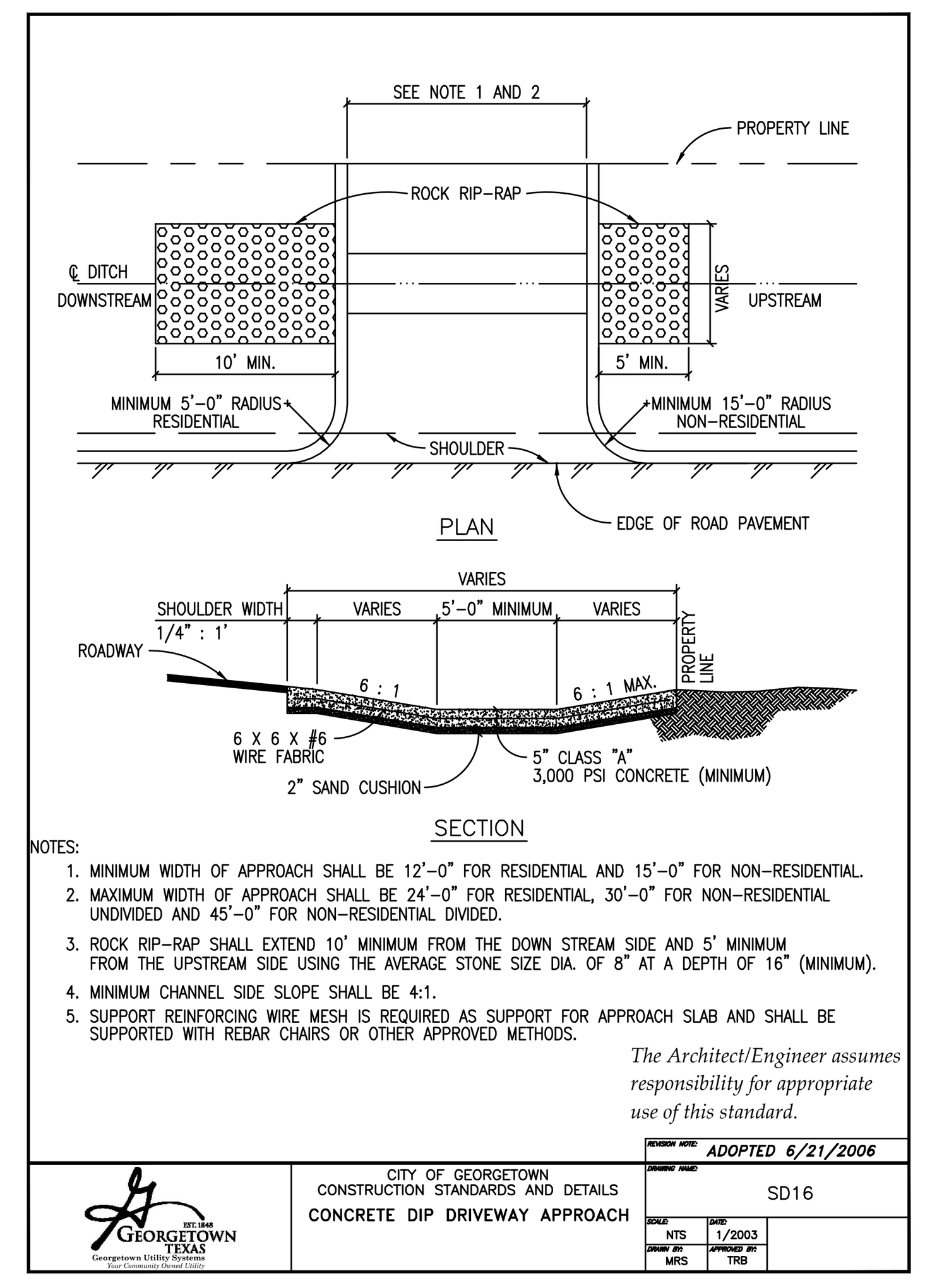


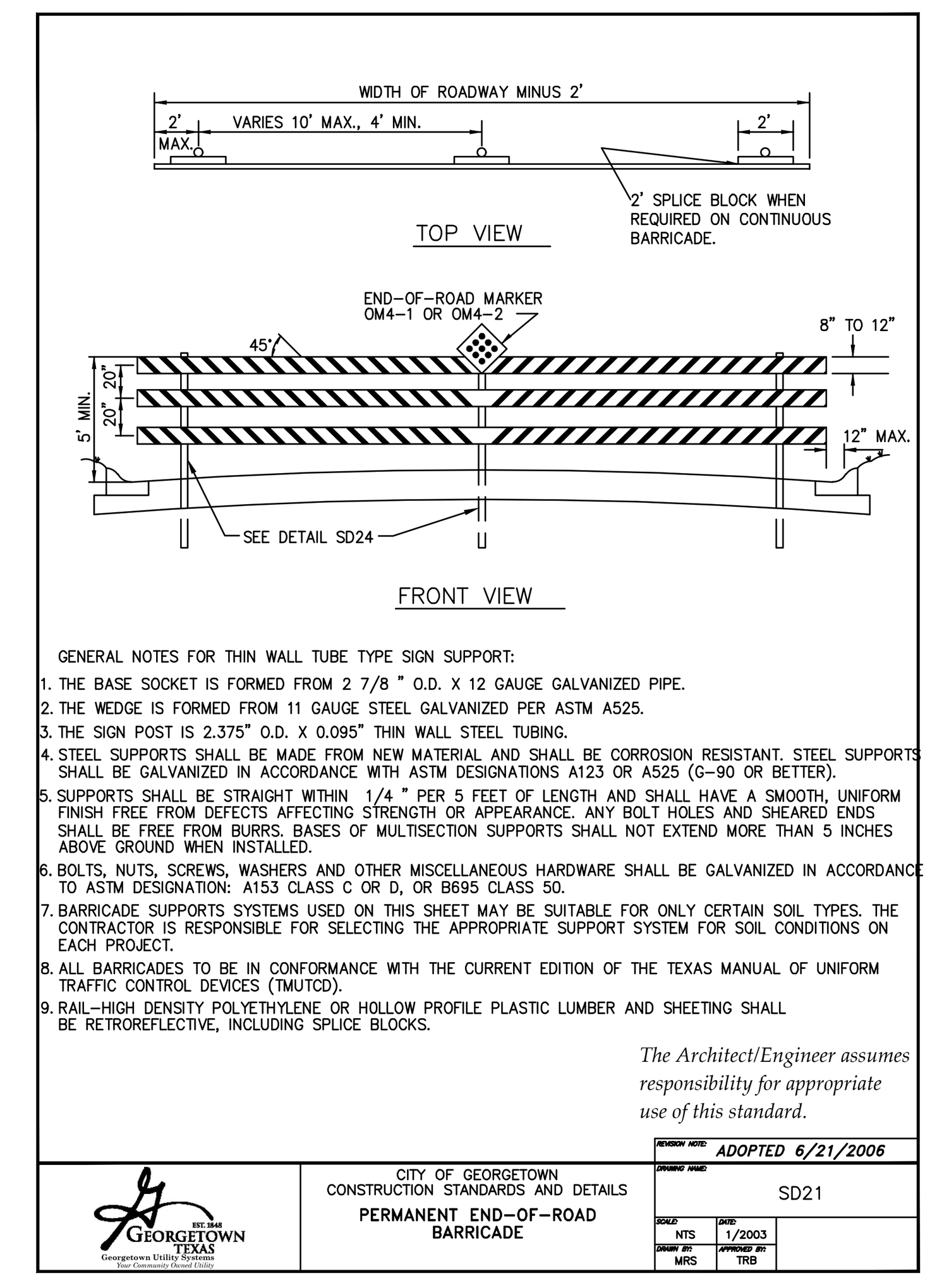


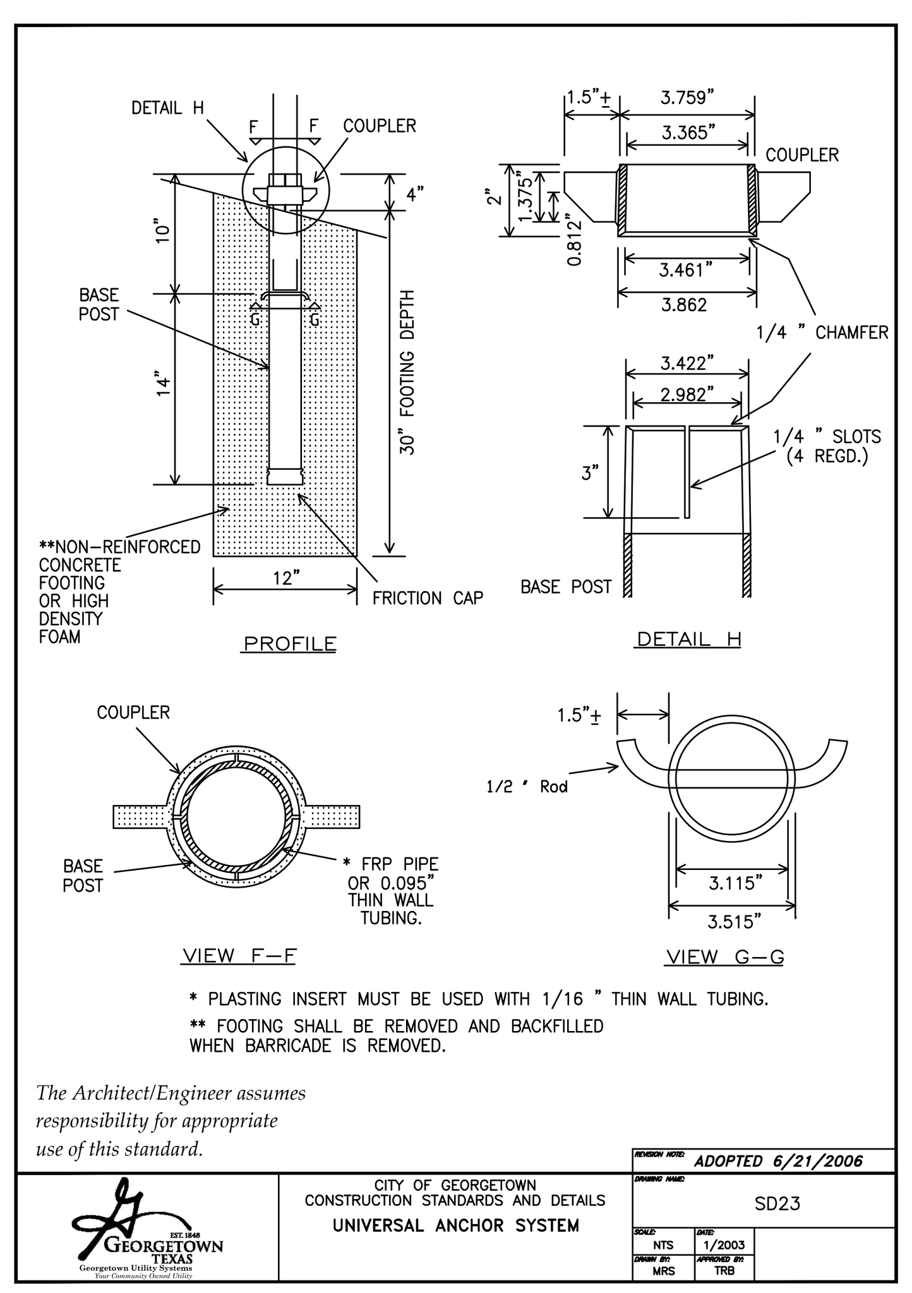


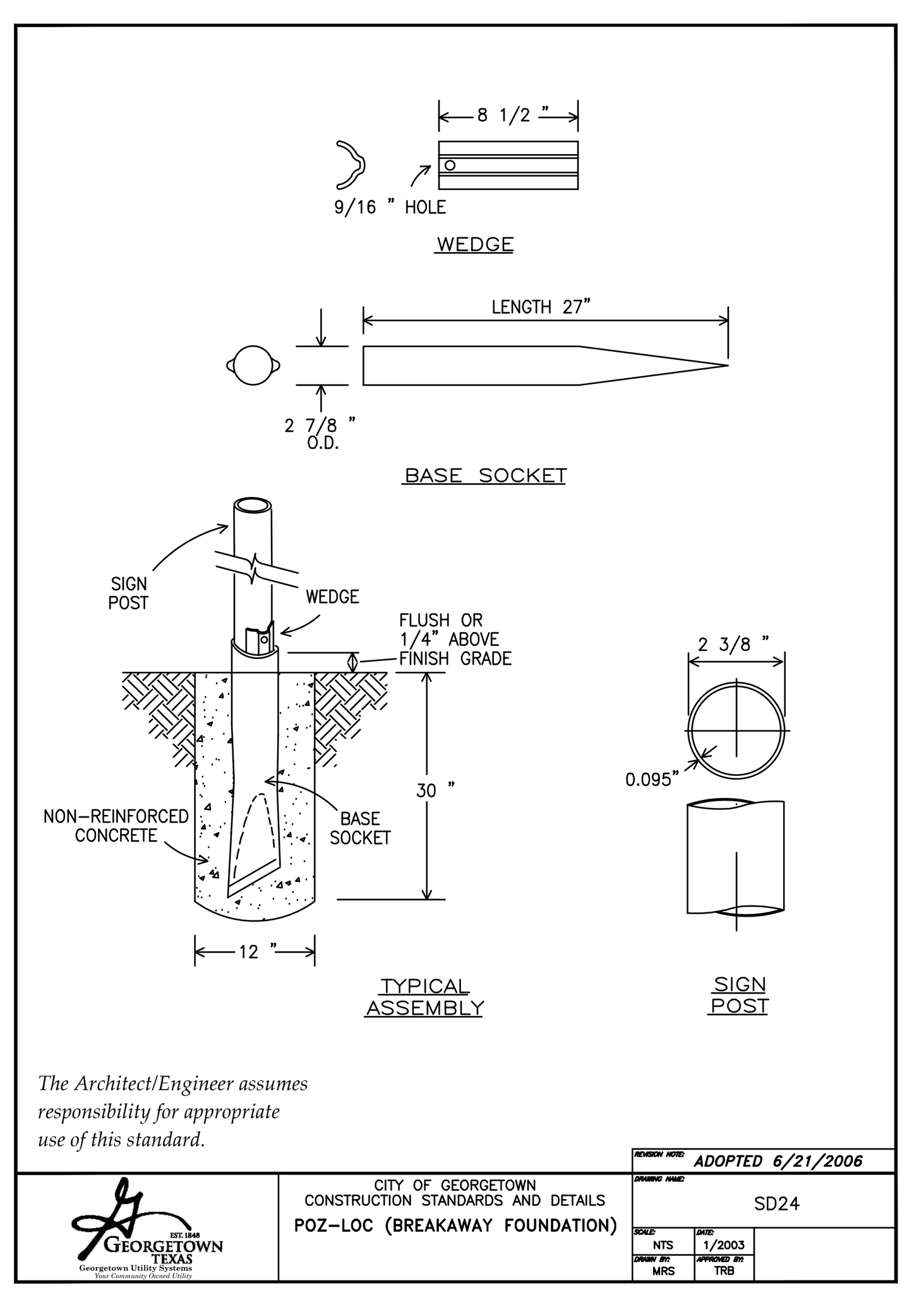


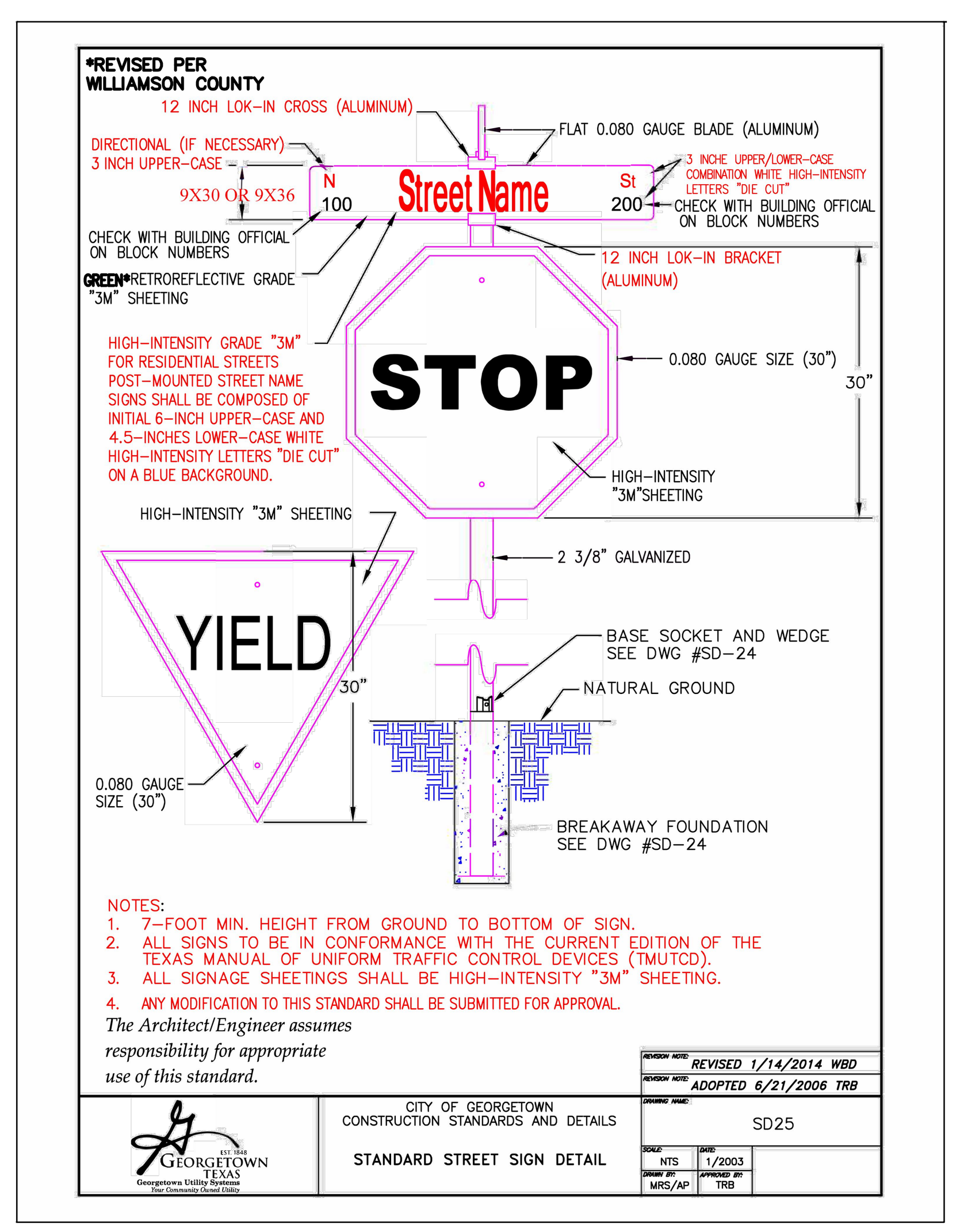


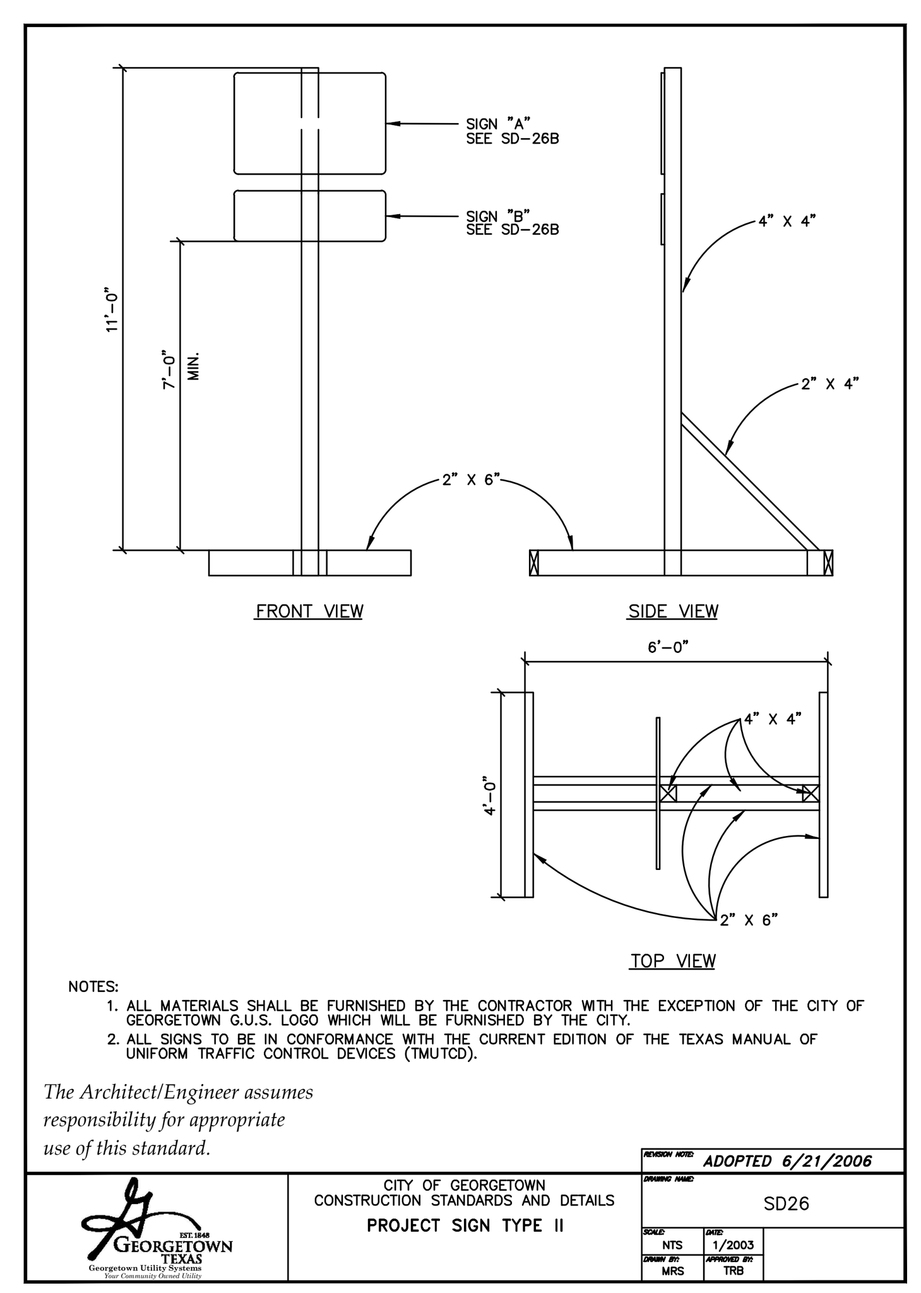


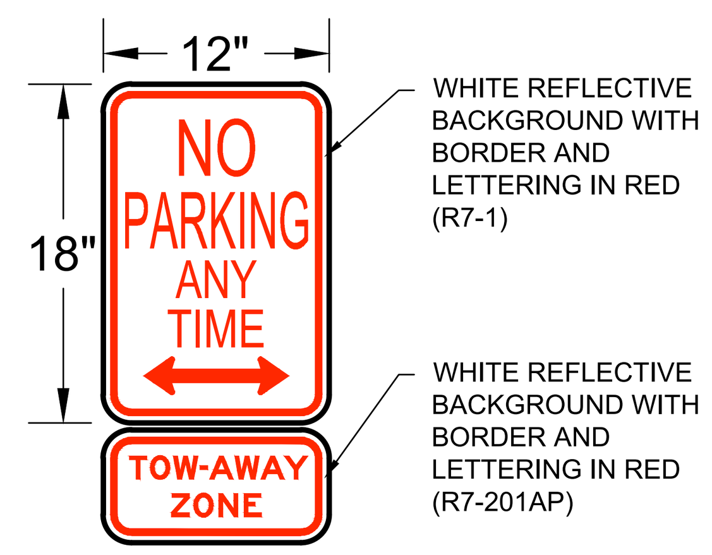












FIRE LANE SIGN DETAIL

NO	REVISION	BY	DATE

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

5508 HIGHWAY 290 WEST
SUITE 150
AUSTIN, TX 78735
512.872.6696
HRGREEN.COM

TBPE NO: 16384
TBPLS NO: 10194101

HRGreen DEVELOPMENT TX

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

PAVING DETAILS
SHEET 1 OF 2

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 25 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Blake Magee\Parkside Peninsula\03_ACAD\Plans\sh25\2006 DTLS.dwg, PAVING DETAILS SHEET 1 OF 2, August 30, 2024, 11:02 AM, makai.muhammad

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

NOTES:

1. COMMERCIAL SIDEWALKS WIDTHS – 6'
   RESIDENTIAL SIDEWALKS WIDTHS – 5'
2. ALL SLOPES ARE MAXIMUM ALLOWABLE. FLATTER SLOPES THAT WILL STILL DRAIN PROPERLY ARE ENCOURAGED.
3. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
4. FOR PURPOSES OF WARNING, THE CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. TEXTURES MAY CONSIST OF PAVERS WITH TRUNCATED DOMED SURFACES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
6. COLOR CONTRAST, FOR EXAMPLE, MAY BE ACCOMPLISHED WITH COLORED CONCRETE PAVERS THAT HAVE TRUNCATED DOMES WHICH WOULD PROVIDE A CONTRAST WITH TYPICALLY LIGHT COLORED CONCRETE.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS IF THEY ARE UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. MEDIAN CROSSING SHALL BE A MINIMUM OF 5' WIDE. MEDIANS SHIOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR TROUGH THEM.
9. ALL SIDEWALK PLANS AND DETAILS SHALL BE SUBMITTED AND APPROVED BY "REGISTERED ACCESSIBILITY SPECIALIST" (RAS).
10. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL MEET THE REQUIREMENTS OF A RAMP PER TAS 405.THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
11. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE OR ACT PROTRUDING OBJECTS.
12. ALL SIDEWALKS SHALL BE DOWELED INTO EXISTING SIDEWALKS, DRIVEWALKS, DRIVEWAYS, INLET BOXES, RETAINING WALLS, ETC.
13. ALL SIDEWALK CROSS–SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

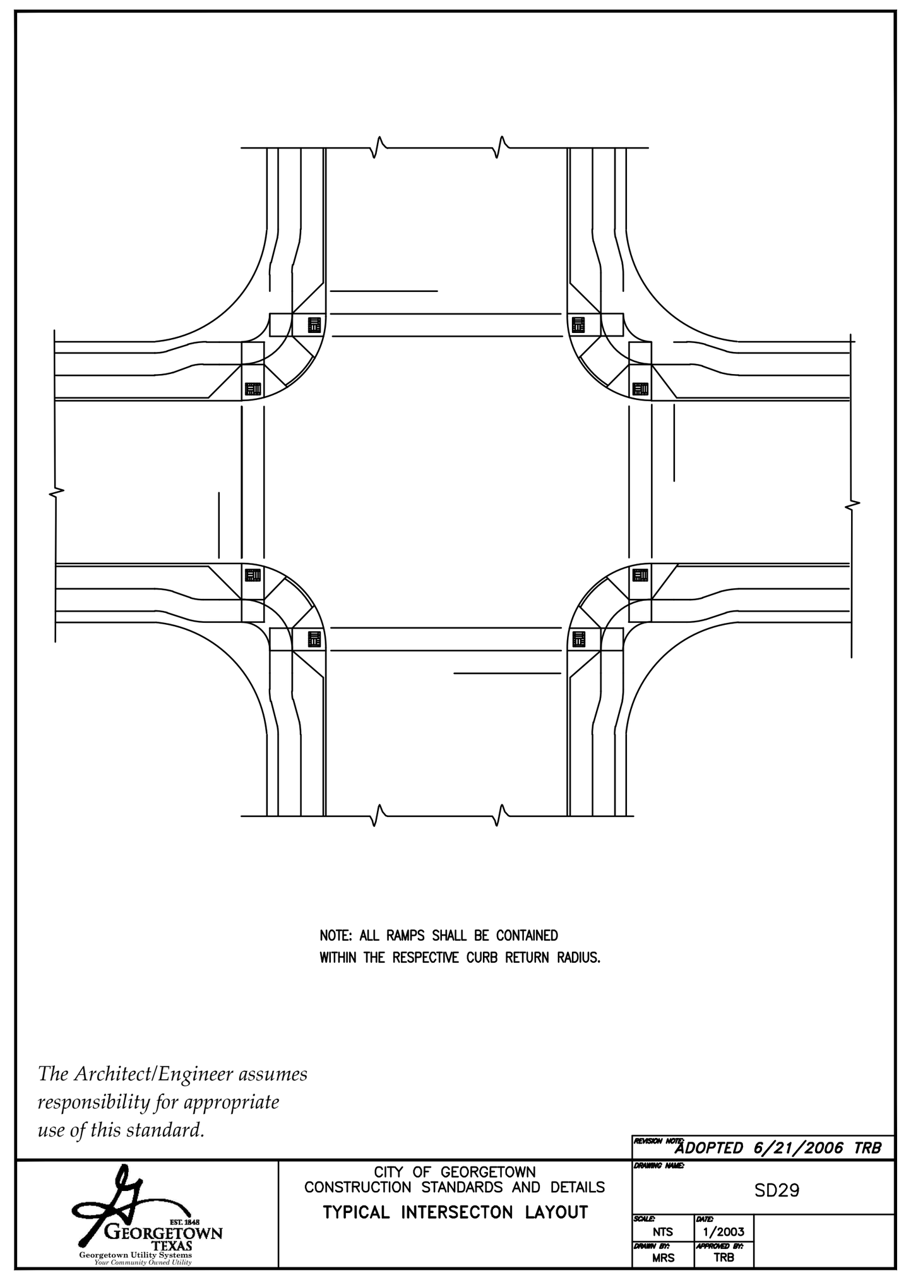
(PENETRATES) A CURB.

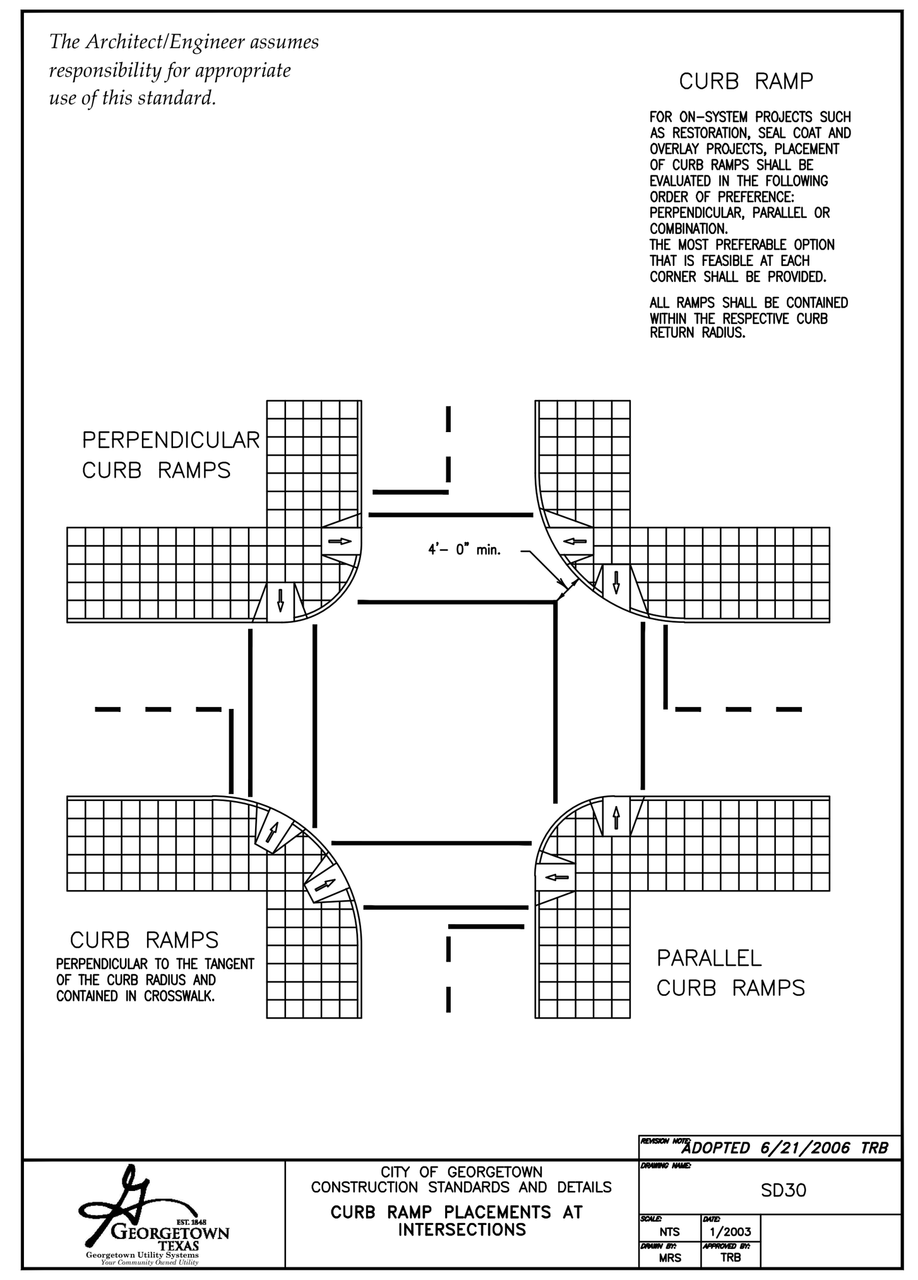
REVISION NOTE: ADOPTED 6/21/2006 TRB

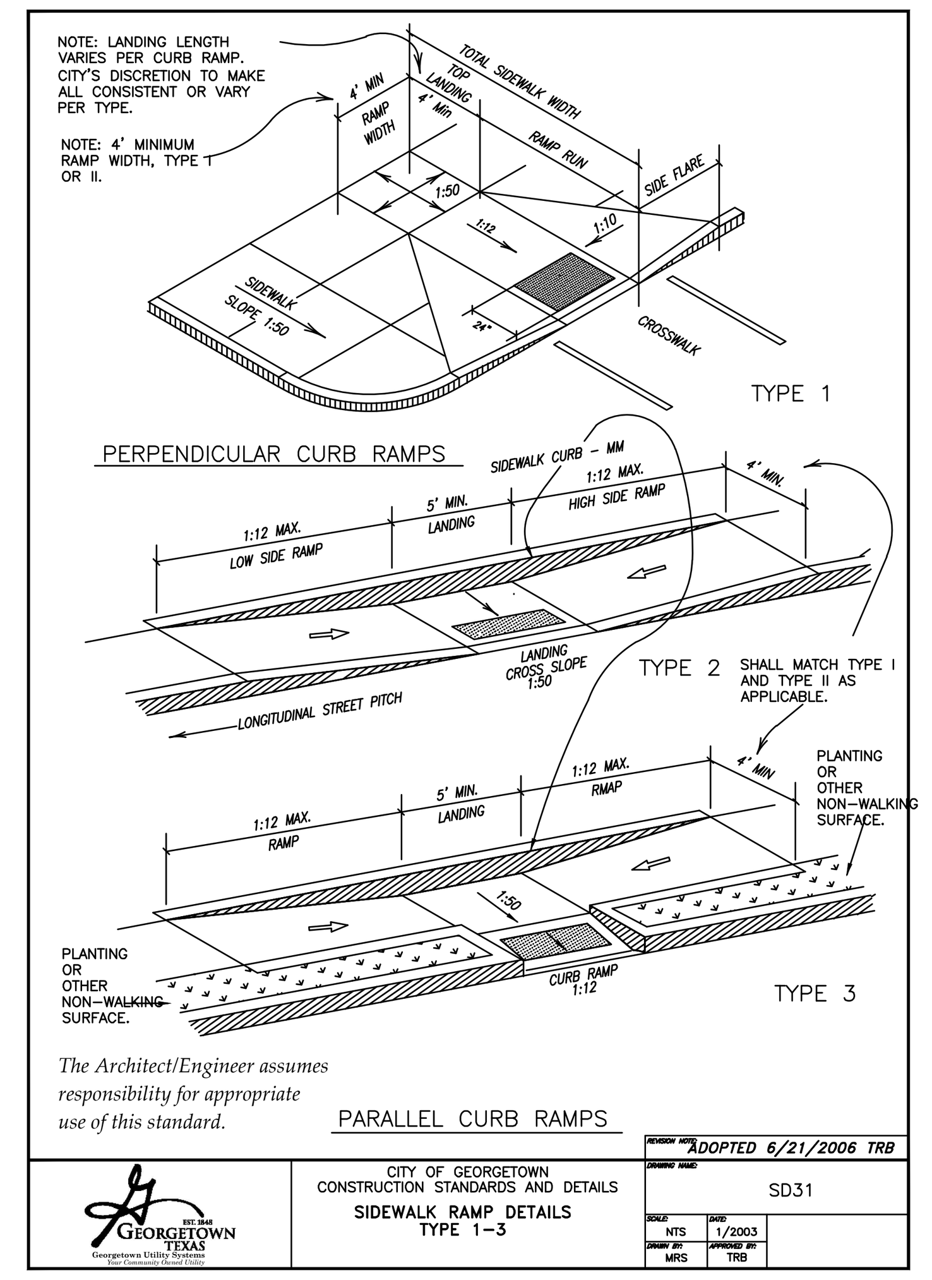
GEORGETOWN TEXAS EST. 1848 — Georgetown Utility Systems — Your Community Owned Utility

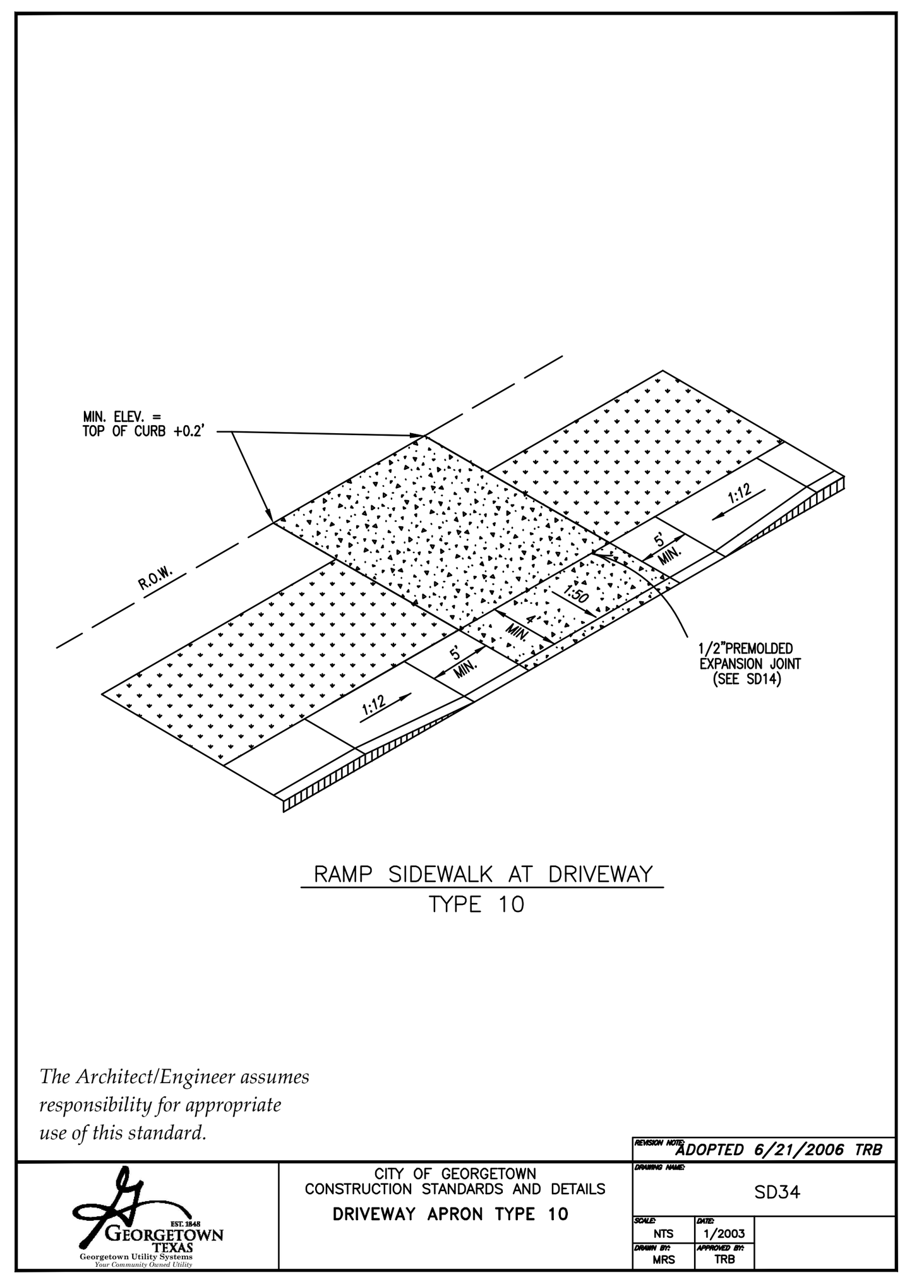
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
PEDESTRIAN RAMPS GENERAL NOTES

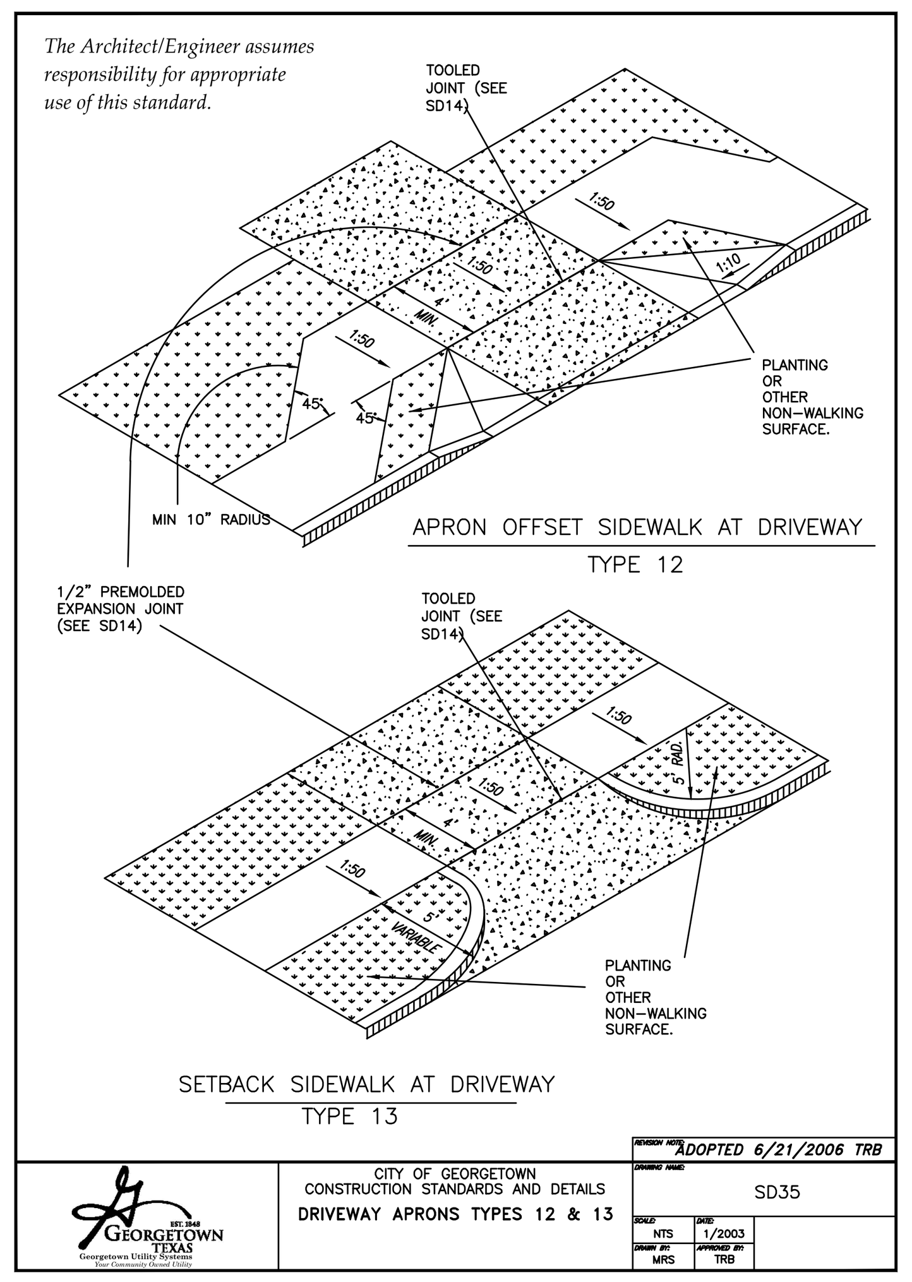
DRAWING NAME: SD28 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

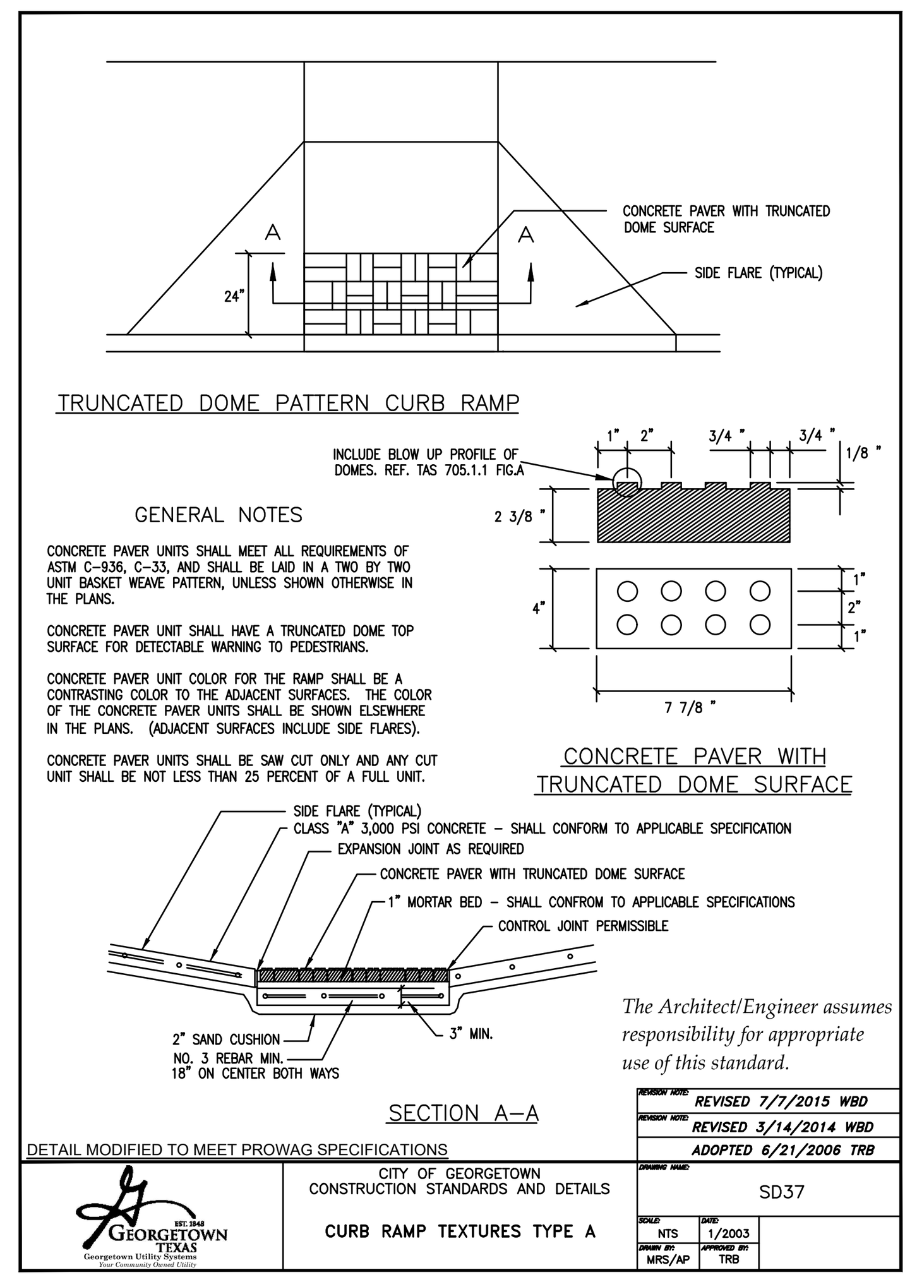

NOTE: ALL RAMPS SHALL BE CONTAINED WITHIN THE RESPECTIVE CURB RETURN RADIUS.
The Architect/Engineer assumes responsibility for appropriate use of this standard.
ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL INTERSECTON LAYOUT
SD29
NTS
1/2003

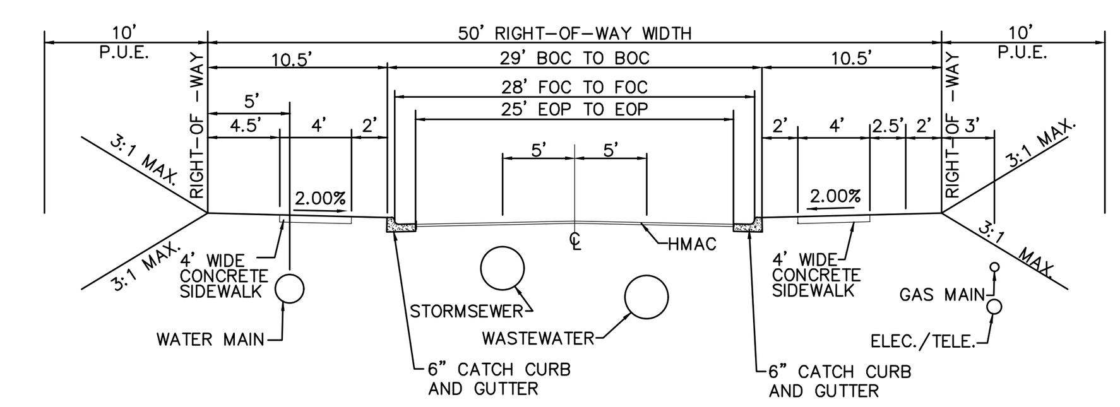

The Architect/Engineer assumes responsibility for appropriate use of this standard.
CURB RAMP
PERPENDICULAR CURB RAMPS
CURB RAMPS
PARALLEL CURB RAMPS
ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB RAMP PLACEMENTS AT INTERSECTIONS
SD30
NTS
1/2003


TYPE 1
PERPENDICULAR CURB RAMPS
TYPE 2
TYPE 3
PARALLEL CURB RAMPS
The Architect/Engineer assumes responsibility for appropriate use of this standard.
ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SIDEWALK RAMP DETAILS TYPE 1-3
SD31
NTS
1/2003

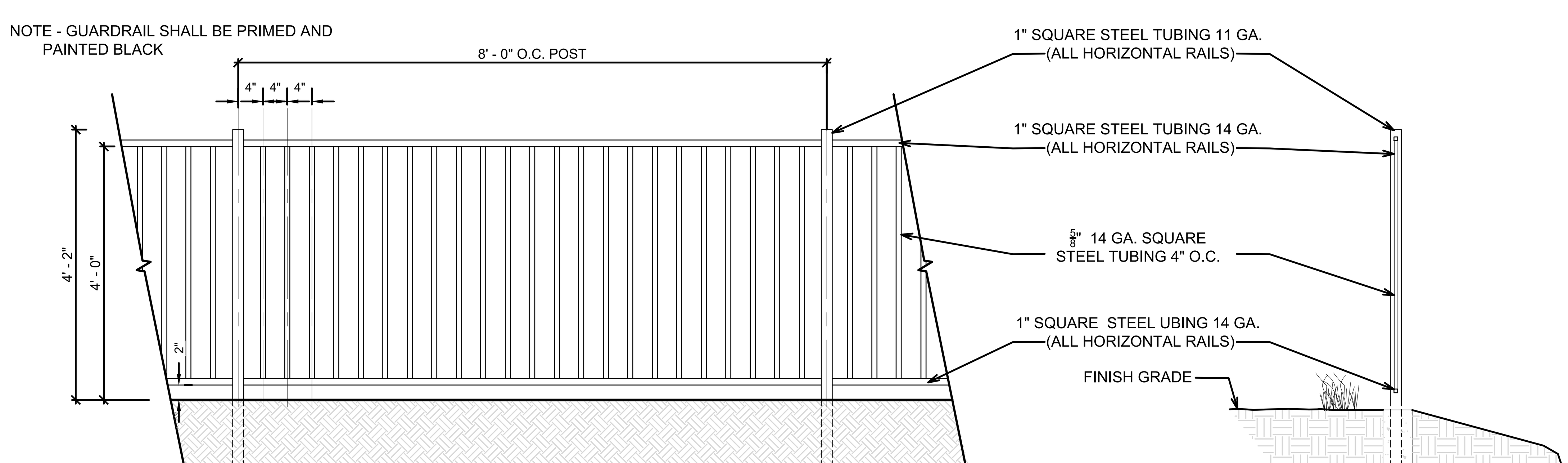



The Architect/Engineer assumes responsibility for appropriate use of this standard.
APRON OFFSET SIDEWALK AT DRIVEWAY
TYPE 12
SETBACK SIDEWALK AT DRIVEWAY
TYPE 13
ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DRIVEWAY APRONS TYPES 12 & 13
SD35
NTS
1/2003


TRUNCATED DOME PATTERN CURB RAMP
GENERAL NOTES
CONCRETE PAVER WITH TRUNCATED DOME SURFACE
SECTION A–A
The Architect/Engineer assumes responsibility for appropriate use of this standard.
DETAIL MODIFIED TO MEET PROWAG SPECIFICATIONS
REVISED 2/7/2015 WBD
REVISED 3/14/2014 WBD
ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB RAMP TEXTURES TYPE A
SD37
NTS
1/2003



TYPICAL RESIDENTIAL LOCAL STREET CROSS SECTION AND UTILITIES LAYOUT


NOTE - GUARDRAIL SHALL BE PRIMED AND PAINTED BLACK
8' - 0" O.C. POST
1" SQUARE STEEL TUBING 11 GA. (ALL HORIZONTAL RAILS)
1" SQUARE STEEL TUBING 14 GA. (ALL HORIZONTAL RAILS)
5/8" 14 GA. SQUARE STEEL TUBING 4" O.C.
1" SQUARE STEEL UBING 14 GA. (ALL HORIZONTAL RAILS)
FINISH GRADE
4' - 2"
4' - 0"

FALL PROTECTION FENCE

NTS

Parkside Peninsula Phase 3 - REVISED
Engineer's Job No. 24101123.001

RECOMMENDATIONS - PAVEMENT THICKNESS SECTIONS

Street Classification	Subgrade Material	Hot Mix Asphaltic Concrete, in	Crushed Limestone Base, in	Low Plasticity Sub-Base, in	Lime Stabilized Subgrade, in
Local Streets	Subgrade PI greater than 20 – Option 1	2.0	14	-	-
	Subgrade PI greater than 20 – Option 2	2.0	8	18**	-
	Subgrade PI greater than 20 – Option 3	2.0	8	-	8
	Subgrade PI less than 20	2.0	8	-	-
Residential Collector	Subgrade PI greater than 20 – Option 1	2.0	15	-	-
	Subgrade PI greater than 20 – Option 2	2.0	10	18**	-
	Subgrade PI greater than 20 – Option 3	2.0	10	-	8
	Subgrade PI less than 20	2.0	10	-	-
Neighborhood Collector	Subgrade PI greater than 20 – Option 1	2.0	20	-	-
	Subgrade PI greater than 20 – Option 2	2.0	13	18**	-
	Subgrade PI greater than 20 – Option 3	2.0	13	-	8
	Subgrade PI less than 20	2.0	13	-	-

Notes:
1. ** - Or the remaining thickness of surface clay. Natural weathered or intact limestone should not be removed to place a low plasticity subbase.
2. Any expansive fill (PI > 20) placed in the subgrade after test pit completion shall be considered an expansive subgrade.
3. If lime is used, the surface clay must first be tested for sulfate reaction and a mix design should be completed to determine the proper lime content, lime type, mixing procedure, and curing conditions required.
4. **Delineation between these different pavement thickness sections should be completed in the field by observation of open utility trenches and the pavement subgrade by the Geotechnical Engineer or his designate.** Given the known variability of surface soils at this site, the Geotechnical Engineer must verify the subgrade before installation of the pavement system can proceed. Multiple site visits may be required depending on the construction schedule. Finalized distinction between pavement thickness section options can be provided as addendum to this report as these observations are completed. Please contact the Geotechnical Engineer when the utility trenches are open.
5. The subgrade improvement should be extended 1.5 feet beyond the back of the curb line for PI less than 20 and 3 feet beyond the back of the curb line for PI greater than 20 options.
6. These pavement thickness designs are intended to transfer the load from the anticipated traffic conditions.
7. The responsibility of assigning street classification to the streets in this project is left to the civil engineer.
8. If pavement designs other than those listed above are desired, please contact MLA Geotechnical.

-6-

MLA Geotechnical Dallas/Fort Worth Austin San Antonio Houston Bryan/College Station Killeen *"put us to the test"*

NOTE:
1. CONTRACTOR SHALL REFERENCE "GEOTECHNICAL INVESTIGATION PAVEMENT THICKNESS RECOMMENDATIONS - REVISED PARKSIDE PENINSULA PHASE 3" CREATED AUGUST 2024 BY MLA GEOTECHNICAL, ENGINEER'S JOB # 24101123.001. CONTRACTOR IS RESPONSIBLE FOR VERIFYING WITH MLA GEOTECHNICAL.
2. CONTRACTOR TO USE "VIRGIN MIX" TXDOT HMAC WEARING SURFACE 340 TYPE D, WITHOUT RAP OR RAZ. IN THE EVENT THAT THE CITY SPECIFICATIONS OR GEOTECH REPORT CONFLICT WITH THIS THEN THIS NOTE SHALL CONTROL.
3. THE BASE OVERBUILD SHOULD BE EXTENDED A MINIMUM OF 18" BEYOND THE BACK OF CURB. IF LIME TREATMENT IS BEING USED, THE BASE OVERBUILD SHOULD BE EXTENDED 3 FEET BEYOND THE BACK OF THE CURB.
4. AVOID INSTALLATION OF IRRIGATION, PLANTINGS, SILT FENCE, ETC. IN THE BASE OVERBUILD.
5. ALL MATERIAL IMPORTED AND USED FOR ROADWAY FILL AND SUBGRADE SHALL BE LOW P.I MATERIAL UNLESS CONTRACTOR OBTAINS APPROVAL FROM DEVELOPER . IF CONTRACTOR CHOOSES TO BRING IN HIGH PI MATERIAL FOR SUBGRADE, CONTRACTOR IS RESPONSIBLE FOR ALTERNATE PAVEMENT DESIGN PER THE GEOTECHNICAL REPORT AND ASSOCIATED COSTS.
6. CONTRACTOR TO ENSURE THAT ALL ONSITE MATERIAL USED FOR ROADWAY FILL AND SUBGRADE SHALL BE LOW P.I. MATERIAL UNLESS LOW P.I. MATERIAL DOES NOT EXIST FROM ONSITE MATERIAL. CONTRACTOR TO COORDINATE FINDINGS WITH THE DEVELOPER AND OBTAIN APPROVAL FOR NEEDING TO USE ALTERNATE PAVEMENT DESIGN PER THE GEOTECHNICAL REPORT.

NO.	REVISION	BY	DATE

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

HRGreen DEVELOPMENT TX
5508 HIGHWAY 290 WEST SUITE 150 AUSTIN, TX 78735 512.872.6696 HRGREEN.COM
TBPE NO: 16384 TBPLS NO: 10194101

STATE OF TEXAS — CHRISTINE N. CAMPBELL — 142536 — LICENSED PROFESSIONAL ENGINEER
08/30/2024

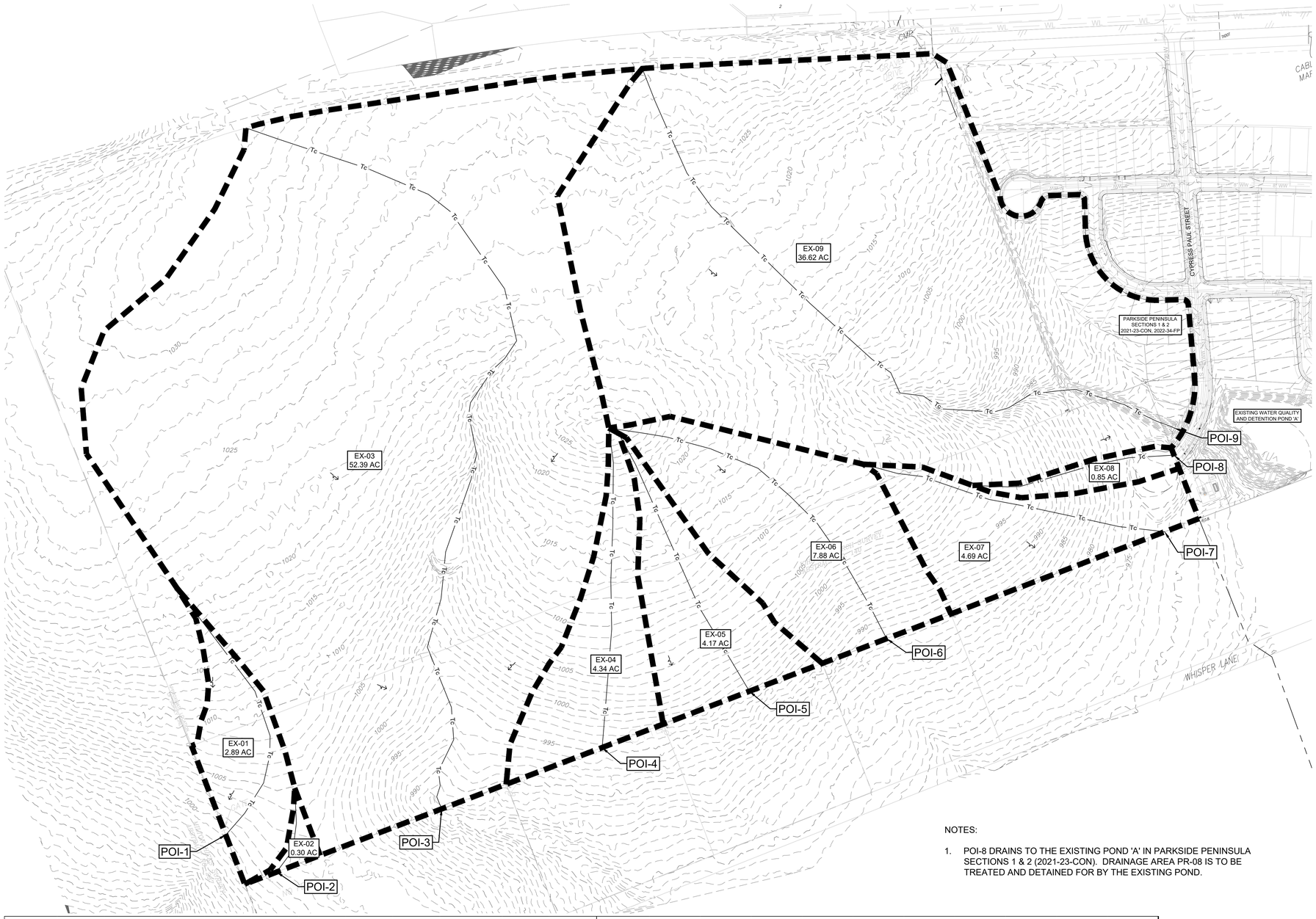
PAVING DETAILS SHEET 2 OF 2

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 26 OF 68

2024-XX-CON



0 150 300

SCALE: 1" = 150'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE
- DRAINAGE AREA
- Tc — TIME OF CONCENTRATION

NOTES:

1. POI-8 DRAINS TO THE EXISTING POND 'A' IN PARKSIDE PENINSULA SECTIONS 1 & 2 (2021-23-CON). DRAINAGE AREA PR-08 IS TO BE TREATED AND DETAINED FOR BY THE EXISTING POND.

Existing Conditions - Flows & Volumes - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
EX-01	4.75	10.14	14.30	21.91	0.43	0.90	1.28	1.99
EX-02	0.51	1.09	1.54	2.35	0.04	0.09	0.13	0.21
EX-03	71.36	152.97	216.03	331.69	7.71	16.34	23.19	36.12
EX-04	7.37	15.69	22.12	33.90	0.64	1.35	1.92	2.99
EX-05	7.23	15.41	21.69	33.18	0.61	1.30	1.85	2.88
EX-06	12.40	26.48	37.31	57.26	1.16	2.46	3.49	5.43
EX-07	7.75	16.44	23.10	35.37	0.70	1.48	2.09	3.25
EX-08	1.70	3.42	4.72	7.09	0.14	0.29	0.40	0.62
EX-09	53.42	113.12	158.87	242.56	5.54	11.64	16.46	25.53
POI-1	4.75	10.14	14.30	21.91	0.43	0.90	1.28	1.99
POI-2	0.51	1.09	1.54	2.35	0.04	0.09	0.13	0.21
POI-3	71.36	152.97	216.03	331.69	7.71	16.34	23.19	36.12
POI-4	7.37	15.69	22.12	33.90	0.64	1.35	1.92	2.99
POI-5	7.23	15.41	21.69	33.18	0.61	1.30	1.85	2.88
POI-6	12.40	26.48	37.31	57.26	1.16	2.46	3.49	5.43
POI-7	7.75	16.44	23.10	35.37	0.70	1.48	2.09	3.25
POI-8	1.70	3.42	4.72	7.09	0.14	0.29	0.40	0.62
POI-9	53.42	113.12	158.87	242.56	5.54	11.64	16.46	25.53

Proposed Conditions - Flows & Volumes - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
PR-01	3.10	5.70	7.61	11.05	0.24	0.46	0.62	0.92
PR-03A	10.78	20.04	26.86	39.11	0.95	1.80	2.46	3.66
PR-03B	11.88	21.60	28.72	41.51	0.97	1.81	2.44	3.61
PR-03C	66.60	142.80	201.45	309.48	7.08	15.02	21.31	33.19
PR-03D	1.67	3.43	4.76	7.18	0.13	0.27	0.38	0.58
PR-04	2.58	4.75	6.35	9.22	0.20	0.38	0.52	0.77
PR-05	2.60	4.81	6.43	9.34	0.20	0.39	0.52	0.78
PR-06A	19.59	36.05	48.20	70.04	1.60	3.02	4.10	6.09
PR-06B	6.21	13.25	18.66	28.62	0.56	1.19	1.69	2.63
PR-07	6.24	11.30	14.99	21.63	0.49	0.91	1.23	1.82
PR-08	8.40	14.78	19.43	27.78	0.69	1.25	1.67	2.44
PR-09	52.57	111.32	156.35	238.70	5.46	11.45	16.20	25.13
POI-1	3.10	5.70	7.61	11.05	0.24	0.46	0.62	0.92
POI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POI-3	70.97	152.61	215.55	331.52	8.51	17.74	25.03	38.74
POI-4	4.43	9.10	12.42	18.69	0.82	1.52	2.06	3.05
POI-5	2.60	4.81	6.43	9.34	0.20	0.39	0.52	0.78
POI-6	10.43	23.70	34.91	56.12	2.16	4.21	5.78	8.71
POI-7	6.24	11.30	14.99	21.63	0.49	0.91	1.23	1.82
POI-8	8.40	14.78	19.43	27.78	0.69	1.25	1.67	2.44
POI-9	52.57	111.32	156.35	238.70	5.46	11.45	16.20	25.13

Flow & Volume Comparison (Proposed - Existing) - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
POI-1	-1.65	-4.44	-6.69	-10.86	-0.19	-0.44	-0.66	-1.07
POI-2	-0.51	-1.09	-1.54	-2.35	-0.04	-0.09	-0.13	-0.21
POI-3	-0.39	-0.36	-0.48	-0.17	0.80	1.40	1.84	2.62
POI-4	-2.94	-6.59	-9.70	-15.21	0.18	0.17	0.14	0.06
POI-5	-4.63	-10.60	-15.26	-23.84	-0.41	-0.91	-1.33	-2.10
POI-6	-1.97	-2.78	-2.40	-1.14	1.00	1.75	2.29	3.28
POI-7	-1.51	-5.14	-8.11	-13.74	-0.21	-0.57	-0.86	-1.43
POI-8	6.70	11.36	14.71	20.69	0.55	0.96	1.27	1.82
POI-9	-0.85	-1.80	-2.52	-3.86	-0.08	-0.19	-0.26	-0.40

Existing Drainage Conditions

User Inputs					Auto-Calculation		TOC Calcs	Routing Analysis Inputs			
Contributing Area	Area (sf)	CN (Pervious)	CN (Impervious)	Impervious Cover (sf)	Area (ac)	Impervious Cover (%)	TOC (min)	Area (sq. mi.)	Composite Curve Number	Lag Time	Reach Lag (if required)
EX-01	125,888	77	98	0	2.89	0.0%	12.76	0.00452	77.0	7.66	
EX-02	13,068	77	98	0	0.30	0.0%	11.14	0.00047	77.0	6.69	
EX-03	2,282,108	77	98	0	52.39	0.0%	22.26	0.08186	77.0	13.36	
EX-04	189,050	77	98	0	4.34	0.0%	11.20	0.00678	77.0	6.72	
EX-05	181,645	77	98	0	4.17	0.0%	10.23	0.00652	77.0	6.14	
EX-06	343,253	77	98	0	7.88	0.0%	14.83	0.01231	77.0	8.90	
EX-07	204,296	77	98	2,801	4.69	1.4%	13.17	0.00733	77.3	7.90	
EX-08	37,026	77	98	5,604	0.85	15.1%	9.89	0.00133	80.2	5.93	
EX-09	1,595,167	77	98	50,400	36.62	3.2%	20.18	0.05722	77.7	12.11	

Time of Concentration Calculations

Contributing Area	Sheet Flow				Shallow Concentrated Flow (Unpaved)			Pipe/Channel Flow 1		
	Length	Slope (ft/ft)	Roughness Coefficient	T_{sheet}	Length (ft)	Slope (ft/ft)	$T_{unpaved}$	Length (ft)	Velocity (ft)	$T_{channel}$ (min)
EX-01	100	0.022	0.150	8.50	685	0.028	4.26			0.00
EX-02	100	0.015	0.150	9.91	156	0.017	1.24			0.00
EX-03	100	0.016	0.150	9.65	956	0.013	8.63	1433	6	3.98
EX-04	100	0.040	0.150	6.69	815	0.035	4.51			0.00
EX-05	100	0.046	0.150	6.33	727	0.037	3.91			0.00
EX-06	100	0.015	0.150	9.91	959	0.040	4.93			0.00
EX-07	100	0.017	0.150	9.42	783	0.046	3.75			0.00
EX-08	100	0.031	0.150	7.41	486	0.041	2.48			0.00
EX-09	100	0.012	0.150	10.83	1105	0.026	7.04	832	6	2.31

NO.	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

EXISTING DRAINAGE MAP

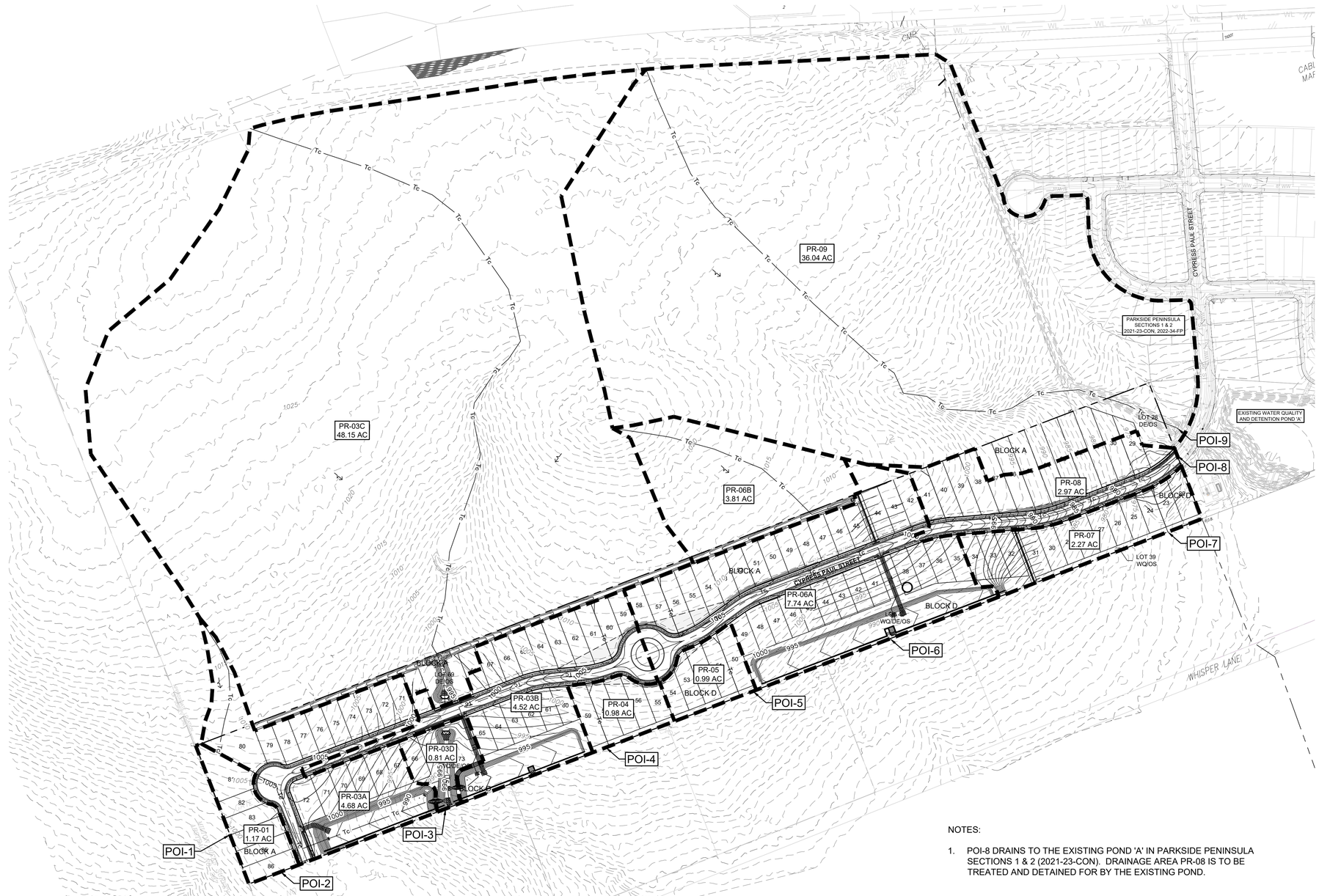
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 27 OF 68

2024-XX-CON

P:\Bike Maglev\Parkside Peninsula\03_ACAD\Plans\sh\20\2006 drMAP.dwg, EXISTING DRAINAGE MAP - August 30, 2024, 11:22 AM, malak.muhammad



0 150 300

SCALE: 1" = 150'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE
- DRAINAGE AREA
- TIME OF CONCENTRATION

NOTES:

1. POI-8 DRAINS TO THE EXISTING POND 'A' IN PARKSIDE PENINSULA SECTIONS 1 & 2 (2021-23-CON). DRAINAGE AREA PR-08 IS TO BE TREATED AND DETAINED FOR BY THE EXISTING POND.

Existing Conditions - Flows & Volumes - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
EX-01	4.75	10.14	14.30	21.91	0.43	0.90	1.28	1.99
EX-02	0.51	1.09	1.54	2.35	0.04	0.09	0.13	0.21
EX-03	71.36	152.97	216.03	331.69	7.71	16.34	23.19	36.12
EX-04	7.37	15.69	22.12	33.90	0.64	1.35	1.92	2.99
EX-05	7.23	15.41	21.69	33.18	0.61	1.30	1.85	2.88
EX-06	12.40	26.48	37.31	57.26	1.16	2.46	3.49	5.43
EX-07	7.75	16.44	23.10	35.37	0.70	1.48	2.09	3.25
EX-08	1.70	3.42	4.72	7.09	0.14	0.29	0.40	0.62
EX-09	53.42	113.12	158.87	242.56	5.54	11.64	16.46	25.53
POI-1	4.75	10.14	14.30	21.91	0.43	0.90	1.28	1.99
POI-2	0.51	1.09	1.54	2.35	0.04	0.09	0.13	0.21
POI-3	71.36	152.97	216.03	331.69	7.71	16.34	23.19	36.12
POI-4	7.37	15.69	22.12	33.90	0.64	1.35	1.92	2.99
POI-5	7.23	15.41	21.69	33.18	0.61	1.30	1.85	2.88
POI-6	12.40	26.48	37.31	57.26	1.16	2.46	3.49	5.43
POI-7	7.75	16.44	23.10	35.37	0.70	1.48	2.09	3.25
POI-8	1.70	3.42	4.72	7.09	0.14	0.29	0.40	0.62
POI-9	53.42	113.12	158.87	242.56	5.54	11.64	16.46	25.53

Proposed Conditions - Flows & Volumes - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
PR-01	3.10	5.70	7.61	11.05	0.24	0.46	0.62	0.92
PR-03A	10.78	20.04	26.86	39.11	0.95	1.80	2.46	3.66
PR-03B	11.88	21.60	28.72	41.51	0.97	1.81	2.44	3.61
PR-03C	66.60	142.80	201.45	309.48	7.08	15.02	21.31	33.19
PR-03D	1.67	3.43	4.76	7.18	0.13	0.27	0.38	0.58
PR-04	2.58	4.75	6.35	9.22	0.20	0.38	0.52	0.77
PR-05	2.60	4.81	6.43	9.34	0.20	0.39	0.52	0.78
PR-06A	19.59	36.05	48.20	70.04	1.60	3.02	4.10	6.09
PR-06B	6.21	13.25	18.66	28.62	0.56	1.19	1.69	2.63
PR-07	6.24	11.30	14.99	21.63	0.49	0.91	1.23	1.82
PR-08	8.40	14.78	19.43	27.78	0.69	1.25	1.67	2.44
PR-09	52.57	111.32	156.35	238.70	5.46	11.45	16.20	25.13
POI-1	3.10	5.70	7.61	11.05	0.24	0.46	0.62	0.92
POI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POI-3	70.97	152.61	215.55	331.52	8.51	17.74	25.03	38.74
POI-4	4.43	9.10	12.42	18.69	0.82	1.52	2.06	3.05
POI-5	2.60	4.81	6.43	9.34	0.20	0.39	0.52	0.78
POI-6	10.43	23.70	34.91	56.12	2.16	4.21	5.78	8.71
POI-7	6.24	11.30	14.99	21.63	0.49	0.91	1.23	1.82
POI-8	8.40	14.78	19.43	27.78	0.69	1.25	1.67	2.44
POI-9	52.57	111.32	156.35	238.70	5.46	11.45	16.20	25.13

Flow & Volume Comparison (Proposed - Existing) - Atlas 14

ID	Peak Flows (cfs)				Volumes (ac-ft)			
	2-yr	10-yr	25-yr	100-yr	2-yr	10-yr	25-yr	100-yr
POI-1	-1.65	-4.44	-6.69	-10.86	-0.19	-0.44	-0.66	-1.07
POI-2	-0.51	-1.09	-1.54	-2.35	-0.04	-0.09	-0.13	-0.21
POI-3	-0.39	-0.36	-0.48	-0.17	0.80	1.40	1.84	2.62
POI-4	-2.94	-6.59	-9.70	-15.21	0.18	0.17	0.14	0.06
POI-5	-4.63	-10.60	-15.26	-23.84	-0.41	-0.91	-1.33	-2.10
POI-6	-1.97	-2.78	-2.40	-1.14	1.00	1.75	2.29	3.28
POI-7	-1.51	-5.14	-8.11	-13.74	-0.21	-0.57	-0.86	-1.43
POI-8	6.70	11.36	14.71	20.69	0.55	0.96	1.27	1.82
POI-9	-0.85	-1.80	-2.52	-3.86	-0.08	-0.19	-0.26	-0.40

Proposed Drainage Conditions

User Inputs				Auto-Calculation		TOC Calcs	Routing Analysis Inputs			
Contributing Area	Area (sf)	CN (Pervious)	CN (Impervious)	Impervious Cover (sf)	Area (ac)	Impervious Cover (%)	TOC (min)	Area (sq. mi.)	Composite Curve Number	Lag Time	Reach Lag (if required)
PR-01	50,965	77	98	21,600	1.17	42.4%	6.00	0.00183	85.9	3.60	
PR-03A	203,861	77	98	81,103	4.68	39.8%	12.28	0.00731	85.4	7.37	
PR-03B	196,891	77	98	93,166	4.52	47.3%	8.01	0.00706	86.9	4.81	
PR-03C	2,097,414	77	98	3,600	48.15	0.2%	21.38	0.07523	77.0	12.83	0.81
PR-03D	35,284	77	98	3,600	0.81	10.2%	6.00	0.00127	79.1	3.60	
PR-04	42,689	77	98	17,800	0.98	41.7%	6.08	0.00153	85.8	3.65	
PR-05	43,124	77	98	17,800	0.99	41.3%	6.06	0.00155	85.7	3.63	
PR-06A	337,154	77	98	142,986	7.74	42.4%	8.37	0.01209	85.9	5.02	
PR-06B	165,964	77	98	0	3.81	0.0%	13.14	0.00595	77.0	7.88	1.09
PR-07	98,881	77	98	47,452	2.27	48.0%	6.00	0.00355	87.1	3.60	
PR-08	129,373	77	98	75,362	2.97	58.3%	7.88	0.00464	89.2	4.73	
PR-09	1,569,902	77	98	50,400	36.04	3.2%	20.18	0.05631	77.7	12.11	

Time of Concentration Calculations

Contributing Area	Sheet Flow				Shallow Concentrated Flow (Unpaved)			Pipe/Channel Flow 1		
	Length	Slope (ft/ft)	Roughness Coefficient	T_{sheet}	Length (ft)	Slope (ft/ft)	$T_{unpaved}$	Length (ft)	Velocity (ft)	$T_{channel}$ (min)
PR-01	30	0.020	0.240	4.91	122	0.020	0.89			0.00
PR-03A	100	0.029	0.150	7.61	444	0.025	2.90	635	6	1.76
PR-03B	30	0.020	0.240	4.91	152	0.020	1.11	717	6	1.99
PR-03C	100	0.016	0.150	9.65	956	0.013	8.63	1115	6	3.10
PR-03D	30	0.033	0.240	4.02	81	0.110	0.25	158	6	0.44
PR-04	30	0.020	0.240	4.91	161	0.020	1.18			0.00
PR-05	30	0.020	0.240	4.91	157	0.020	1.15			0.00
PR-06A	30	0.020	0.240	4.91	151	0.020	1.10	850	6	2.36
PR-06B	100	0.015	0.150	9.91	538	0.037	2.89	124	6	0.34
PR-07	30	0.020	0.240	4.91	103	0.020	0.75			0.00
PR-08	30	0.020	0.240	4.91	139	0.020	1.02	704	6	1.96
PR-09	100	0.012	0.150	10.83	1105	0.026	7.04	832	6	2.31

NO.	REVISION	BY	DATE

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08/30/2024

PROPOSED DRAINAGE MAP

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS

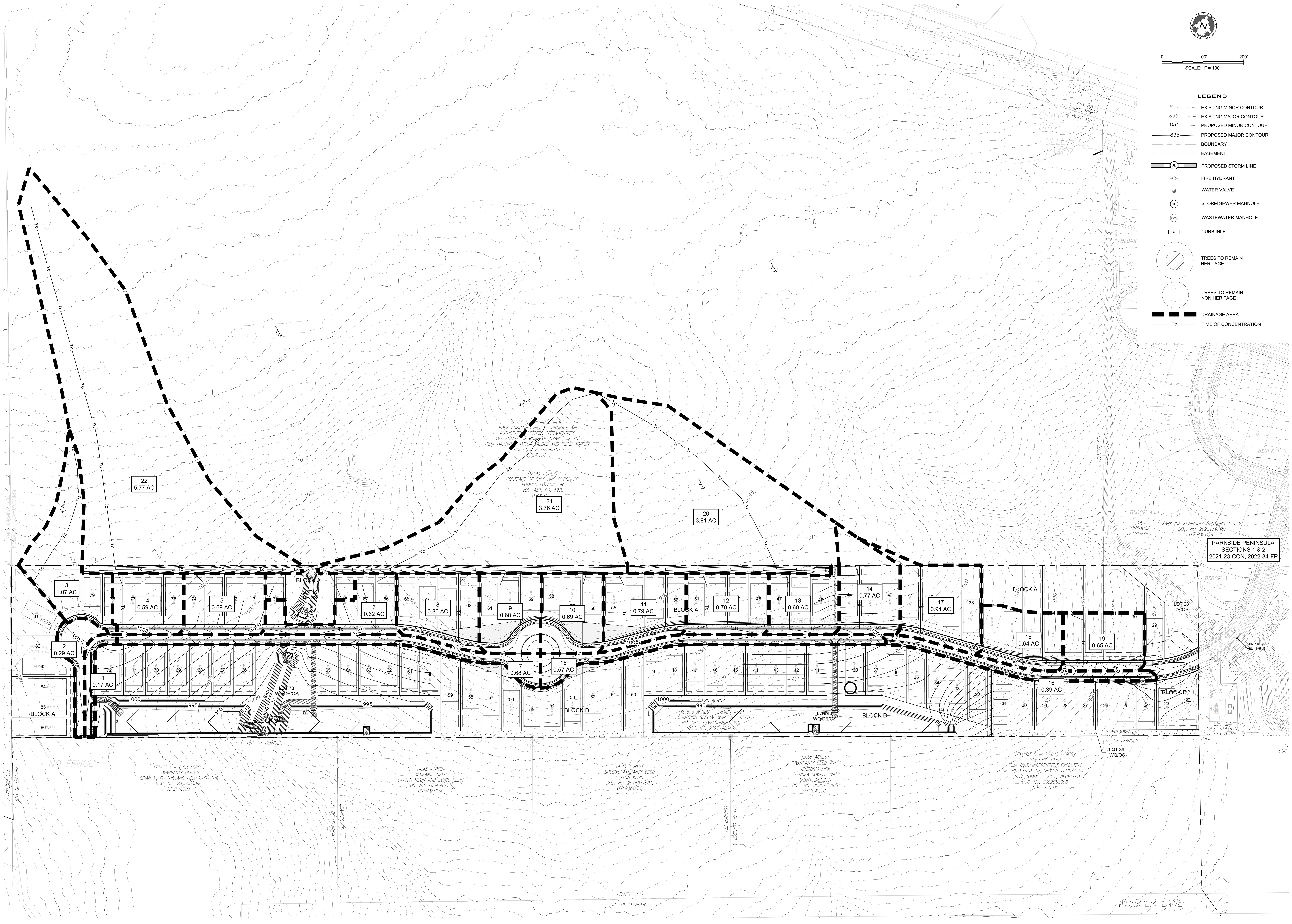
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 28 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\SD_ACAD\Planset\20200906 PDMAP.dwg, PROPOSED DRAINAGE MAP, August 30, 2024, 11:34 AM, miaki.muhammed



NO	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

INLET DRAINAGE AREA MAP

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 29 OF 68

2024-XX-CON

COG C-Values				
	2	**10**	**25**	**100**
Impervious	0.95	0.95	0.95	0.95
Pervious	0.24	0.28	0.31	0.36

COG IDF Curve Values			
Year	**a**	**b**	**c**
2	**106.29**	**16.81**	**0.9076**
10	**96.84**	**15.88**	**0.7952**
25	**111.07**	**17.23**	**0.7815**
100	**129.03**	**17.83**	**0.7625**

PARKSIDE PENINSULA PHASE 3
RATIONAL METHOD FLOW CALCULATIONS FOR STORM INLETS

BASIN LABEL	INLET LABEL	INLET TYPE*	AREA (SQ FT)	AREA (AC)	IMPERVIOUS (LOTS) (SF)	IMPERVIOUS (ROADS) (SF)	IMPERVIOUS %	PERVIOUS %	TC (MIN)	2-YR			10-YR			25-YR			100-YR		
										C	I	Q	C	I	Q	C	I	Q	C	I	Q
1	E10	CGRD	7,285	0.17	0	5,506	76%	24%	5.0	0.78	6.48	0.84	0.79	8.64	1.14	0.79	9.84	1.31	0.81	11.88	1.60
2	E11	CGRD	12,737	0.29	0	10,869	85%	15%	5.0	0.85	6.48	1.60	0.85	8.64	2.15	0.86	9.84	2.46	0.86	11.88	3.00
3	E8	CGRD	46,731	1.07	9,000	879	21%	79%	9.1	0.39	5.54	2.32	0.42	7.50	3.39	0.45	8.62	4.12	0.48	10.48	5.45
4	D11	CGRD	25,891	0.59	12,600	2,940	60%	40%	5.0	0.67	6.48	2.57	0.68	8.64	3.50	0.69	9.84	4.06	0.71	11.88	5.04
5	D8	CGRD	30,019	0.69	14,400	3,709	60%	40%	5.0	0.67	6.48	2.98	0.68	8.64	4.07	0.70	9.84	4.72	0.72	11.88	5.86
6	C13	CSAG	27,030	0.62	11,200	6,168	64%	36%	5.0	0.70	6.48	2.80	0.71	8.64	3.81	0.72	9.84	4.40	0.74	11.88	5.45
7	C11	CSAG	29,817	0.68	0	21,322	72%	28%	5.0	0.75	6.48	3.32	0.76	8.64	4.49	0.77	9.84	5.17	0.78	11.88	6.36
8	C14	CGRD	34,689	0.80	14,400	3,867	53%	47%	5.7	0.61	6.29	3.07	0.63	8.41	4.24	0.65	9.59	4.94	0.67	11.60	6.20
9	C10	CGRD	29,622	0.68	10,800	4,601	52%	48%	5.7	0.61	6.31	2.61	0.63	8.43	3.60	0.64	9.62	4.20	0.67	11.63	5.27
10	B20	CGRD	30,005	0.69	10,800	4,727	52%	48%	5.6	0.61	6.32	2.64	0.63	8.44	3.64	0.64	9.63	4.25	0.67	11.64	5.33
11	B23	CGRD	34,491	0.79	14,400	3,844	53%	47%	5.6	0.62	6.33	3.09	0.63	8.46	4.25	0.65	9.65	4.96	0.67	11.66	6.21
12	B21	CGRD	30,510	0.70	14,400	3,750	59%	41%	5.0	0.66	6.48	3.01	0.68	8.64	4.11	0.69	9.84	4.76	0.71	11.88	5.92
13	B5	CGRD	26,036	0.60	10,800	3,789	56%	44%	5.0	0.64	6.48	2.47	0.66	8.64	3.39	0.67	9.84	3.93	0.69	11.88	4.90
14	B11	CGRD	33,368	0.77	10,800	2,799	41%	59%	5.0	0.53	6.47	2.62	0.55	8.63	3.66	0.57	9.83	4.30	0.60	11.87	5.46
15	B13	CGRD	24,920	0.57	0	17,674	71%	29%	5.0	0.74	6.48	2.76	0.76	8.64	3.73	0.76	9.84	4.30	0.78	11.88	5.29
16	A9	CGRD	16,894	0.39	0	12,516	74%	26%	5.0	0.77	6.48	1.92	0.78	8.64	2.60	0.78	9.84	2.99	0.80	11.88	3.67
17	A8	CGRD	40,905	0.94	14,400	3,776	44%	56%	5.5	0.56	6.33	3.30	0.58	8.47	4.59	0.59	9.65	5.39	0.62	11.67	6.82
18	A11	CGRD	27,868	0.64	14,400	3,827	65%	35%	5.0	0.70	6.48	2.92	0.72	8.64	3.97	0.73	9.84	4.59	0.75	11.88	5.67
19	A10	CGRD	28,429	0.65	14,400	3,685	64%	36%	5.0	0.69	6.48	2.92	0.71	8.64	3.98	0.72	9.84	4.61	0.74	11.88	5.70
20	B8	ASAG	166,023	3.81	0	0	0%	100%	10.2	0.24	5.33	4.87	0.28	7.23	7.72	0.31	8.34	9.85	0.36	10.15	13.92
21			163,775	3.76	0	0	0%	100%	10.1	0.24	5.36	4.84	0.28	7.27	7.66	0.31	8.38	9.77	0.36	10.20	13.81
22			251,451	5.77	0	0	0%	100%	18.0	0.24	4.24	5.88	0.28	5.89	9.51	0.31	6.87	12.29	0.36	8.43	17.52

PARKSIDE PENINSULA PHASE 3
TIME OF CONCENTRATION CALCULATIONS

Contributing Area	Sheet Flow				Shallow Concentrated Flow (Unpaved)				Gutter Flow		
	Length (ft)	Slope (ft/ft)	Roughness Coefficient	T_{sheet}	Length (ft)	Slope (ft/ft)	Roughness Coefficient	$T_{unpaved}$	Length (ft)	Velocity (ft/s)	Tpaved
1				0.00				0.00			0.00
2				0.00				0.00			0.00
3	100	0.029	0.15	2.10	443	0.025	0.15	7.00			0.00
4	30	0.02	0.24	1.21	104	0.02	0.24	2.94	143	6	0.40
5	30	0.02	0.24	1.21	111	0.02	0.24	3.14	143	6	0.40
6	30	0.02	0.24	1.21	114	0.02	0.24	3.22	172	6	0.48
7				0.00				0.00			0.00
8	30	0.02	0.24	1.21	145	0.02	0.24	4.10	149	6	0.41
9	30	0.02	0.24	1.21	152	0.02	0.24	4.30	51	6	0.14
10	30	0.02	0.24	1.21	151	0.02	0.24	4.27	51	6	0.14
11	30	0.02	0.24	1.21	139	0.02	0.24	3.93	149	6	0.41
12	30	0.02	0.24	1.21	106	0.02	0.24	3.00	145	6	0.40
13	30	0.02	0.24	1.21	105	0.02	0.24	2.97	112	6	0.31
14	30	0.02	0.24	1.21	126	0.02	0.24	3.56	92	6	0.26
15				0.00				0.00			0.00
16				0.00				0.00			0.00
17	30	0.02	0.24	1.21	139	0.02	0.24	3.93	146	6	0.41
18	30	0.02	0.24	1.21	122	0.02	0.24	3.45	93	6	0.26
19	30	0.02	0.24	1.21	111	0.02	0.24	3.14	142	6	0.39
20	100	0.015	0.15	2.92	538	0.037	0.15	6.99	124	6	0.34
21	100	0.028	0.15	2.14	589	0.038	0.15	7.55	133	6	0.37
22	100	0.01	0.15	3.57	819	0.024	0.15	13.24	418	6	1.16

Curb Inlets On Grade Calculation Summary: 25 year

Drainage Area No.	Inlet No.	Q_{25} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	Slope (%)	n	Ku	Street Width (ft)	Crown Height (ft)	Inlet Depression, a (ft)	K0	K1	K2	y0 (ft)	a	b	Flow Spread, T (ft)	H1 (ft)	H2 (ft)	Qa/La (cfs/ft)	Length (ft)	Qa	Q_{pass} (cfs)	% Captured	Bypass to Inlet
1	E10	1.31	0.00	1.31	0.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.30	0.0714	0.0026	5.15	0.72	0.42	0.75	10.00	7.53		100%	OS
2	E11	2.46	0.00	2.46	0.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.37	0.0714	0.0026	6.86	0.79	0.42	0.83	10.00	8.27		100%	OS
3	E8	4.12	0.00	4.12	0.60%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.43	0.0714	0.0026	8.60	0.84	0.42	0.89	10.00	8.86		100%	E11
4	D11	4.06	0.00	4.06	2.00%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.35	0.0714	0.0026	6.26	0.76	0.42	0.80	10.00	8.02		100%	D8
5	D8	4.72	0.00	4.72	1.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.38	0.0714	0.0026	7.22	0.80	0.42	0.84	10.00	8.40		100%	C13
8	C14	4.94	0.00	4.94	1.90%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.37	0.0714	0.0026	6.96	0.79	0.42	0.83	10.00	8.30		100%	C13
9	C10	4.20	0.00	4.20	1.00%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.39	0.0714	0.0026	7.55	0.81	0.42	0.85	10.00	8.52		100%	C14
10	B20	4.25	0.00	4.25	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.42	0.0714	0.0026	8.37	0.84	0.42	0.88	10.00	8.80		100%	B23
11	B23	4.96	0.00	4.96	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.44	0.0714	0.0026	9.19	0.86	0.42	0.90	10.00	9.03		100%	B21
12	B21	4.76	0.00	4.76	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.44	0.0714	0.0026	8.96	0.85	0.42	0.90	10.00	8.97		100%	B5
13	B5	3.93	0.00	3.93	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.41	0.0714	0.0026	8.01	0.83	0.42	0.87	10.00	8.68		100%	B11
14	B11	4.30	0.00	4.30	1.60%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.37	0.0714	0.0026	6.78	0.78	0.42	0.82	10.00	8.23		100%	A8
15	B13	4.30	0.00	4.30	1.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.36	0.0714	0.0026	6.68	0.78	0.42	0.82	10.00	8.19		100%	A9
16	A9	2.99	0.00	2.99	2.20%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.31	0.0714	0.0026	5.35	0.73	0.42	0.76	10.00	7.62		100%	OS
17	A8	5.39	0.00	5.39	4.40%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.33	0.0714	0.0026	5.95	0.75	0.42	0.79	10.00	7.89		100%	A11
18	A11	4.59	0.00	4.59	3.90%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.32	0.0714	0.0026	5.69	0.74	0.42	0.78	10.00	7.78		100%	A10
19	A10	4.61	0.00	4.61	2.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.34	0.0714	0.0026	6.19	0.76	0.42	0.80	10.00	7.99		100%	OS

Curb Inlets On Grade Calculation Summary: 100 year

Drainage Area No.	Inlet No.	Q_{100} (cfs)	Q_{pass} (cfs)	Q_{total} (cfs)	Slope (%)	n	Ku	Street Width (ft)	Crown Height (ft)	Inlet Depression, a (ft)	K0	K1	K2	y0 (ft)	a	b	Flow Spread, T (ft)	H1 (ft)	H2 (ft)	Qa/La (cfs/ft)	Length (ft)	Qa	Q_{pass} (cfs)	% Captured	Bypass to Inlet
1	E10	1.60	0.00	1.60	0.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.32	0.0714	0.0026	5.62	0.74	0.42	0.77	10.00	7.75		100%	OS
2	E11	3.00	0.00	3.00	0.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.39	0.0714	0.0026	7.58	0.81	0.42	0.85	10.00	8.53		100%	OS
3	E8	5.45	0.00	5.45	0.60%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.47	0.0714	0.0026	10.39	0.88	0.42	0.93	10.00	9.32		100%	E11
4	D11	5.04	0.00	5.04	2.00%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.37	0.0714	0.0026	6.94	0.79	0.42	0.83	10.00	8.30		100%	D8
5	D8	5.86	0.00	5.86	1.50%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.41	0.0714	0.0026	8.09	0.83	0.42	0.87	10.00	8.71		100%	C13
8	C14	6.20	0.00	6.20	1.90%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.40	0.0714	0.0026	7.82	0.82	0.42	0.86	10.00	8.61		100%	C13
9	C10	5.27	0.00	5.27	1.00%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.42	0.0714	0.0026	8.55	0.84	0.42	0.89	10.00	8.85		100%	C14
10	B20	5.33	0.00	5.33	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.45	0.0714	0.0026	9.65	0.87	0.42	0.92	10.00	9.15		100%	B23
11	B23	6.21	0.00	6.21	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.47	0.0714	0.0026	10.87	0.89	0.42	0.94	10.00	9.41		100%	B21
12	B21	5.92	0.00	5.92	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.47	0.0714	0.0026	10.43	0.88	0.42	0.93	10.00	9.33		100%	B5
13	B5	4.90	0.00	4.90	0.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.44	0.0714	0.0026	9.13	0.86	0.42	0.90	10.00	9.02		100%	B11
14	B11	5.46	0.00	5.46	1.60%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.40	0.0714	0.0026	7.65	0.81	0.42	0.86	10.00	8.56		100%	A8
15	B13	5.29	0.00	5.29	1.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.39	0.0714	0.0026	7.41	0.81	0.42	0.85	10.00	8.47		100%	A9
16	A9	3.67	0.00	3.67	2.20%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.33	0.0714	0.0026	5.85	0.75	0.42	0.78	10.00	7.85		100%	OS
17	A8	6.82	0.00	6.82	4.40%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.36	0.0714	0.0026	6.64	0.78	0.42	0.82	10.00	8.18		100%	A11
18	A11	5.67	0.00	5.67	3.90%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.35	0.0714	0.0026	6.26	0.76	0.42	0.80	10.00	8.02		100%	A10
19	A10	5.70	0.00	5.70	2.70%	0.015	0.560	28.00	0.500	0.42	2.85	0.50	3.03	0.37	0.0714	0.0026	6.85	0.79	0.42	0.83	10.00	8.26		100%	OS

Curb Inlets in Sump Calculation Summary: 25 year

Drainage Area No.	Inlet No.	Q_{25} (cfs)	Qpass (cfs)	Qtotal (cfs)	W (ft)	Inlet Depression, a (ft)	Curb opening height, h (ft)	Street Width (ft)	Crown Height (%)	Clogging Factor (%)	Inlet Length (ft)	d_{weir} Above S_x (ft)	$d_{orifice}$ above S_x (ft)	a	b	Depth of Ponding over S_x, y0 (ft)	Ponded Width (ft)
6	C13	4.40	0.00	4.40	1.50	0.42	0.52	28.00	0.50	100%	10.00	0.28	0.00	0.07	0.00	0.28	4.78
7	C11	5.17	0.00	5.17	1.50	0.42	0.52	28.00	0.50	100%	10.00	0.32	0.00	0.07	0.00	0.31	5.35

Curb Inlets in Sump Calculation Summary: 100 year

Drainage Area No.	Inlet No.	Q_{100} (cfs)	Qpass (cfs)	Qtotal (cfs)	W (ft)	Inlet Depression, a (ft)	Curb opening height, h (ft)	Street Width (ft)	Crown Height (%)	Clogging Factor (%)	Inlet Length (ft)	d_{weir} Above S_x (ft)	$d_{orifice}$ above S_x (ft)	a	b	Depth of Ponding over S_x, y0 (ft)	Ponded Width (ft)
6	C13	5.45	0.00	5.45	1.50	0.42	0.52	28.00	0.50	100%	10.00	0.33	0.00	0.07	0.00	0.31	5.35
7	C11	6.36	0.00	6.36	1.50	0.42	0.52	28.00	0.50	100%	10.00	0.36	0.00	0.07	0.00	0.31	5.35

Area Inlet in Sag Calculation Summary: 25 year

Drainage Area No.	Inlet No.	Q_{25} (cfs)	Qpass (cfs)	Qtotal (cfs)	Throat Height, h (in)	Inlet Length, L (ft)	Yard Cross Slope, Sx (%)	Weir Depth above FL (ft)	Orifice Depth above FL (ft)	Ponded Depth, d (ft)	Ponding Spread, T (ft)
20	B8	9.85	0.00	9.85	5.00	16.00	1.67%	0.35	0.28	0.35	20.72

Area Inlet in Sag Calculation Summary: 100 year

Drainage Area No.	Inlet No.	Q_{100} (cfs)	Qpass (cfs)	Qtotal (cfs)	Throat Height, h (in)	Inlet Length, L (ft)	Yard Cross Slope, Sx (%)	Weir Depth above FL (ft)	Orifice Depth above FL (ft)	Ponded Depth, d (ft)	Ponding Spread, T (ft)
20	B8	13.92	0.00	13.92	5.00	16.00	1.67%	0.44	0.36	0.44	26.13

NO.	REVISION	BY	DATE

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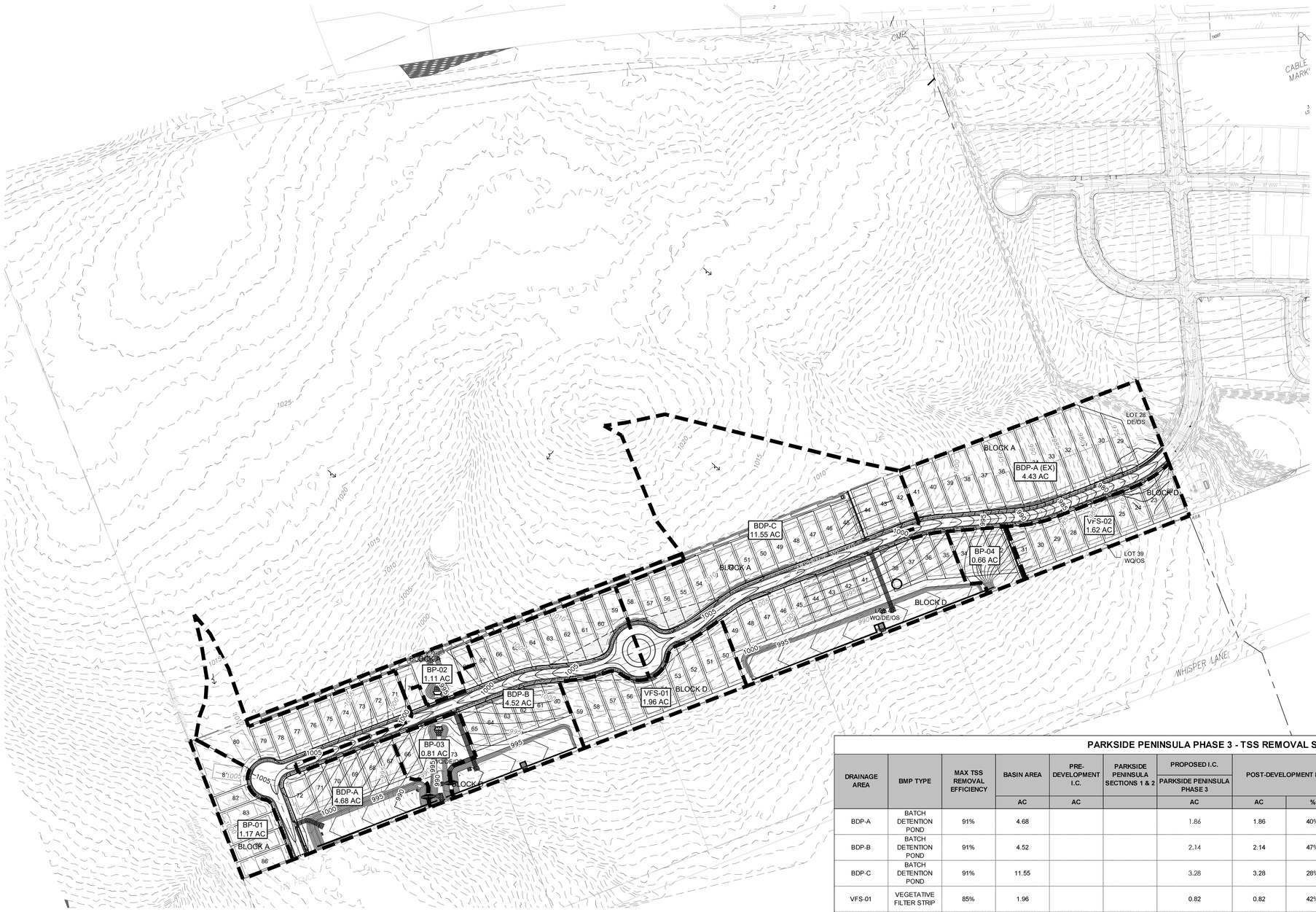
STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED
PROFESSIONAL ENGINEER
08/30/2024

INLET DRAINAGE CALCULATIONS

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

2024-XX-CON



0 150 300

SCALE: 1" = 150'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE
- DRAINAGE AREA

PARKSIDE PENINSULA PHASE 3 - TSS REMOVAL SUMMARY

DRAINAGE AREA	BMP TYPE	MAX TSS REMOVAL EFFICIENCY	BASIN AREA	PRE-DEVELOPMENT I.C.	PARKSIDE PENINSULA SECTIONS 1 & 2	PROPOSED I.C. PARKSIDE PENINSULA PHASE 3	POST-DEVELOPMENT I.C.		TCEQ REQUIRED 80% TSS LOAD REMOVAL	CITY OF GEORGETOWN REQUIRED 85% POND TSS LOAD REMOVAL	PROVIDED TSS LOAD REMOVAL	VOLUME REQUIRED	VOLUME PROVIDED
			AC	AC		AC	AC	%	LB	LB	LB	CF	CF
BDP-A	BATCH DETENTION POND	91%	4.68			1.86	1.86	40%	1,619	1,720	1,842	17,447	20,209
BDP-B	BATCH DETENTION POND	91%	4.52			2.14	2.14	47%	1,863	1,979	2,095	18,926	20,681
BDP-C	BATCH DETENTION POND	91%	11.55			3.28	3.28	28%	2,855	3,033	3,283	35,193	44,784
VFS-01	VEGETATIVE FILTER STRIP	85%	1.96			0.82	0.82	42%	714		788		
VFS-02	VEGETATIVE FILTER STRIP	85%	1.62			0.83	0.83	51%	722		793		
BP-01	BY-PASS	0%	1.17			0.50	0.50	43%	435				
BP-02	BY-PASS	0%	1.11			0.08	0.08	7%	70				
BP-03	BY-PASS	0%	0.81			0.08	0.08	10%	70				
BP-04	BY-PASS	0%	0.66			0.26	0.26	39%	226				
BDP-A (EX)	BATCH DETENTION POND	91%	39.35 (34.92 + 4.43)		15.30	1.73	17.03	43%	14,823	15,749	16,720	143,844	151,783
BDP-C (EX)	BATCH DETENTION POND	91%	2.13		0.36		0.36	17%	313	333	350	2,838	3,344
BP (EX)	BY-PASS	0%	1.91		0.71		0.71	37%	618				
TOTAL:			**71.47**	**0.00**	**16.37**	**11.58**	**27.95**	**39%**	**24,328**		**25,871**		

1 - FOR THE GEORGETOWN TSS REMOVAL REQUIREMENT, WE CONSIDER 85% OF TSS REMOVAL FOR THE DRAINAGE AREA THAT DRAINS TOWARD THE BATCH DETENTION PONDS.

DATE | BY | REVISION | NO.

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TBPLS NO: 10194101

STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER

08/30/2024

WATER QUALITY DRAINAGE AREA MAP

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 31 OF 68

2024-XX-CON

P:\Black Magpie\Parkside Peninsula\03_ACAD\Plans\dr\250206 WQMAP.dwg, WATER QUALITY DRAINAGE AREA MAP, September 18, 2024, 10:39 AM, mmuhammad

BATCH DETENTION POND - BDP-A

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009	
	Parkside Peninsula
Project Name:	Phase 3
Date Prepared:	9/17/2024

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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. =	BDP-A	
Total drainage basin/outfall area =	4.68	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.86	acres
Post-development impervious fraction within drainage basin/outfall area =	0.40	
$L_{M\ THIS\ BASIN}$ =	1619	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	4.68	acres
A_I =	1.86	acres
A_P =	2.82	acres
L_R =	1918	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	1842	lbs.
F =	0.96	

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 =	2.80	inches
Post Development Runoff Coefficient =	0.31	
On-site Water Quality Volume =	14539	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 =	2908	
Total Capture Volume (required water quality volume(s) x 1.20) =	17447	cubic feet
1/2 WQV =	8723	

BATCH DETENTION POND - BDP-B

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009	
	Parkside Peninsula
Project Name:	Phase 3
Date Prepared:	9/17/2024

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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. =	BDP-B	
Total drainage basin/outfall area =	4.52	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.14	acres
Post-development impervious fraction within drainage basin/outfall area =	0.47	
$L_{M\ THIS\ BASIN}$ =	1863	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	4.52	acres
A_I =	2.14	acres
A_P =	2.38	acres
L_R =	2194	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	2095	lbs.
F =	0.96	

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 =	2.80	inches
Post Development Runoff Coefficient =	0.34	
On-site Water Quality Volume =	15771	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 =	3154	
Total Capture Volume (required water quality volume(s) x 1.20) =	18926	cubic feet
1/2 WQV =	9463	

BATCH DETENTION POND - BDP-C

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009	
	Parkside Peninsula
Project Name:	Phase 3
Date Prepared:	9/17/2024

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. =	BDP-C	
Total drainage basin/outfall area =	11.55	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	3.28	acres
Post-development impervious fraction within drainage basin/outfall area =	0.28	
$L_{M\ THIS\ BASIN}$ =	2855	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Batch Detention	
Removal efficiency =	91	percent

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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	11.55	acres
A_I =	3.28	acres
A_P =	8.27	acres
L_R =	3435	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	3283	lbs.
F =	0.96	

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 =	2.80	inches
Post Development Runoff Coefficient =	0.25	
On-site Water Quality Volume =	29327	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 =	5865	
Total Capture Volume (required water quality volume(s) x 1.20) =	35193	cubic feet
1/2 WQV =	17596	

NO	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WATER QUALITY CALCULATIONS 1 OF 2

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 32 OF 68
2024-XX-CON

VEGETATIVE FILTER STRIP - VFS-01

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = VFS-01

Total drainage basin/outfall area =	1.96	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.82	acres
Post-development impervious fraction within drainage basin/outfall area =	0.42	
$L_{M\ THIS\ BASIN}$ =	714	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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 =	1.96	acres
A_I =	0.82	acres
A_P =	1.14	acres
L_R =	788	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 788 lbs.

F = 1.00

VEGETATIVE FILTER STRIP - VFS-02

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = VFS-03

Total drainage basin/outfall area =	1.62	acres
Predevelopment impervious area within drainage basin/outfall area =	0.03	acres
Post-development impervious area within drainage basin/outfall area =	0.83	acres
Post-development impervious fraction within drainage basin/outfall area =	0.51	
$L_{M\ THIS\ BASIN}$ =	696	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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 =	1.62	acres
A_I =	0.83	acres
A_P =	0.79	acres
L_R =	793	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 793 lbs.

F = 1.00

EXISTING BATCH DETENTION POND - BDP-A (EX)

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres	34.92 acres from the approved Parkside Peninsula Sections 1 & 2
Predevelopment impervious area within the limits of the plan * =	0.00	acres	+ 4.43 acres from Parkside Peninsula Phase 3
Total post-development impervious area within the limits of the plan * =	11.58	acres	
Total post-development impervious cover fraction * =	0.41		15.3 acres from the approved Parkside Peninsula Sections 1 & 2
P =	32	inches	+ 1.73 acres from Parkside Peninsula Phase 3
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.	

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = BDP-A (EX)

Total drainage basin/outfall area =	39.35	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	17.03	acres
Post-development impervious fraction within drainage basin/outfall area =	0.43	
$L_{M\ THIS\ BASIN}$ =	14823	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention
Removal efficiency = 91 percent

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 =	39.35	acres
A_I =	17.03	acres
A_P =	22.32	acres
L_R =	17510	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 16720 lbs.

F = 0.95

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 =	2.60	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	119870	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 =	23974	
Total Capture Volume (required water quality volume(s) x 1.20) =	143844	cubic feet
1/2 WQV =	71922	

BY PASS - BP-01

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = BP-01

Total drainage basin/outfall area =	1.17	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.50	acres
Post-development impervious fraction within drainage basin/outfall area =	0.43	
$L_{M\ THIS\ BASIN}$ =	435	lbs.

BY PASS - BP-02

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = BP-02

Total drainage basin/outfall area =	1.11	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.08	acres
Post-development impervious fraction within drainage basin/outfall area =	0.07	
$L_{M\ THIS\ BASIN}$ =	70	lbs.

BY PASS - BP-03

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = BP-03

Total drainage basin/outfall area =	0.81	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.08	acres
Post-development impervious fraction within drainage basin/outfall area =	0.10	
$L_{M\ THIS\ BASIN}$ =	70	lbs.

BY PASS - BP-04

Texas Commission on Environmental Quality

Parkside Peninsula

TSS Removal Calculations 04-20-2009 Project Name: **Phase 3**

Date Prepared: **9/17/2024**

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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 * =	28.22	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	11.58	acres
Total post-development impervious cover fraction * =	0.41	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	10079	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 10

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

Drainage Basin/Outfall Area No. = BP-04

Total drainage basin/outfall area =	0.66	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.26	acres
Post-development impervious fraction within drainage basin/outfall area =	0.39	
$L_{M\ THIS\ BASIN}$ =	226	lbs.

DATE | BY | REVISION | NO.

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STATE OF TEXAS
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142536
LICENSED PROFESSIONAL ENGINEER

08/30/2024

WATER QUALITY CALCULATIONS 2 OF 2

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

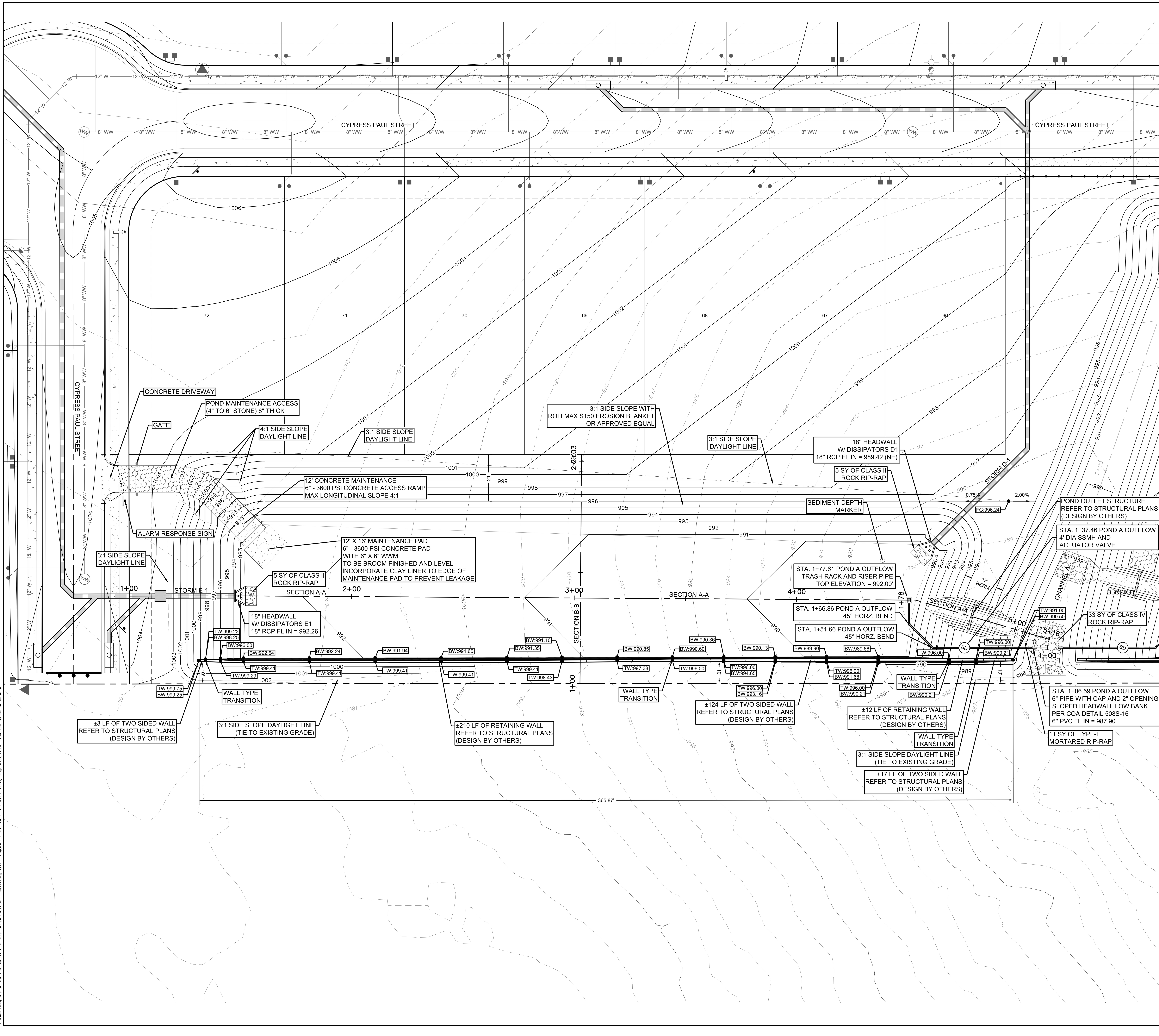
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 33 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\03_ACAD\Plans\9-20\2006 WQMAP.dwg, WATER QUALITY CALCULATIONS 2 OF 2, September 18, 2024, 10:39 AM, mmuhammad



SCALE: 1" = 20'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

GENERAL NOTES:

1. CONTRACTOR TO UTILIZE A TEMPORARY CONSTRUCTION PUMP TO DISCHARGE WATER FROM THE POND AFTER A RAINFALL EVENT, DURING CONSTRUCTION. PUMP IS TO DISCHARGE UPSTREAM OF PROPOSED ROCK BERM LOCATED BEFORE THE CREEK BED. AT NO TIME SHALL THE PUMP BE DISCHARGED DIRECTLY INTO STORMSEWER SYSTEM BEFORE CROSSING A ROCK BERM.
2. 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. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO ROADS A MINIMUM OF ONCE DAILY.
3. ALL DISTURBED AREAS TO BE REVEGETATED PRIOR TO ACCEPTANCE.
4. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC ROADWAY.
6. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF GEORGETOWN RULES AND REGULATIONS. HOWEVER, MODIFICATIONS TO THE ENGINEERING DESIGN AND FUNCTIONS OF THE EROSION AND SEDIMENTATION CONTROLS SYSTEMS CONTAINED HEREIN IS STRICTLY FORBIDDEN WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PROJECT PROFESSIONAL ENGINEER (TAC22 §137.3 AND §137.37).
7. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER 1.4.5(A) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
8. ALL POND BOTTOMS, SIDE SLOPES, AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% MAXIMUM DENSITY, IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS AND PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. ALLOW ADEQUATE VOLUME FOR TOPSOIL TO SUPPORT VEGETATION.
9. GRADING WITHIN THE 1/2 CRITICAL ROOT ZONE OF PROTECTED TREES, IDENTIFIED BY A HATCH PATTERN ON THESE PLANS, SHALL BE LIMITED TO LESS THAN 12 INCHES OF DISTURBANCE. NO GRADING ACTIVITY WITH DISTURBANCE OF MORE THAN 6 INCHES IS ALLOWED IN THE 1/4 CRITICAL ROOT ZONE.
10. GRADING WORK WITHIN THE 1/2 CRITICAL ROOT ZONE OF ALL PROTECTED TREES SHALL BE DONE BY HAND OR WITH RUBBER TIRED EQUIPMENT.
11. ALL RETAINING WALLS GREATER THAN FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

NO	REVISION	BY	DATE

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TBPLS NO: 10194101

STATE OF TEXAS CHRISTINE N. CAMPBELL 142536 LICENSED PROFESSIONAL ENGINEER 08/30/2024

WATER QUALITY AND DETENTION POND A

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

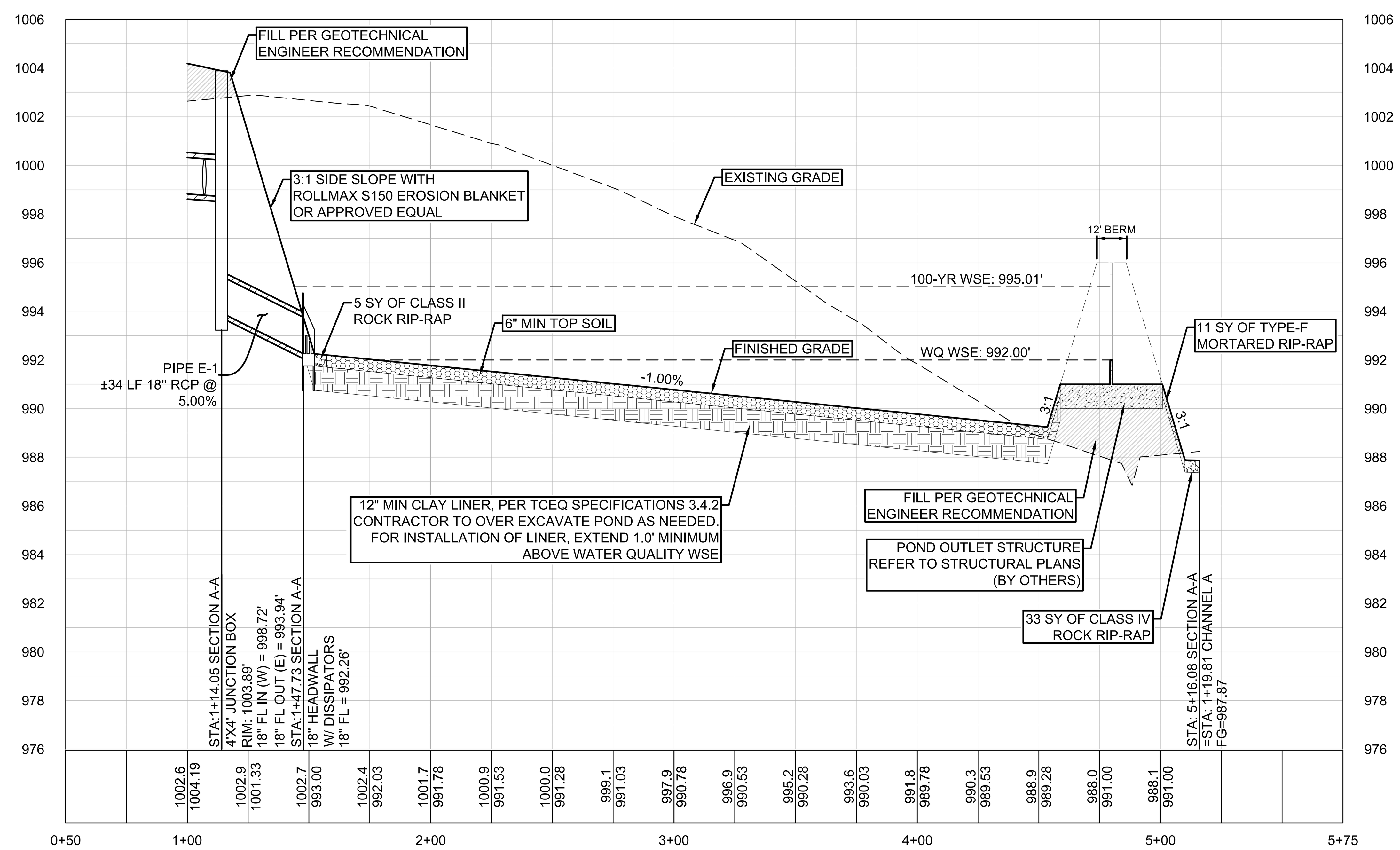
GEORGETOWN, WILLIAMSON, TEXAS

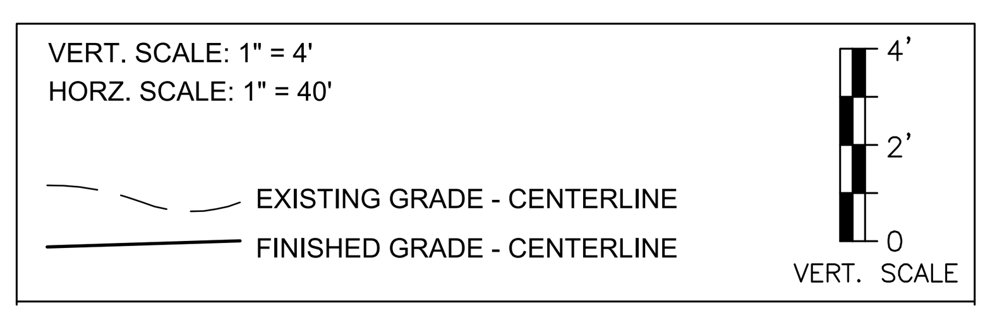
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 34 OF 68

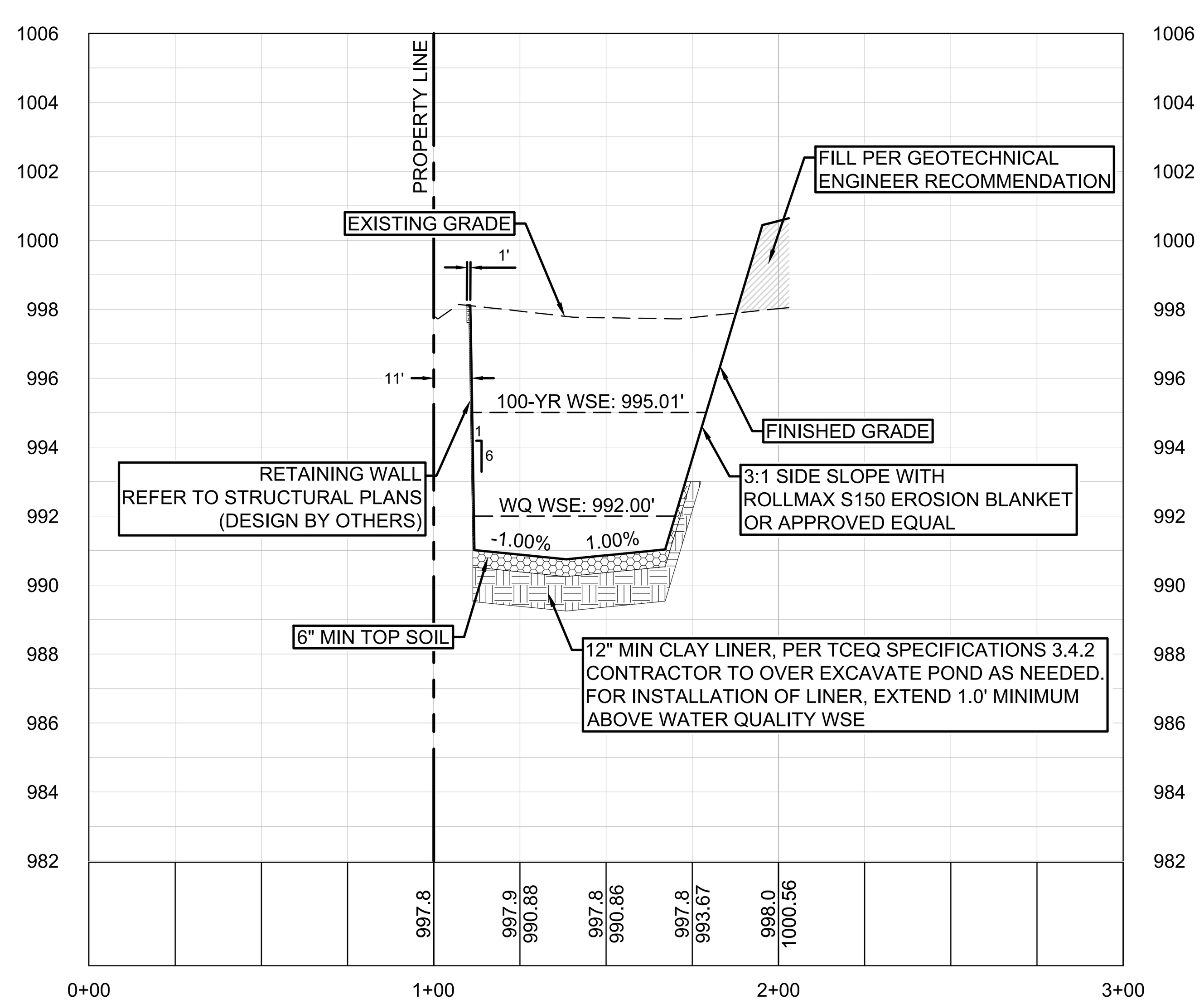
2024-XX-CON

SECTION A-A

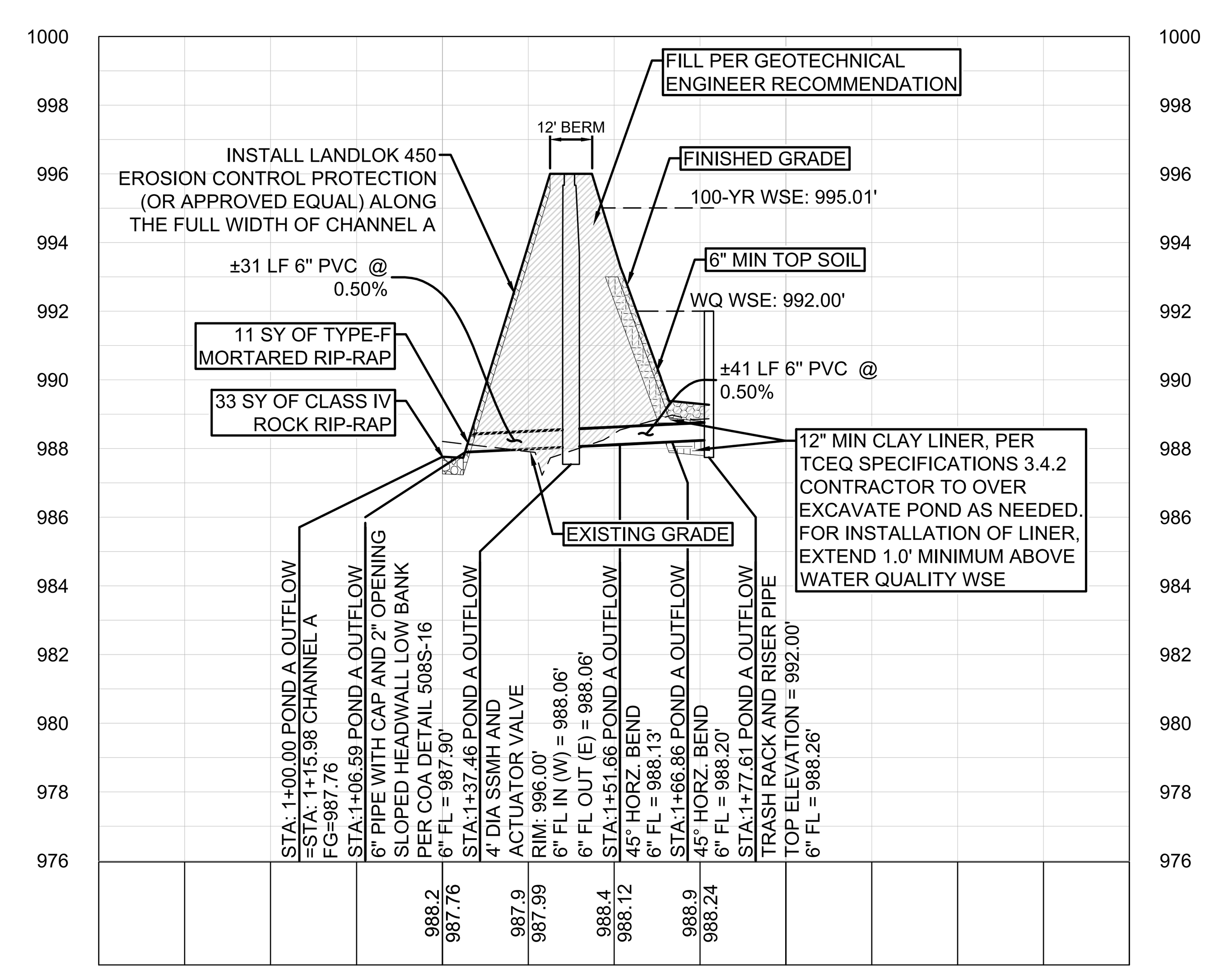




SECTION B-B



POND A OUTFLOW



Pond A Volume

Elevation	Area		Volume		Cumulative Volume		Comments
	SF	ac	cf	ac*ft	cf	ac*ft	
989.25	0	0.00	0	0.00	0	0.00	
990	3,429	0.08	1,286	0.03	1,286	0.03	Water Quality Volume
991	9,299	0.21	6,364	0.15	7,650	0.18	
992	15,819	0.36	12,559	0.29	20,209	0.46	
993	19,428	0.45	17,624	0.40	37,832	0.87	Detention
994	20,812	0.48	20,120	0.46	57,952	1.33	
995	22,226	0.51	21,519	0.49	79,471	1.82	
996	23,671	0.54	22,949	0.53	102,420	2.35	Freeboard

OUTFLOW STRUCTURE

Elevation	Flow
ft	cfs
992.00	0.0
992.50	0.9
993.00	2.6
993.50	4.8
994.00	7.4
994.50	10.3
995.00	13.5
995.50	17.0
996.00	29.1

$$Q = C_w L H^{1.5}$$

Q - *weir flow rate (cfs)*

C_w - *Weir Coefficient* BROAD: 2.60

L - *horizontal length of weir crest (ft)* BROAD: 1 FT

H - *head above weir crest elevation (ft)*

DRAWDOWN CALCUATIONS FOR A ROUND ORIFICE

PROJECT NAME: PARKSIDE PENINSULA PHASE 3 - POND A

Pipe Diameter =	6.00	IN	W.Q.V. =	20,209	CF
Orifice Diameter =	2.00	IN	WQ Elev =	992.00	MSL
Outflow Orifice Elev =	987.90	MSL	Pond Bottom Elev =	989.25	MSL
Draining time	34.00	HR	Initial Head =	4.10	FT

TIME	HEAD	OUTFLOW	VOL.	dV	Total dV	H	dH	W.E.
HRS	FT	CFS	CF	CF	CF	FT	FT	MSL
0.00	4.10	0.21	20,209	766	766	0.10	4.00	992.00
1.00	4.00	0.21	19,443	756	1,522	0.10	3.89	991.90
2.00	3.89	0.21	18,687	746	2,268	0.10	3.79	991.79
3.00	3.79	0.20	17,941	736	3,004	0.10	3.69	991.69
4.00	3.69	0.20	17,205	727	3,731	0.10	3.59	991.59
5.00	3.59	0.20	16,478	717	4,447	0.10	3.49	991.49
6.00	3.49	0.20	15,762	707	5,154	0.10	3.40	991.39
7.00	3.40	0.19	15,055	697	5,852	0.09	3.30	991.30
8.00	3.30	0.19	14,357	687	6,539	0.09	3.21	991.20
9.00	3.21	0.19	13,670	678	7,217	0.09	3.12	991.11
10.00	3.12	0.19	12,992	668	7,884	0.09	3.03	991.02
11.00	3.03	0.18	12,325	658	8,542	0.09	2.94	990.93
12.00	2.94	0.18	11,667	648	9,190	0.09	2.85	990.84
13.00	2.85	0.18	11,019	638	9,829	0.09	2.76	990.75
14.00	2.76	0.17	10,380	629	10,457	0.09	2.68	990.66
15.00	2.68	0.17	9,752	619	11,076	0.08	2.59	990.58
16.00	2.59	0.17	9,133	609	11,685	0.08	2.51	990.49
17.00	2.51	0.17	8,524	599	12,284	0.08	2.43	990.41
18.00	2.43	0.16	7,925	589	12,873	0.08	2.35	990.33
19.00	2.35	0.16	7,336	579	13,453	0.08	2.27	990.25
20.00	2.27	0.16	6,756	570	14,023	0.08	2.19	990.17
21.00	2.19	0.16	6,186	560	14,582	0.08	2.12	990.09
22.00	2.12	0.15	5,627	550	15,133	0.07	2.04	990.02
23.00	2.04	0.15	5,076	540	15,673	0.07	1.97	989.94
24.00	1.97	0.15	4,536	530	16,203	0.07	1.90	989.87
25.00	1.90	0.14	4,006	521	16,724	0.07	1.82	989.80
26.00	1.82	0.14	3,485	511	17,235	0.07	1.75	989.72
27.00	1.75	0.14	2,974	501	17,735	0.07	1.69	989.65
28.00	1.69	0.14	2,474	491	18,227	0.07	1.62	989.59
29.00	1.62	0.13	1,982	481	18,708	0.07	1.55	989.52
30.00	1.55	0.13	1,501	471	19,179	0.06	1.49	989.45
31.00	1.49	0.13	1,030	462	19,641	0.06	1.43	989.39
32.00	1.43	0.13	568	452	20,093	0.06	1.37	989.33
33.00	1.37	0.12	116	442	20,209	0.06	1.35	989.27
34.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
35.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
36.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
37.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
38.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
39.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
40.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
41.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
42.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
43.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
44.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
45.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
46.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
47.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25
48.00	1.35	0.00	0	0	20,209	0.00	1.35	989.25

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TBPE NO: 16384 TBPLS NO: 10194101
STATE OF TEXAS — CHRISTINE N. CAMPBELL 142536 LICENSED PROFESSIONAL ENGINEER
08/30/2024

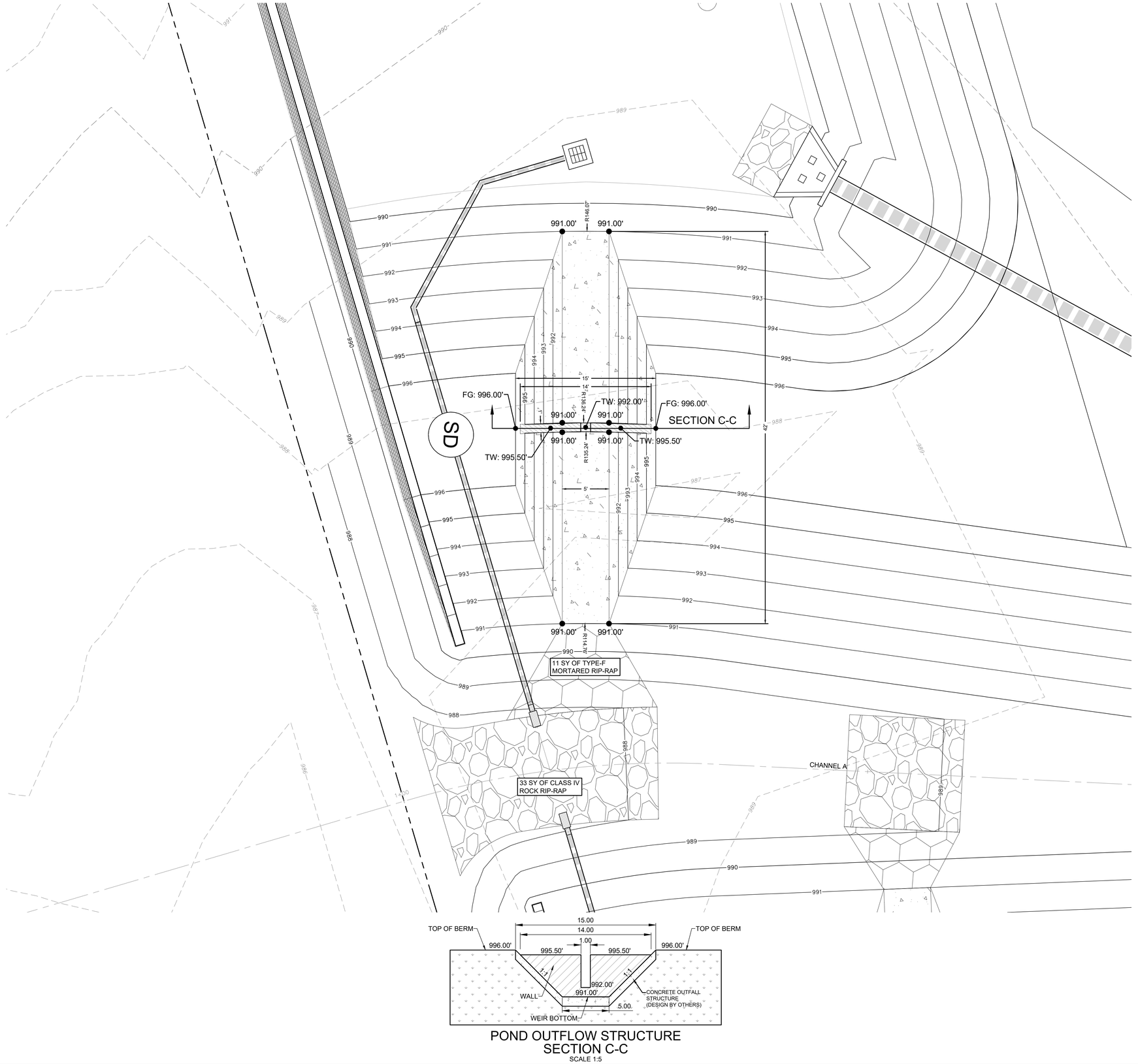
POND A SECTIONS

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 35 OF 68

2024-XX-CON



POND OUTFLOW STRUCTURE
SECTION C-C
SCALE 1:5

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

POND A OUTLET STRUCTURE DETAILS

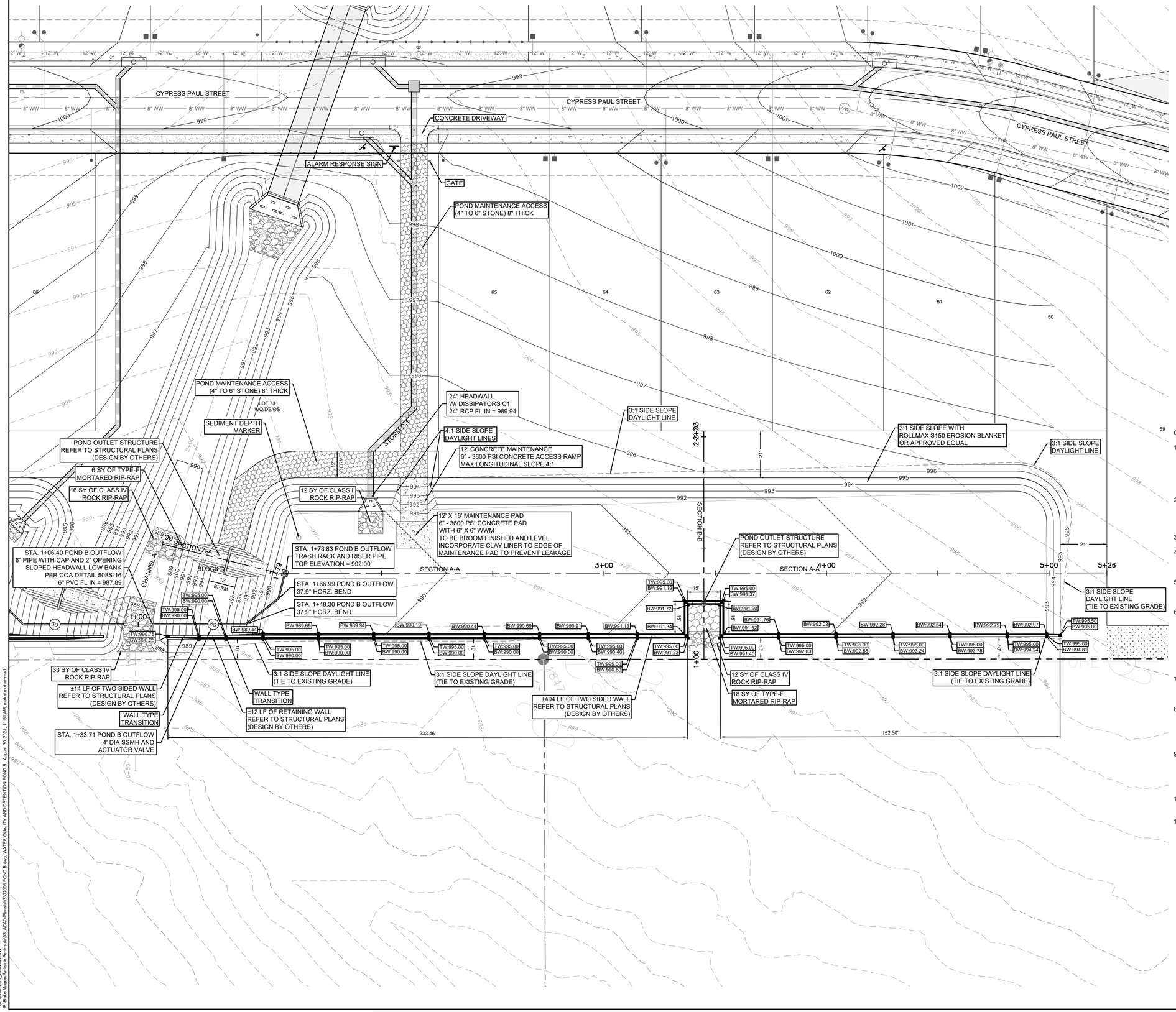
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 36 OF 68

2024-XX-CON



0 20' 40'

SCALE: 1" = 20'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

GENERAL NOTES:

1. CONTRACTOR TO UTILIZE A TEMPORARY CONSTRUCTION PUMP TO DISCHARGE WATER FROM THE POND AFTER A RAINFALL EVENT, DURING CONSTRUCTION. PUMP IS TO DISCHARGE UPSTREAM OF PROPOSED ROCK BERM LOCATED BEFORE THE CREEK BED. AT NO TIME SHALL THE PUMP BE DISCHARGED DIRECTLY INTO STORMSEWER SYSTEM BEFORE CROSSING A ROCK BERM.
2. 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. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO ROADS A MINIMUM OF ONCE DAILY.
3. ALL DISTURBED AREAS TO BE REVEGETATED PRIOR TO ACCEPTANCE.
4. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC ROADWAY.
6. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF GEORGETOWN RULES AND REGULATIONS. HOWEVER, MODIFICATIONS TO THE ENGINEERING DESIGN AND FUNCTIONS OF THE EROSION AND SEDIMENTATION CONTROLS SYSTEMS CONTAINED HERE IN IS STRICTLY FORBIDDEN WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PROJECT PROFESSIONAL ENGINEER (TAC22 §137.3 AND §137.37).
7. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER 1.4.5(A) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
8. ALL POND BOTTOMS, SIDE SLOPES, AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% MAXIMUM DENSITY, IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS AND PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. ALLOW ADEQUATE VOLUME FOR TOPSOIL TO SUPPORT VEGETATION.
9. GRADING WITHIN THE 1/2 CRITICAL ROOT ZONE OF PROTECTED TREES, IDENTIFIED BY A HATCH PATTERN ON THESE PLANS, SHALL BE LIMITED TO LESS THAN 12 INCHES OF DISTURBANCE. NO GRADING ACTIVITY WITH DISTURBANCE OF MORE THAN 6 INCHES IS ALLOWED IN THE 1/4 CRITICAL ROOT ZONE.
10. GRADING WORK WITHIN THE 1/2 CRITICAL ROOT ZONE OF ALL PROTECTED TREES SHALL BE DONE BY HAND OR WITH RUBBER TIRED EQUIPMENT.
11. ALL RETAINING WALLS GREATER THAN FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

NO	REVISION	BY	DATE

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08/30/2024

WATER QUALITY AND DETENTION POND B

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

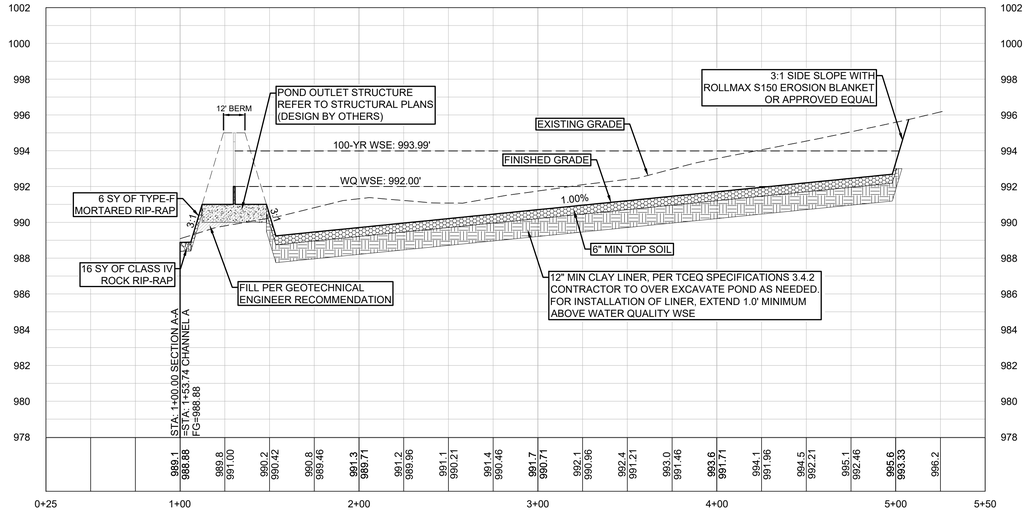
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 37 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Site Mgmt\Parkside Peninsula\03_ACAD\Plans\s3\300906 POND B.dwg, WATER QUALITY AND DETENTION POND B, August 30, 2024, 11:51 AM, malak.muhammad

SECTION A-A



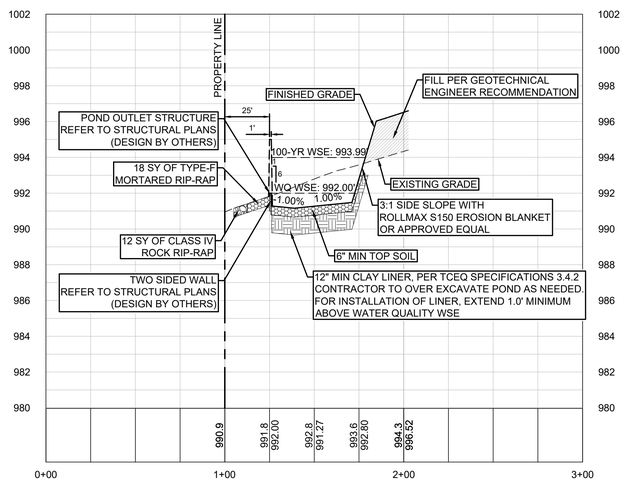
VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE

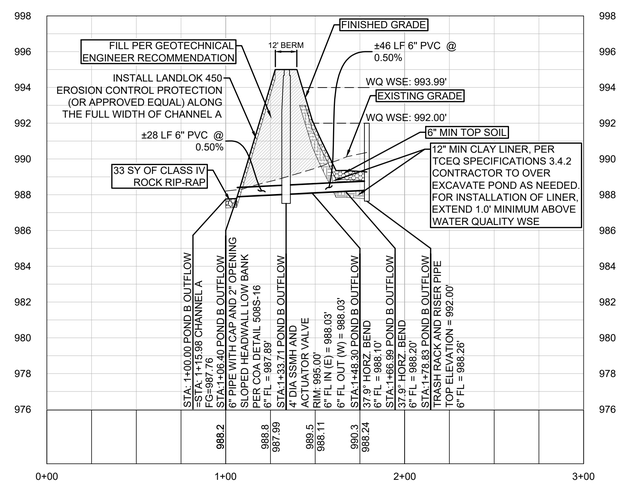
FINISHED GRADE - CENTERLINE

4'
2'
0
VERT. SCALE

SECTION B-B



POND B OUTFLOW



Pond B Volume							
Elevation	Area		Volume		Cumulative Volume		Comments
	SF	ac	cf	ac*ft	cf	ac*ft	
989.25	0	0.00					
990	3,523	0.08	1,321	0.03	1,321	0.03	Water Quality Volume
991	9,569	0.22	6,546	0.15	7,867	0.18	
992	16,058	0.37	12,814	0.29	20,681	0.47	
993	22,516	0.52	19,287	0.44	39,968	0.92	Detention
994	24,015	0.55	23,266	0.53	63,233	1.45	
995	25,550	0.59	24,783	0.57	88,016	2.02	Freeboard

OUTFLOW STRUCTURE	
Elevation	Flow
ft	cfs
992.00	0
992.50	0.9
993.00	2.6
993.50	4.8
994.00	7.4
994.50	10.3
995.00	21.8

$Q = C_w L H^{1.5}$

Q - *weir flow rate (cfs)*

C_w - *Weir Coefficient* BROAD: 2.60

L - *horizontal length of weir crest (ft)* BROAD: 1 FT

H - *head above weir crest elevation (ft)*

OUTFLOW STRUCTURE	
Elevation	Flow
ft	cfs
992.00	0
992.50	1.4
993.00	3.9
993.50	7.2
994.00	11.0
994.50	15.4
995.00	28.1

$Q = C_w L H^{1.5}$

Q - *weir flow rate (cfs)*

C_w - *Weir Coefficient* SHARP: 3.00

L - *horizontal length of weir crest (ft)* SHARP: 1.5 FT

H - *head above weir crest elevation (ft)*

DRAWDOWN CALCUATIONS FOR A ROUND ORIFICE

PROJECT NAME: PARKSIDE PENINSULA PHASE 3 - POND B

Pipe Diameter =	6.00	IN	W.Q.V. =	20,681	CF
Orifice Diameter =	2.00	IN	WQ Elev =	992.00	MSL
Outflow Orifice Elev =	987.89	MSL	Pond Bottom Elev =	989.25	MSL
Draining time	34.00	HR	Initial Head =	4.11	FT

TIME	HEAD	OUTFLOW	VOL.	dV	Total dV	H	dH	W.E.
HRS	FT	CFS	CF	CF	CF	FT	FT	MSL
0.00	4.11	0.21	20,681	767	767	0.10	4.01	992.00
1.00	4.01	0.21	19,914	757	1,524	0.10	3.91	991.90
2.00	3.91	0.21	19,157	748	2,271	0.10	3.81	991.80
3.00	3.81	0.20	18,410	738	3,009	0.10	3.71	991.70
4.00	3.71	0.20	17,672	728	3,738	0.10	3.61	991.60
5.00	3.61	0.20	16,943	719	4,456	0.10	3.52	991.50
6.00	3.52	0.20	16,225	709	5,166	0.09	3.42	991.41
7.00	3.42	0.19	15,515	700	5,865	0.09	3.33	991.31
8.00	3.33	0.19	14,816	690	6,555	0.09	3.24	991.22
9.00	3.24	0.19	14,126	681	7,236	0.09	3.15	991.13
10.00	3.15	0.19	13,445	671	7,907	0.09	3.06	991.04
11.00	3.06	0.18	12,774	661	8,568	0.09	2.97	990.95
12.00	2.97	0.18	12,113	652	9,220	0.09	2.88	990.86
13.00	2.88	0.18	11,461	642	9,862	0.09	2.80	990.77
14.00	2.80	0.18	10,819	633	10,495	0.08	2.71	990.69
15.00	2.71	0.17	10,186	623	11,118	0.08	2.63	990.60
16.00	2.63	0.17	9,563	613	11,731	0.08	2.55	990.52
17.00	2.55	0.17	8,950	604	12,335	0.08	2.47	990.44
18.00	2.47	0.17	8,346	594	12,930	0.08	2.39	990.36
19.00	2.39	0.16	7,751	585	13,514	0.08	2.31	990.28
20.00	2.31	0.16	7,167	575	14,090	0.08	2.24	990.20
21.00	2.24	0.16	6,591	566	14,655	0.08	2.16	990.13
22.00	2.16	0.15	6,026	556	15,211	0.07	2.09	990.05
23.00	2.09	0.15	5,470	546	15,757	0.07	2.01	989.98
24.00	2.01	0.15	4,924	537	16,294	0.07	1.94	989.90
25.00	1.94	0.15	4,387	527	16,821	0.07	1.87	989.83
26.00	1.87	0.14	3,860	518	17,339	0.07	1.80	989.76
27.00	1.80	0.14	3,342	508	17,847	0.07	1.74	989.69
28.00	1.74	0.14	2,834	498	18,345	0.07	1.67	989.63
29.00	1.67	0.14	2,336	489	18,834	0.06	1.61	989.56
30.00	1.61	0.13	1,847	479	19,313	0.06	1.54	989.50
31.00	1.54	0.13	1,368	470	19,783	0.06	1.48	989.43
32.00	1.48	0.13	898	460	20,243	0.06	1.42	989.37
33.00	1.42	0.13	438	450	20,681	0.06	1.36	989.31
34.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
35.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
36.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
37.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
38.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
39.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
40.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
41.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
42.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
43.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
44.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
45.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
46.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
47.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25
48.00	1.36	0.00	0	0	20,681	0.00	1.36	989.25

NO. REVISION BY DATE

Know what's below. Call before you dig.

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

POND B SECTIONS

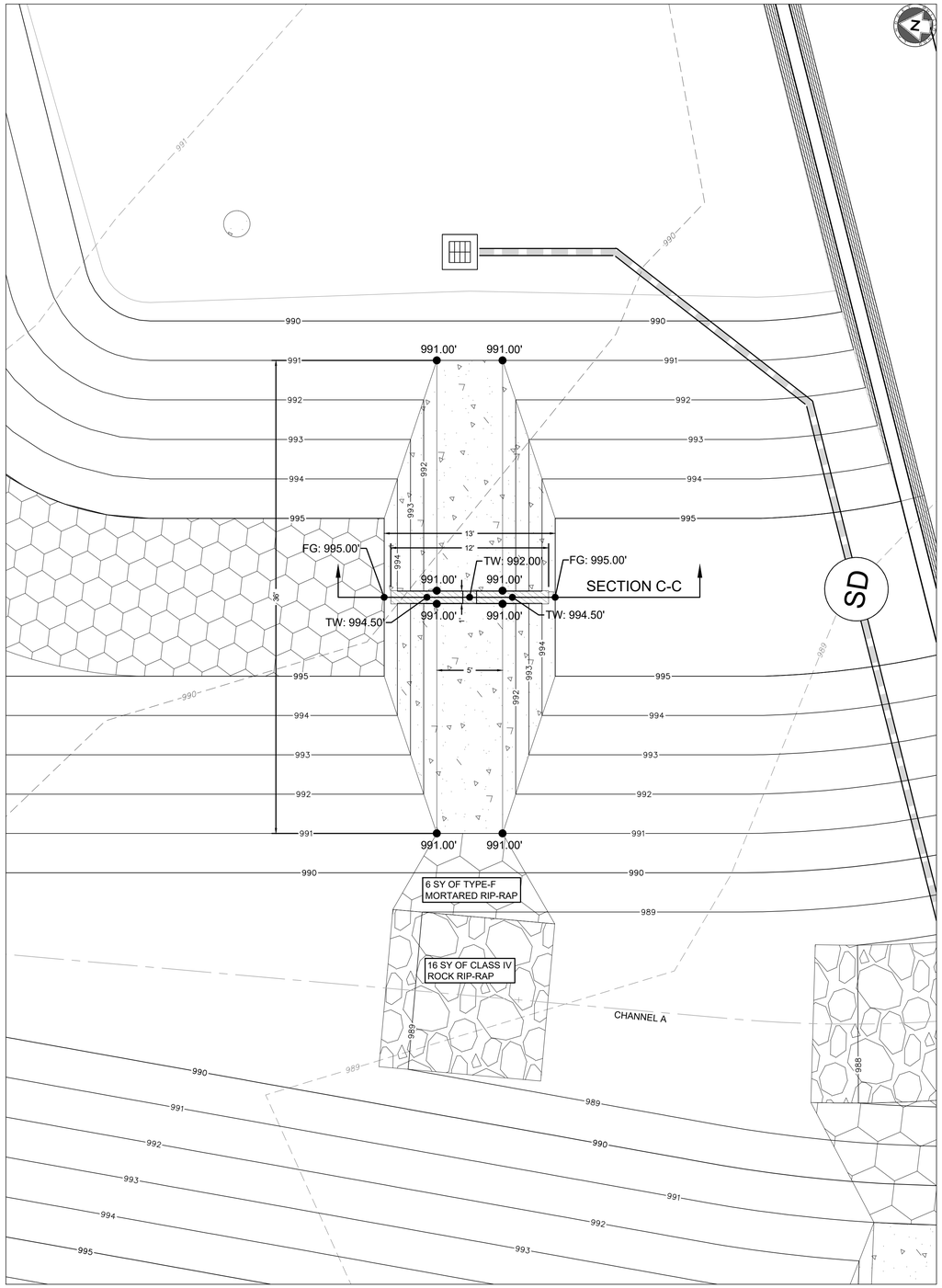
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

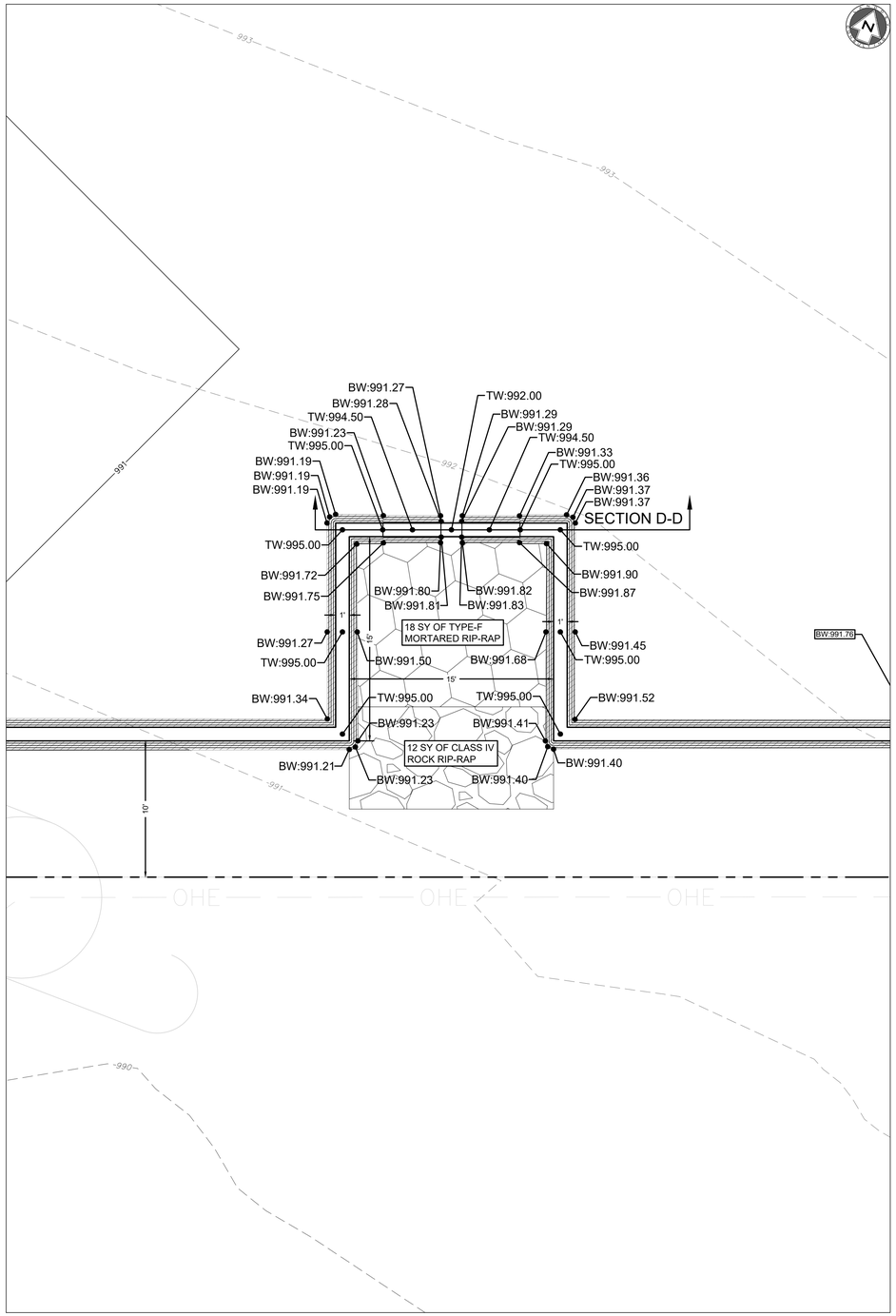
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

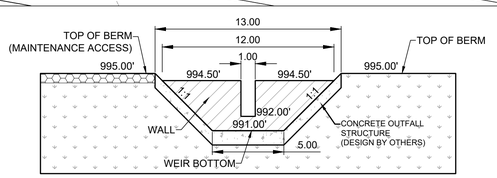
SHEET 38 OF 68

2024-XX-CON

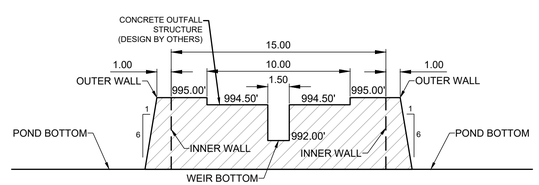
Plot Style: Landflow Global.ctb
Template LDC_C3D2022.DWT
P:\Bikes Maglen\Parkside Peninsula\03_ACAD\Plans\04\20\2006 POND B.dwg, POND B SECTIONS, August 30, 2024, 11:51 AM, maisa.mohammad







POND OUTFLOW STRUCTURE
SECTION C-C
SCALE 1:5



POND OUTFLOW STRUCTURE (WALL)
SECTION D-D
SCALE 1:5

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142536
LICENSED PROFESSIONAL ENGINEER

08/30/2024

POND B OUTLET STRUCTURE DETAILS

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

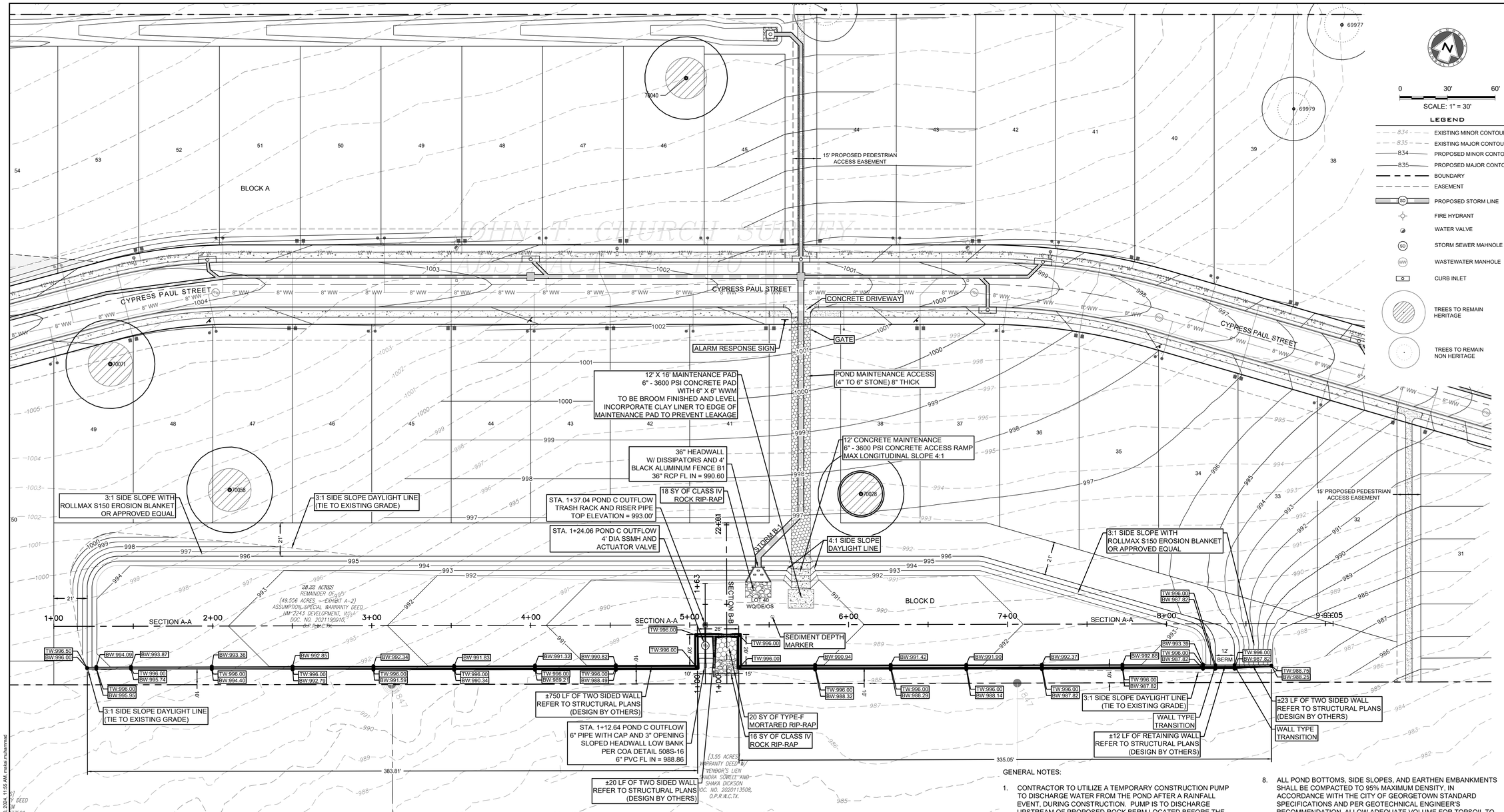
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 39 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Parks Edge\Parkside Peninsula\03_ACAD\Planset\D3\20305 POND B.dwg, POND B OUTLET STRUCTURE DETAILS, August 30, 2024, 11:51 AM, makai.muhammad



GENERAL NOTES:

1. CONTRACTOR TO UTILIZE A TEMPORARY CONSTRUCTION PUMP TO DISCHARGE WATER FROM THE POND AFTER A RAINFALL EVENT, DURING CONSTRUCTION. PUMP IS TO DISCHARGE UPSTREAM OF PROPOSED ROCK BERM LOCATED BEFORE THE CREEK BED. AT NO TIME SHALL THE PUMP BE DISCHARGED DIRECTLY INTO STORMSEWER SYSTEM BEFORE CROSSING A ROCK BERM.
2. 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. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO ROADS A MINIMUM OF ONCE DAILY.
3. ALL DISTURBED AREAS TO BE REVEGETATED PRIOR TO ACCEPTANCE.
4. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC ROADWAY.
6. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF GEORGETOWN RULES AND REGULATIONS. HOWEVER, MODIFICATIONS TO THE ENGINEERING DESIGN AND FUNCTIONS OF THE EROSION AND SEDIMENTATION CONTROLS SYSTEMS CONTAINED HERE IN IS STRICTLY FORBIDDEN WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE SIGNING PROJECT PROFESSIONAL ENGINEER (TAC22 §137.3 AND §137.37).
7. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER 1.4.5(A) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
8. ALL POND BOTTOMS, SIDE SLOPES, AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% MAXIMUM DENSITY, IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS AND PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. ALLOW ADEQUATE VOLUME FOR TOPSOIL TO SUPPORT VEGETATION.
9. GRADING WITHIN THE 1/2 CRITICAL ROOT ZONE OF PROTECTED TREES, IDENTIFIED BY A HATCH PATTERN ON THESE PLANS, SHALL BE LIMITED TO LESS THAN 12 INCHES OF DISTURBANCE. NO GRADING ACTIVITY WITH DISTURBANCE OF MORE THAN 6 INCHES IS ALLOWED IN THE 1/4 CRITICAL ROOT ZONE.
10. GRADING WORK WITHIN THE 1/2 CRITICAL ROOT ZONE OF ALL PROTECTED TREES SHALL BE DONE BY HAND OR WITH RUBBER TIRED EQUIPMENT.
11. ALL RETAINING WALLS GREATER THAN FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

DEWATERING PLAN NOTES:

1. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRECONSTRUCTION MEETING.
2. THE SKIMMER IS TO BE USED DURING CONSTRUCTION AND SHALL BE REMOVED AFTER COMPLETING CONSTRUCTION OF THE BATCH DETENTION POND.

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STATE OF TEXAS
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142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WATER QUALITY AND DETENTION POND C
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

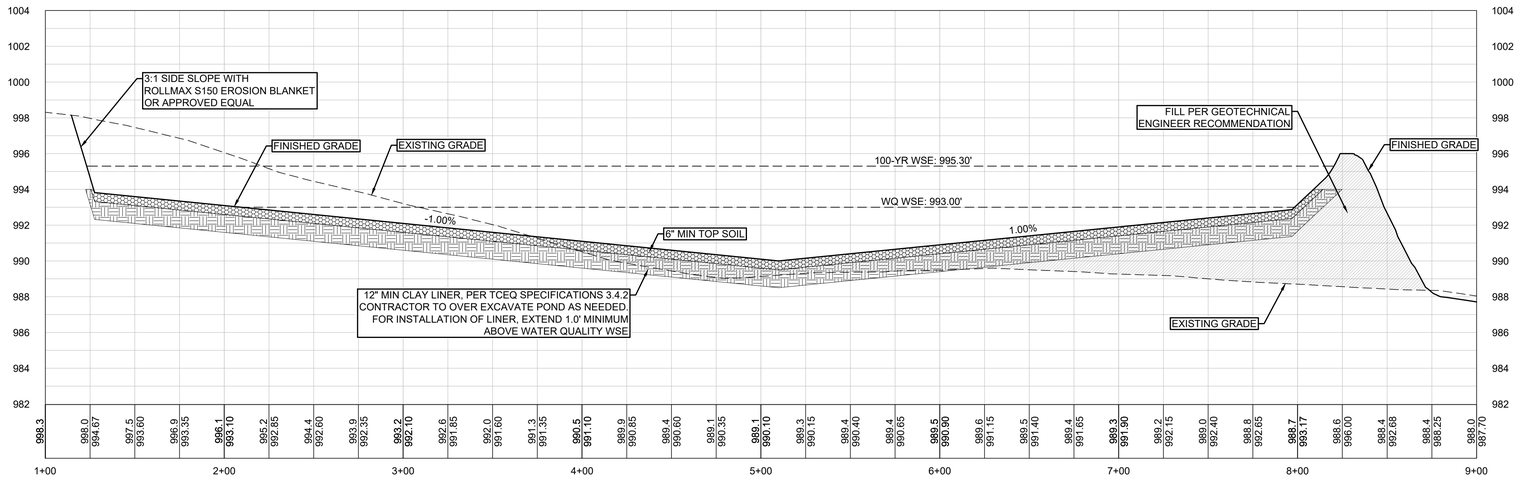
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 40 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_CS20222.DWT
P:\Data Ksigler\Parkside Peninsula\03_ACAD\Plansheets\20220506 POND C.dwg, WATER QUALITY AND DETENTION POND C, August 30, 2024, 11:56 AM, malak.muhammad

SECTION A-A

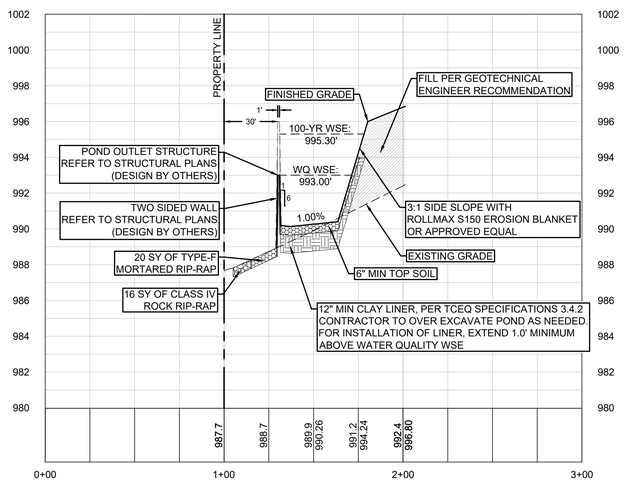


VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

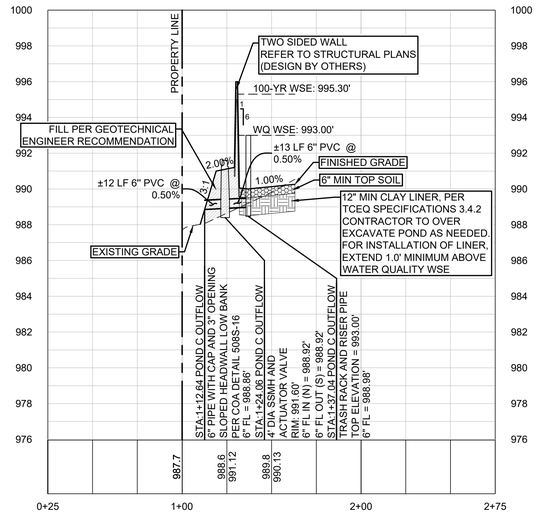
EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0
VERT. SCALE

SECTION B-B



POND C OUTFLOW



Pond C Volume							
Elevation	Area		Volume		Cumulative Volume		Comments
	SF	ac	cf	ac*ft	cf	ac*ft	
990	0	0.00					
991	8,581	0.20	4,291	0.10	4,291	0.10	Water Quality Volume
992	20,382	0.47	14,482	0.33	18,772	0.43	
993	31,641	0.73	26,012	0.60	44,784	1.03	
994	40,169	0.92	35,905	0.82	80,689	1.85	Detention
995	42,866	0.98	41,518	0.95	122,206	2.81	
996	45,359	1.04	44,113	1.01	166,319	3.82	Freeboard

OUTFLOW STRUCTURE	
Elevation	Flow
ft	cfs
993.00	0
993.50	4.8
994.00	13.5
994.50	26.9
995.00	44.2
995.50	64.4
996.00	90.8

$$Q = C_w L H^{1.5}$$

Q - *weir flow rate (cfs)*

C_w - *Weir Coefficient* SHARP: 3.00

L - *horizontal length of weir crest (ft)* SHARP: 4.5 FT / SHARP: 6.5 FT

H - *head above weir crest elevation (ft)*

DRAWDOWN CALCUATIONS FOR A ROUND ORIFICE

PROJECT NAME: PARKSIDE PENINSULA PHASE 3 - POND C

Pipe Diameter =	6.00	IN	W.Q.V. =	44,784	CF
Orifice Diameter =	3.00	IN	WQ Elev =	993.00	MSL
Outflow Orifice Elev =	988.86	MSL	Pond Bottom Elev =	990.00	MSL
Draining time	34.00	HR	Initial Head =	4.14	FT

TIME	HEAD	OUTFLOW	VOL.	dV	Total dV	H	dH	W.E.
HRS	FT	CFS	CF	CF	CF	FT	FT	MSL
0.00	4.14	0.48	44,784	1,731	1,731	0.12	4.02	993.00
1.00	4.02	0.47	43,053	1,707	3,438	0.11	3.91	992.88
2.00	3.91	0.47	41,346	1,682	5,121	0.11	3.80	992.77
3.00	3.80	0.46	39,663	1,658	6,779	0.11	3.69	992.66
4.00	3.69	0.45	38,005	1,634	8,412	0.11	3.58	992.55
5.00	3.58	0.45	36,372	1,609	10,021	0.11	3.47	992.44
6.00	3.47	0.44	34,763	1,585	11,606	0.11	3.36	992.33
7.00	3.36	0.43	33,178	1,560	13,166	0.10	3.26	992.22
8.00	3.26	0.43	31,618	1,536	14,702	0.10	3.16	992.12
9.00	3.16	0.42	30,082	1,511	16,213	0.10	3.05	992.02
10.00	3.05	0.41	28,571	1,487	17,700	0.10	2.95	991.91
11.00	2.95	0.41	27,084	1,462	19,163	0.10	2.86	991.81
12.00	2.86	0.40	25,621	1,438	20,601	0.10	2.76	991.72
13.00	2.76	0.39	24,183	1,414	22,015	0.09	2.67	991.62
14.00	2.67	0.39	22,769	1,389	23,404	0.09	2.57	991.53
15.00	2.57	0.38	21,380	1,365	24,768	0.09	2.48	991.43
16.00	2.48	0.37	20,016	1,340	26,108	0.09	2.39	991.34
17.00	2.39	0.37	18,676	1,316	27,424	0.09	2.30	991.25
18.00	2.30	0.36	17,360	1,291	28,715	0.09	2.22	991.16
19.00	2.22	0.35	16,069	1,267	29,982	0.08	2.13	991.08
20.00	2.13	0.35	14,802	1,242	31,224	0.08	2.05	990.99
21.00	2.05	0.34	13,560	1,218	32,442	0.08	1.97	990.91
22.00	1.97	0.33	12,342	1,193	33,635	0.08	1.89	990.83
23.00	1.89	0.32	11,149	1,169	34,804	0.08	1.81	990.75
24.00	1.81	0.32	9,980	1,144	35,949	0.08	1.73	990.67
25.00	1.73	0.31	8,835	1,120	37,068	0.08	1.66	990.59
26.00	1.66	0.30	7,716	1,095	38,164	0.07	1.58	990.52
27.00	1.58	0.30	6,620	1,071	39,234	0.07	1.51	990.44
28.00	1.51	0.29	5,550	1,046	40,280	0.07	1.44	990.37
29.00	1.44	0.28	4,504	1,022	41,302	0.07	1.37	990.30
30.00	1.37	0.28	3,482	997	42,299	0.07	1.31	990.23
31.00	1.31	0.27	2,485	973	43,272	0.07	1.24	990.17
32.00	1.24	0.26	1,512	948	44,220	0.06	1.18	990.10
33.00	1.18	0.26	564	923	44,784	0.06	1.14	990.04
34.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
35.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
36.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
37.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
38.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
39.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
40.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
41.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
42.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
43.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
44.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
45.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
46.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
47.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00
48.00	1.14	0.00	0	0	44,784	0.00	1.14	990.00

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08/30/2024

POND C SECTIONS

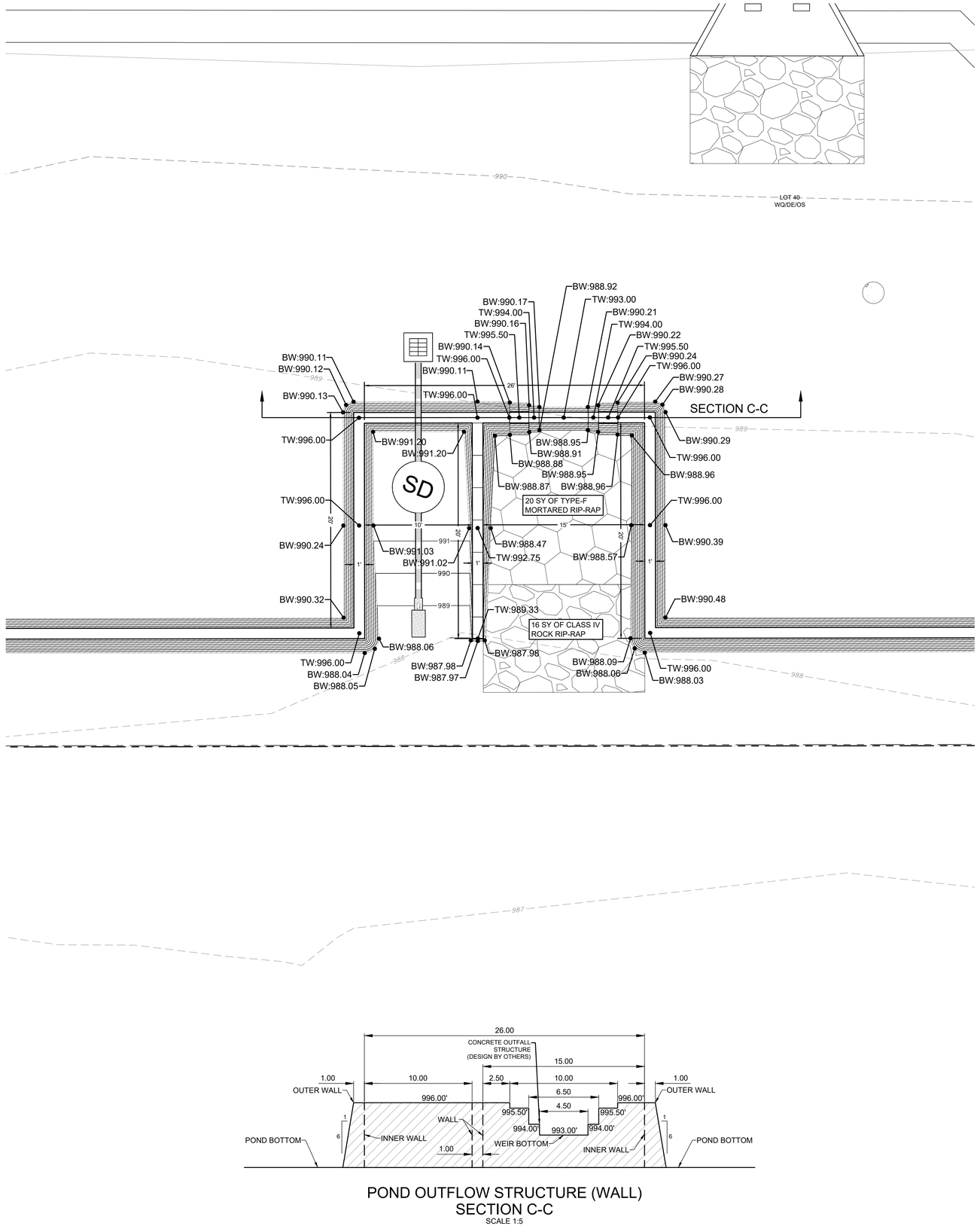
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 41 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template LDC_C3D2022.DWT
P:\Blue Mound\Parkside Peninsula\03_ACAD\Plans\04\20\2006 POND C.dwg, POND C SECTIONS, August 30, 2024, 11:56 AM, maisa.muhammad



POND OUTFLOW STRUCTURE (WALL)
SECTION C-C
SCALE 1:5

0 5' 10'
SCALE: 1" = 5'

NO.	REVISION	BY	DATE

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POND C OUTLET
STRUCTURE DETAILS

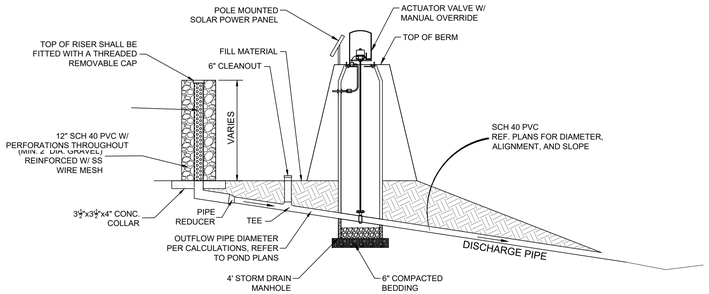
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

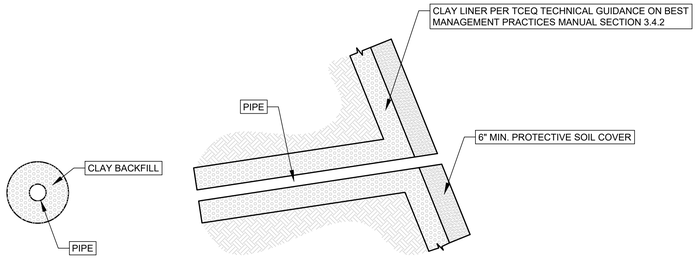
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 42 OF 68

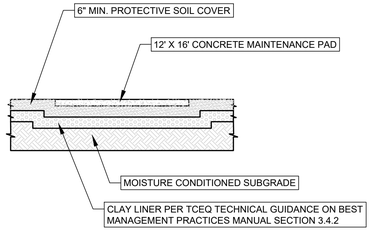
2024-XX-CON



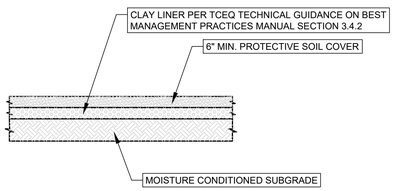
TRASH RACK AND ACTUATOR VALVE
N.T.S.



INTERBASIN PIPES DETAIL
N.T.S.



MAINTENANCE PAD INSTALLATION
N.T.S.

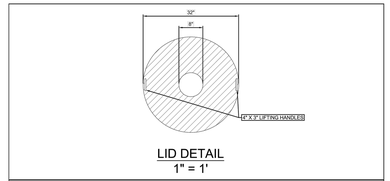


CLAY LINER INSTALLATION
N.T.S.

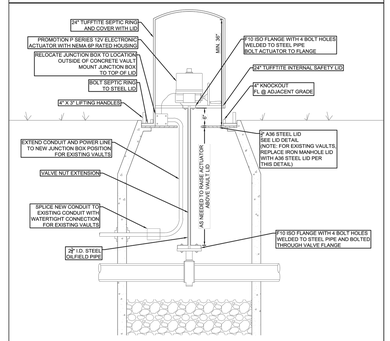
Table 3-6 Clay Liner Specifications (COA, 2004)

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

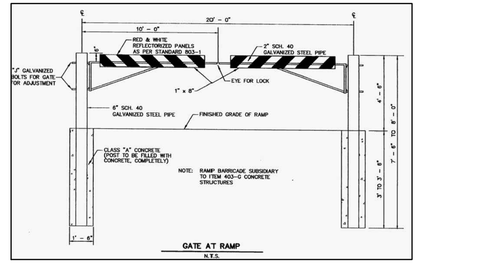
CLAY LINER SPECIFICATIONS PER TCEQ SPECIFICATIONS 3.4.2

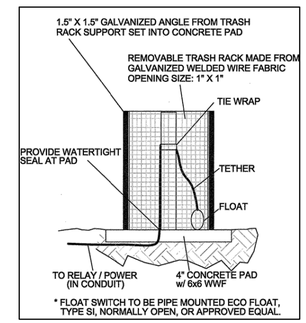


LID DETAIL
1" = 1'

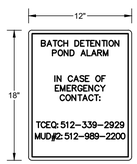


BATCH DETENTION ACTUATOR & VALVE DETAIL
1" = 1'

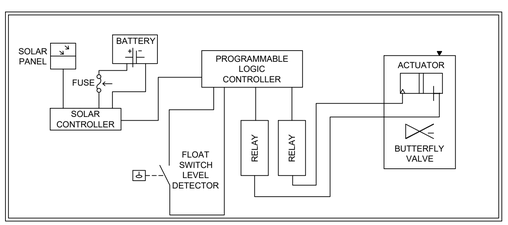




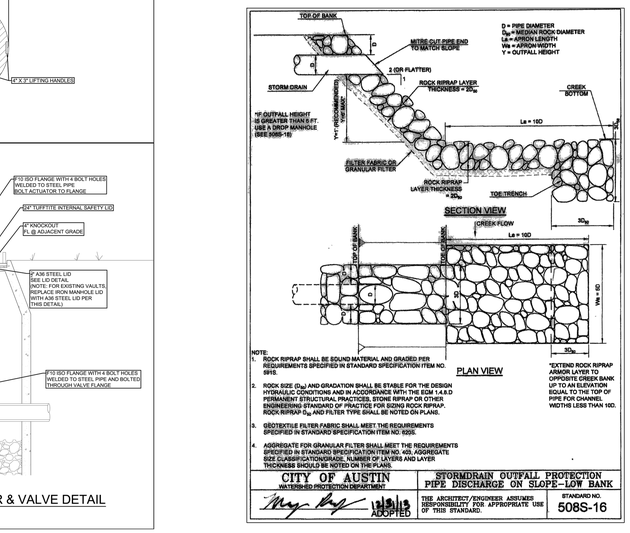
FLOAT SWITCH DETAIL

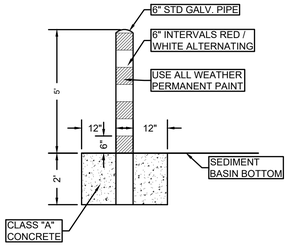


ALARM RESPONSE SIGN
N.T.S.



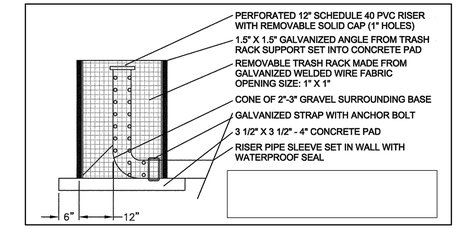
ACTUATOR VALVE POWER & CONTROLLER CIRCUIT BLOCK DIAGRAM





CONCRETE FILLED FIXED SEDIMENT MARKER FOR BATCH DETENTION POND
N.T.S.

NOTE:
1. BATCH DETENTION POND SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RG-348 MANUAL (ADDENDUM)
2. THE BATCH DETENTION POND AND RISER PIPE / TRASH RACK WILL FUNCTION AS THE DEWATERING OUTLET AND SHALL BE BE INSTALLED AND FUNCTIONAL PRIOR TO ANY GENERAL GRADING AND UTILITY WORK.
3. SYSTEM SHALL BE 12 VDC WITH SOLAR CHARGED 12 VDC BATTERY. ALTERNATE ELECTRICAL DESIGN MAY ALSO BE UTILIZED IN LIEU OF SOLAR POWER WITH ENGINEERS APPROVAL.
4. ACTUATOR SHALL BE ELECTRONIC QUARTER-TURN WITH MANUAL OVERRIDE AND POSITION INDICATOR.
5. ACTUATOR SHALL BE "AVID 12V ACTUATOR, EPI-6" OR EQUIVALENT.
6. ACTUATOR VALVE TO BE SET AT "NORMALLY CLOSED" POSITION.
7. CONTROLLER SHALL BE SET TO OPEN VALVE 12 HOURS AFTER INITIAL RAINFALL DETECTION. VALVE TO REMAIN OPEN UNTIL 2 HRS FOLLOWING BASIN EMPTY SIGNAL.
8. LOGIC CONTROLLER SYSTEM SHALL HAVE TEST SEQUENCE TO DEAL WITH LOW BATTERY/POWER OUTAGES, ON/OFF/RESET SWITCH AND THE PROGRAMMING SHALL BE FIELD UPLOADABLE.
9. CONTROLLER SHALL BE "MORNINGSTAR SOLAR CONTROLLER, 12V, 20 AMP" OR EQUIVALENT.
10. ALL WIRING SHALL BE INSTALLED IN CONDUIT AND BURIED. CONTACT ENGINEER FOR ADDITIONAL CONTROLLER SCHEMATICS.
11. CONTRACTOR TO INSTALL LIBERTY ALARM MODEL ALM-2W OR EQUIVALENT AT A CONTROLLER PANEL.
12. ATTACH ALARM RESPONSE SIGN TO CONTROLLER POLE. REFERENCE ALARM RESPONSE SIGN TO RIGHT.
13. HAZARDOUS MATERIAL THREAT (HMT) OPERATION - THE BASIN'S OUTLET VALVE IS NORMALLY CLOSED AND WILL DETAIN A HAZARDOUS MATERIAL SPILL. HOWEVER, AFTER A SPILL OCCURS, THE MANUAL CONTROLS ON THE CONTROLLER OR THE ACTUATOR/VALVE ARE USED TO PREVENT THE VALVE FROM AUTOMATICALLY OPENING PRIOR TO REMOVAL OF THE HAZARDOUS MATERIAL. ALTHOUGH NOT REQUIRED BY THE EDWARDS RULES, THE HMT OPERATION CAN BE USED TO COMPLY WITH APPENDIX A OF RG-348. IF A SPILL DOES OCCUR IN THE BASIN, ALL COMPONENTS OF THE CONTROLLER MUST BE INSPECTED AND CHECKED FOR PROPER OPERATION WITHIN 7 DAYS.
14. POWER - THE POND CONTROL SYSTEM CONTROLLER AND ACTUATOR SHALL BE 12 VOLT POWERED OR 12 VOLT SOLAR POWERED WITH BACKUP BATTERY POWER TO RESPOND TO A LOSS OF POWER IN THE MIDDLE OF A CYCLE.
15. PARTS ENCLOSURE & ALARM SYSTEM - THE PARTS ENCLOSURE SHALL BE LOCKABLE. AN ALARM SYSTEM CLEARLY VISIBLE TO INDICATE SYSTEM MALFUNCTION.
16. TEMPERATURE/WEATHER - THE SYSTEM SHALL BE CAPABLE OF OPERATION FROM 0 TO 130 DEGREES FAHRENHEIT AND FROM 10 TO 90% HUMIDITY.
17. RELIABILITY - THE SYSTEM SHALL HAVE A MINIMUM RELIABILITY OF 40,000 HOURS (4.6 YEARS).



TRASH RACK / RISER PIPE DETAIL
N.T.S.

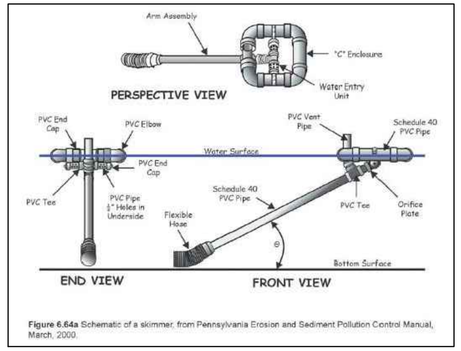
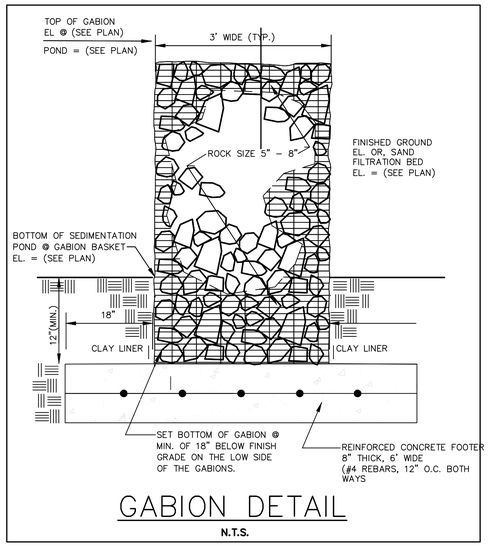


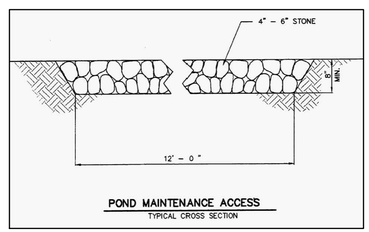
Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

DEWATERING SKIMMER
N.T.S.

NOTE: DISCHARGE WATER MUST BE FILTERED USING FILTER BAG OR SOCK. DISCHARGE SHALL ALSO BE DIRECTED TOWARD SILT FENCE FOR ADDITIONAL FILTERING PRIOR TO LEAVING THE SITE.



GABION DETAIL
N.T.S.



POND MAINTENANCE ACCESS
TYPICAL CROSS SECTION

NO.	BY	DATE	REVISION

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

POND DETAILS

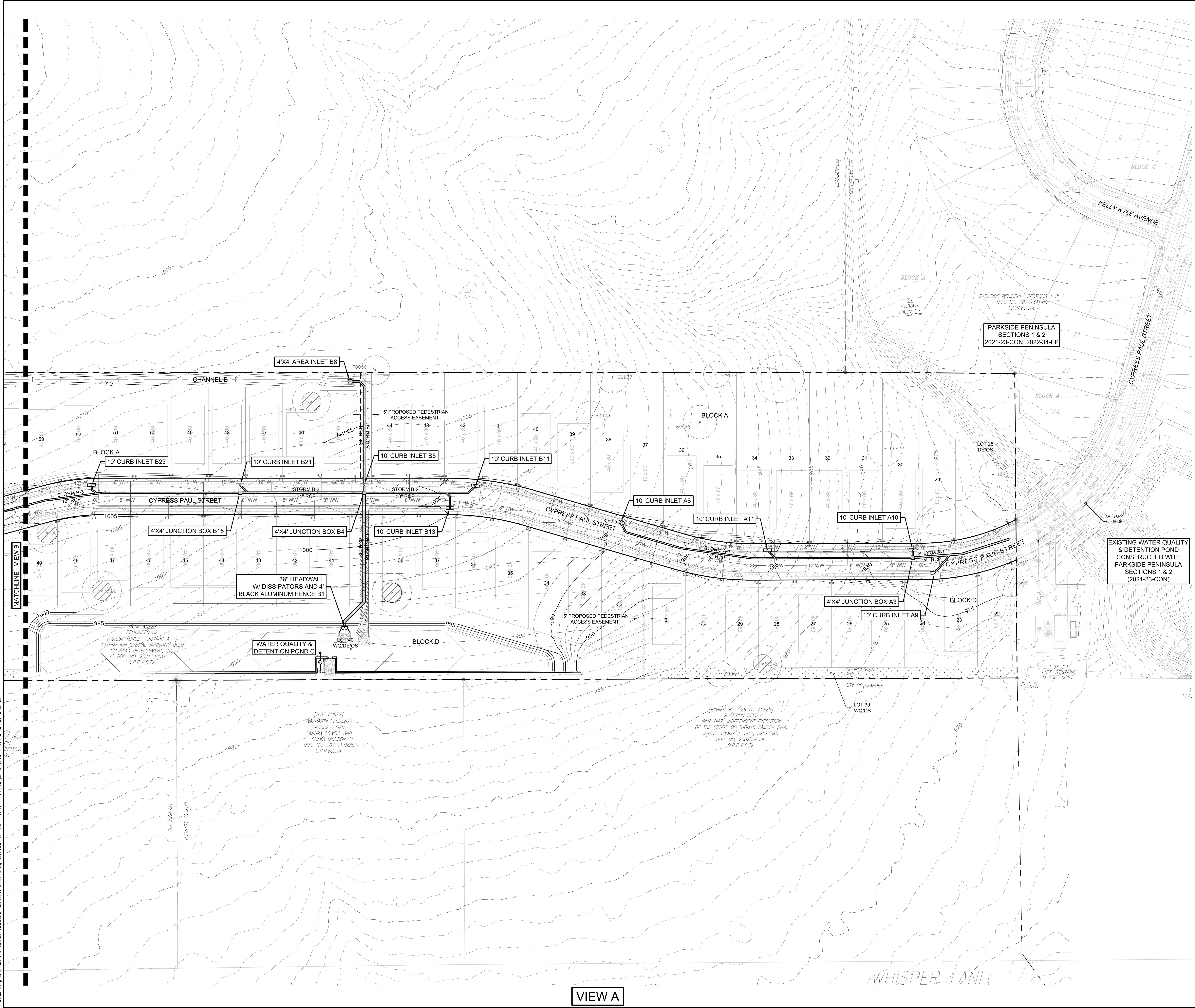
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 43 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Black Maple\Parkside Peninsula\03_ACAD\Planset\2024\08\30\08 POND C.dwg, POND DETAILS, August 30, 2024, 11:55 AM, malia.muhammad



VIEW A

0 60' 120'

SCALE: 1" = 60'

LEGEND

834	EXISTING MINOR CONTOUR
835	EXISTING MAJOR CONTOUR
834	PROPOSED MINOR CONTOUR
835	PROPOSED MAJOR CONTOUR
	BOUNDARY
	EASEMENT
SD	PROPOSED STORM LINE
	FIRE HYDRANT
	WATER VALVE
SD	STORM SEWER MANHOLE
WW	WASTEWATER MANHOLE
	CURB INLET
	TREES TO REMAIN HERITAGE
	TREES TO REMAIN NON HERITAGE

NOTE:

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3. VEGETATE ALL DISTURBED AREAS WITHIN THE ROW AND OPEN SPACE LOT AREAS PER CITY OF GEORGETOWN SPECIFICATIONS.

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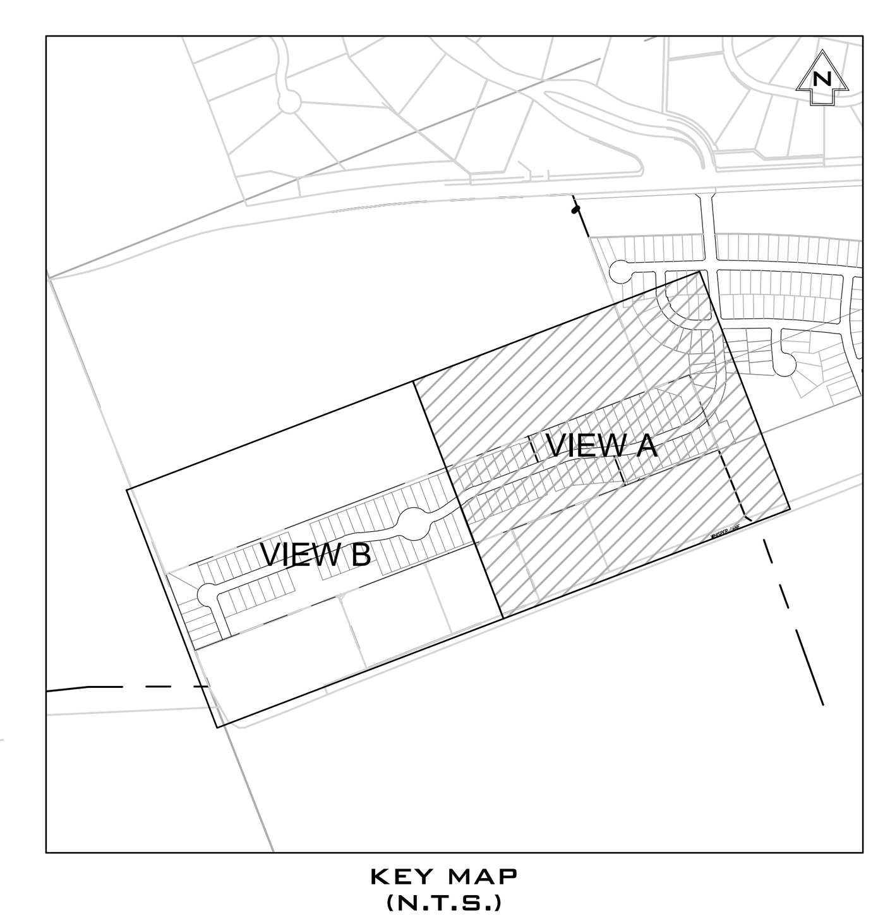

KEY MAP
(N.T.S.)

NO	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

OVERALL STORM SEWER PLAN A

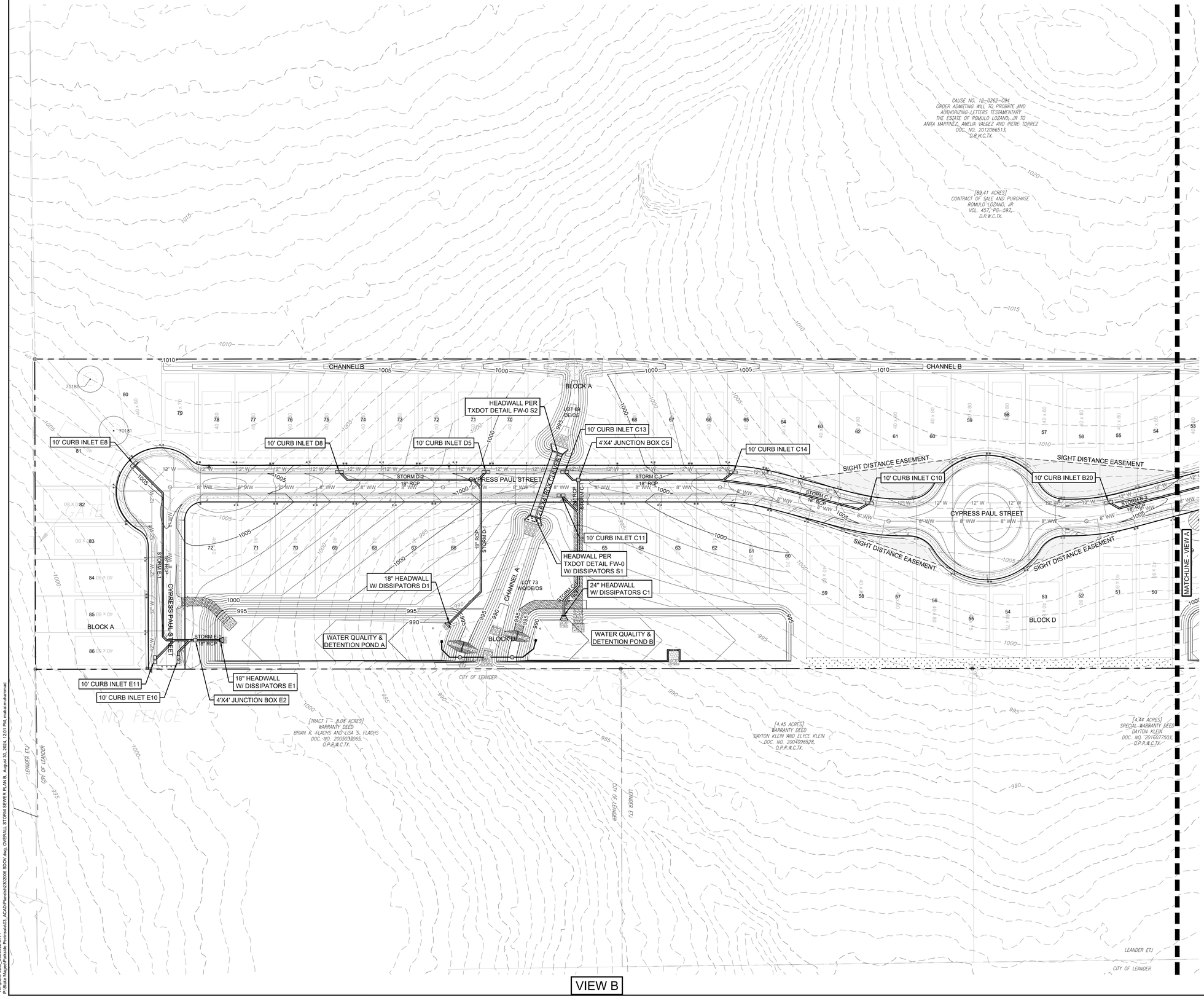
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 44 OF 68

2024-XX-CON



0 60' 120'

SCALE: 1" = 60'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
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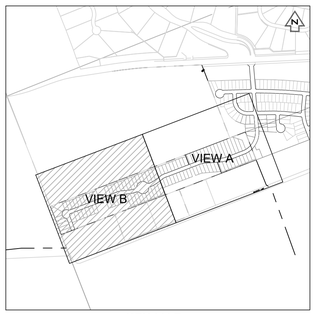

KEY MAP (N.T.S.)

NO.	REVISION	BY	DATE

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OVERALL STORM SEWER PLAN B

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 45 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
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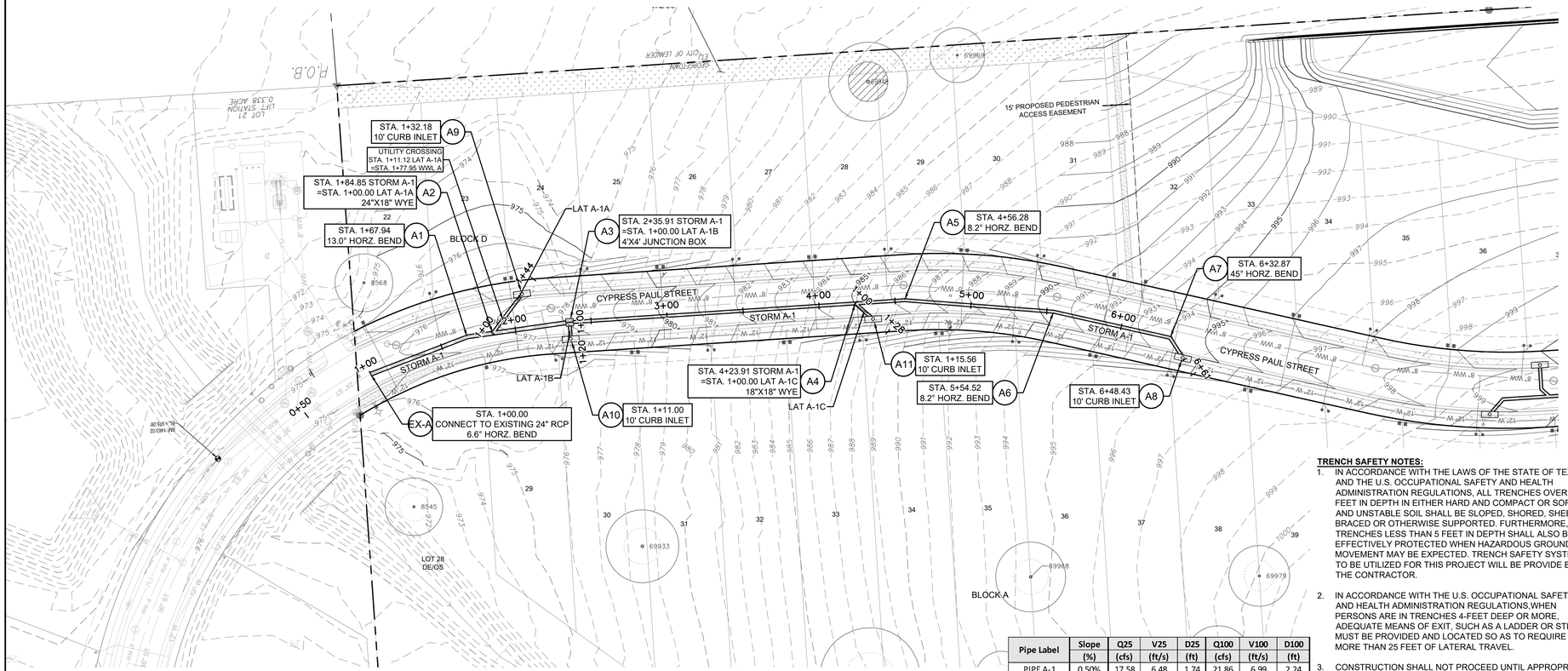

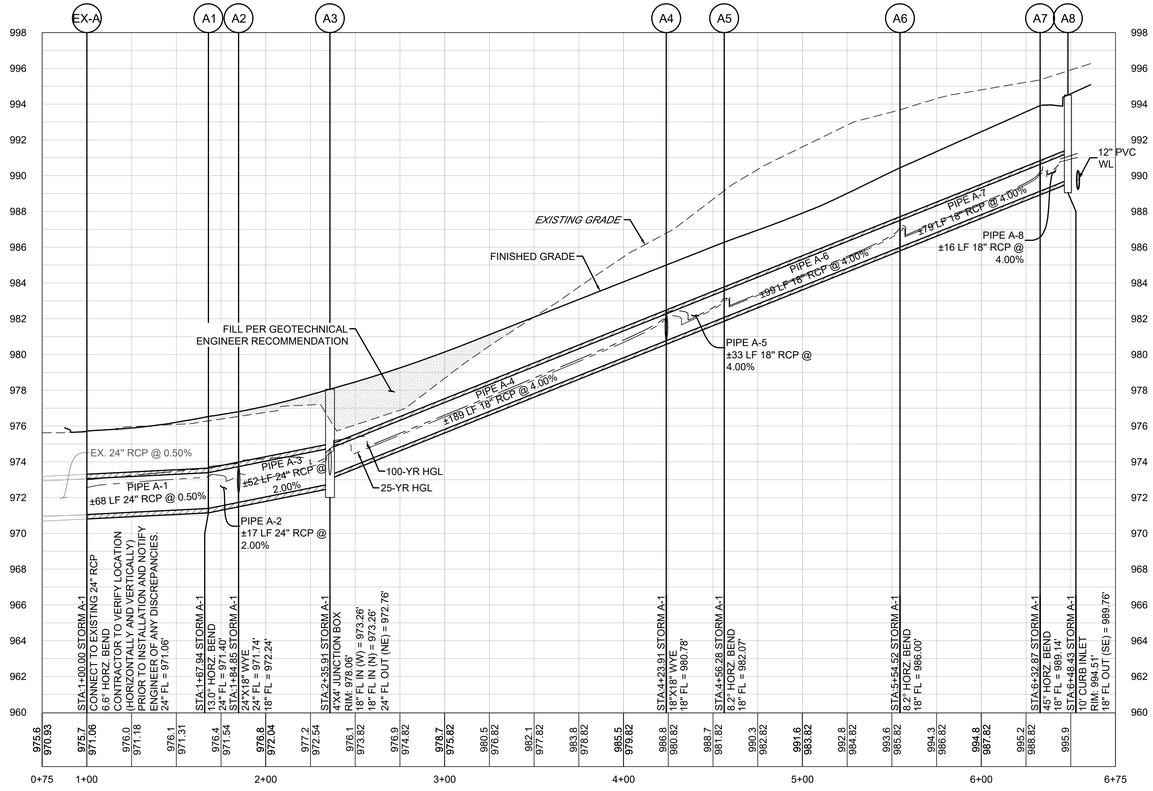

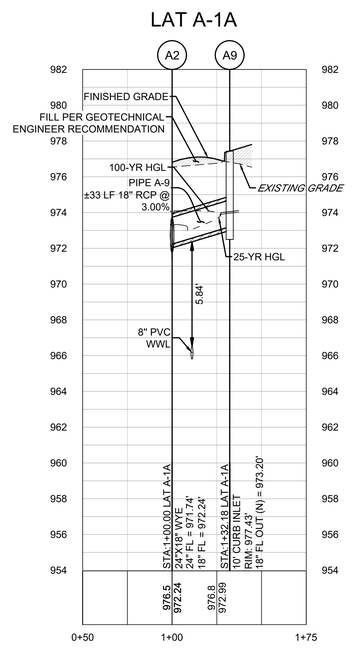

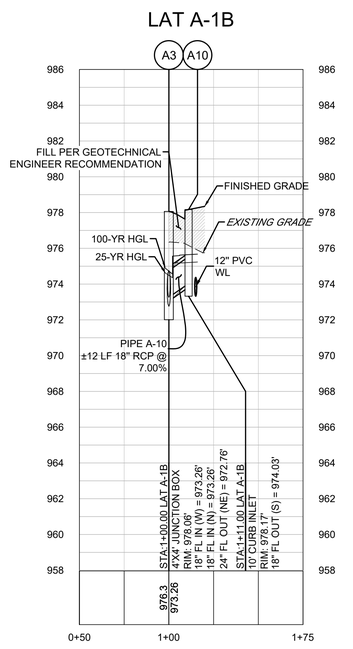

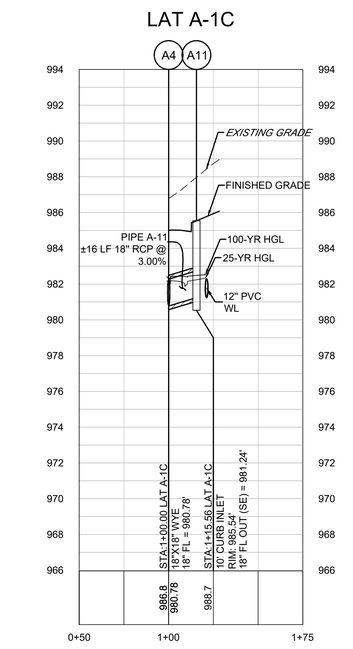

Pipe Label	Slope	Q25	V25	D25	Q100	V100	D100
	(%)	(cfs)	(ft/s)	(ft)	(cfs)	(ft/s)	(ft)
PIPE A-1	0.50%	17.58	6.48	1.74	21.86	6.99	2.24
PIPE A-2	2.00%	17.58	6.31	1.89	21.86	6.96	2.35
PIPE A-3	2.00%	14.59	5.87	1.60	18.19	6.41	2.35
PIPE A-4	4.00%	9.98	6.07	1.69	12.49	7.30	1.93
PIPE A-5	4.00%	5.39	4.02	1.41	6.82	4.62	1.65
PIPE A-6	4.00%	5.39	4.43	1.08	6.82	4.90	1.23
PIPE A-7	4.00%	5.39	4.43	1.08	6.82	4.90	1.23
PIPE A-8	4.00%	5.39	4.21	1.21	6.82	4.70	1.38
PIPE A-9	3.00%	2.99	3.08	1.10	3.67	3.19	1.85
PIPE A-10	7.00%	4.61	2.95	1.92	5.70	3.23	2.30
PIPE A-11	3.00%	4.59	3.65	1.41	5.67	3.56	1.65

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0 40' 80'

SCALE: 1" = 40'

LEGEND

- 834 — EXISTING MINOR CONTOUR
- 835 — EXISTING MAJOR CONTOUR
- 834 — PROPOSED MINOR CONTOUR
- 835 — PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- SD — PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- SD — STORM SEWER MAHNOLE
- WW — WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

4' 2' 0 VERT. SCALE

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 997.10 PROPOSED FLOWLINE

NOTE:

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NO	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM A-1 & LATERALS PLAN & PROFILE

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

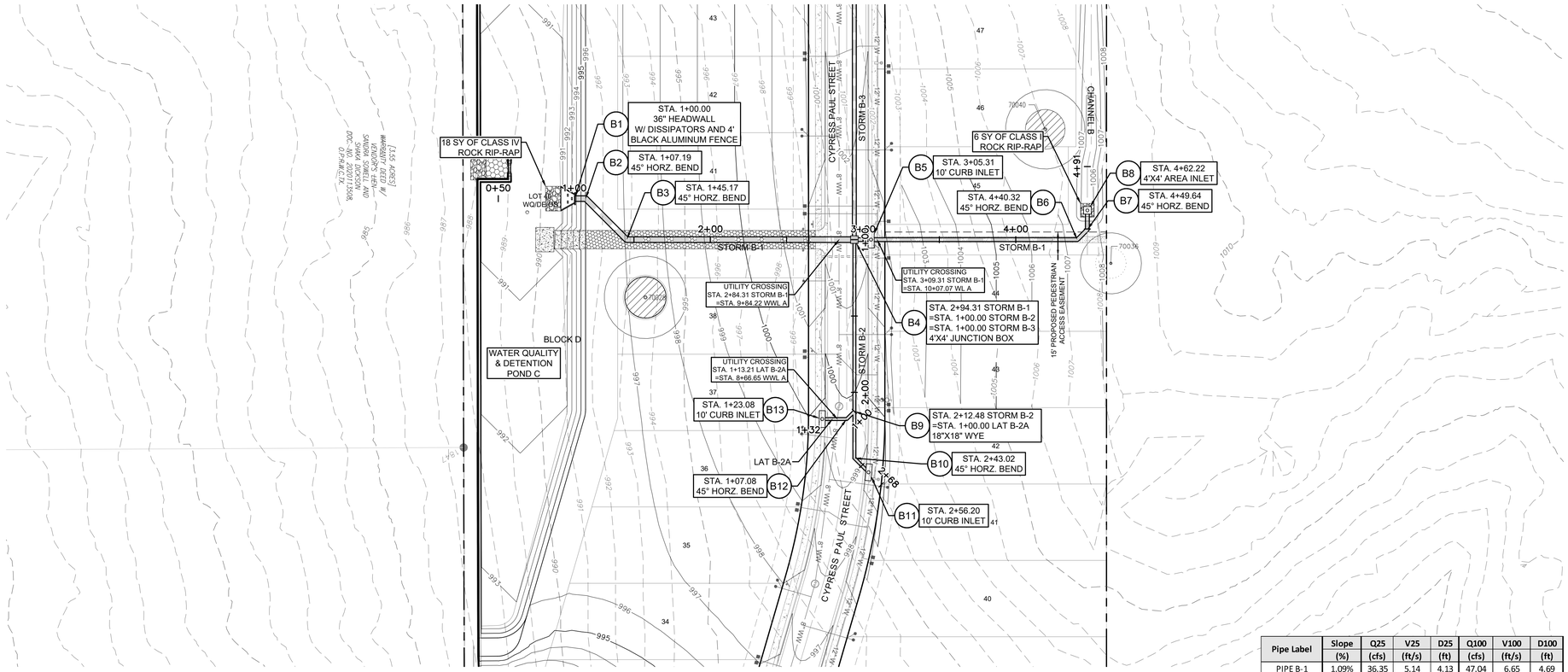
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 46 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\03_ACAD\Panels\20200906 SDPP STORM A-1.dwg, STORM A-1 & LATERALS PLAN & PROFILE, August 30, 2024, 12:05 PM, nataliemhammed



Pipe Label	Slope	Q25	V25	D25	Q100	V100	D100
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PIPE B-1	1.09%	36.35	5.14	4.13	47.04	6.65	4.69
PIPE B-2	1.09%	36.35	5.14	4.23	47.04	6.65	4.91
PIPE B-3	1.09%	36.35	5.17	4.08	47.04	6.65	4.94
PIPE B-4	2.75%	13.78	7.25	1.34	18.83	8.12	1.56
PIPE B-5	2.75%	9.85	4.28	2.11	13.92	5.32	2.52
PIPE B-6	2.75%	9.85	4.64	1.52	13.92	5.37	1.83
PIPE B-7	2.75%	9.85	4.64	1.52	13.92	5.42	1.82
PIPE B-8	0.50%	8.60	4.87	1.93	10.75	6.08	3.93
PIPE B-9	0.50%	4.30	2.43	2.08	5.46	3.09	4.16
PIPE B-10	0.50%	4.30	2.43	2.01	5.46	3.09	4.14
PIPE B-11	3.50%	4.30	2.43	2.08	5.29	2.99	4.16
PIPE B-12	3.50%	4.30	2.51	1.88	5.29	2.99	3.98

0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
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- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

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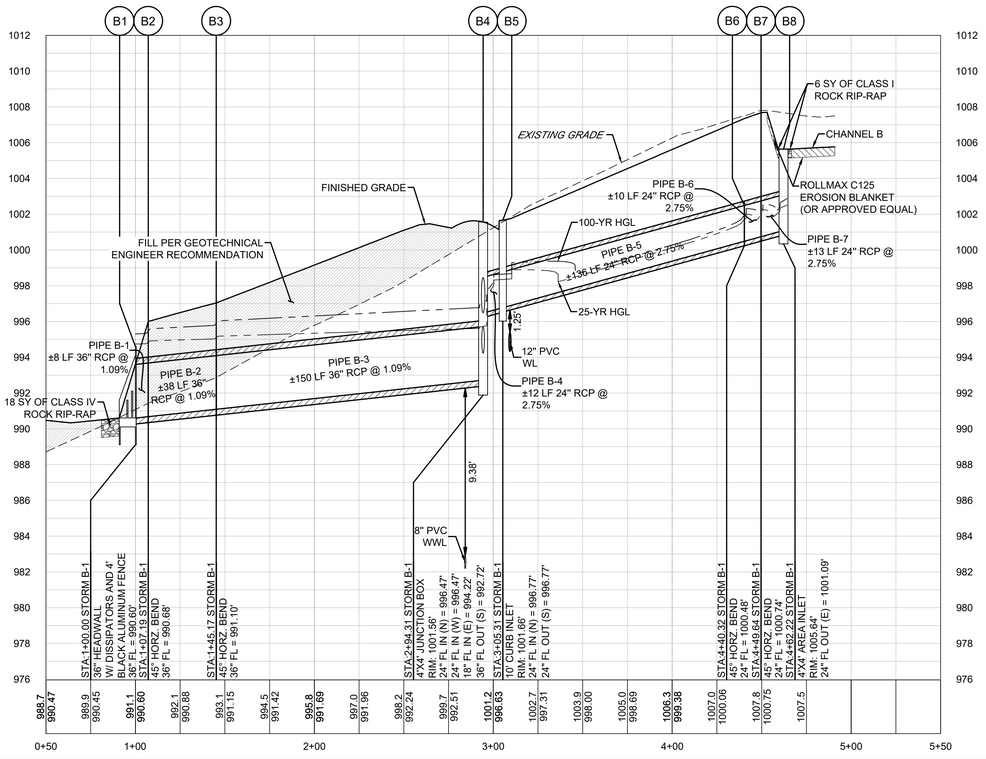
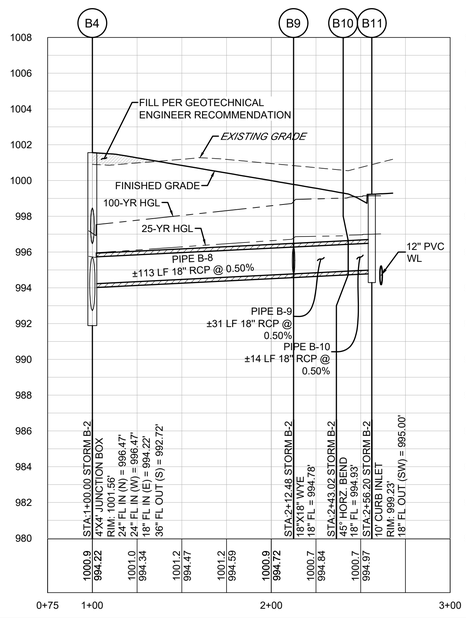
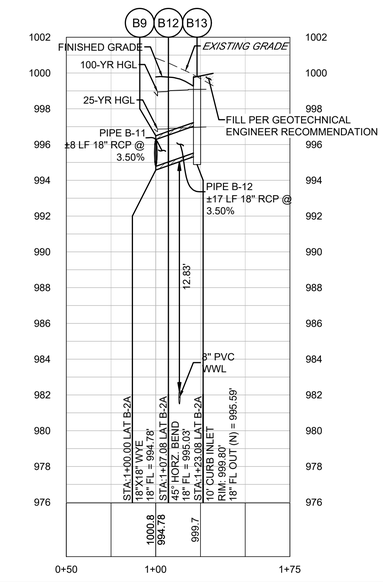
STORM B-1



STORM B-2



LAT B-2A



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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM B-1, STORM B-2 & LAT B-2A PLAN & PROFILE

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

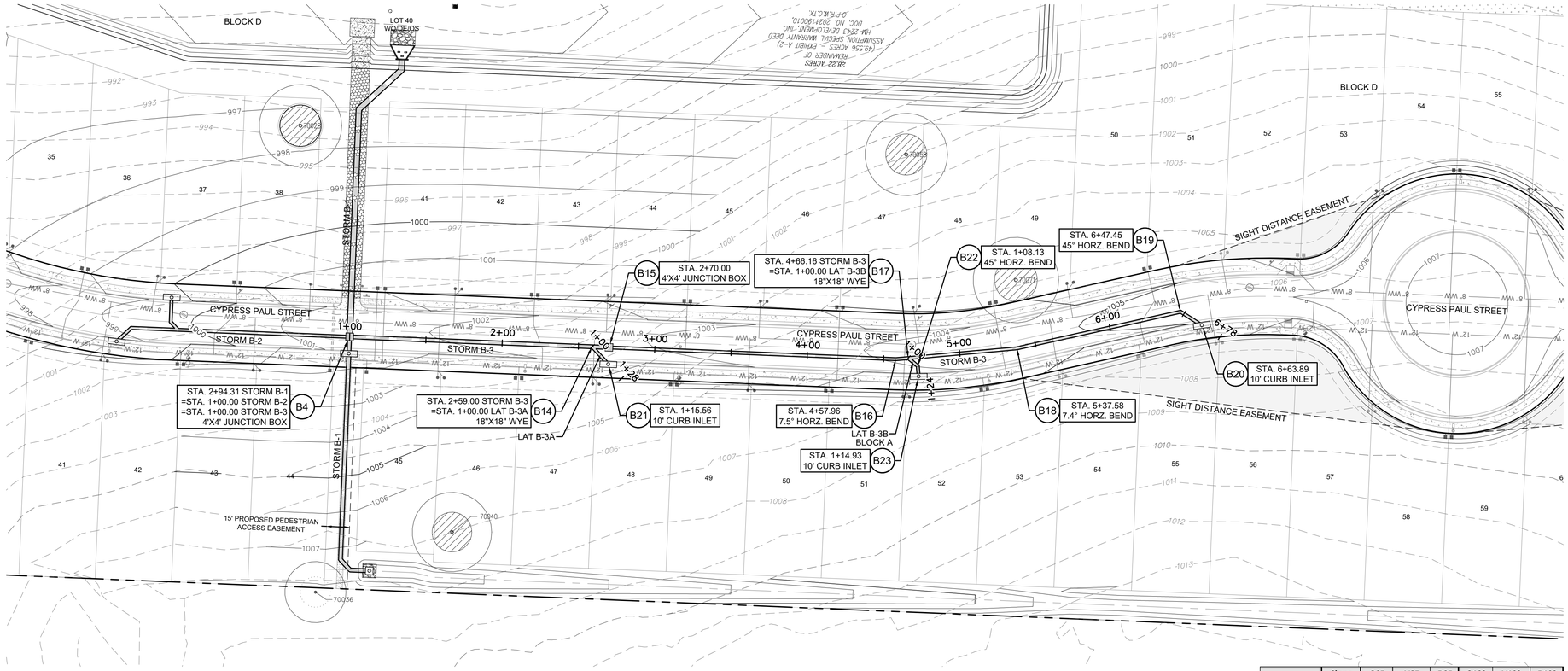
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 47 OF 68

2024-XX-CON

NO. | REVISION | BY | DATE

P:\Blue Mope\Parkside Peninsula\03_ACAD\Planset\030006 SDPP STORM B-1.dwg, STORM B-1, STORM B-2 & LAT B-2A PLAN & PROFILE, August 30, 2024, 12:09 PM, nadan.muhammad



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

4' 2' 0 VERT. SCALE

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

Pipe Label	Slope (%)	Q25 (cfs)	V25 (ft/s)	D25 (ft)	Q100 (cfs)	V100 (ft/s)	D100 (ft)
PIPE B-13	0.70%	13.97	6.41	1.35	17.46	6.85	1.51
PIPE B-14	0.70%	9.21	4.24	1.35	11.54	4.43	1.58
PIPE B-15	0.70%	9.21	5.65	1.30	11.54	6.82	2.34
PIPE B-16	0.70%	9.21	5.29	1.44	11.54	6.53	2.48
PIPE B-17	0.70%	4.25	2.64	1.59	5.33	3.02	2.73
PIPE B-18	0.70%	4.25	3.66	1.19	5.33	3.02	2.44
PIPE B-19	0.70%	4.25	3.40	1.07	5.33	3.02	2.00
PIPE B-20	3.75%	4.76	4.63	0.85	5.92	4.71	1.08
PIPE B-21	3.75%	4.96	2.95	1.59	6.21	3.51	2.73
PIPE B-22	3.75%	4.96	3.46	1.35	6.21	3.51	2.53

NOTE:

1. ALL PROPOSED STORM SEWER PIPE LINES SHALL BE CLASS III REINFORCED CONCRETE UNLESS NOTED OTHERWISE.
2. FILL SHALL BE PLACED ACCORDING TO THE GEOTECHNICAL ENGINEERS RECOMMENDATION AND CITY OF GEORGETOWN SPECIFICATIONS.
3. VEGETATE ALL DISTURBED AREAS WITHIN THE ROW AND OPEN SPACE LOT AREAS PER CITY OF GEORGETOWN SPECIFICATIONS.

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDE BY THE CONTRACTOR.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS,WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
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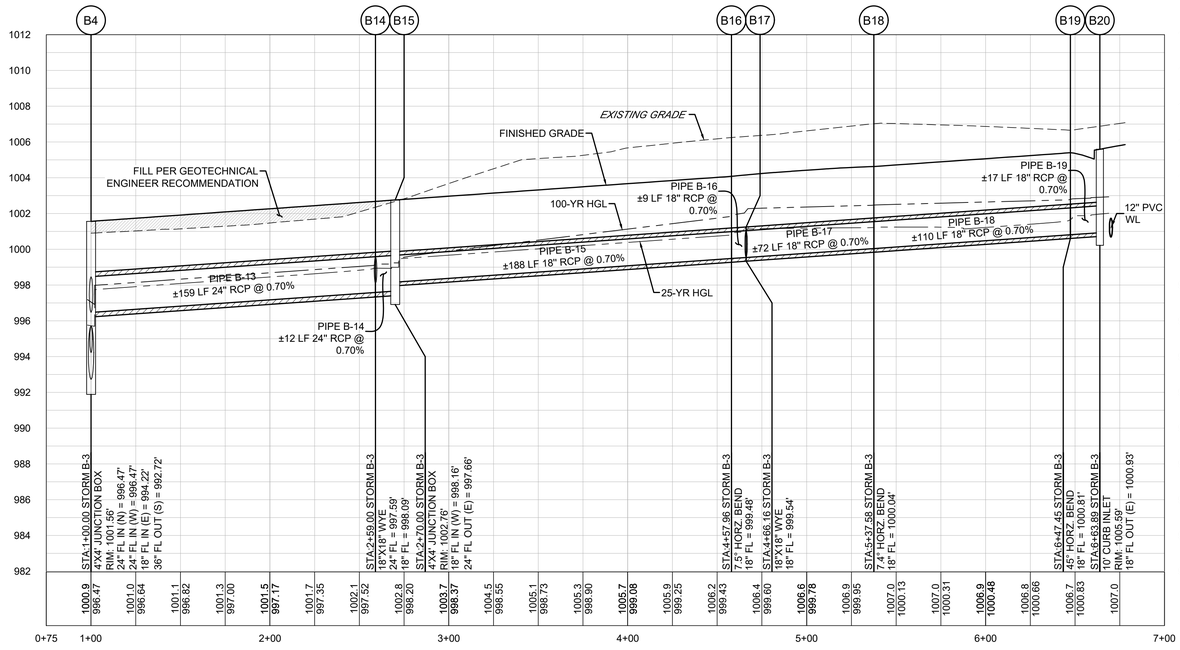
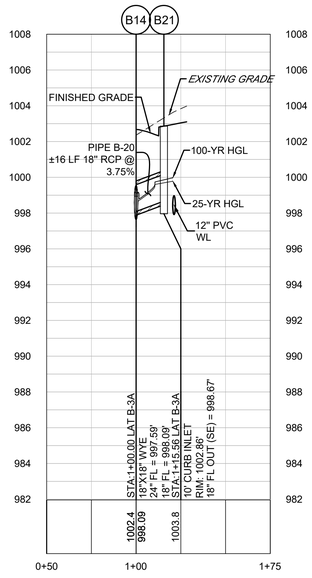
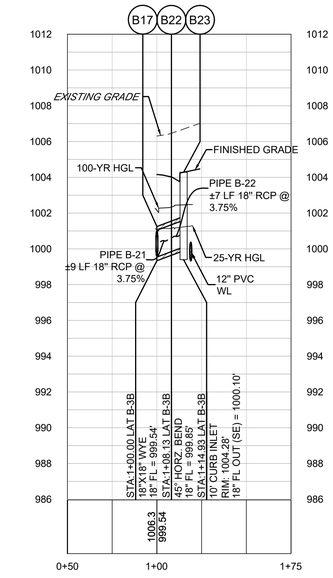
STORM B-3



LAT B-3A



LAT B-3B



DATE	BY	REVISION	NO

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

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM B-3 & LATERALS PLAN & PROFILE

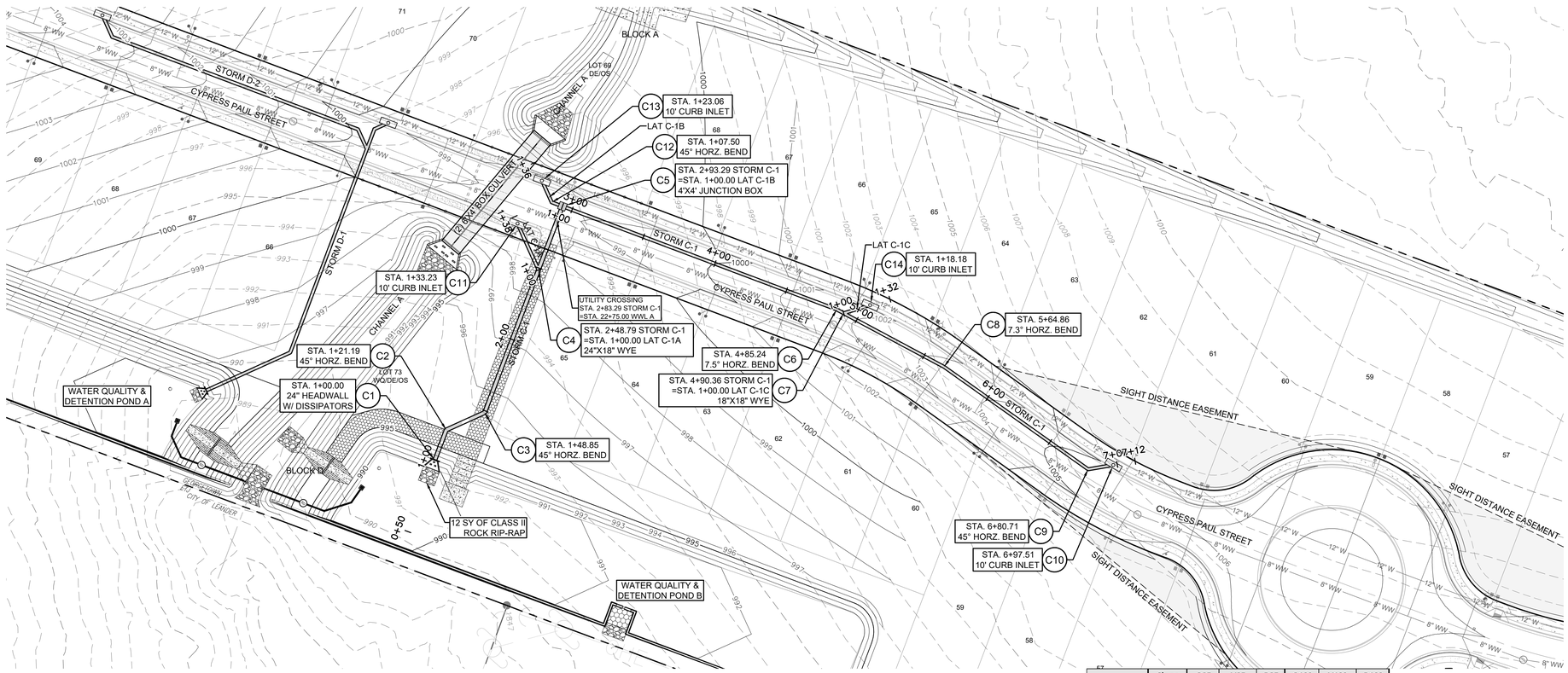
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 48 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\01_ACAD\Parkside\202005 SDP\ STORM B-3.dwg, STORM B-3 & LATERALS PLAN & PROFILE - August 30, 2024, 12:12 PM, mabarrahammad



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

Pipe Label	Slope	Q25	V25	D25	Q100	V100	D100
	(%)	(cfs)	(ft/s)	(ft)	(cfs)	(ft/s)	(ft)
PIPE C-1	1.98%	18.71	5.96	3.56	23.28	7.41	4.05
PIPE C-2	1.98%	18.71	5.96	3.49	23.28	7.41	4.17
PIPE C-3	1.98%	18.71	5.96	3.34	23.28	7.41	4.23
PIPE C-4	1.98%	13.54	5.22	2.20	16.92	5.39	3.55
PIPE C-5	1.75%	9.14	5.68	1.99	11.47	6.49	2.85
PIPE C-6	1.75%	9.14	5.43	1.42	11.47	6.49	1.88
PIPE C-7	1.75%	4.20	3.44	1.47	5.27	3.92	2.10
PIPE C-8	1.75%	4.20	4.04	0.94	5.27	4.39	1.07
PIPE C-9	1.75%	4.20	3.82	1.06	5.27	4.17	1.20
PIPE C-10	5.50%	5.17	3.88	1.70	6.36	3.74	3.05
PIPE C-11	1.00%	4.40	2.49	2.18	5.45	3.08	3.15
PIPE C-12	1.00%	4.40	2.49	2.16	5.45	3.08	3.15
PIPE C-13	0.87%	4.94	2.90	1.47	6.20	3.51	2.10

NOTE:
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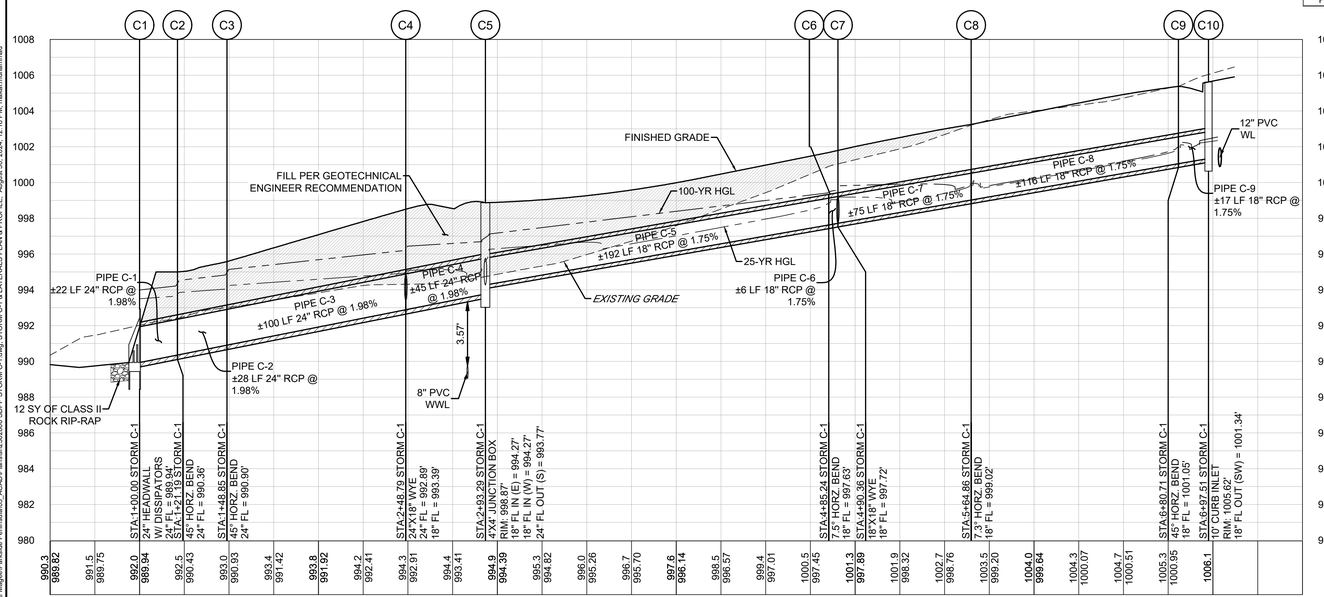
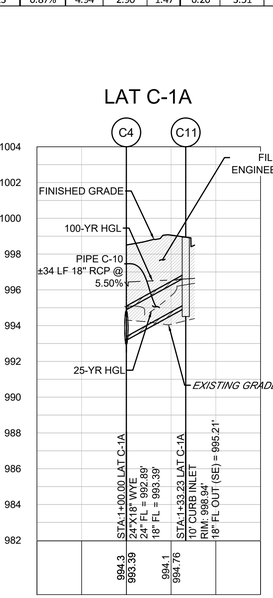
STORM C-1



LAT C-1A



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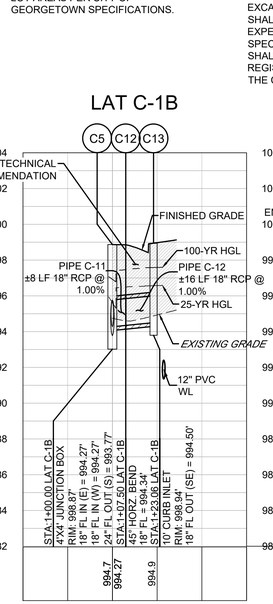
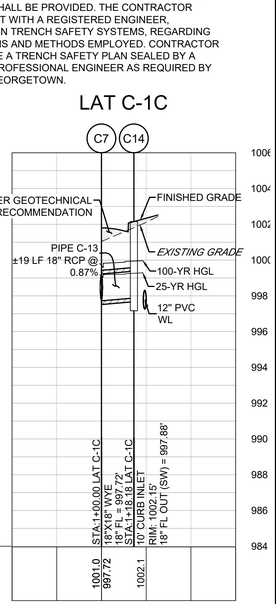


LAT C-1C



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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM C-1 & LATERALS PLAN & PROFILE

PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

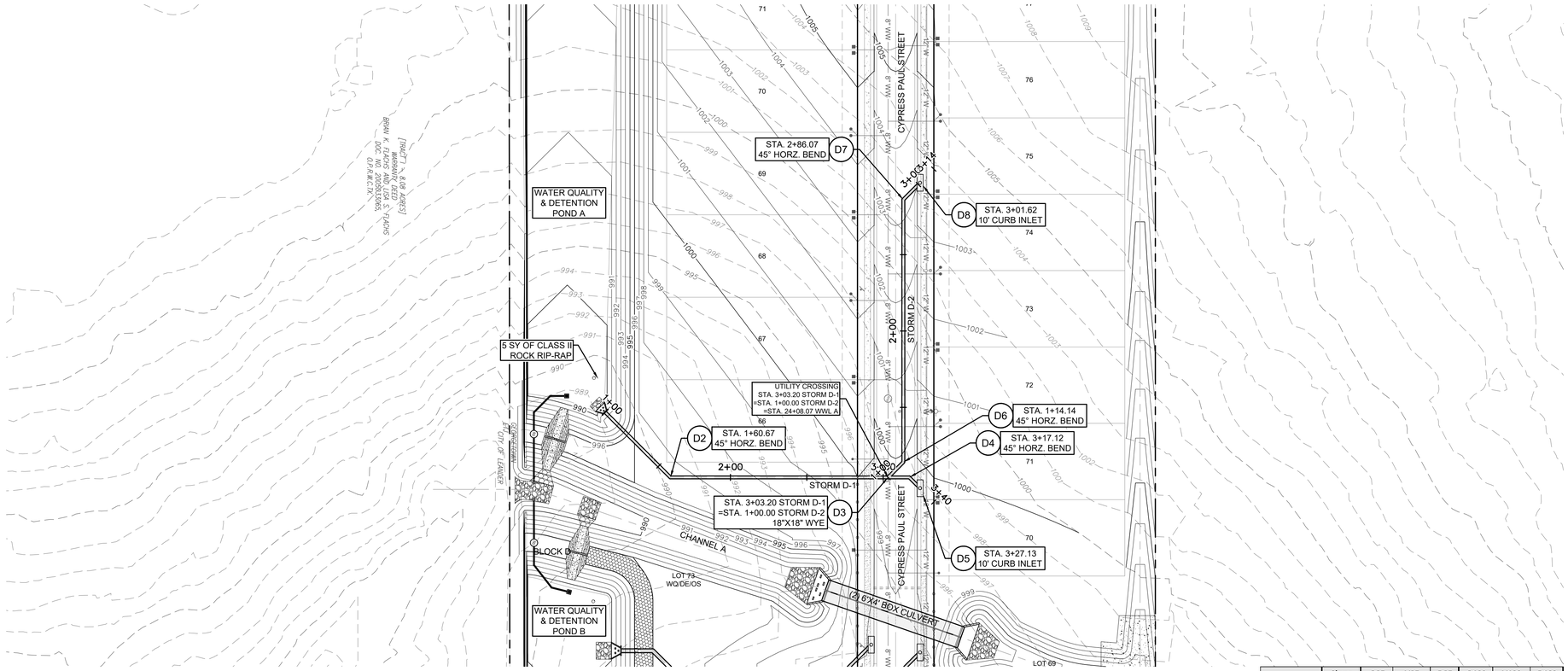
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 49 OF 68

2024-XX-CON

NO	DATE	BY	REVISION

P:\Blake Magee\Parkside Peninsula\03_ACAD\Parkside\202009S SDP\P STORM C-1.dwg, STORM C-1 & LATERALS PLAN & PROFILE, August 30, 2024, 12:16 PM, mekai.muhammad



LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

- EXISTING GRADE - CENTERLINE
- FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 997.10 PROPOSED FLOWLINE

Pipe Label	Slope (%)	Q25 (cfs)	V25 (ft/s)	D25 (ft)	Q100 (cfs)	V100 (ft/s)	D100 (ft)
PIPE D-1	2.70%	8.78	4.97	4.80	10.90	6.17	5.59
PIPE D-2	2.70%	8.78	5.51	3.73	10.90	6.17	4.82
PIPE D-3	2.70%	4.72	3.81	1.27	5.86	3.32	2.75
PIPE D-4	2.70%	4.72	3.99	1.13	5.86	3.32	2.48
PIPE D-5	2.00%	4.06	3.05	1.27	5.04	2.85	2.75
PIPE D-6	2.00%	4.06	3.77	1.04	5.04	3.82	2.55
PIPE D-7	2.00%	4.06	3.77	1.04	5.04	4.10	1.17

NOTE:

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2. FILL SHALL BE PLACED ACCORDING TO THE GEOTECHNICAL ENGINEERS RECOMMENDATION AND CITY OF GEORGETOWN SPECIFICATIONS.
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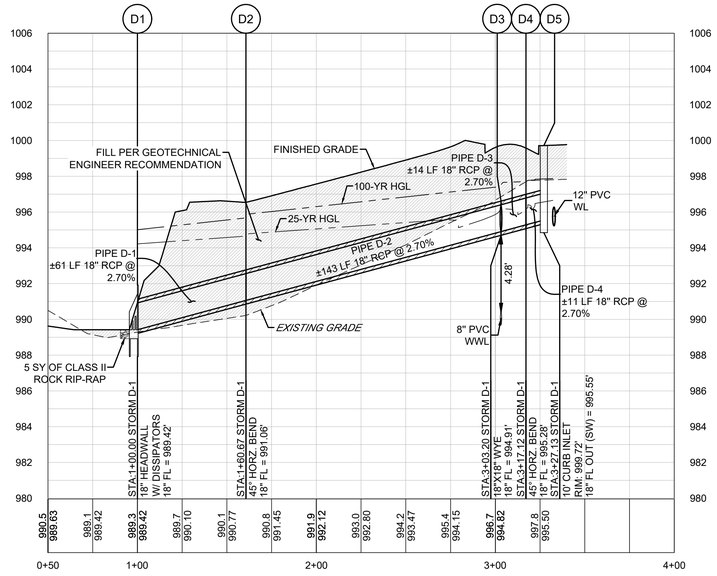
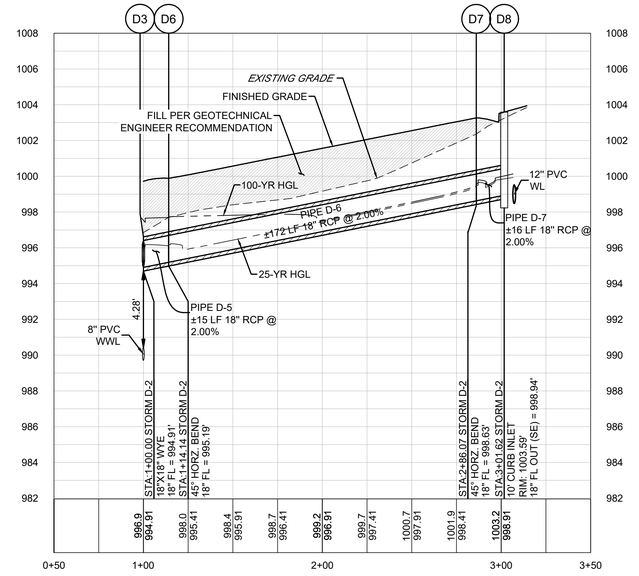
STORM D-1



STORM D-2



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STATE OF TEXAS
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142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM D-1 & STORM D-2 PLAN & PROFILE

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

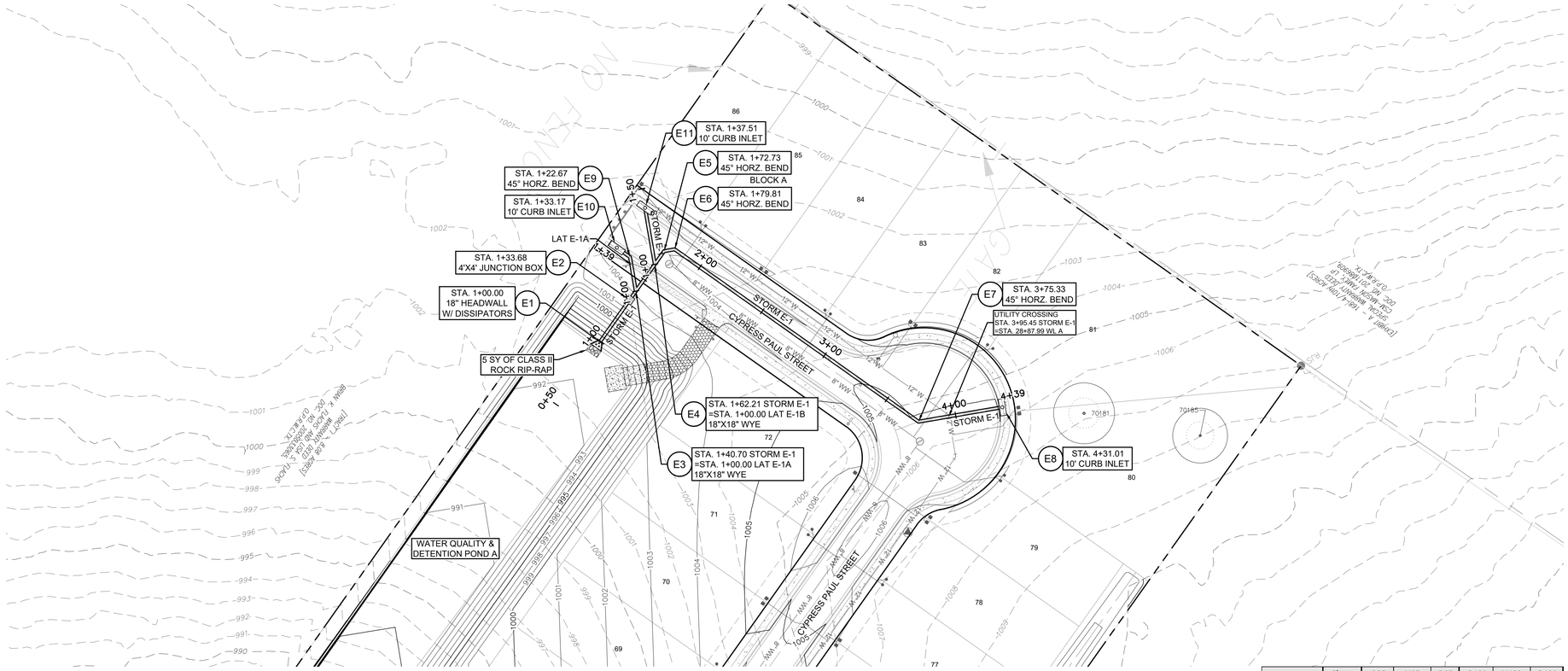
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 50 OF 68

2024-XX-CON

NO.	REVISION	BY	DATE

P:\Blake Magee\Parkside Peninsula\03_ACAD\Parkside\200206 SEPP STORM D-1.dwg, STORM D-1 & STORM D-2 PLAN & PROFILE, August 30, 2024, 12:21 PM, malak.muhammad



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

4' 2' 0 VERT. SCALE

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

Pipe Label	Slope (%)	Q25 (cfs)	V25 (ft/s)	D25 (ft)	Q100 (cfs)	V100 (ft/s)	D100 (ft)
PIPE E-1	5.00%	7.89	5.10	1.96	10.05	6.11	2.75
PIPE E-2	0.75%	7.89	5.77	1.09	10.05	6.36	1.29
PIPE E-3	0.75%	6.58	4.91	1.15	8.45	4.96	1.42
PIPE E-4	0.75%	4.12	3.32	1.04	5.45	3.10	1.50
PIPE E-5	0.75%	4.12	3.18	1.06	5.45	3.09	1.50
PIPE E-6	0.75%	4.12	3.72	1.10	5.45	4.00	1.52
PIPE E-7	0.75%	4.12	3.80	1.05	5.45	4.23	1.22
PIPE E-8	4.00%	1.31	2.02	1.15	1.60	2.13	1.42
PIPE E-9	4.00%	1.31	2.64	0.57	1.60	2.80	0.63
PIPE E-10	2.00%	2.46	2.84	1.04	3.00	2.86	1.50

NOTE:

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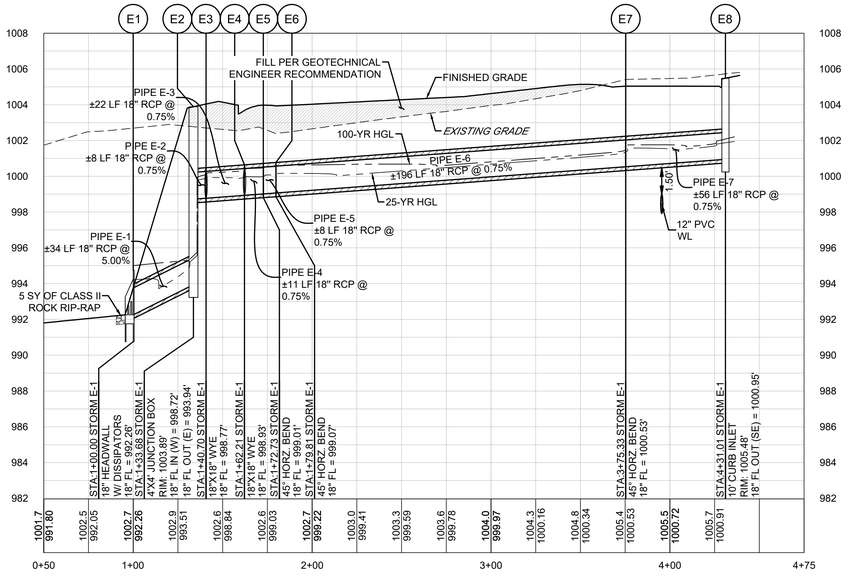
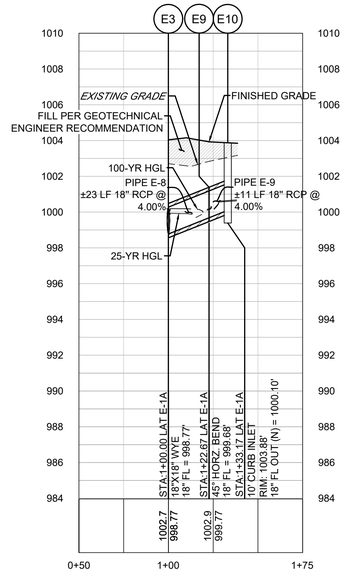
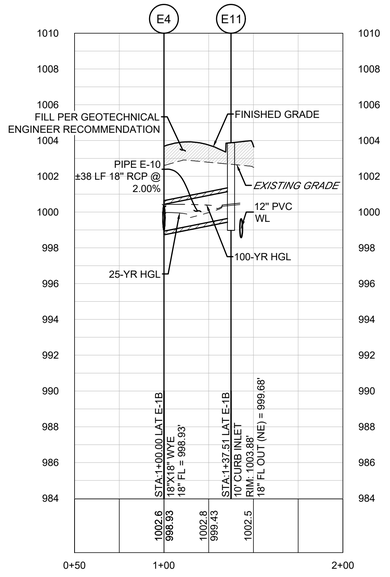
STORM E-1



LAT E-1A



LAT E-1B



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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

STORM E-1 & LATERALS PLAN & PROFILE

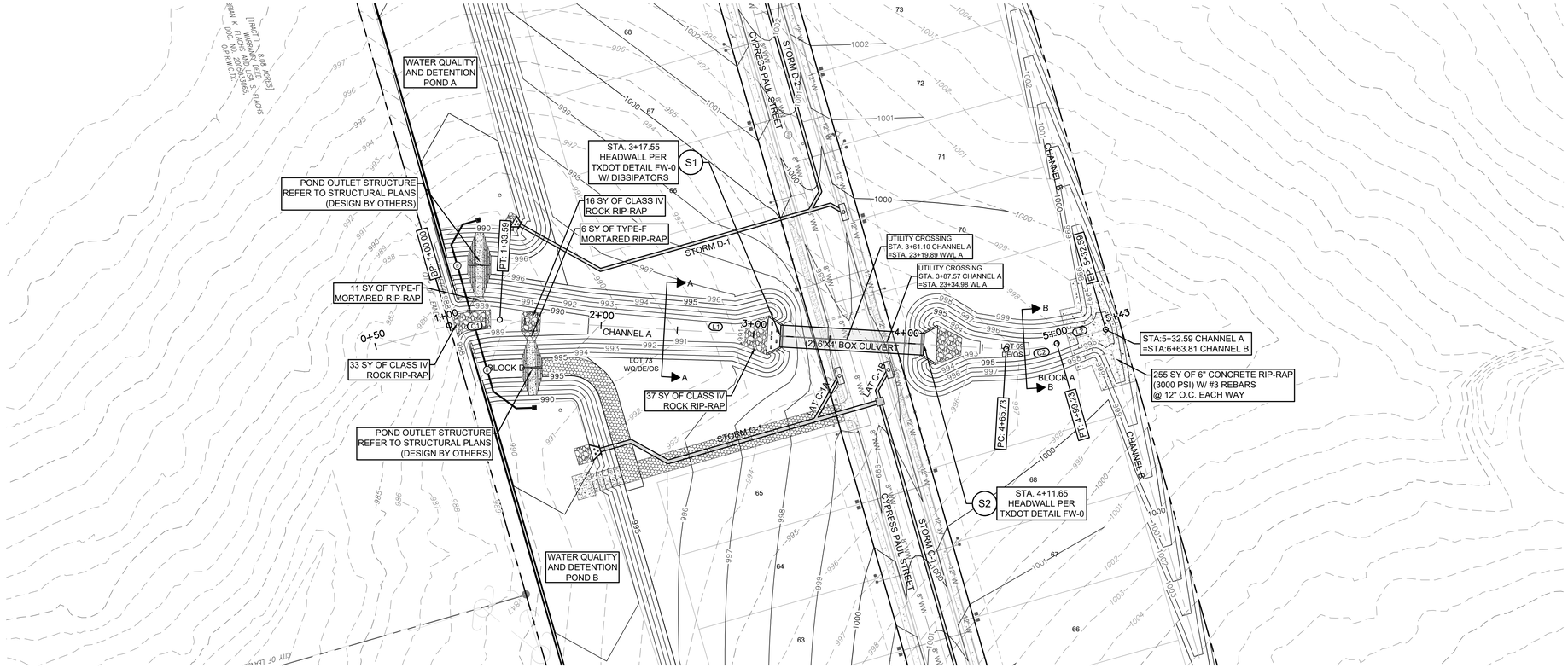
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 51 OF 68

2024-XX-CON



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

4' 2' 0 VERT. SCALE

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 997.10 PROPOSED FLOWLINE

NOTE:

1. ALL PROPOSED STORM SEWER PIPE LINES SHALL BE CLASS III REINFORCED CONCRETE UNLESS NOTED OTHERWISE.
2. FILL SHALL BE PLACED ACCORDING TO THE GEOTECHNICAL ENGINEERS RECOMMENDATION AND CITY OF GEORGETOWN SPECIFICATIONS.
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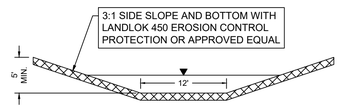
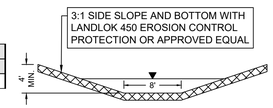
HYDRAULIC CALCULATIONS		HYDRAULIC CALCULATIONS	
Q25 = 215.55 CFS*	Q100 = 331.52 CFS*	Q25 = 215.55 CFS*	Q100 = 331.52 CFS*
V25 = 7.47 FT/S	V100 = 8.46 FT/S	V25 = 5.08 FT/S	V100 = 5.75 FT/S
D25 = 1.96'	D100 = 2.13'	D25 = 2.26'	D100 = 2.82'
PROVIDED DEPTH	5.00'	PROVIDED DEPTH	5.00'
FREEBOARD REQUIRED	1.00'	FREEBOARD REQUIRED	1.00'
MANNING'S N	0.040	MANNING'S N	0.040
CL SLOPE	2.96%	CL SLOPE	1.00%

*REFER TO DRAINAGE AT POI-3 *REFER TO DRAINAGE AT POI-3



SECTION A-A
CHANNEL A SOUTH SIDE
SCALE: 1"=10'

Pipe Label	Slope (%)	Q25 (cfs)	V25 (ft/s)	D25 (ft)	Q100 (cfs)	V100 (ft/s)	D100 (ft)
STORM S-1	1.00%	201.45	7.23	2.65	309.48	8.59	3.32



SECTION B-B
CHANNEL A NORTH SIDE
SCALE: 1"=10'

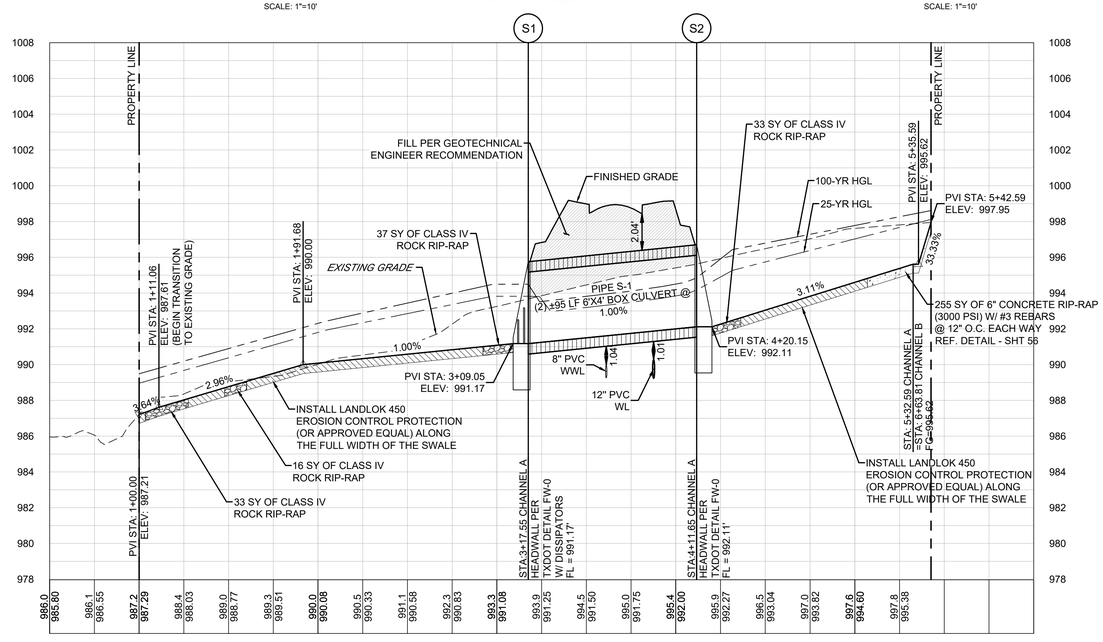
HYDRAULIC CALCULATIONS	
Q25 = 201.45 CFS*	Q100 = 309.48 CFS*
V25 = 7.74 FT/S	V100 = 8.75 FT/S
D25 = 1.90'	D100 = 2.35'
PROVIDED DEPTH	4.00'
FREEBOARD REQUIRED	1.00'
MANNING'S N	0.040
CL SLOPE	3.11%

*REFER TO DRAINAGE AREA PR-03C

LINE TABLE		
NUMBER	LENGTH	BEARING
L1	332.14'	N1°41'46"W
L2	33.37'	N20°53'21"W

CURVE TABLE					
NUMBER	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	33.59'	100.00'	19.245°	N11°19'07"W	33.43'
C2	33.50'	100.00'	19.193°	N11°17'33"W	33.34'

CHANNEL A



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LICENSED PROFESSIONAL ENGINEER
08/30/2024

CHANNEL A PLAN & PROFILE

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

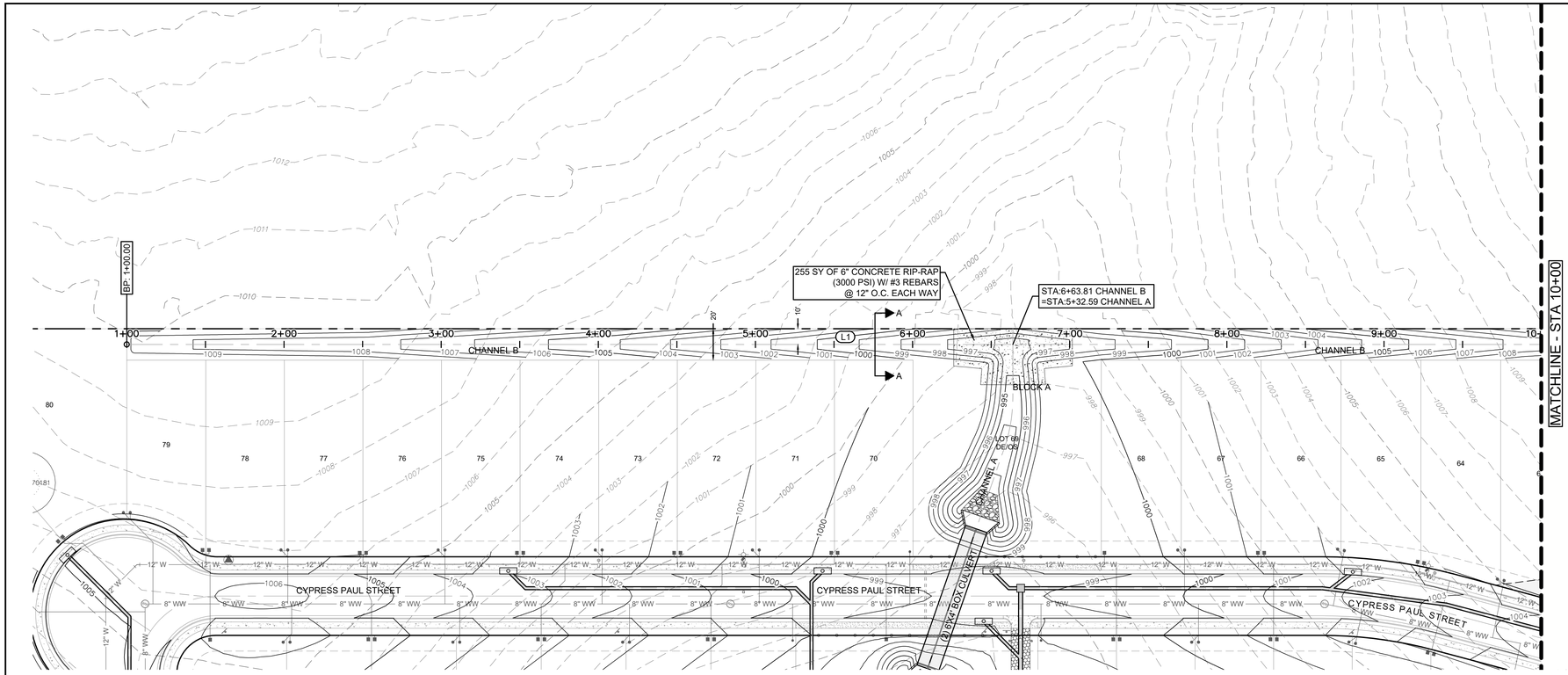
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 52 OF 68

2024-XX-CON

NO	REVISION	BY	DATE

P:\Blake Magee\Parkside Peninsula\03_ACAD\Panels\20200509 SDP\ CHANNEL A.dwg, CHANNEL A PLAN & PROFILE, August 30, 2024, 12:29 PM, malak.muhammad



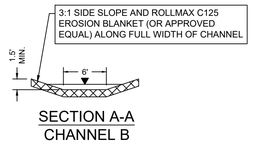
HYDRAULIC CALCULATIONS	
Q25 = 12.29 CFS*	Q100 = 17.52 CFS*
V25 = 1.86 FT/S	V100 = 2.06 FT/S
D25 = 0.79'	D100 = 0.96'
PROVIDED DEPTH	1.50'
FREEBOARD REQUIRED	0.50'
MANNING'S N	0.040
CL SLOPE	0.50%

*REFER TO DRAINAGE AREA 22

HYDRAULIC CALCULATIONS	
Q25 = 12.29 CFS*	Q100 = 17.52 CFS*
V25 = 3.72 FT/S	V100 = 4.16 FT/S
D25 = 0.45'	D100 = 0.55'
PROVIDED DEPTH	1.50'
FREEBOARD REQUIRED	0.50'
MANNING'S N	0.040
CL SLOPE	3.75%

*REFER TO DRAINAGE AREA 22

CHANNEL B

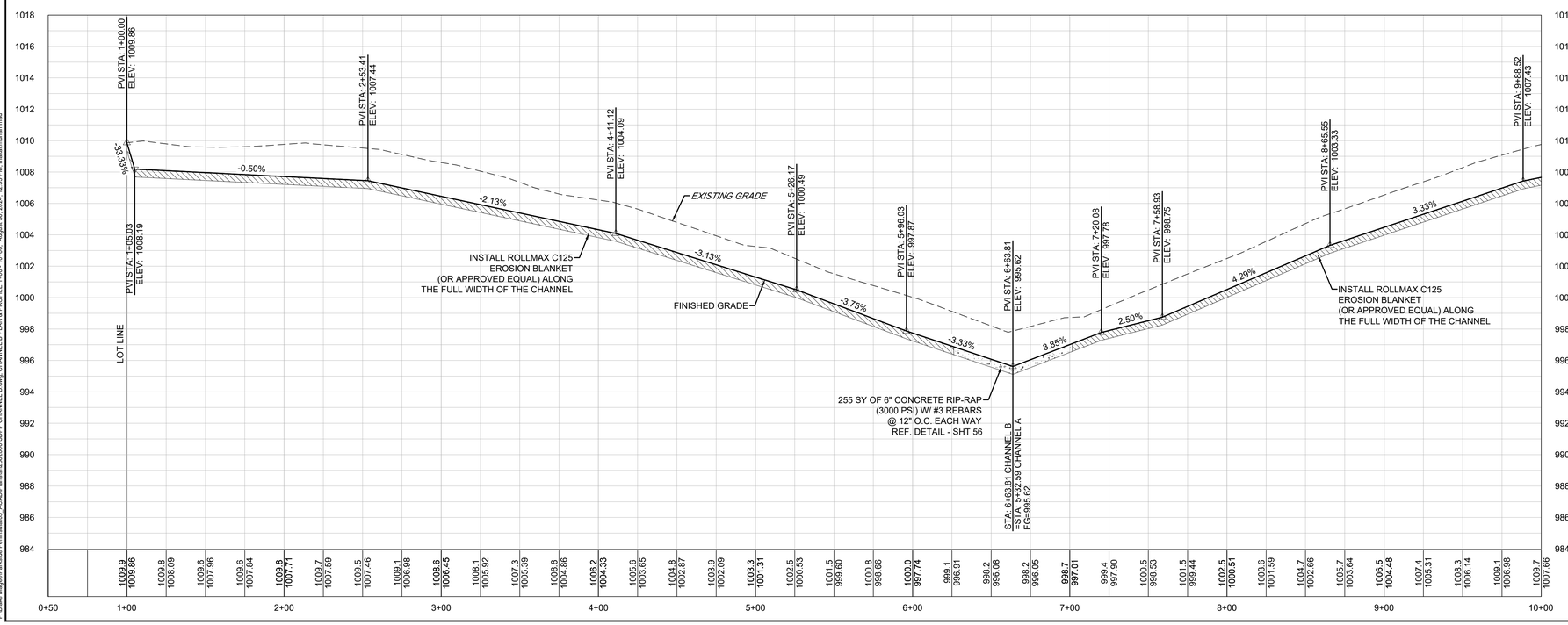


SECTION A-A
CHANNEL B
SCALE: 1"=10'

HYDRAULIC CALCULATIONS	
Q25 = 9.77 CFS*	Q100 = 13.81 CFS*
V25 = 3.60 FT/S	V100 = 3.97 FT/S
D25 = 0.38'	D100 = 0.47'
PROVIDED DEPTH	1.50'
FREEBOARD REQUIRED	0.50'
MANNING'S N	0.040
CL SLOPE	4.29%

*REFER TO DRAINAGE AREA 21

LINE TABLE		
NUMBER	LENGTH	BEARING
L1	1789.24'	N69°06'34"E
L2	12.75'	N80°25'10"E
L3	38.33'	N69°06'34"E



LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED STORM LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
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- TREES TO REMAIN NON HERITAGE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

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NO	REVISION	BY	DATE

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08/30/2024

CHANNEL B PLAN & PROFILE 1+00 - 10+00

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

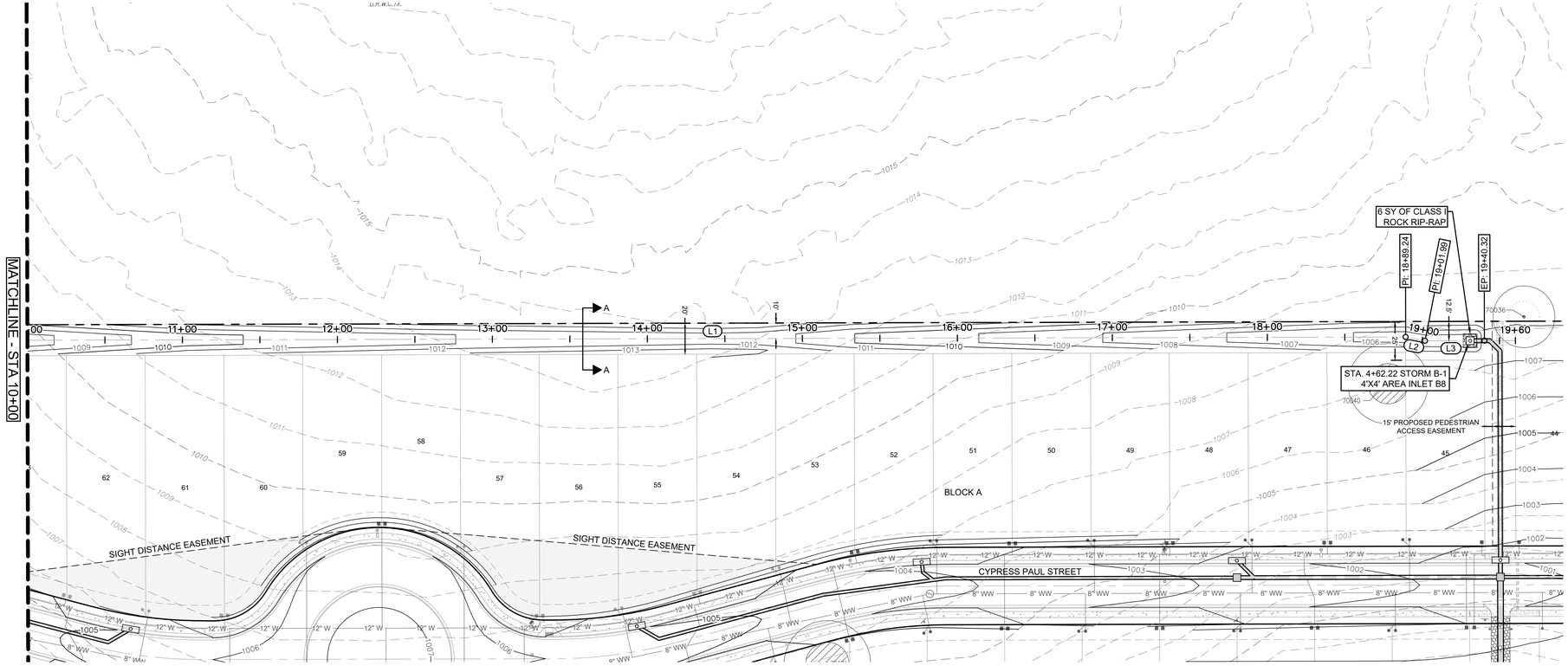
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 53 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\03_ACAD\Parcels\3\20\005 SDP\ CHANNEL B.dwg, CHANNEL B PLAN & PROFILE 1+00 - 10+00, August 30, 2024, 12:33 PM, mabin.muhammad



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
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- FIRE HYDRANT
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VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

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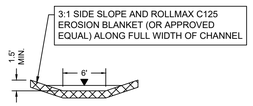
HYDRAULIC CALCULATIONS	
Q25 = 9.77 CFS*	Q100 = 13.81 CFS*
V25 = 1.72 FT/S	V100 = 1.93 FT/S
D25 = 0.70'	D100 = 0.84'
PROVIDED DEPTH	1.50'
FREEBOARD REQUIRED	0.50'
MANNING'S N	0.040
CL SLOPE	0.50%

*REFER TO DRAINAGE AREA 21

CHANNEL B

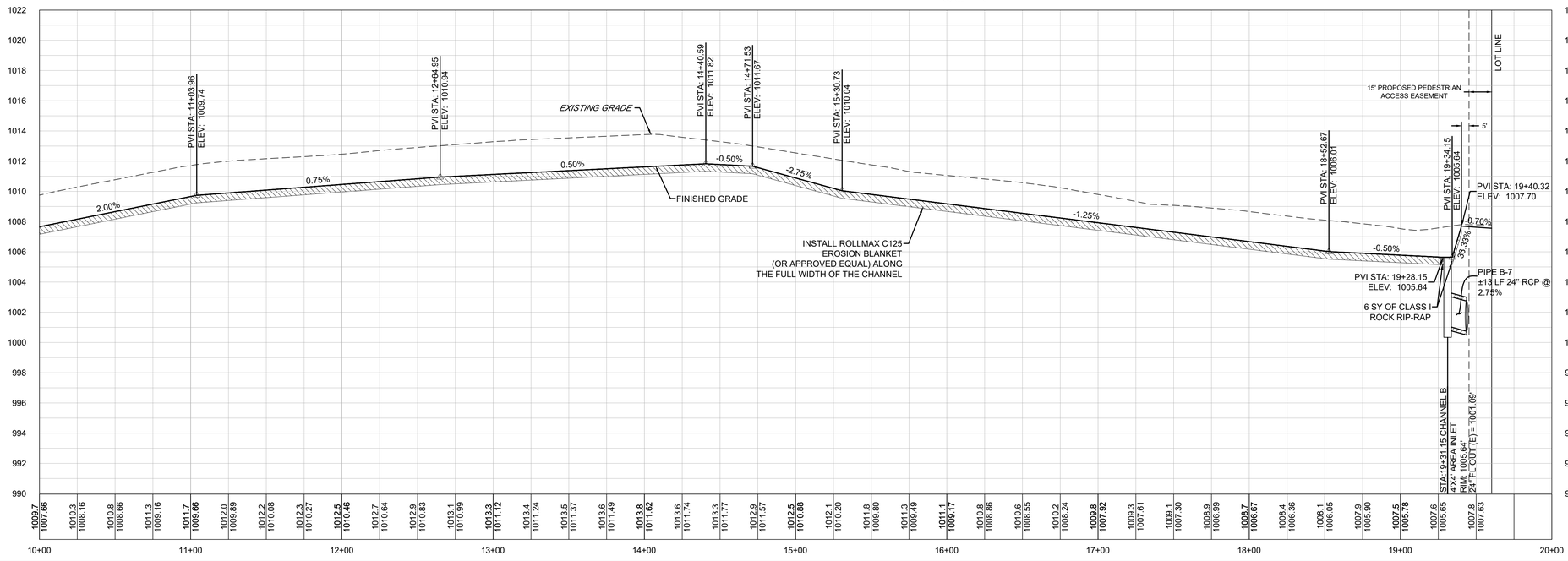


SECTION A-A
CHANNEL B
SCALE: 1"=10'

HYDRAULIC CALCULATIONS	
Q25 = 9.85 CFS*	Q100 = 13.92 CFS*
V25 = 1.74 FT/S	V100 = 1.92 FT/S
D25 = 0.70'	D100 = 0.85'
PROVIDED DEPTH	1.50'
FREEBOARD REQUIRED	0.50'
MANNING'S N	0.040
CL SLOPE	0.50%

*REFER TO DRAINAGE AREA 20

LINE TABLE		
NUMBER	LENGTH	BEARING
L1	1789.24'	N69°06'34"E
L2	12.75'	N80°25'10"E
L3	38.33'	N69°06'34"E



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CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

CHANNEL B PLAN & PROFILE 10+00 - END

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 54 OF 68

2024-XX-CON

NO	REVISION	BY	DATE

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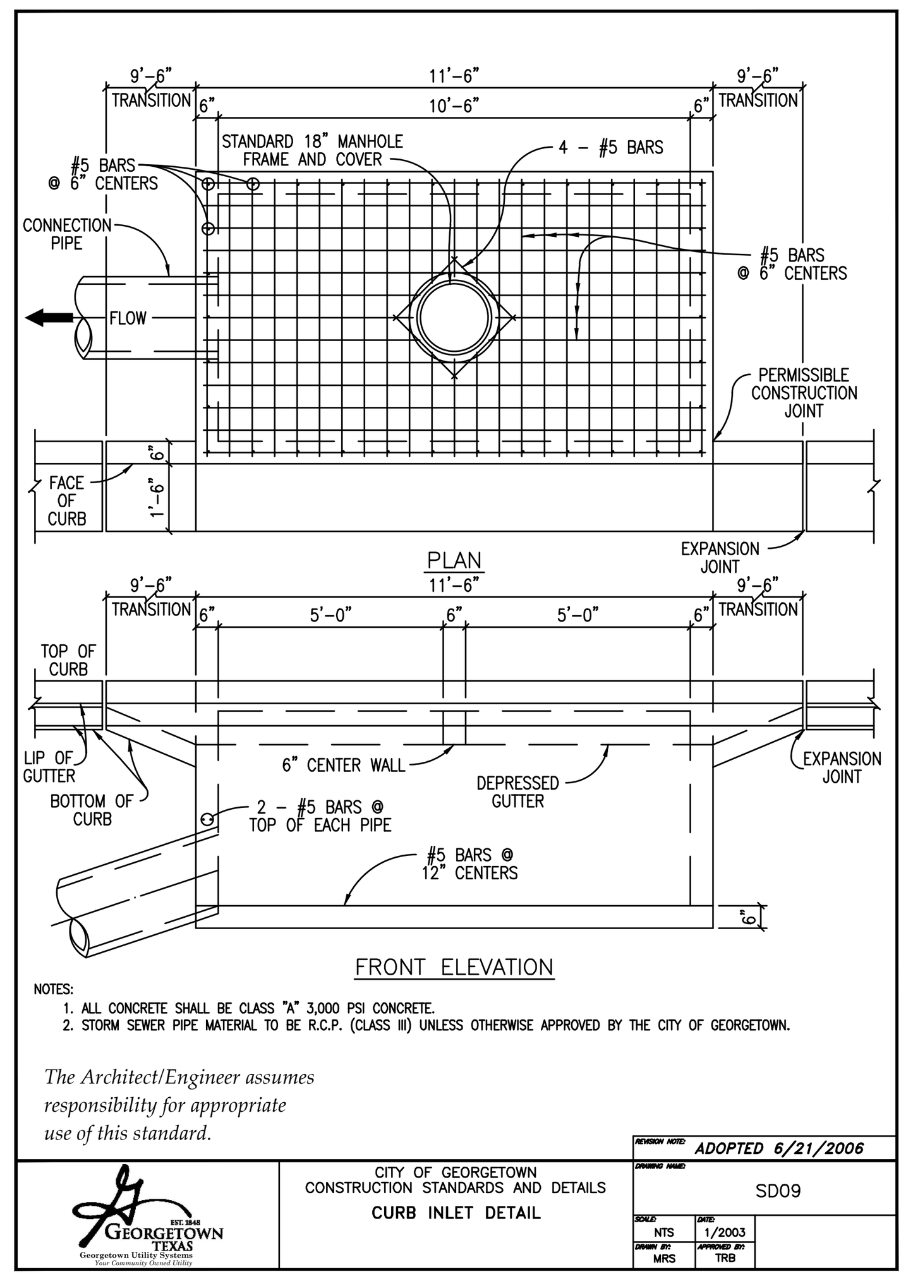

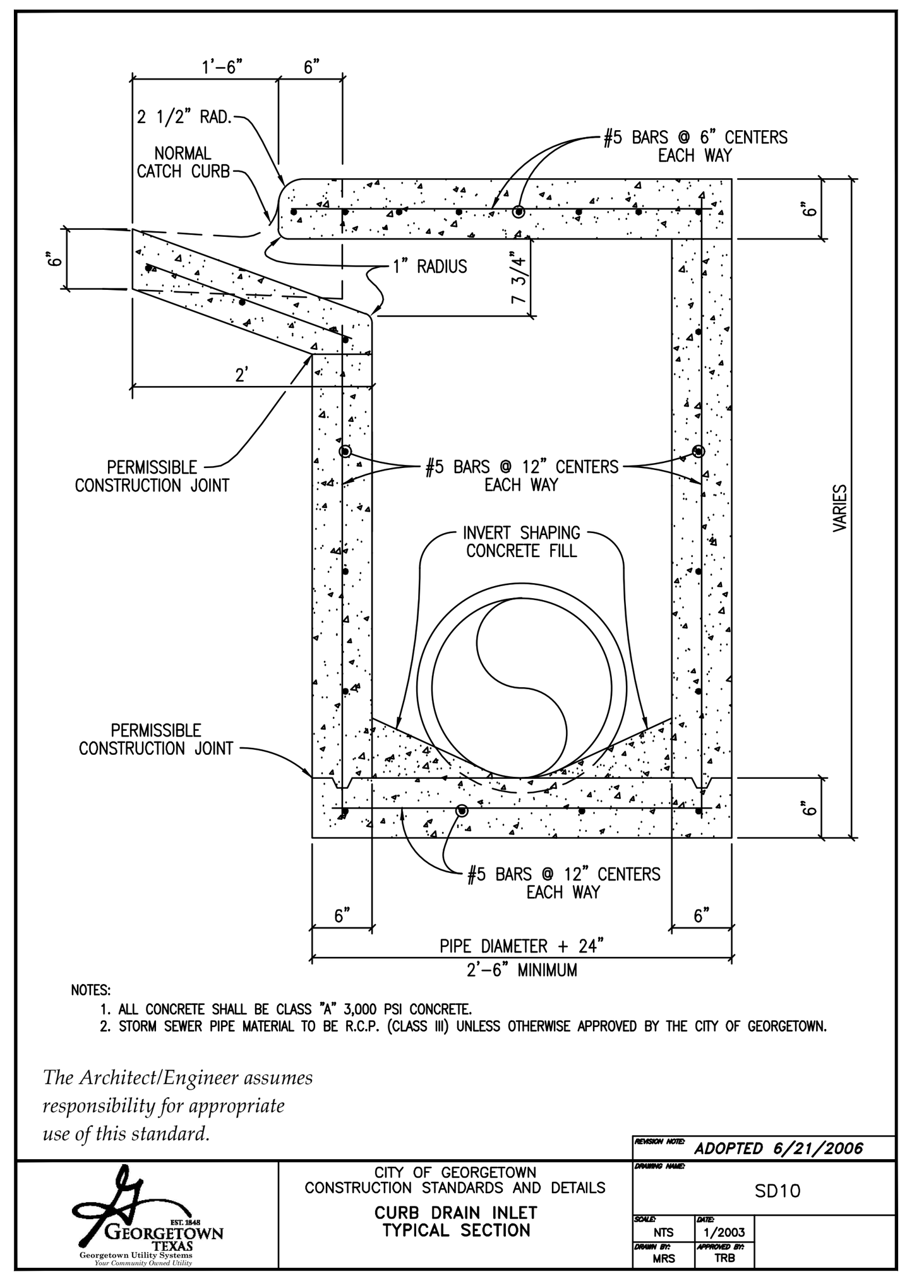

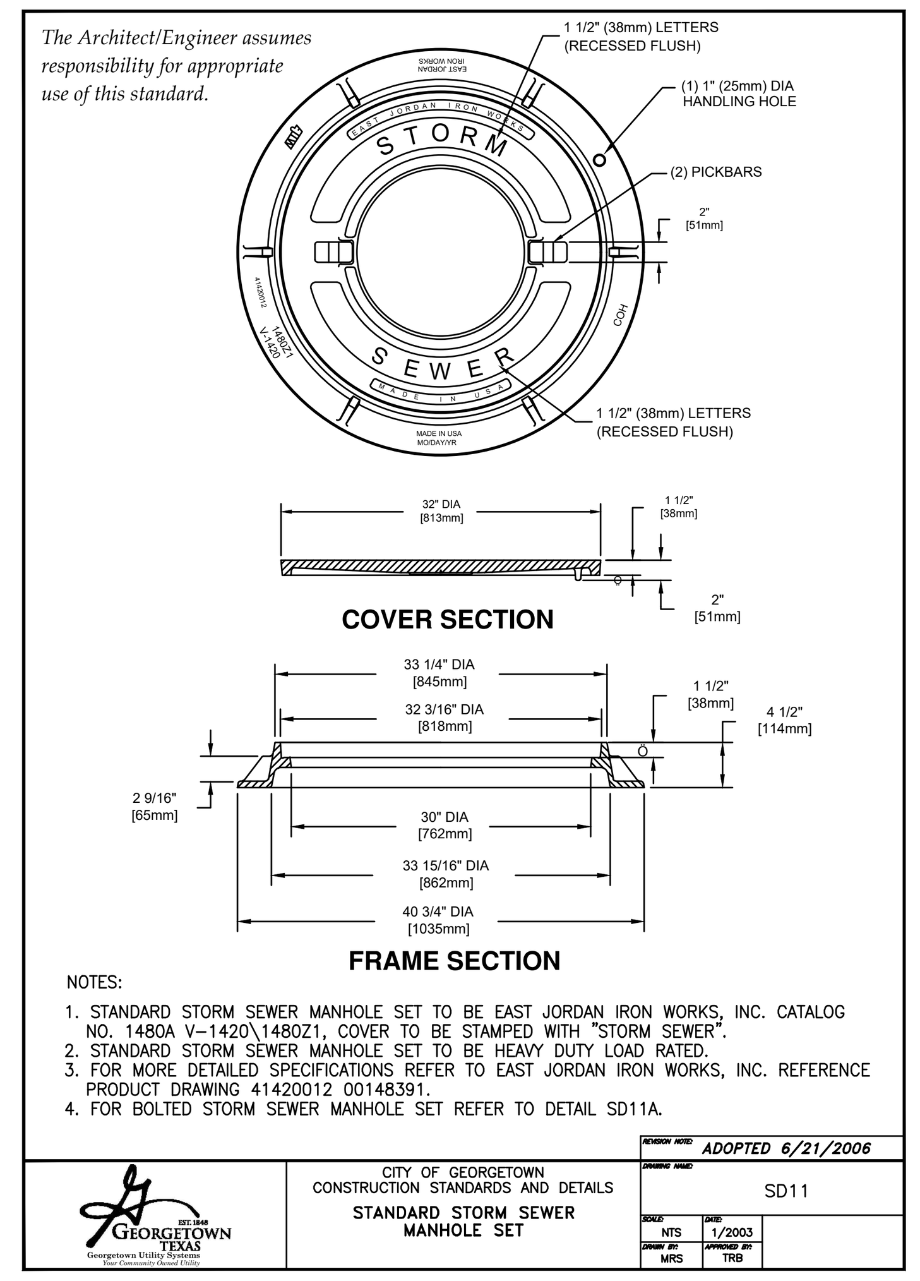

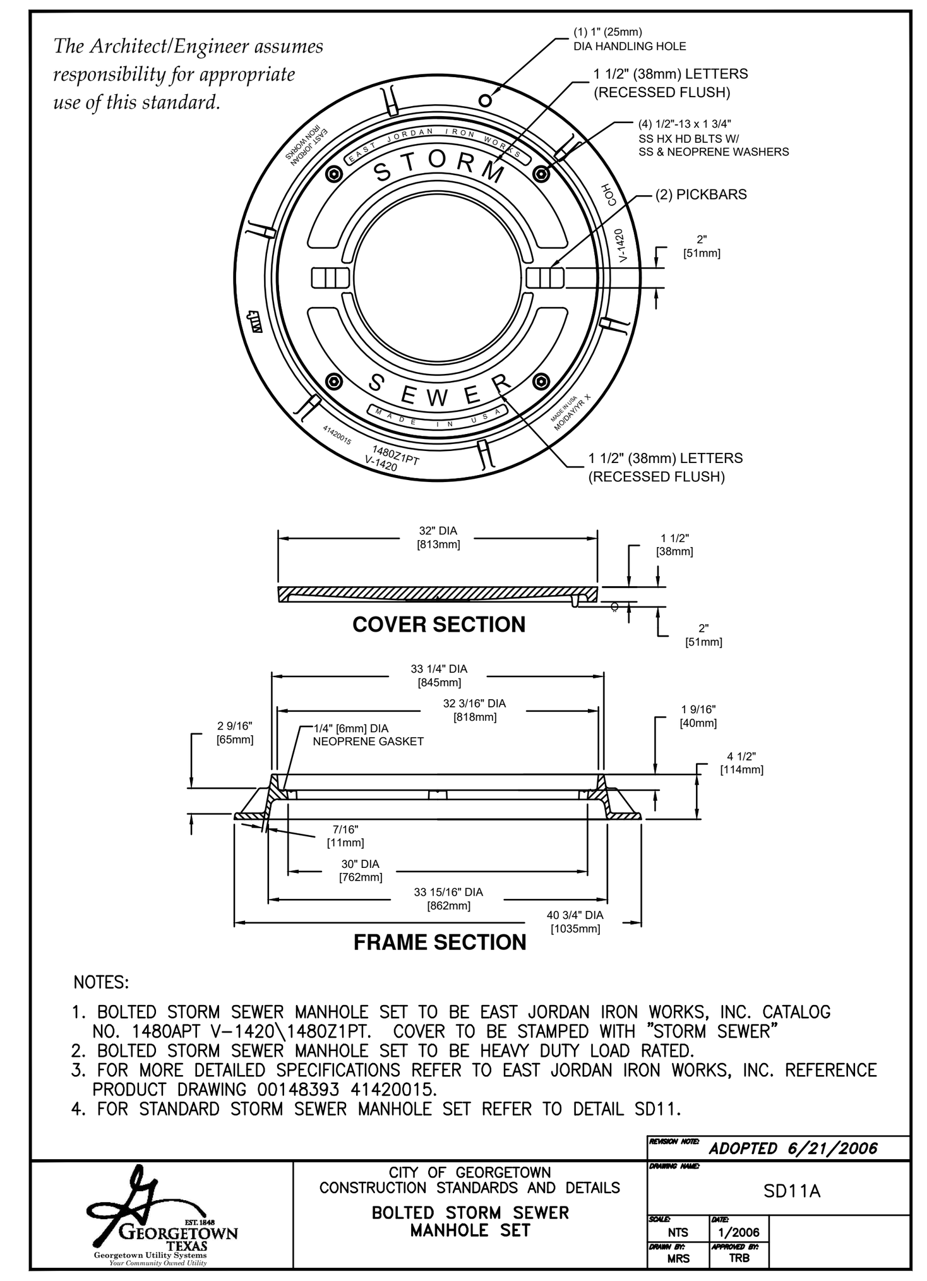

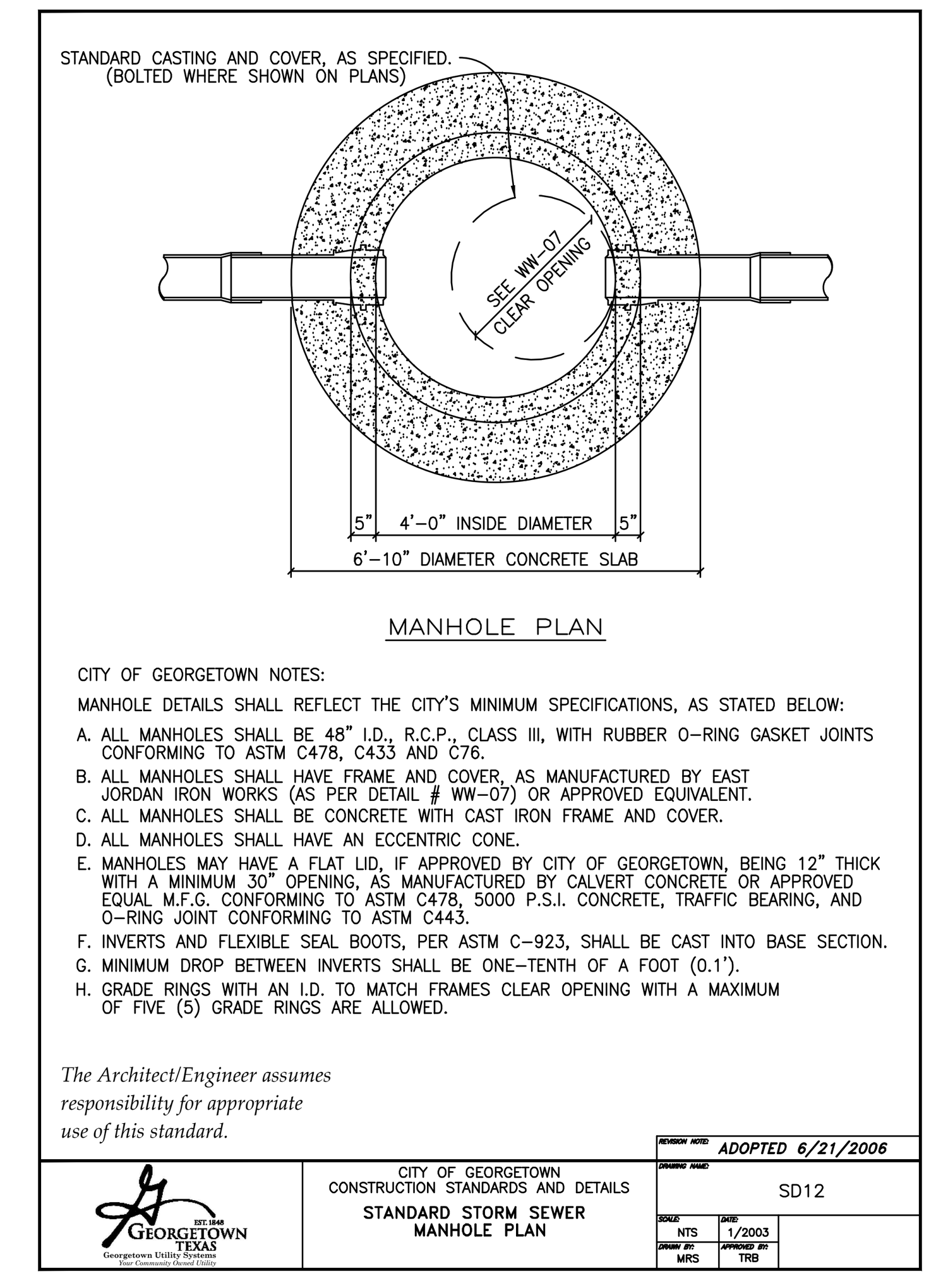

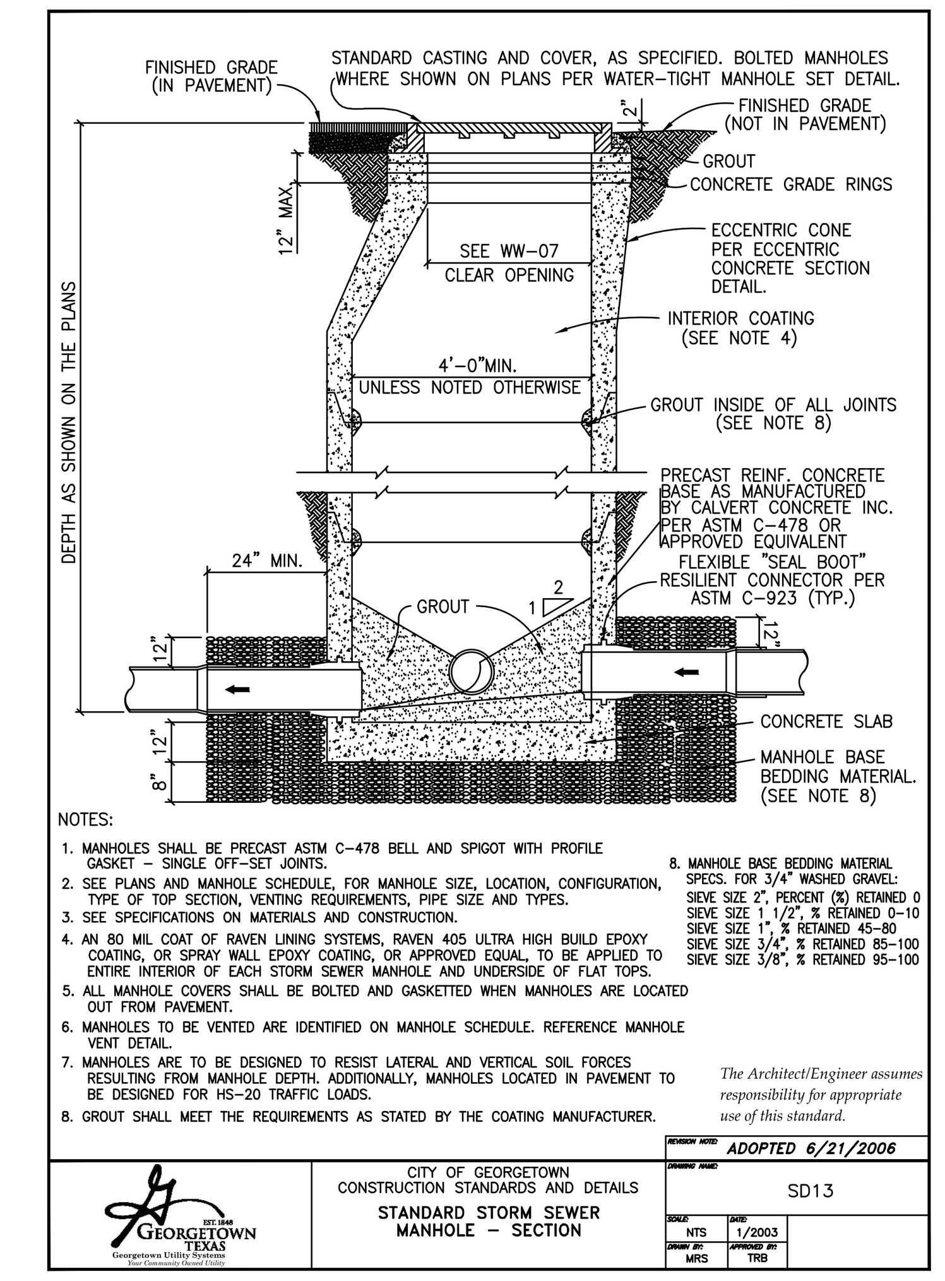

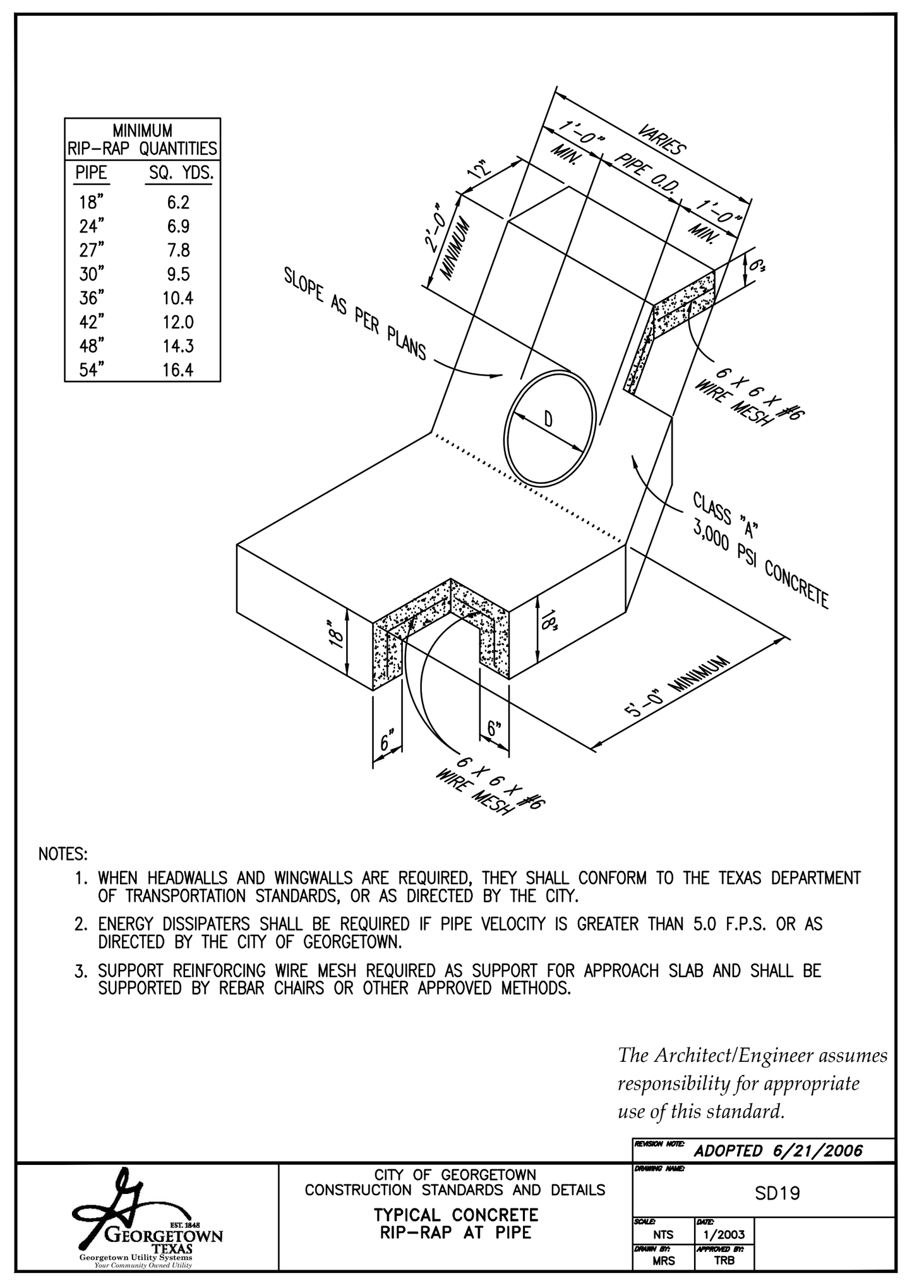

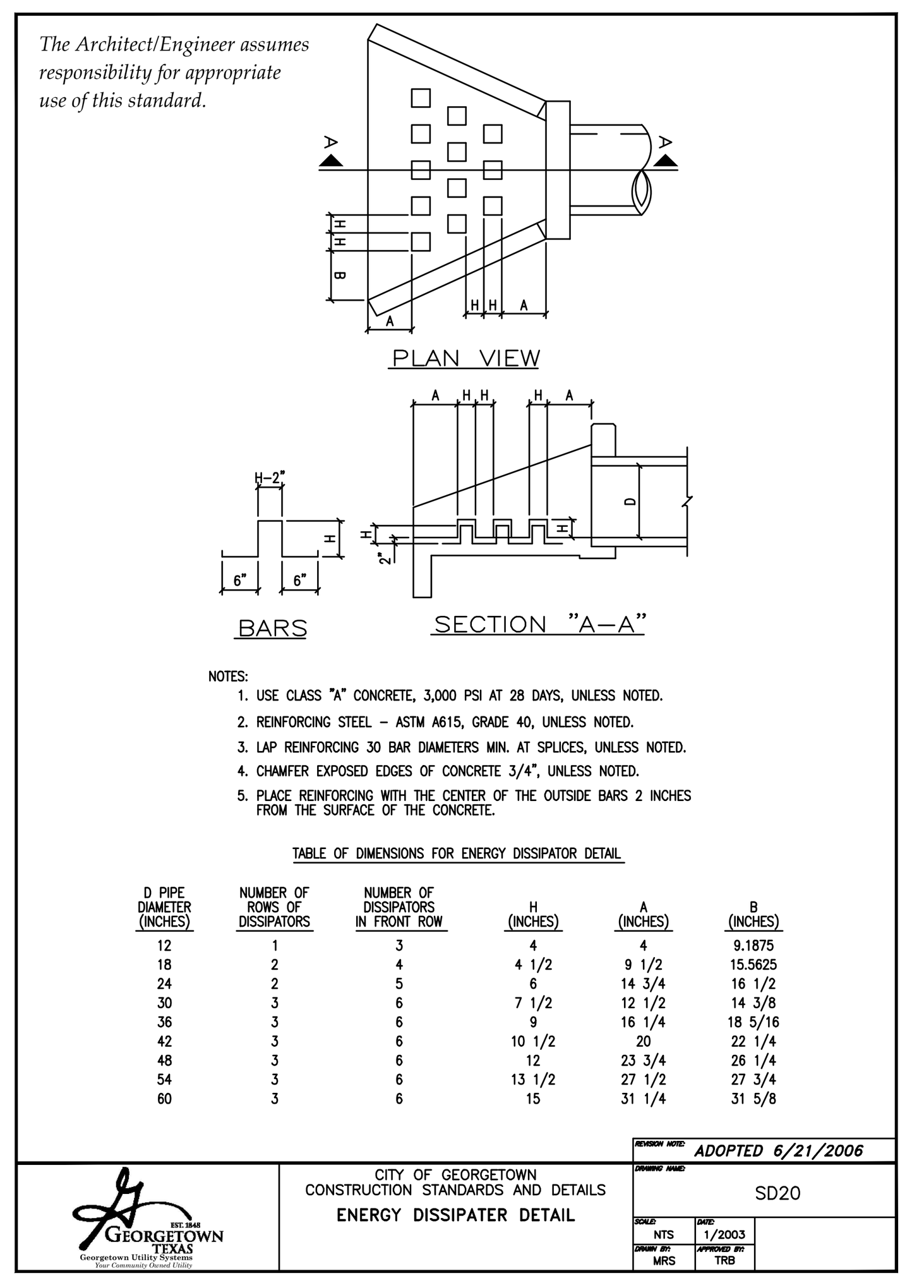

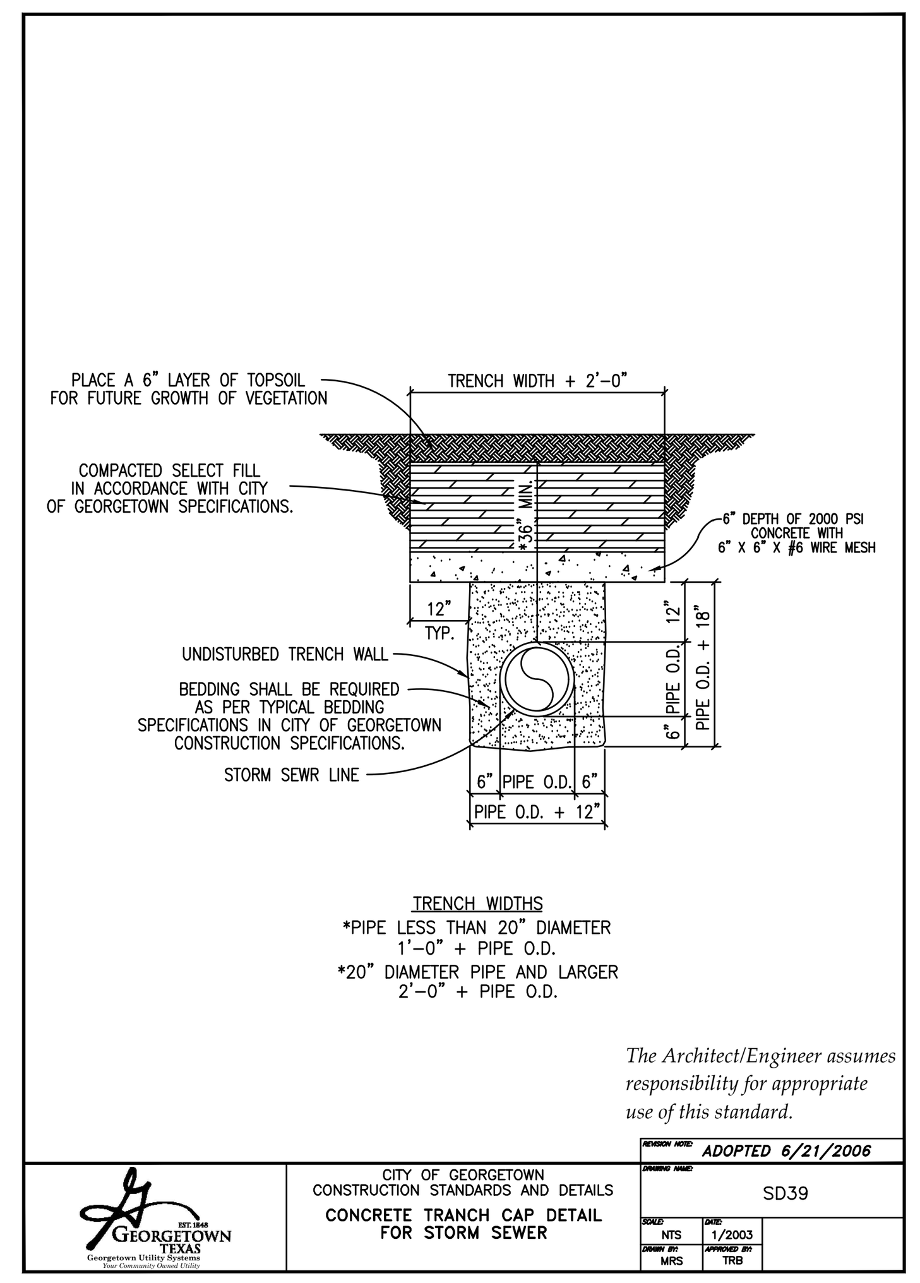

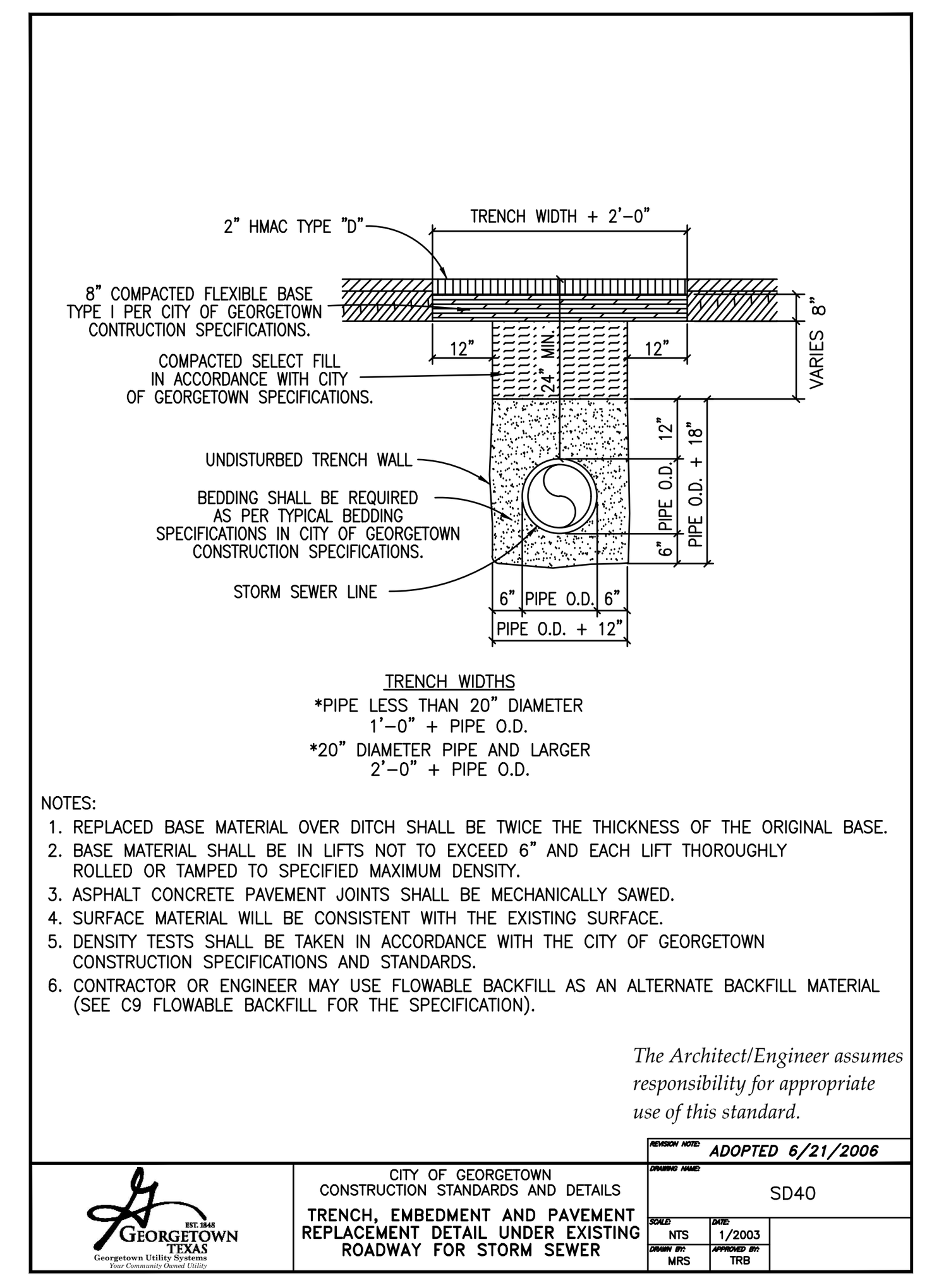

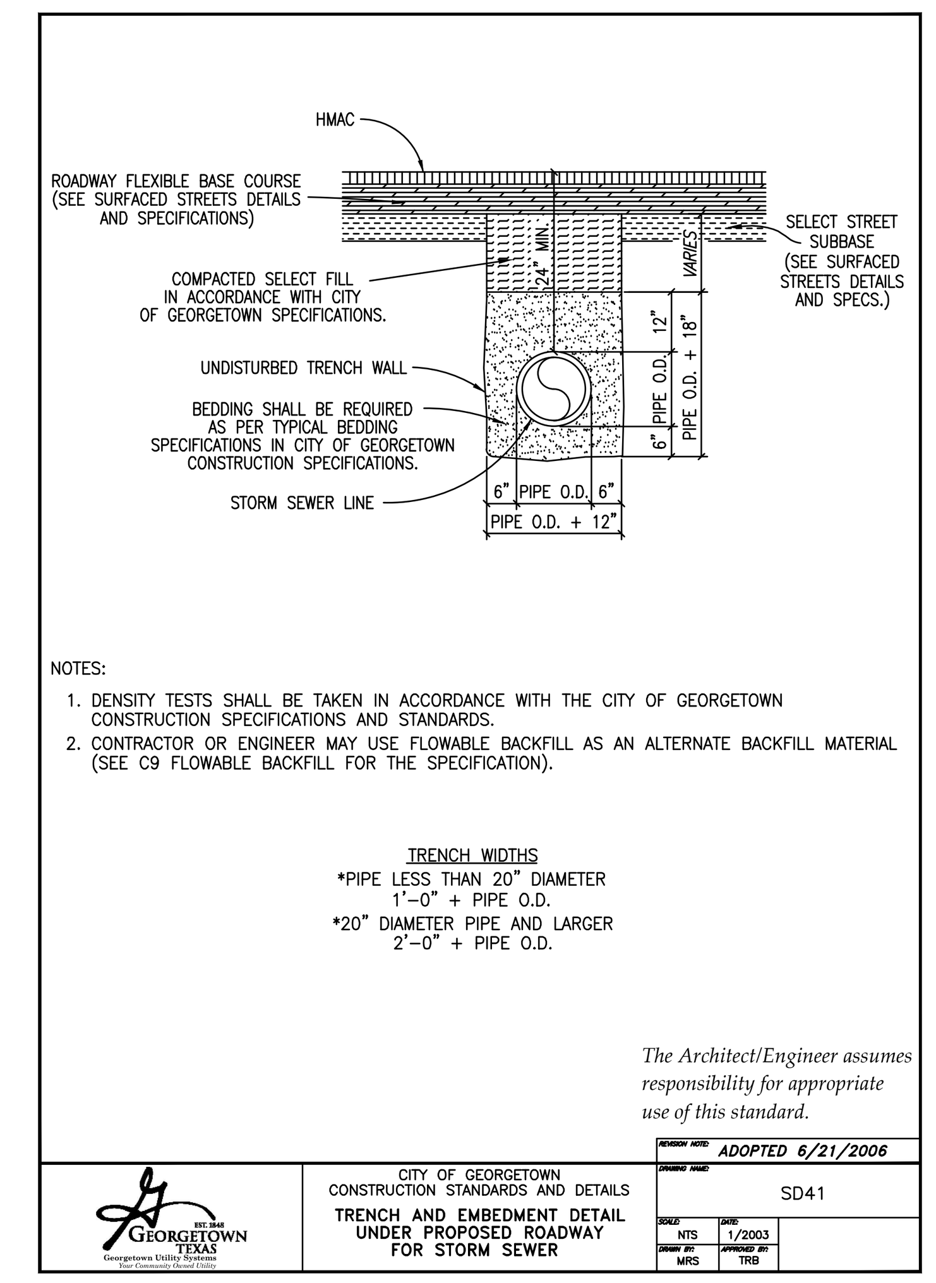

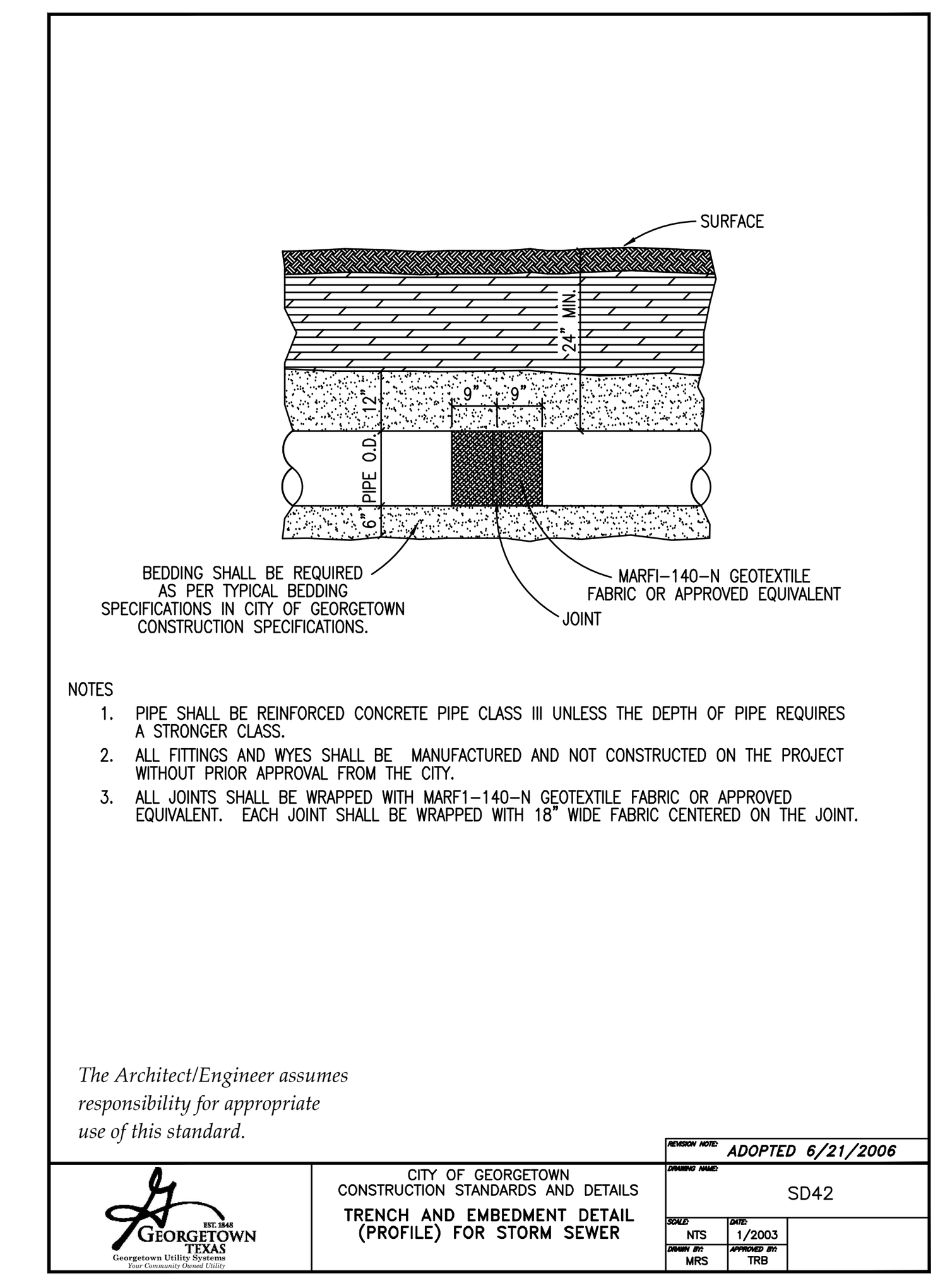

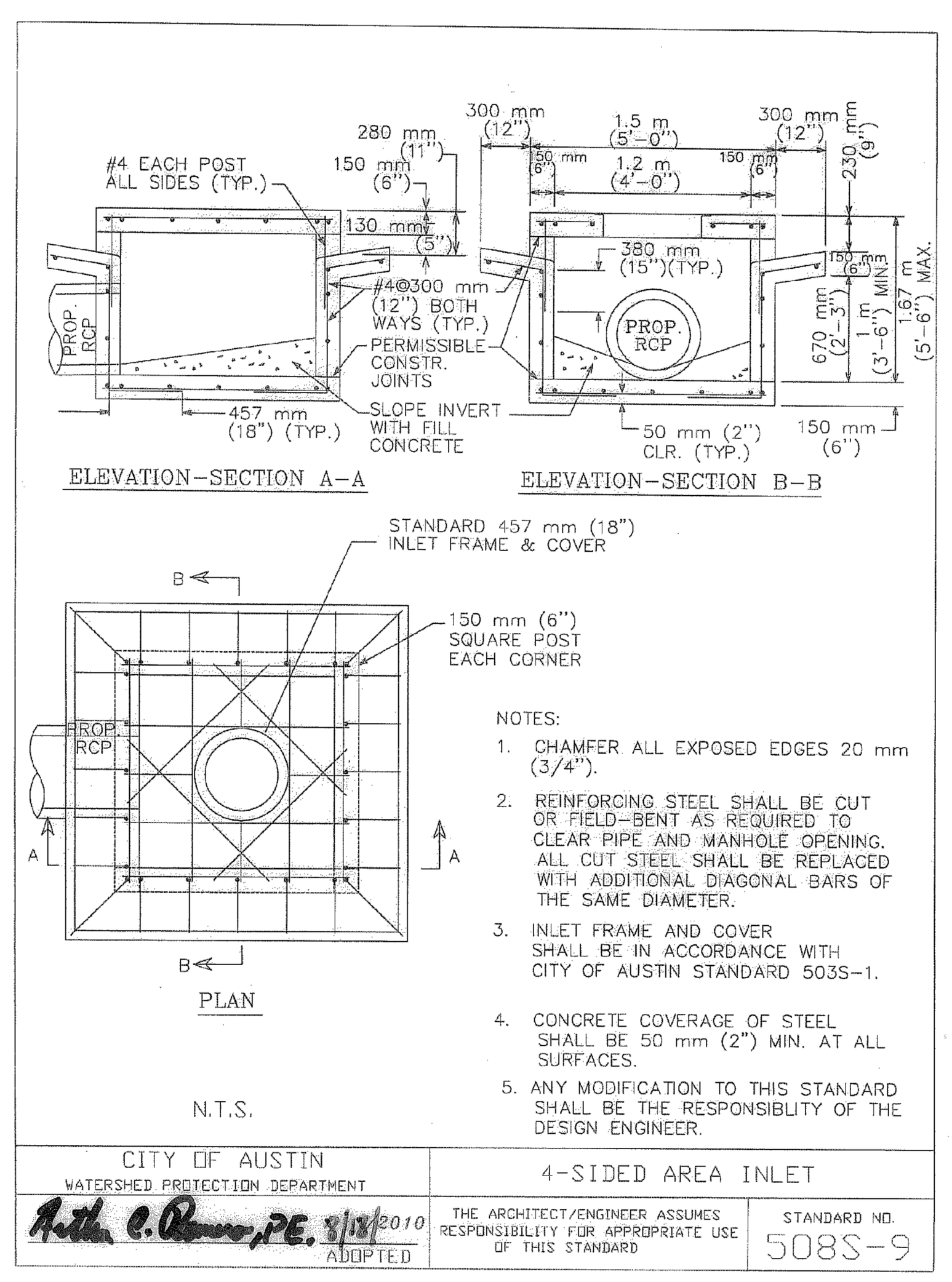

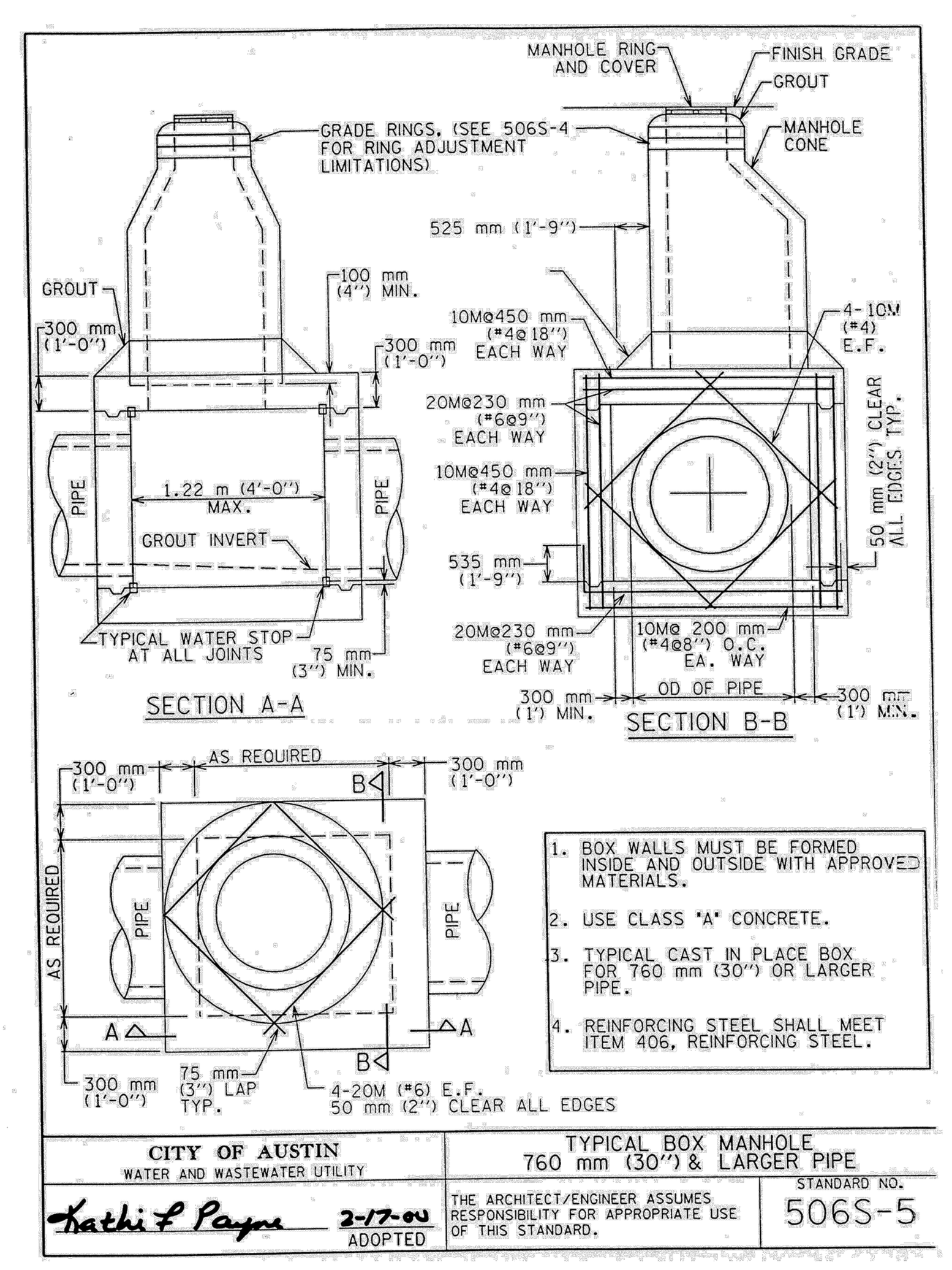

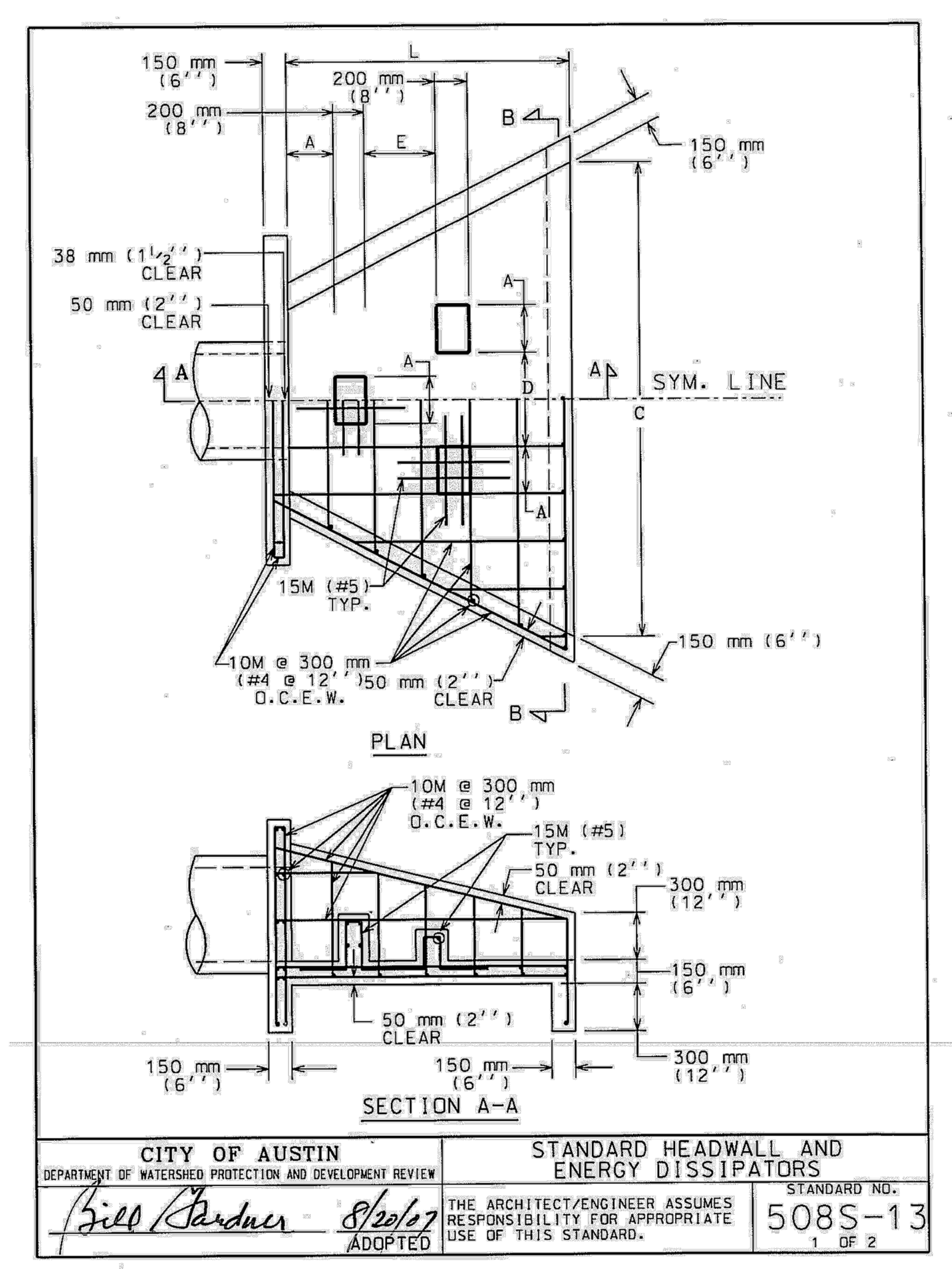

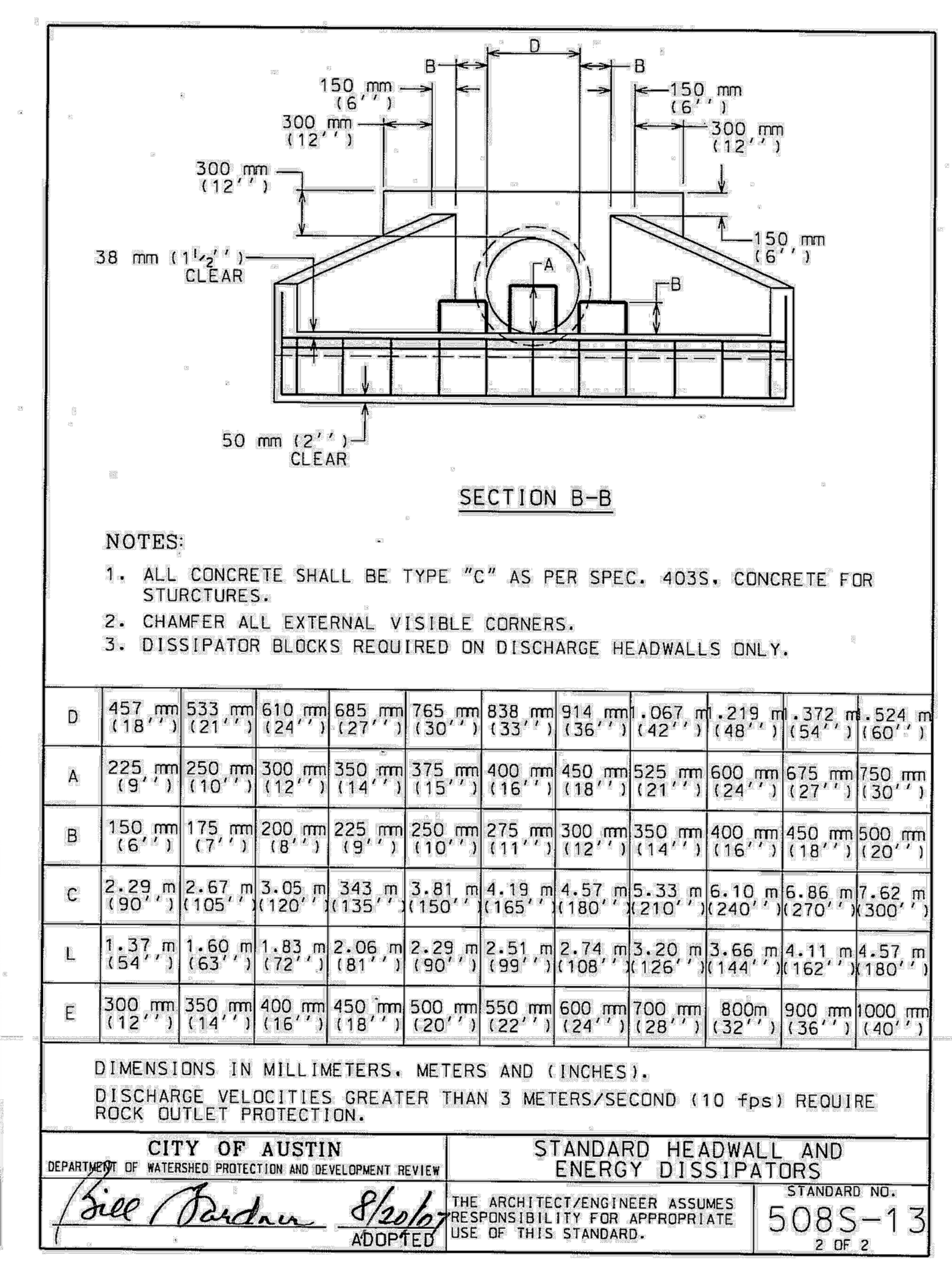

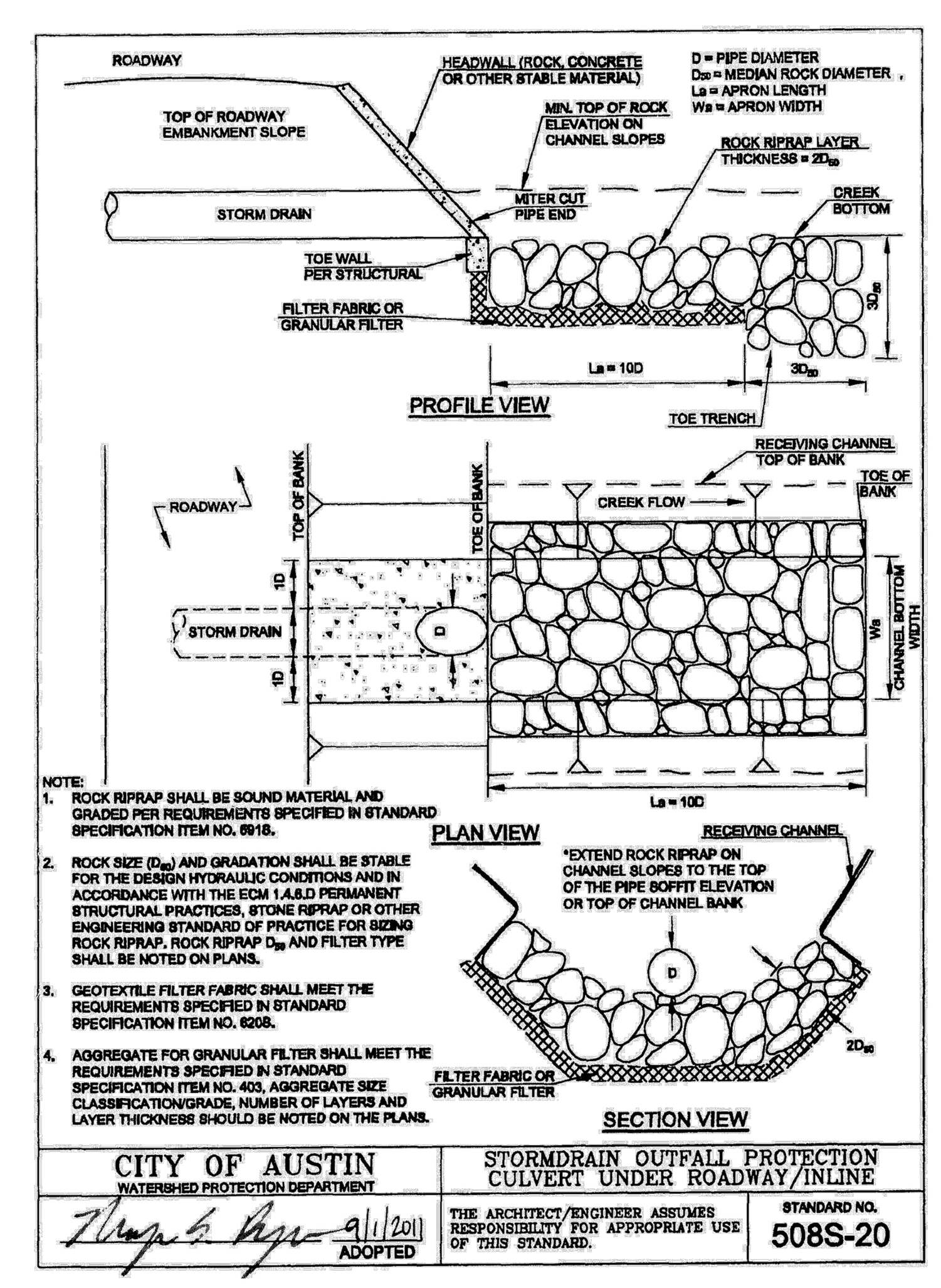

RIP-RAP CLASSIFICATION SPECIFICATIONS

CLASS 1 RIP-RAP

No more than 10% of the stone will have a diameter greater than twelve (12) inches; no more than 50% of the stone will have a diameter less than ten (10) inches; and no more than 10% of the stone will have a diameter of less than six (6) inches. The thickness of the rip-rap liner will be no less than twelve (12) inches.

CLASS 2 RIP-RAP

No more than 10% of the stone will have a diameter greater than sixteen (16) inches; no more than 50% of the stone will have a diameter less than twelve (12) inches; and no more than 10% of the stone will have a diameter of less than six (6) inches. The thickness of the rip-rap liner will be no less than sixteen (16) inches.

CLASS 3 RIP-RAP

No more than 10% of the stone will have a diameter greater than twenty two (22) inches; no more than 50% of the stone will have a diameter less than sixteen (16) inches; and no more than 10% of the stone will have a diameter of less than eight (8) inches. The thickness of the rip-rap liner will be no less than twenty two (22) inches.

CLASS 4 RIP-RAP

No more than 10% of the stone will have a diameter greater than twenty seven (27) inches; no more than 50% of the stone will have a diameter less than twenty two (22) inches; and no more than 10% of the stone will have a diameter of less than ten (10) inches. The thickness of the rip-rap liner will be no less than twenty seven (27) inches.

CLASS 5 RIP-RAP

No more than 10% of the stone will have a diameter greater than thirty four (34) inches; no more than 50% of the stone will have a diameter less than twenty seven (27) inches; and no more than 10% of the stone will have a diameter of less than sixteen (16) inches. The thickness of the rip-rap liner will be no less than thirty four (34) inches.

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CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

DRAINAGE DETAILS

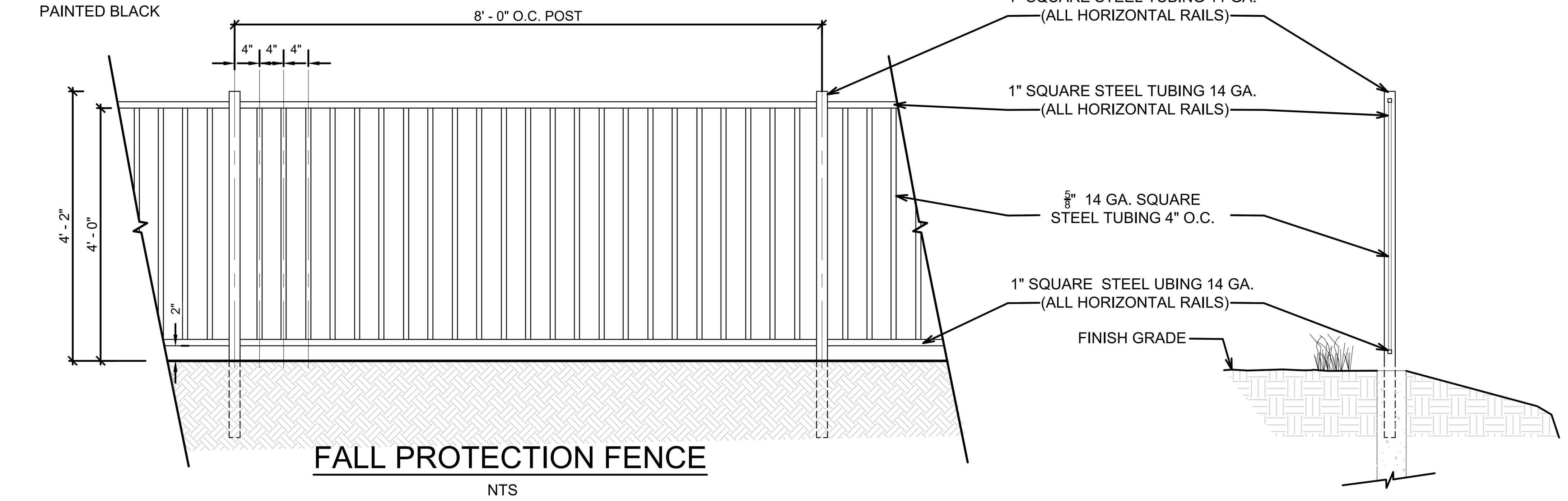
PARKSIDE PENINSULA PHASE 3
CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 55 OF 68

2024-XX-CON

NOTE - GUARDRAIL SHALL BE PRIMED AND PAINTED BLACK



FALL PROTECTION FENCE

NTS

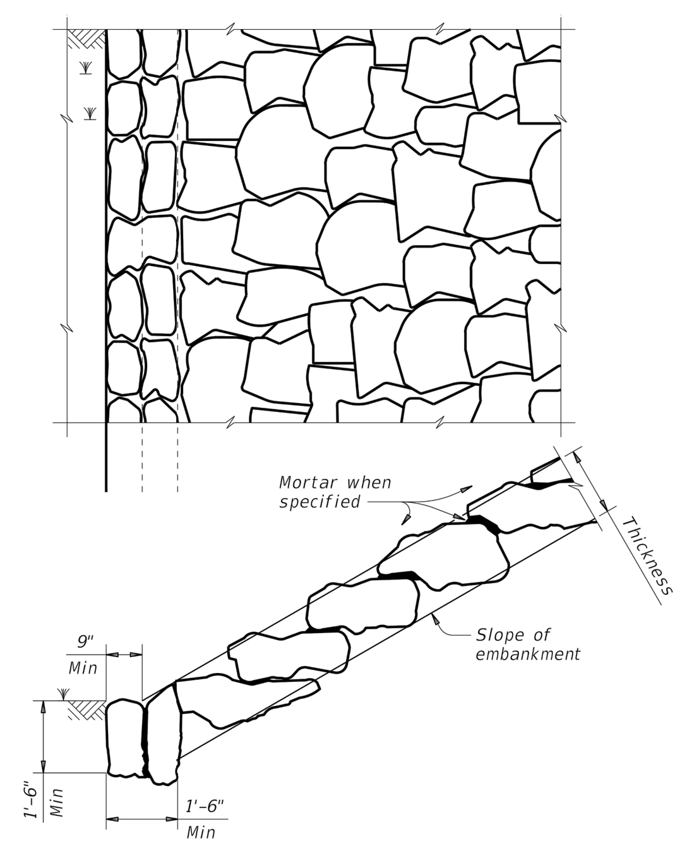


FIGURE 2 ~ TYPE F STONE RIPRAP

dry or mortared

SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

STONE RIPRAP

SRR

FILE: srrstde1-19.dgn	DN: AES	CK: JGD	DW: BWH	CK: AES
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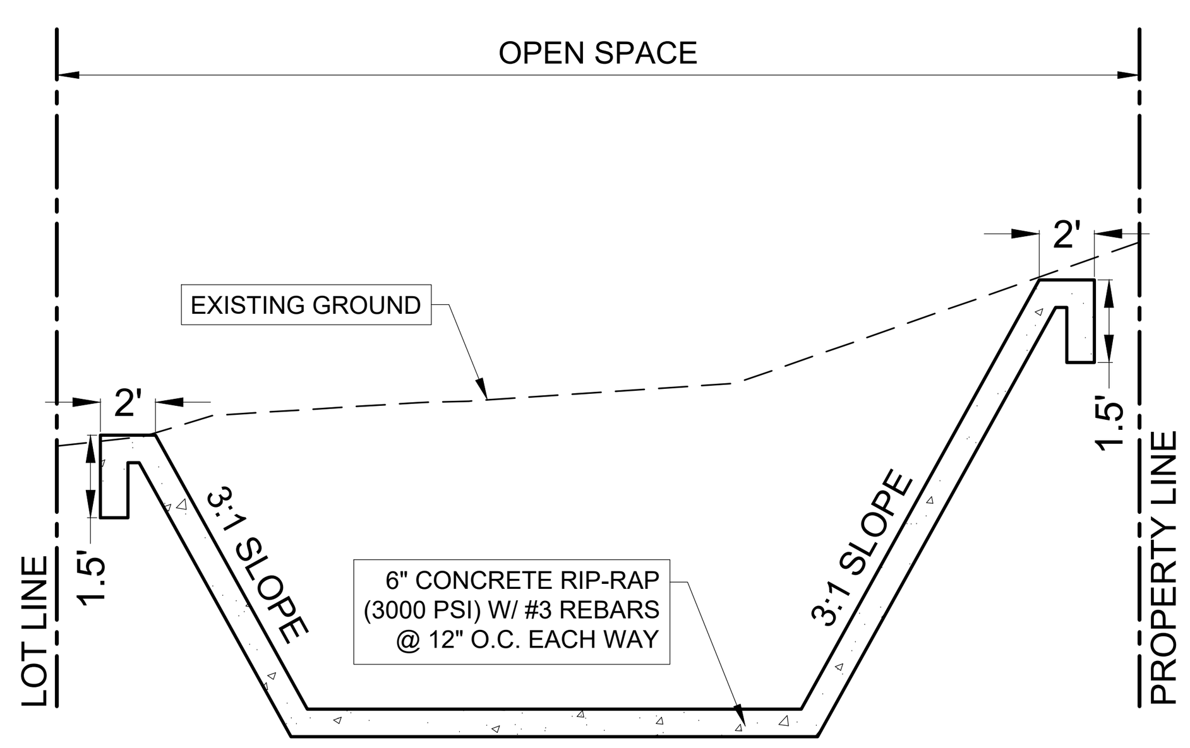
REVISIONS	DIST	COUNTY		SHEET NO.

TYPE F STONE RIPRAP - MORTARED (TXDOT DETAIL - SRR)

N.T.S.



CONCRETE RIP-RAP DETAIL (N.T.S.)

TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)

Maximum Wingwall Height Hw	Dimensions W	X	Y	Z	Variable Reinforcing Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities (3) per ft of wing length (2~wings) Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING (2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:
(All values are in feet.)

Hw = H + T + C - 0.250'
A = (Hw - 0.333') (SL)
B = (A) tangent (30°)
Lw = (A) ÷ cosine (30°)

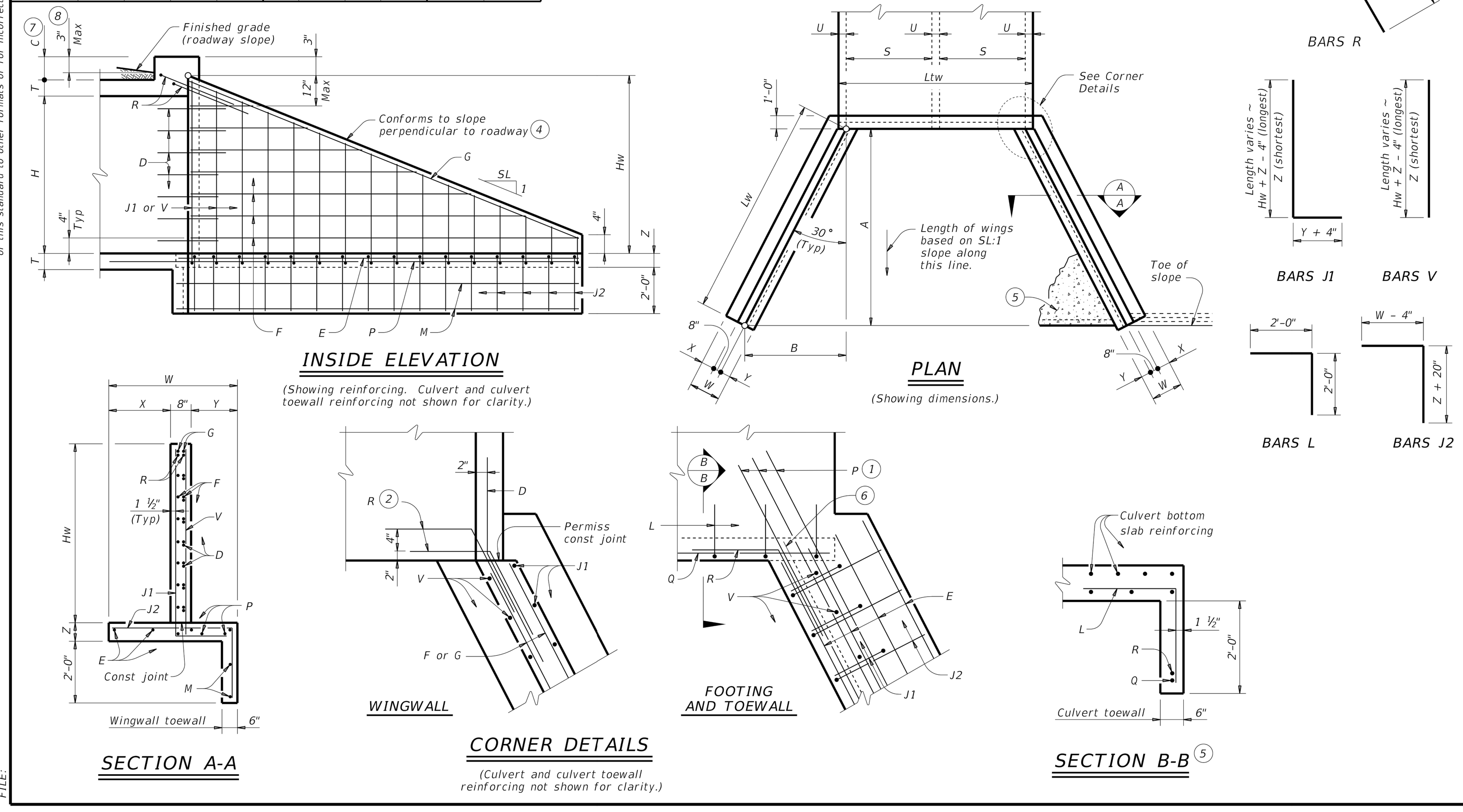
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total wingwall area (two wings ~ SF) = (Hw + 0.333') (Lw)

Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.



(1) Extend Bars P 3'-0" minimum into bottom slab of box culvert.

(2) Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

(3) Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

(4) Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

(5) When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

(6) At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

(7) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(8) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

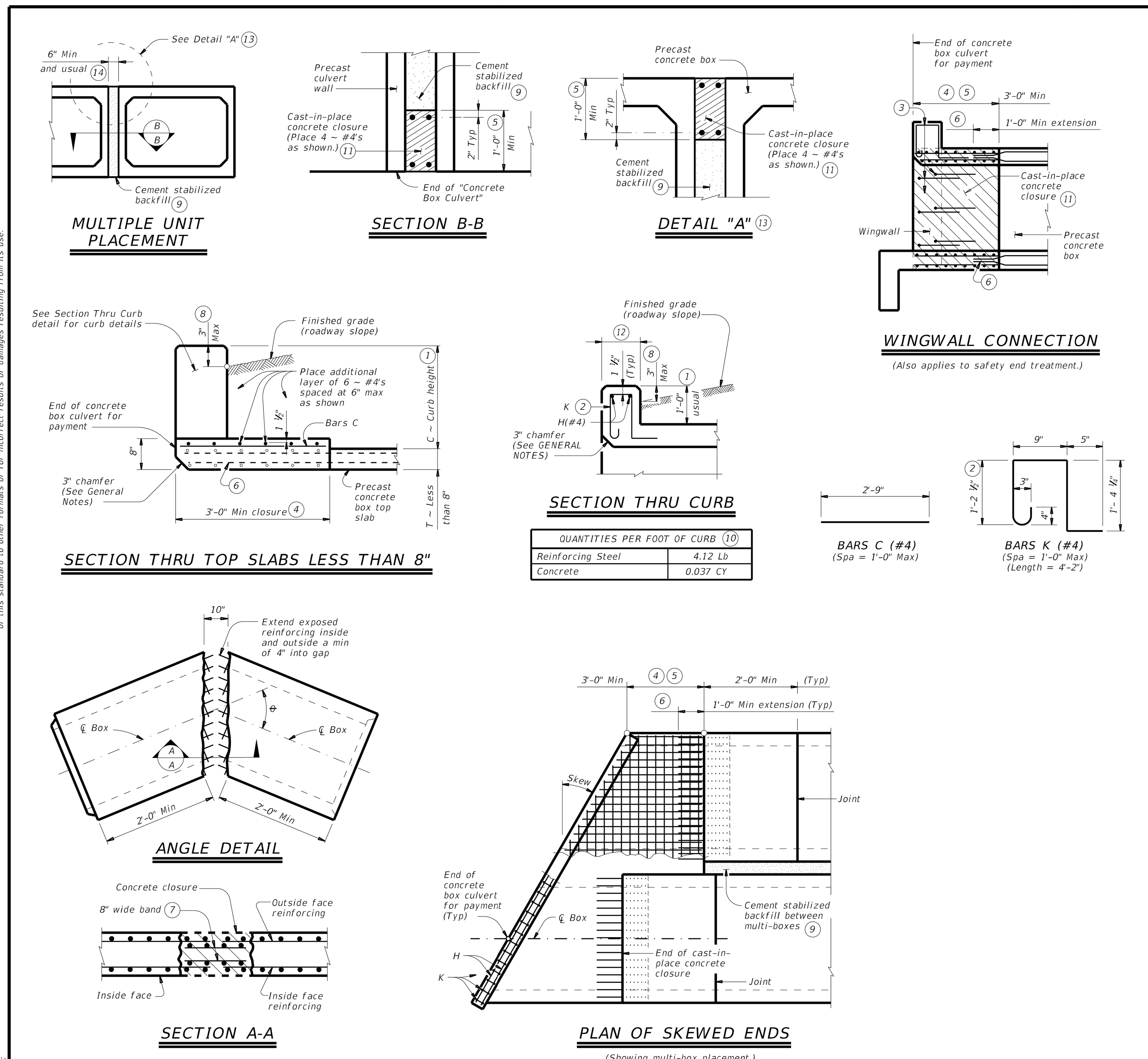
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

FW-0

FILE: fw-0stde-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.



QUANTITIES PER FOOT OF CURB (10)

Reinforcing Steel	4.12 Lb
Concrete	0.037 CY

(1) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail, or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(2) For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

(3) Extend curb, wingwall, or safety end treatment reinforcing into concrete closure. Bend or trim, as necessary, any reinforcing that does not fit into closure area.

(4) Provide a 3'-0" Min cast-in-place concrete closure. Break back boxes in the field or cast boxes short. Provide bands of reinforcing in the closure that are the same size and spacing as in the precast box section. Provide #4 longitudinal reinforcement spaced at 12 inches Max within the closure. Except where shown otherwise, construct the cast-in-place closure flush with the inside and outside faces of the precast box section.

(5) For multiple unit placements, adjust the length of the closure for the interior walls as necessary. Provide a 3'-0" Min cast-in-place closure in the top slab, bottom slab, and exterior wall. See Section B-B detail when interior walls are cast full length.

(6) Extend precast box reinforcing a minimum of 1'-0" into concrete closure (Typ).

(7) Place bands of reinforcing matching the inside and outside face reinforcing in the gaps of the top and bottom slabs. Place a band matching the outside face reinforcing of the wall in the gaps of the walls (placed in the outside face only). Tack weld the bands to the exposed reinforcing at each point of contact.

(8) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(9) Cement stabilized backfill between boxes is considered part of the box culvert for payment.

(10) All curb concrete and reinforcing is considered part of the box culvert for payment.

(11) Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.

(12) 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.

(13) For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in Detail "A".

(14) This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide ASTM A1064 welded wire reinforcement.
Provide Class C concrete (f'c = 3,600 psi) for the closures.
Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures."
Any additional concrete required for the closures will be considered subsidiary to the box culvert.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to the Single Box Culverts Precast (SCP) standard sheets for details and notes not shown.
Chamfer the bottom edge of the top slab closure 3 inches at culvert closure ends.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bars dimensions are out-to-out of bars.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

SCP-MD

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08/30/2024

DRAINAGE DETAILS

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 56 OF 68

2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDC_C3D2020.DWT
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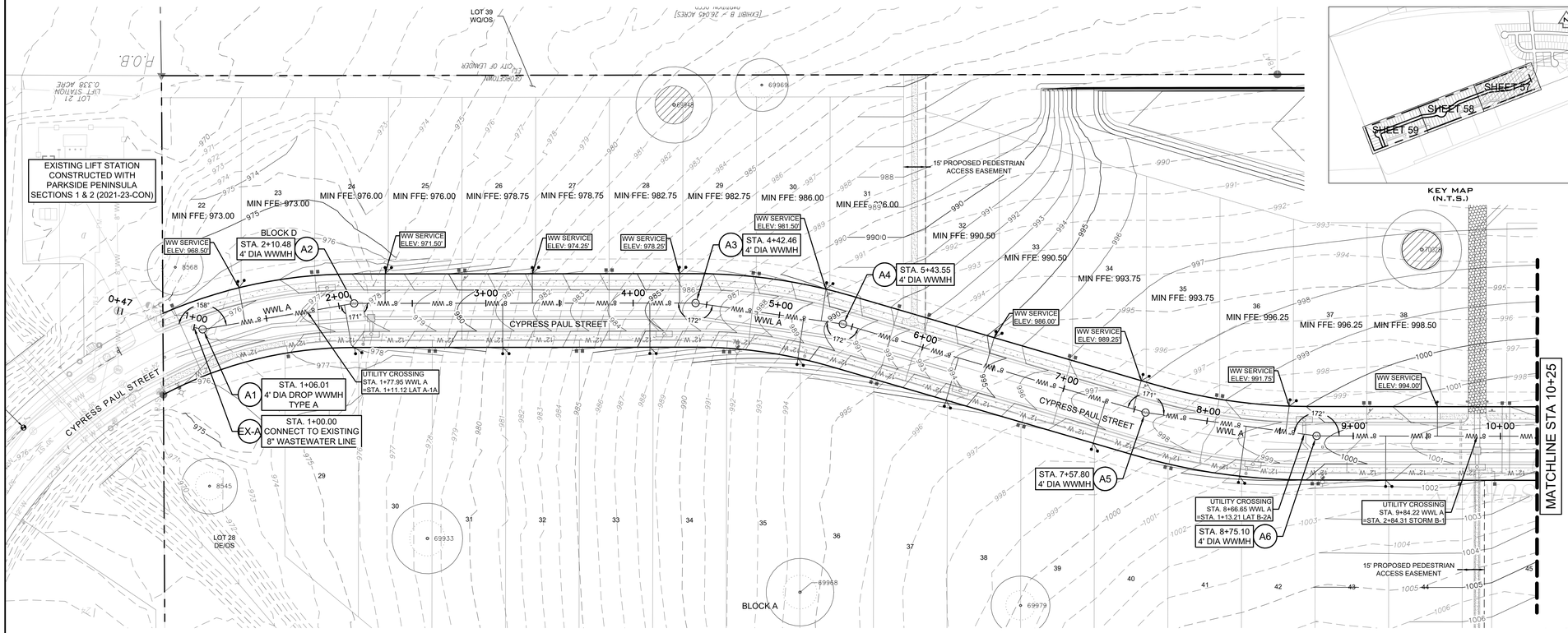


KEY MAP (N.T.S.)

0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- 2-4" SCH 40 PVC SLEEVE
- PROPOSED WASTEWATER LINE
- PROPOSED STORM LINE
- PROPOSED WATER LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- PROPOSED SINGLE WASTEWATER SERVICE
- PROPOSED DOUBLE WASTEWATER SERVICE
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DOUBLE WATER SERVICE
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

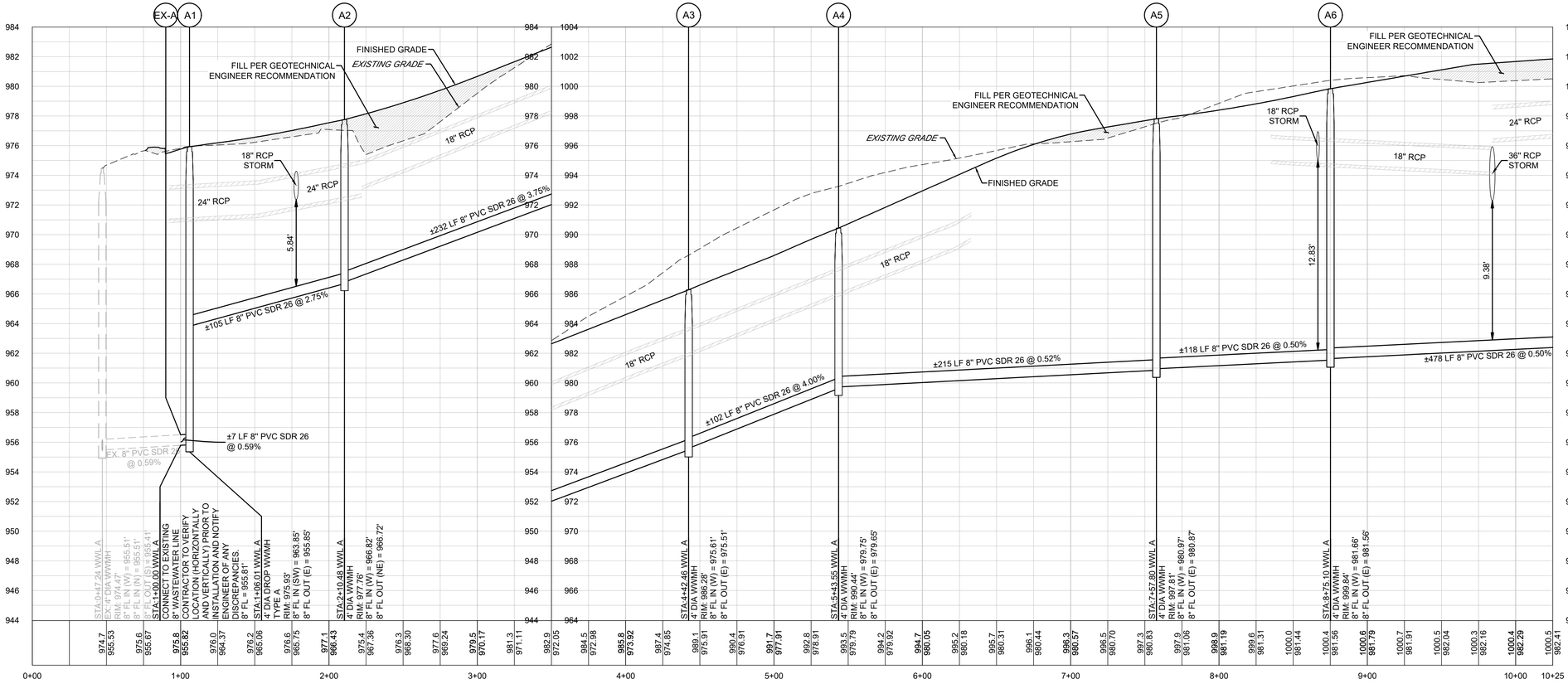
VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

WWL A



NOTES:

1. REFER TO THE WATER AND WASTEWATER DETAIL SHEET(S) FOR TYPE S AND TYPE D SERVICE CONNECTIONS.
2. UTILITIES ON THIS SITE TO BE BUILT PER THE APPROVED UTILITY ASSIGNMENT SHOWN ON THE WATER AND WASTEWATER DETAIL SHEET.
3. NO PORTION OF THIS SITE LIES WITHIN THE FEMA 100-YR FLOODPLAIN.
4. ALL PROPOSED GRAVITY WASTEWATER PIPES TO BE SDR-26 UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. UNLESS OTHERWISE NOTED, CONTRACTOR TO ENSURE WW SERVICES ARE SET TO MAXIMUM DEPTH (PER DETAIL WW13) FOR ALL LOTS IN ORDER TO PROVIDE SUFFICIENT DEPTH TO CONNECT SERVICE.
6. ALL MANHOLES TO BE COATED PER CITY OF GEORGETOWN SPECIFICATIONS. EXISTING MANHOLES WITH PROPOSED CONNECTIONS TO BE COATED.
7. IF THE HOME BUILDER CANNOT ACHIEVE THE MINIMUM FINISHED FLOOR ELEVATIONS SPECIFIED, THEN A WASTEWATER GRINDER PUMP SYSTEM MAY BE NEEDED TO CONNECT TO THE WASTEWATER MAIN.

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDE BY THE CONTRACTOR.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS,WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
3. CONSTRUCTION SHALL NOT PROCEED UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF GEORGETOWN.
4. DEEP EXCAVATIONS: ON EXCAVATIONS EXCEEDING 20 FEET IN DEPTH, TWO OR MORE MEANS OF EGRESS FROM THE EXCAVATION SHALL BE PROVIDED. THE CONTRACTOR SHALL CONSULT WITH A REGISTERED ENGINEER, EXPERIENCED IN TRENCH SAFETY SYSTEMS, REGARDING SPECIFIC MEANS AND METHODS EMPLOYED. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN SEALED BY A REGISTERED PROFESSIONAL ENGINEER AS REQUIRED BY THE CITY OF GEORGETOWN.

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CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WWL A PLAN & PROFILE 1+00 - 10+25

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 57 OF 68

2024-XX-CON

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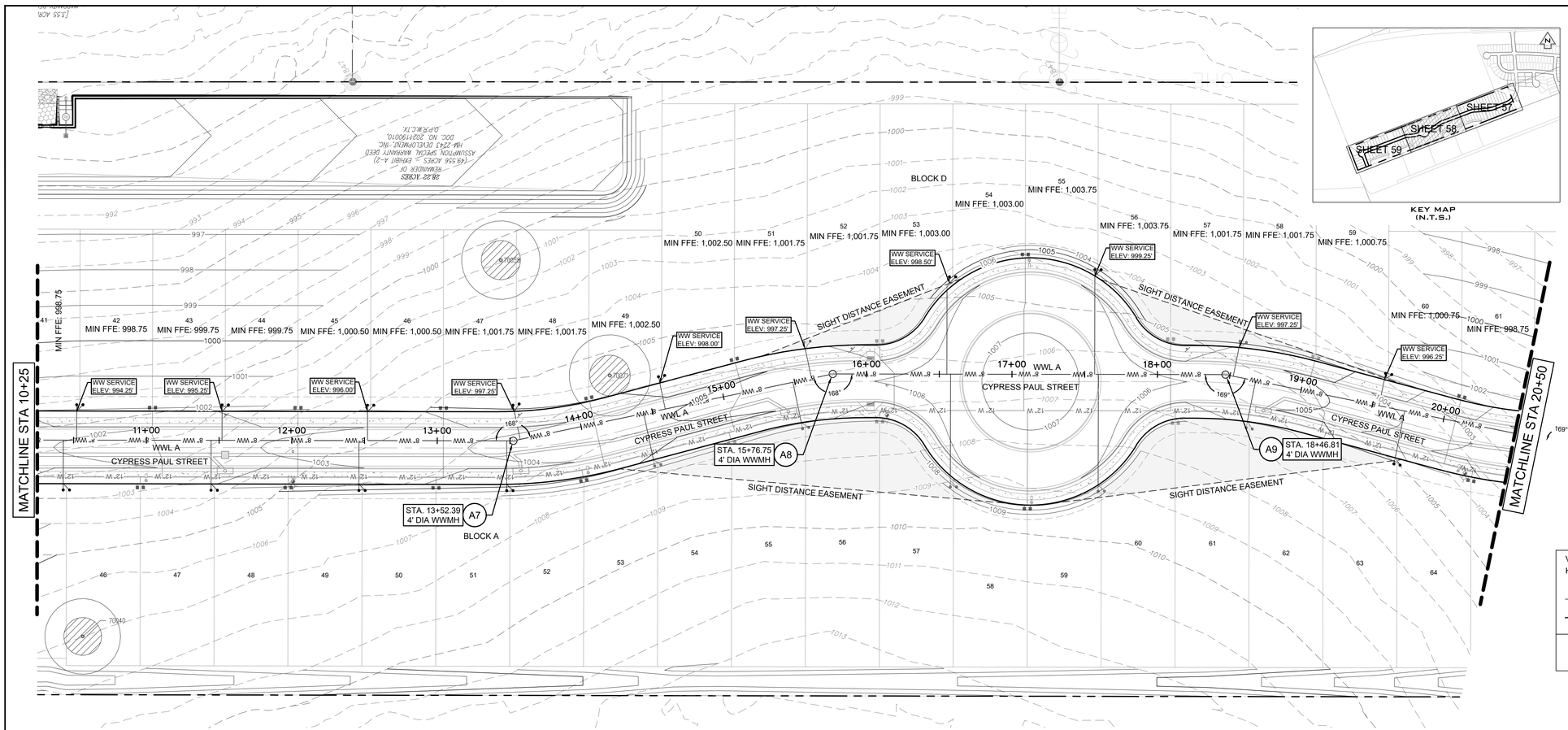

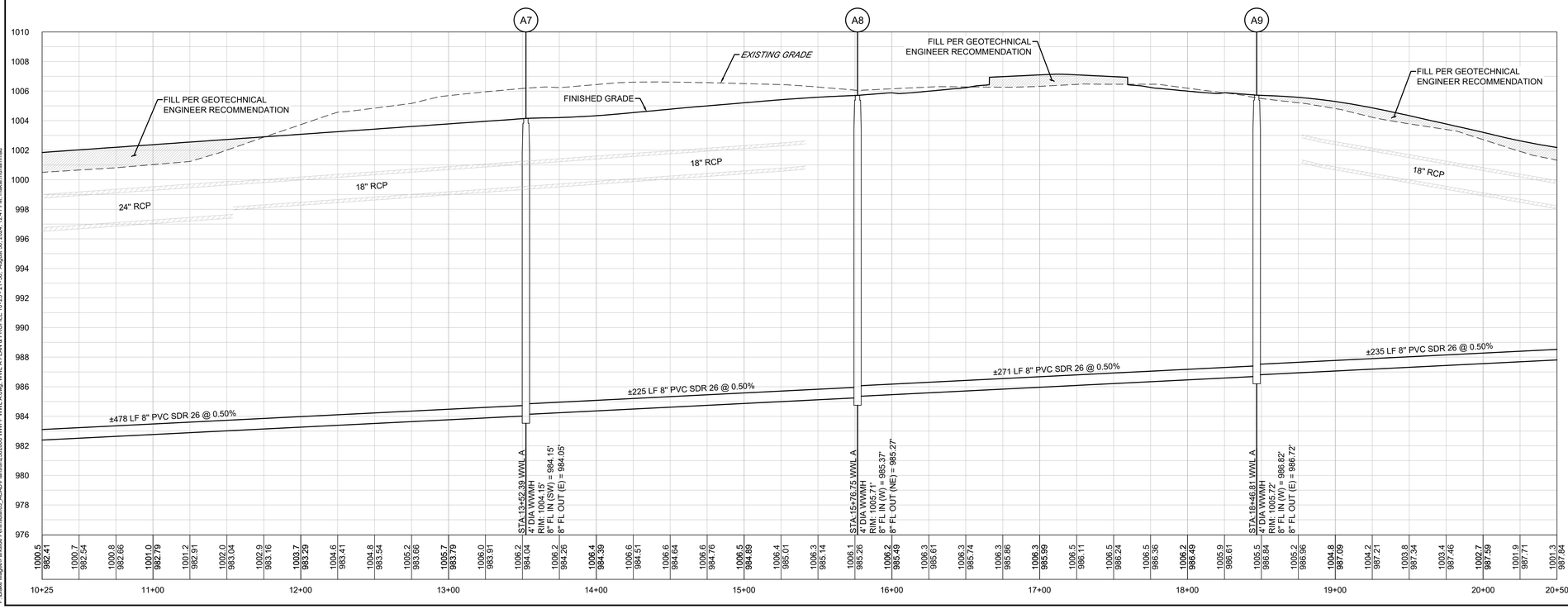

NOTES:

1. REFER TO THE WATER AND WASTEWATER DETAIL SHEET(S) FOR TYPE S AND TYPE D SERVICE CONNECTIONS.
2. UTILITIES ON THIS SITE TO BE BUILT PER THE APPROVED UTILITY ASSIGNMENT SHOWN ON THE WATER AND WASTEWATER DETAIL SHEET.
3. NO PORTION OF THIS SITE LIES WITHIN THE FEMA 100-YR FLOODPLAIN.
4. ALL PROPOSED GRAVITY WASTEWATER PIPES TO BE SDR-26 UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. UNLESS OTHERWISE NOTED, CONTRACTOR TO ENSURE WW SERVICES ARE SET TO MAXIMUM DEPTH (PER DETAIL WW13) FOR ALL LOTS IN ORDER TO PROVIDE SUFFICIENT DEPTH TO CONNECT SERVICE.
6. ALL MANHOLES TO BE COATED PER CITY OF GEORGETOWN SPECIFICATIONS. EXISTING MANHOLES WITH PROPOSED CONNECTIONS TO BE COATED.
7. IF THE HOME BUILDER CANNOT ACHIEVE THE MINIMUM FINISHED FLOOR ELEVATIONS SPECIFIED, THEN A WASTEWATER GRINDER PUMP SYSTEM MAY BE NEEDED TO CONNECT TO THE WASTEWATER MAIN.

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDE BY THE CONTRACTOR.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS,WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
3. CONSTRUCTION SHALL NOT PROCEED UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF GEORGETOWN.
4. DEEP EXCAVATIONS: ON EXCAVATIONS EXCEEDING 20 FEET IN DEPTH, TWO OR MORE MEANS OF EGRESS FROM THE EXCAVATION SHALL BE PROVIDED. THE CONTRACTOR SHALL CONSULT WITH A REGISTERED ENGINEER, EXPERIENCED IN TRENCH SAFETY SYSTEMS, REGARDING SPECIFIC MEANS AND METHODS EMPLOYED. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN SEALED BY A REGISTERED PROFESSIONAL ENGINEER AS REQUIRED BY THE CITY OF GEORGETOWN.

NO.	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WWL A PLAN & PROFILE 10+25 - 21+50

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

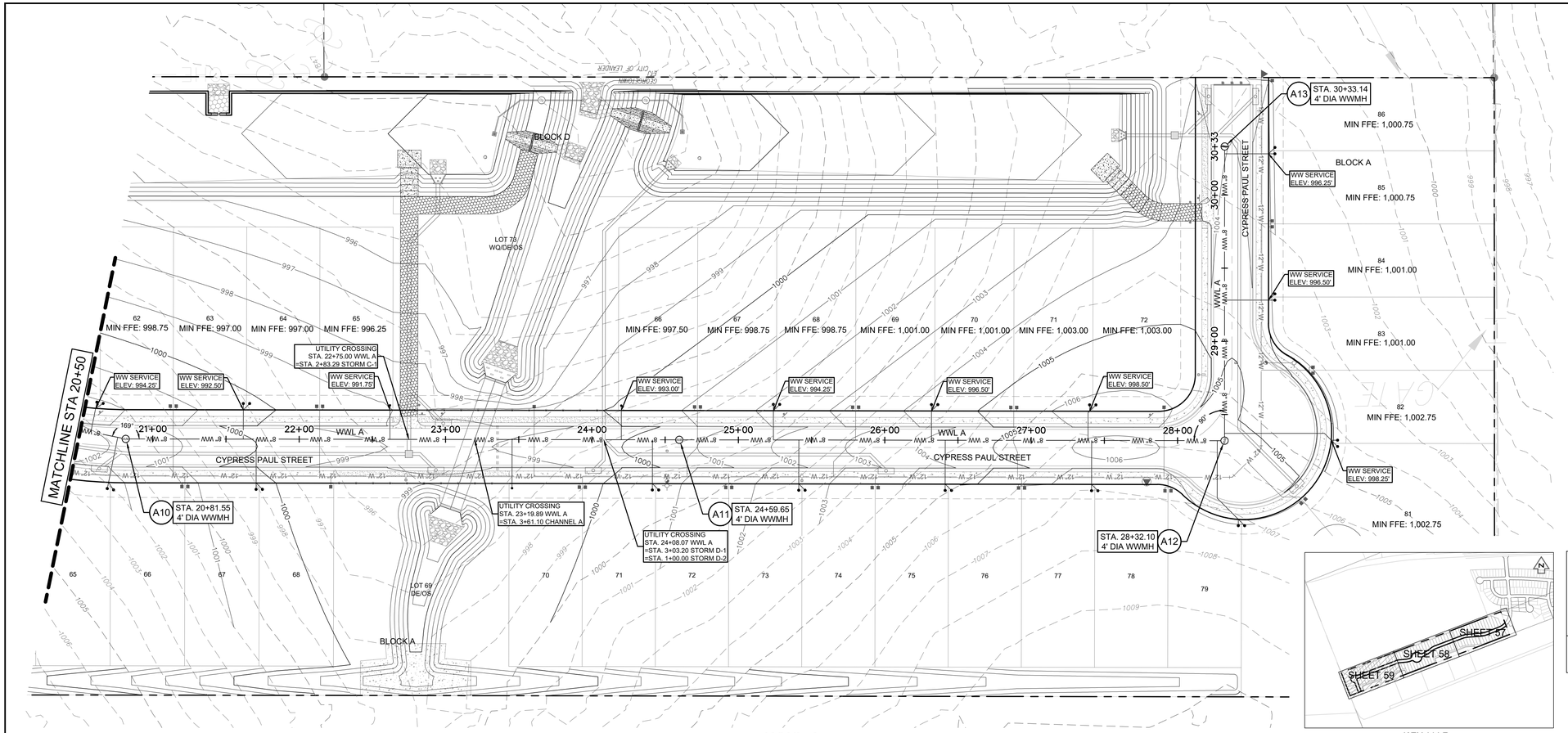
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 58 OF 68

2024-XX-CON

P:\Blake Magee\Parkside Peninsula\03_ACAD\Parcels\3\20\008 WWPP WWL A Reg. WWL A PLAN & PROFILE 10+25 - 21+50 - August 30, 2024, 12:41 PM, makai.muhammad



LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- 2-4" SCH 40 PVC SLEEVE
- PROPOSED WASTEWATER LINE
- PROPOSED STORM LINE
- PROPOSED WATER LINE
- FIRE HYDRANT
- WATER VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- PROPOSED SINGLE WASTEWATER SERVICE
- PROPOSED DOUBLE WASTEWATER SERVICE
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DOUBLE WATER SERVICE
- TREES TO REMAIN HERITAGE
- TREES TO REMAIN NON HERITAGE

KEY MAP (N.T.S.)

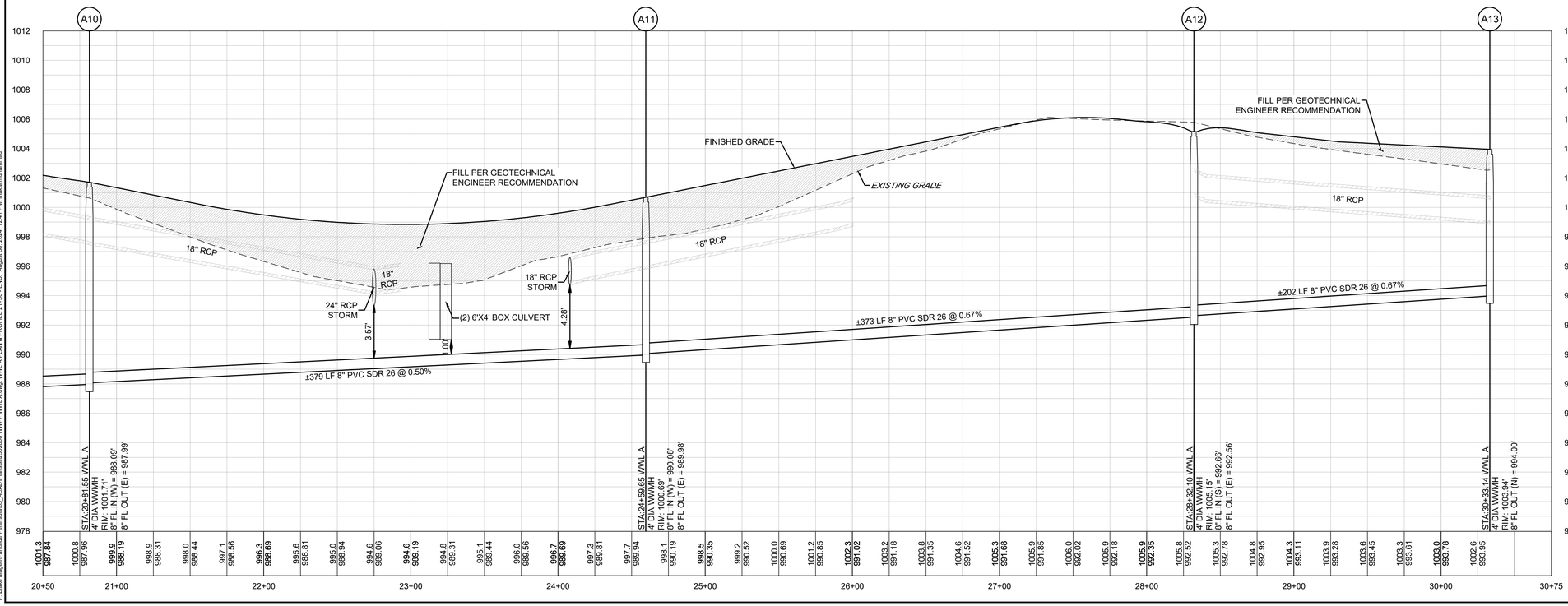
VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

WWL A



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NO	REVISION	BY	DATE

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STATE OF TEXAS
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WWL A PLAN & PROFILE 21+50 - END

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
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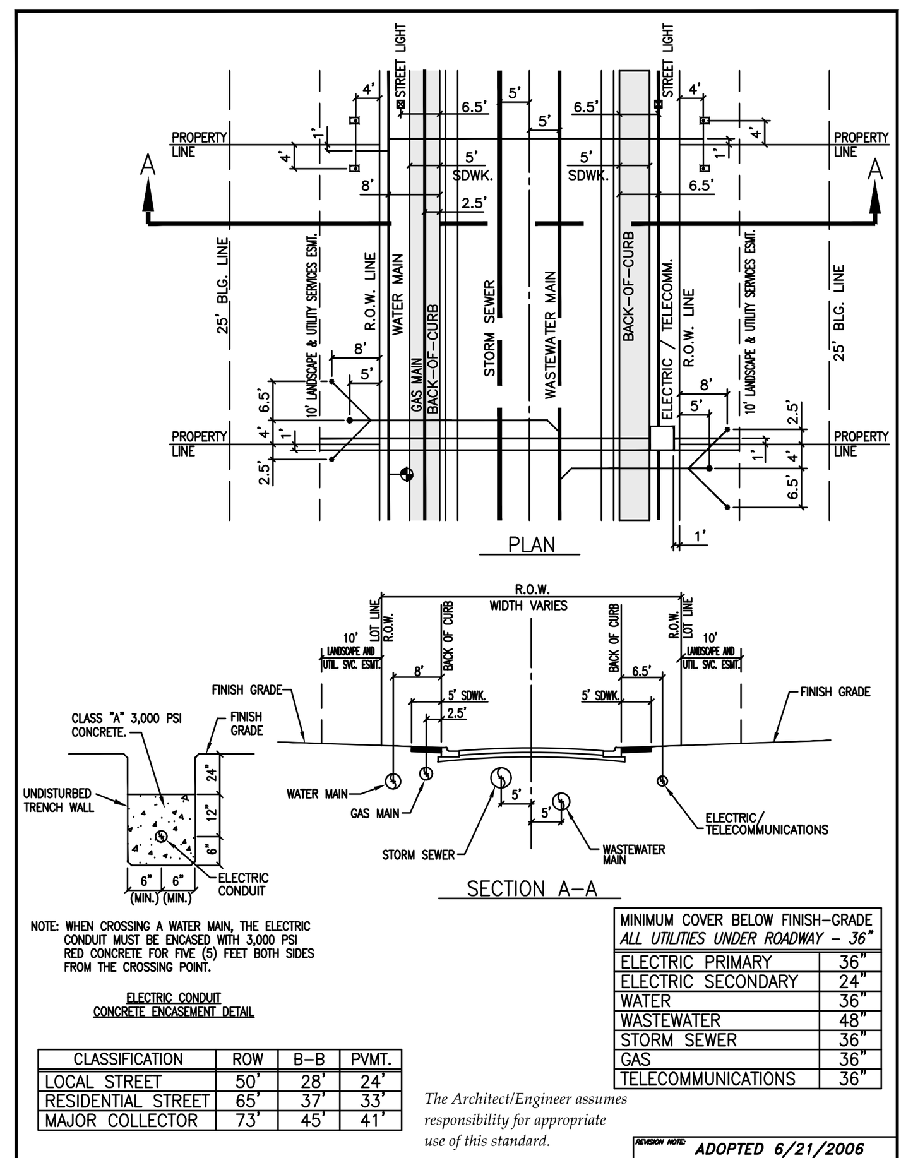
APPROVED BY:

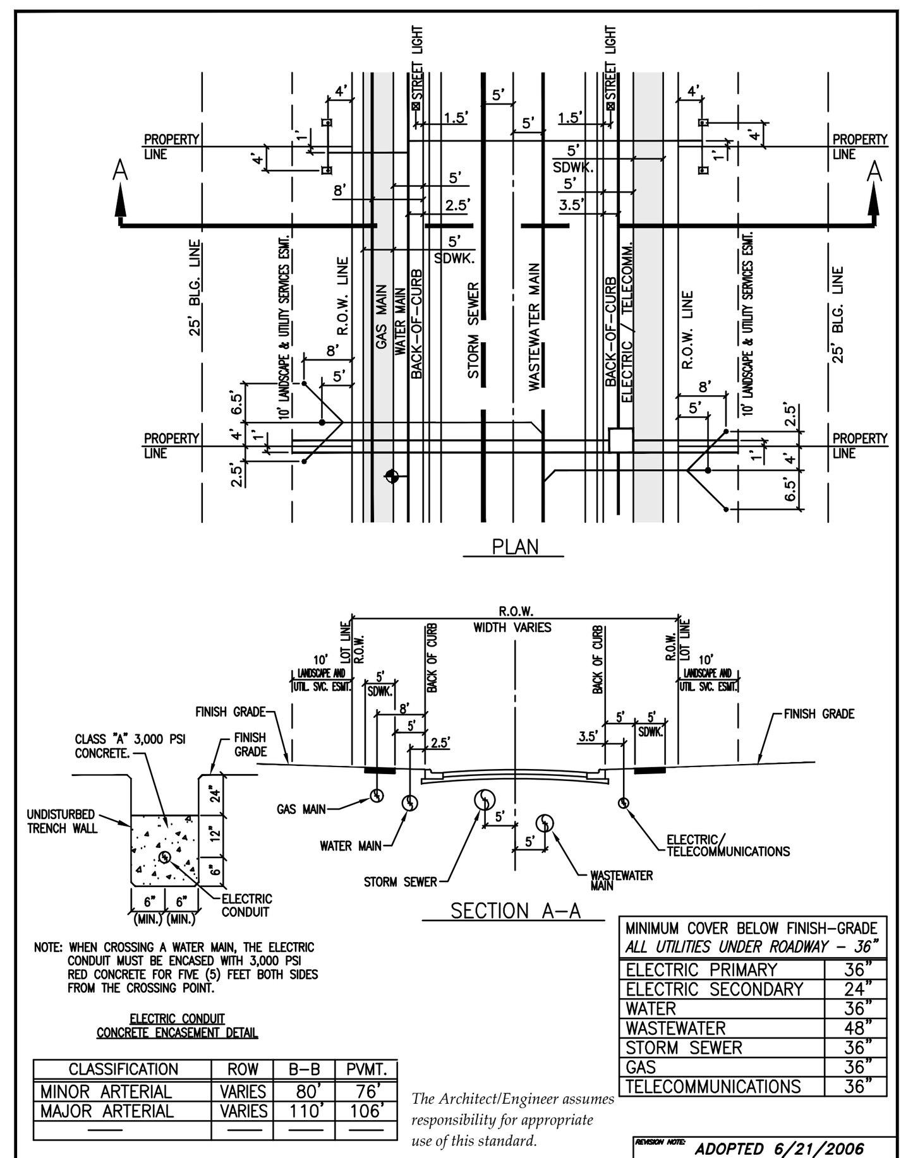
SHEET 59 OF 68

2024-XX-CON

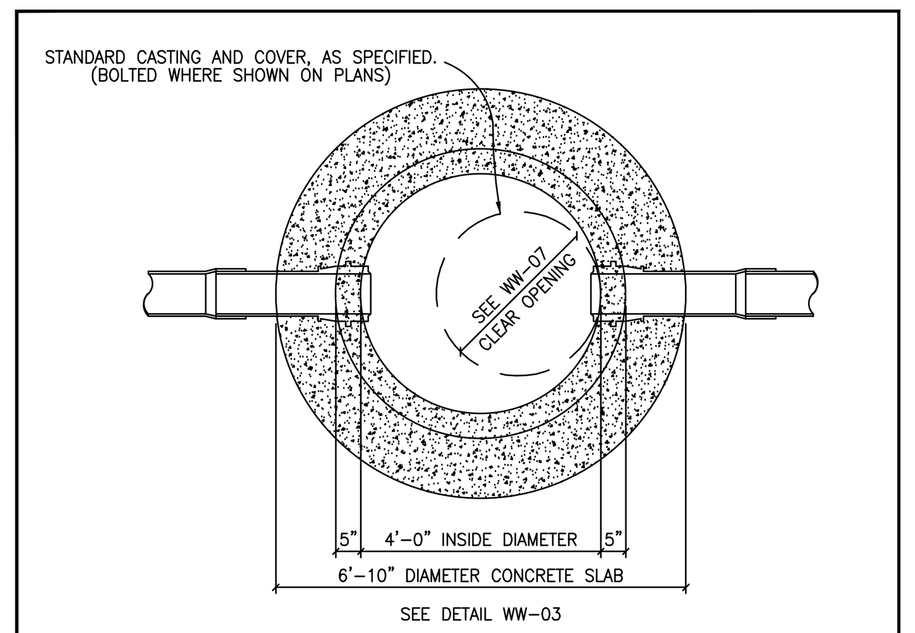
P:\Brian Mangel\Parkside Peninsula\03_ACAD\Planset\030306 WWP WWL A.dwg, WWL A PLAN & PROFILE 21+50 - END, August 30, 2024, 12:41 PM, malal.muhammad



CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS — WW01A — ADOPTED 6/21/2006



CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR MINOR ARTERIAL AND MAJOR ARTERIAL ROADWAYS — WW01B — ADOPTED 6/21/2006



SEE DETAIL WW-03

MANHOLE PLAN

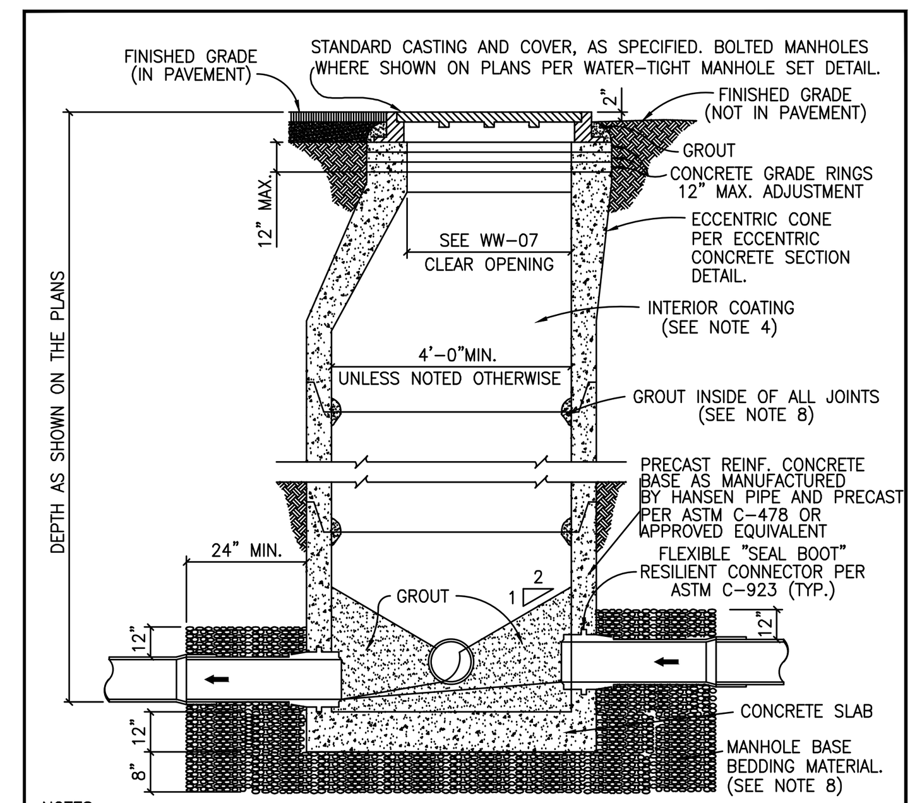
CITY OF GEORGETOWN NOTES:

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

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

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

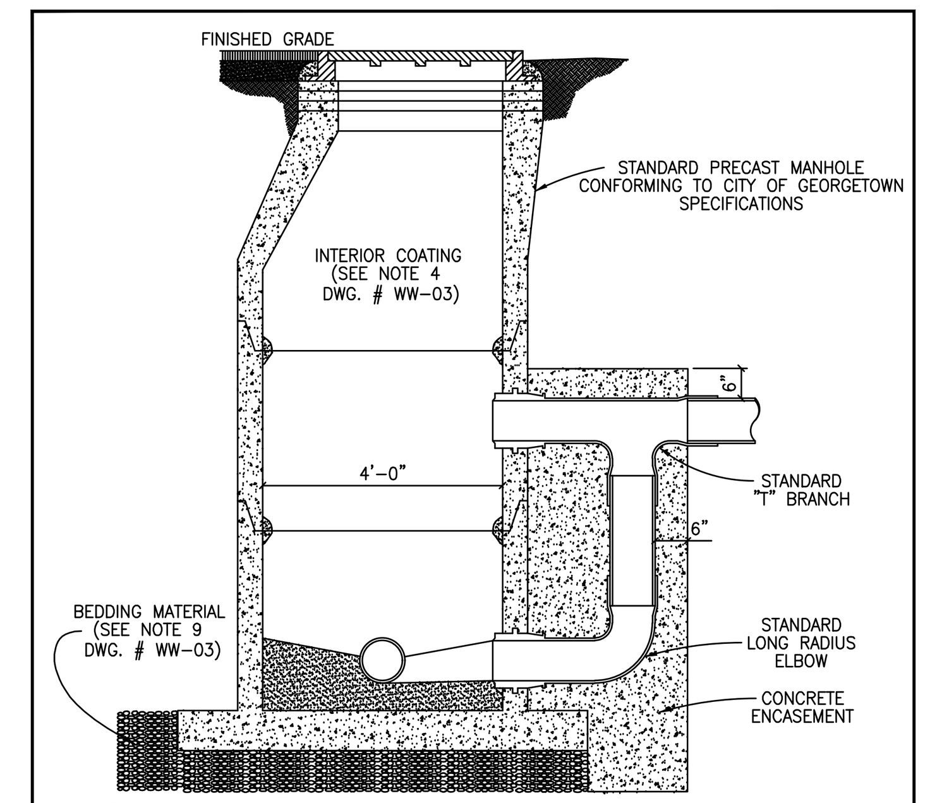
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – PLAN — WW02 — ADOPTED 6/21/2006



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

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

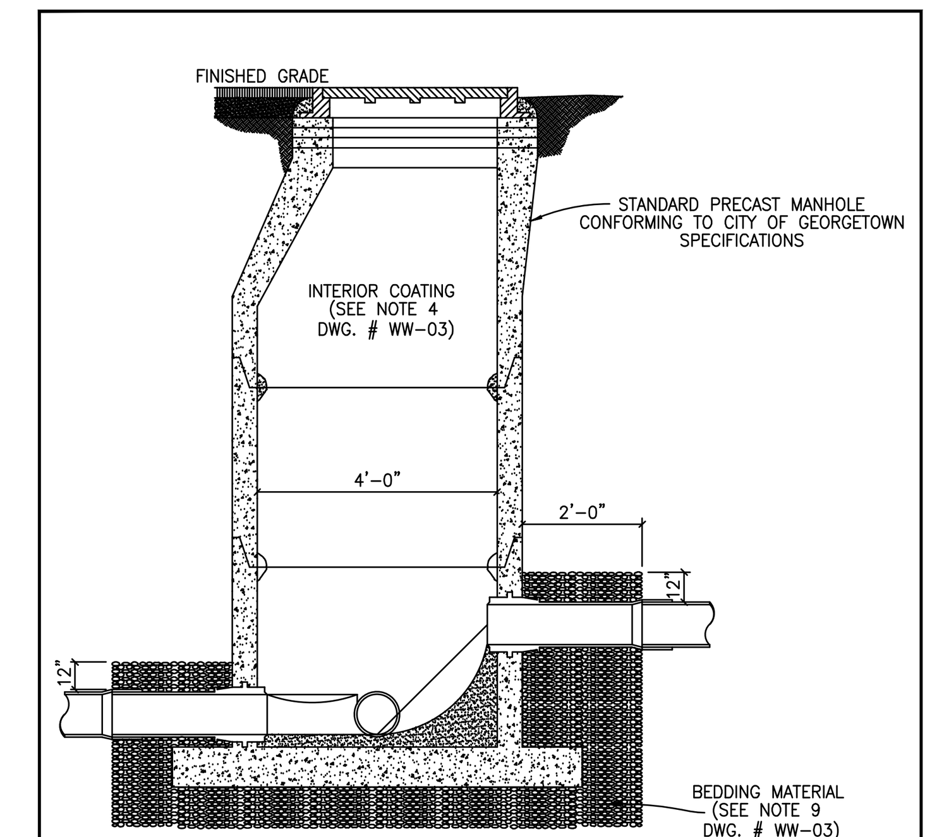
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – SECTION — WW03 — ADOPTED 6/21/2006



NOTES:
1. CONCRETE ENCASEMENT FOR DROP CONNECTION TO BE POURED INTEGRALLY WITH BOTH MANHOLE SLAB AND WALL.
2. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO FEET (2') OR MORE ABOVE THE MAIN INVERT CHANNEL.
3. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
4. WHEN P.V.C. IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.
5. MINIMUM PIPE SIZE FOR DROP IS EIGHT INCHES (8").
6. SEE STANDARD MANHOLE DETAIL (DWG. # WW-03) FOR ADDITIONAL REQUIREMENTS.

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DROP CONNECTION–PRECAST MANHOLE TYPE "A" — WW04 — ADOPTED 6/21/2006

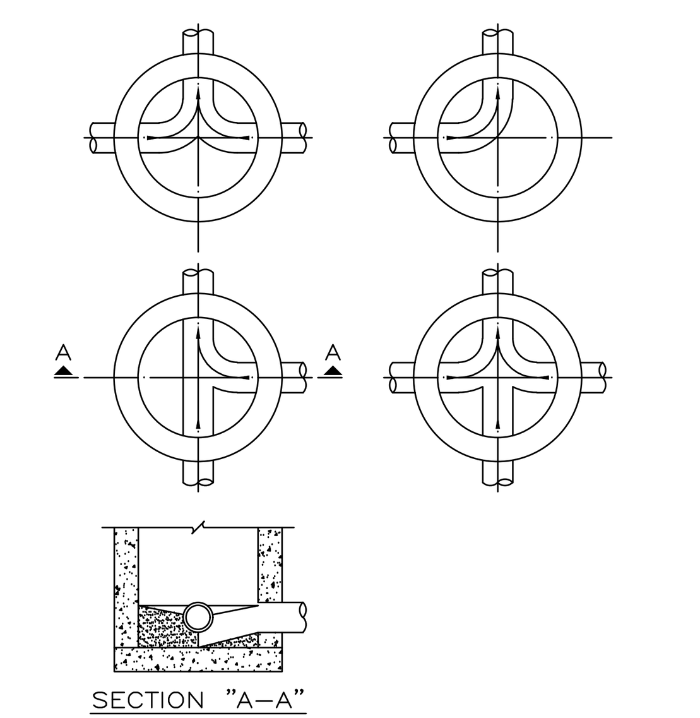


NOTES:
1. TO BE USED WHERE DROP IS SIX INCHES (6") TO TWO FEET (2'-0").
2. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
3. CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED SLAB TO EXTEND UNDER THE DROP CONNECTION.
4. MINIMUM PIPE SIZE FOR DROP IS EIGHT INCHES (8").
5. SEE STANDARD MANHOLE DETAIL (DWG. # WW-03) FOR ADDITIONAL REQUIREMENTS.

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DROP CONNECTION–PRECAST MANHOLE TYPE "B" — WW05 — ADOPTED 6/21/2006

FLOW PATTERNS FOR INVERT CHANNELS



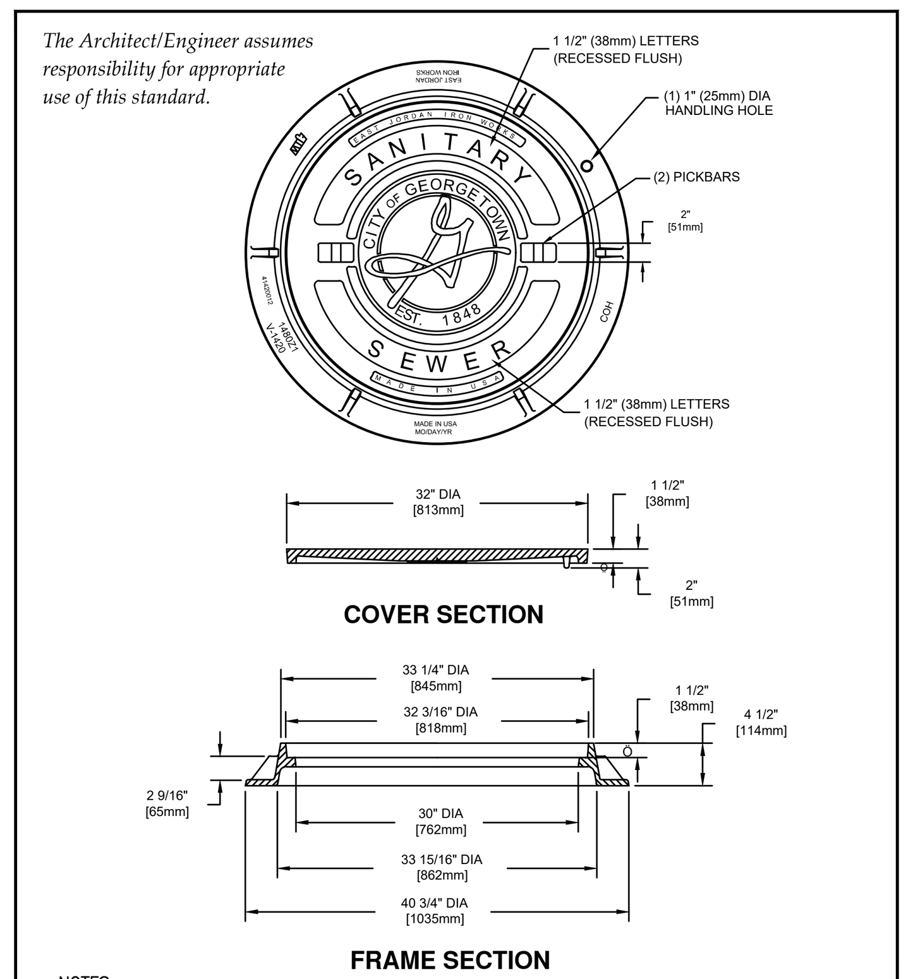
SECTION "A–A"

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

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLOW PATTERNS FOR INVERT CHANNELS — WW06 — ADOPTED 6/21/2006

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



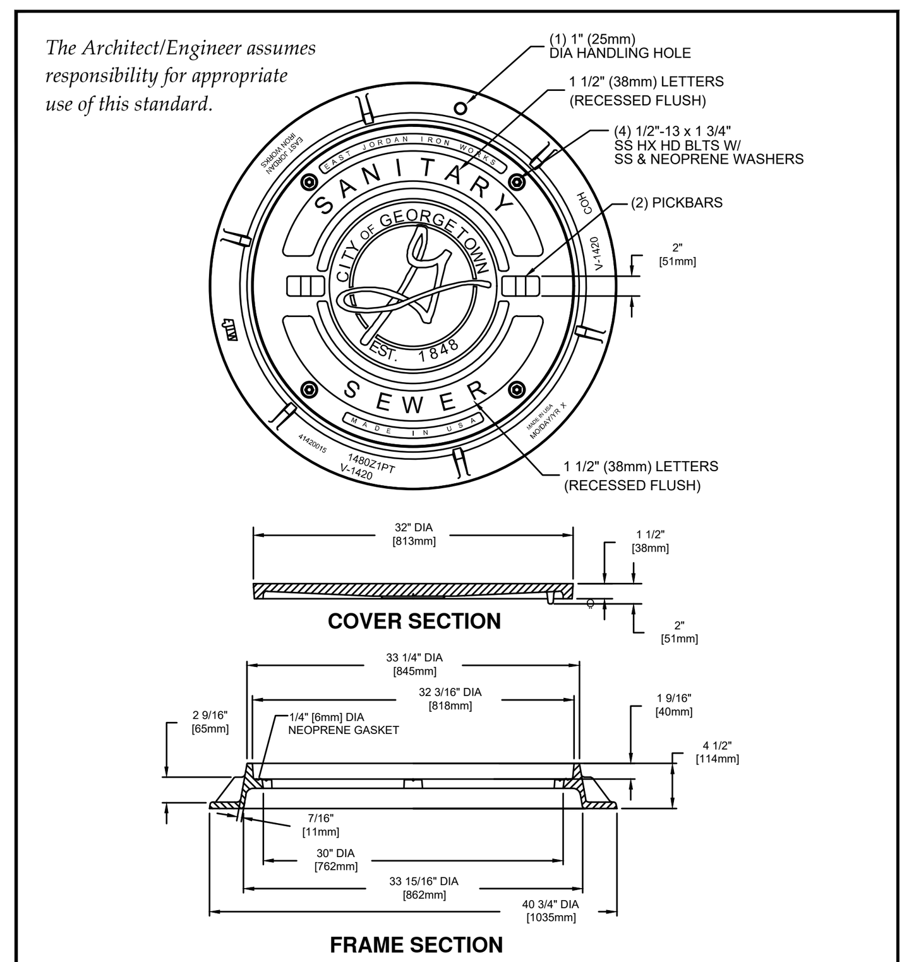
COVER SECTION

FRAME SECTION

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD WASTEWATER MANHOLE SET — WW07 — ADOPTED 6/21/2006

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

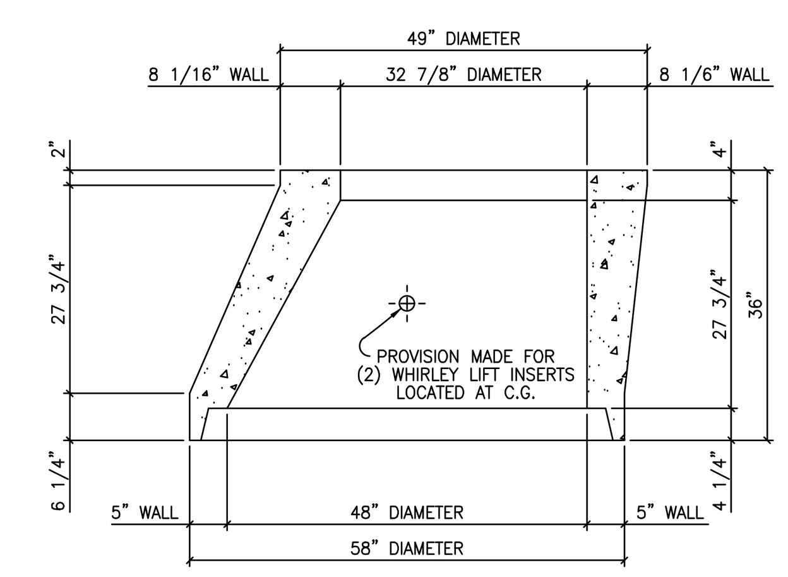


COVER SECTION

FRAME SECTION

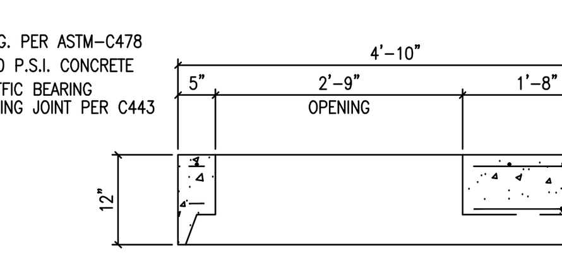
NOTES:
1. BOLTED WASTEWATER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480APT V-1420/1480Z1PT, COVER TO BE STAMPED WITH "SANITARY SEWER".
2. BOLTED WASTEWATER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
BOLTED MANHOLE SET — WW07A — ADOPTED 6/21/2006



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

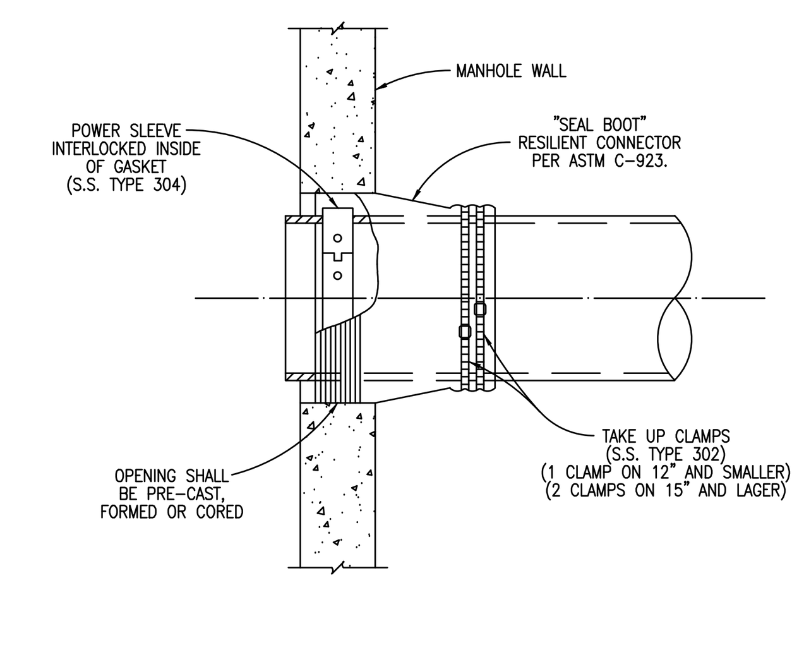
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
48"X3" TO 33"X8"X36" TALL ECCENTRIC CONCRETE SECTION — WW08 — ADOPTED 6/21/2006



NOTES:
1. AVAILABLE WITH CAST IRON RING AND COVER CAST IN PLACE.
2. PERMITTED ONLY WITH WRITTEN APPROVAL FROM GEORGETOWN UTILITY SYSTEMS, CITY OF GEORGETOWN.

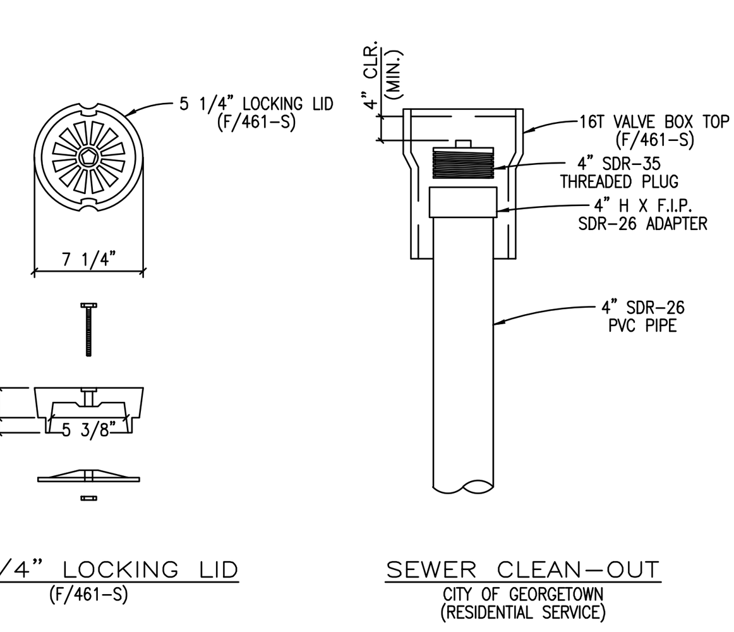
The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
48" MANHOLE FLAT LID — WW09 — ADOPTED 6/21/2006



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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLEXIBLE "SEAL BOOT" CONNECTOR — WW10 — ADOPTED 6/21/2006

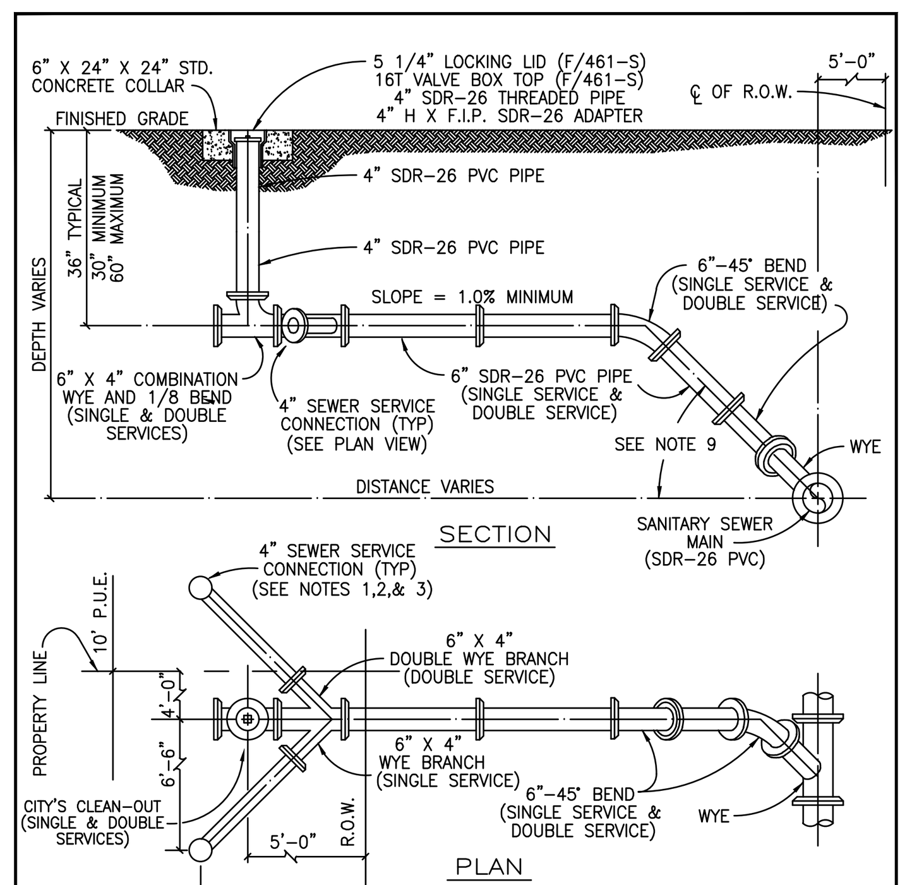


5 1/4" LOCKING LID (F/461-S)

SEWER CLEAN-OUT (RESIDENTIAL SERVICE)

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEWER CLEAN-OUT DETAIL — WW12 — ADOPTED 6/21/2006



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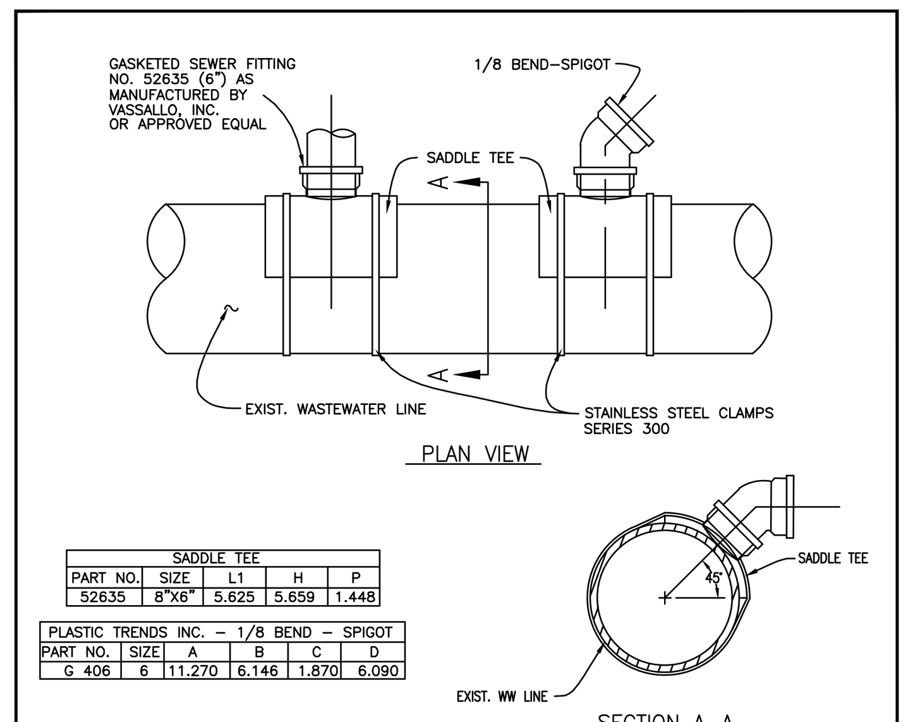
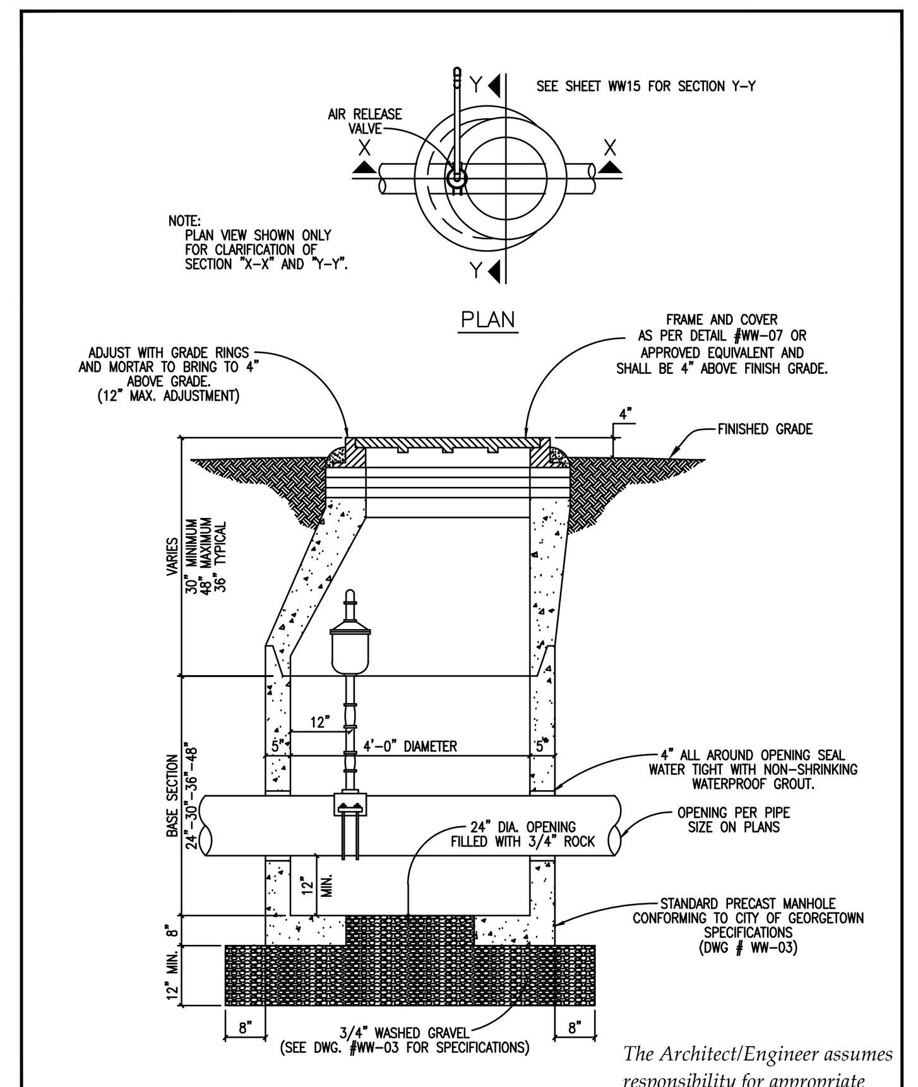
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEWER SERVICE CONNECTIONS — WW13 — ADOPTED 6/21/2006



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

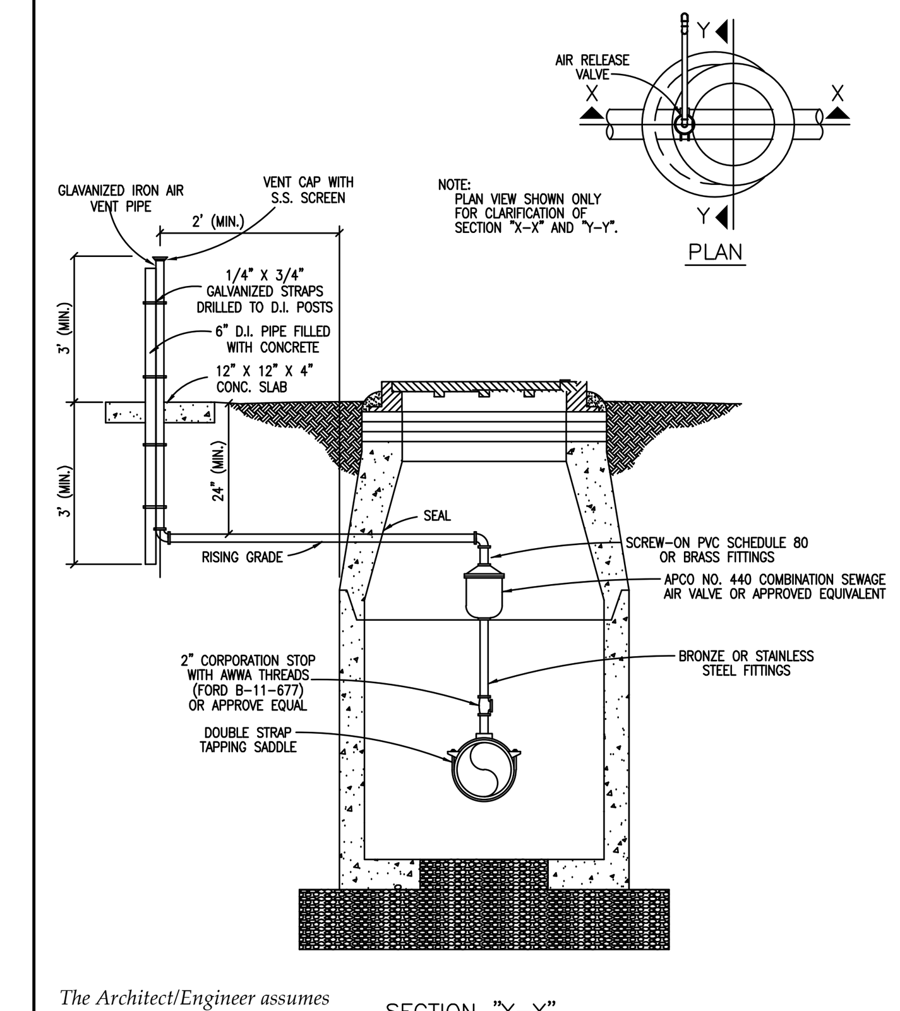
The Architect/Engineer assumes responsibility for appropriate use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
GASKETED SEWER FITTING FOR SEWER SERVICE CONNECTIONS TO EXISTING MAINS — WW13A — ADOPTED 6/21/2006



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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR FORCE MAIN — WW14 — ADOPTED 6/21/2006



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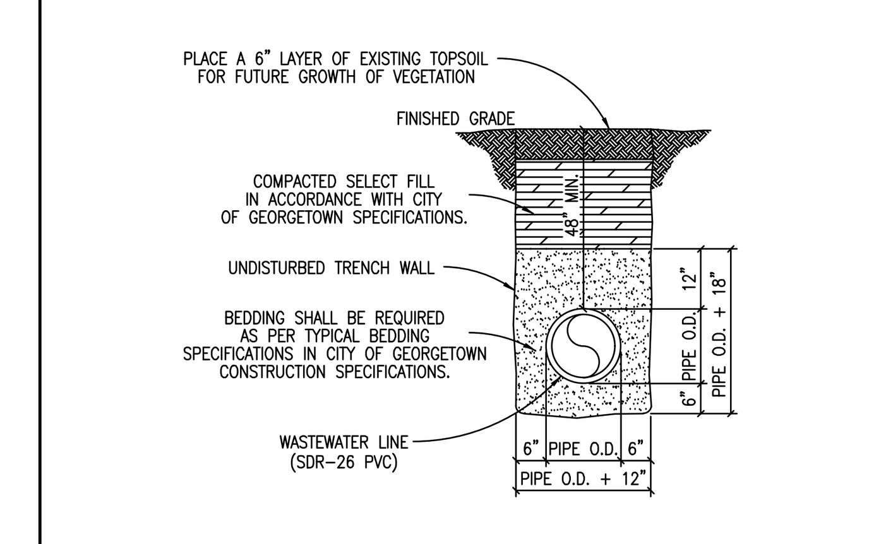
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR FORCE MAIN — WW15 — ADOPTED 6/21/2006



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

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

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS — WW16 — ADOPTED 6/21/2006

NO.	REVISION	BY	DATE

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WASTEWATER DETAILS SHT 1 OF 2

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

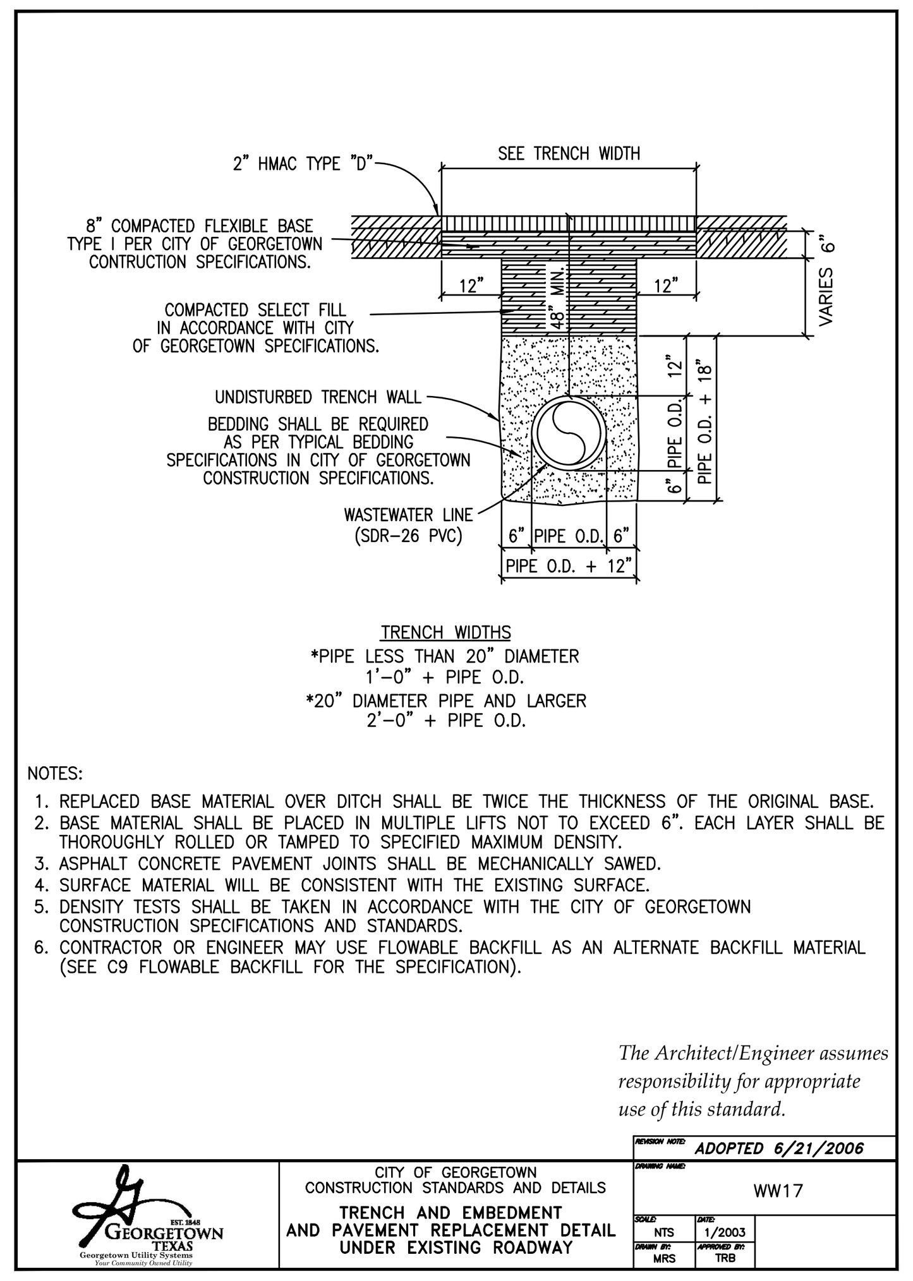
GEORGETOWN, WILLIAMSON, TEXAS

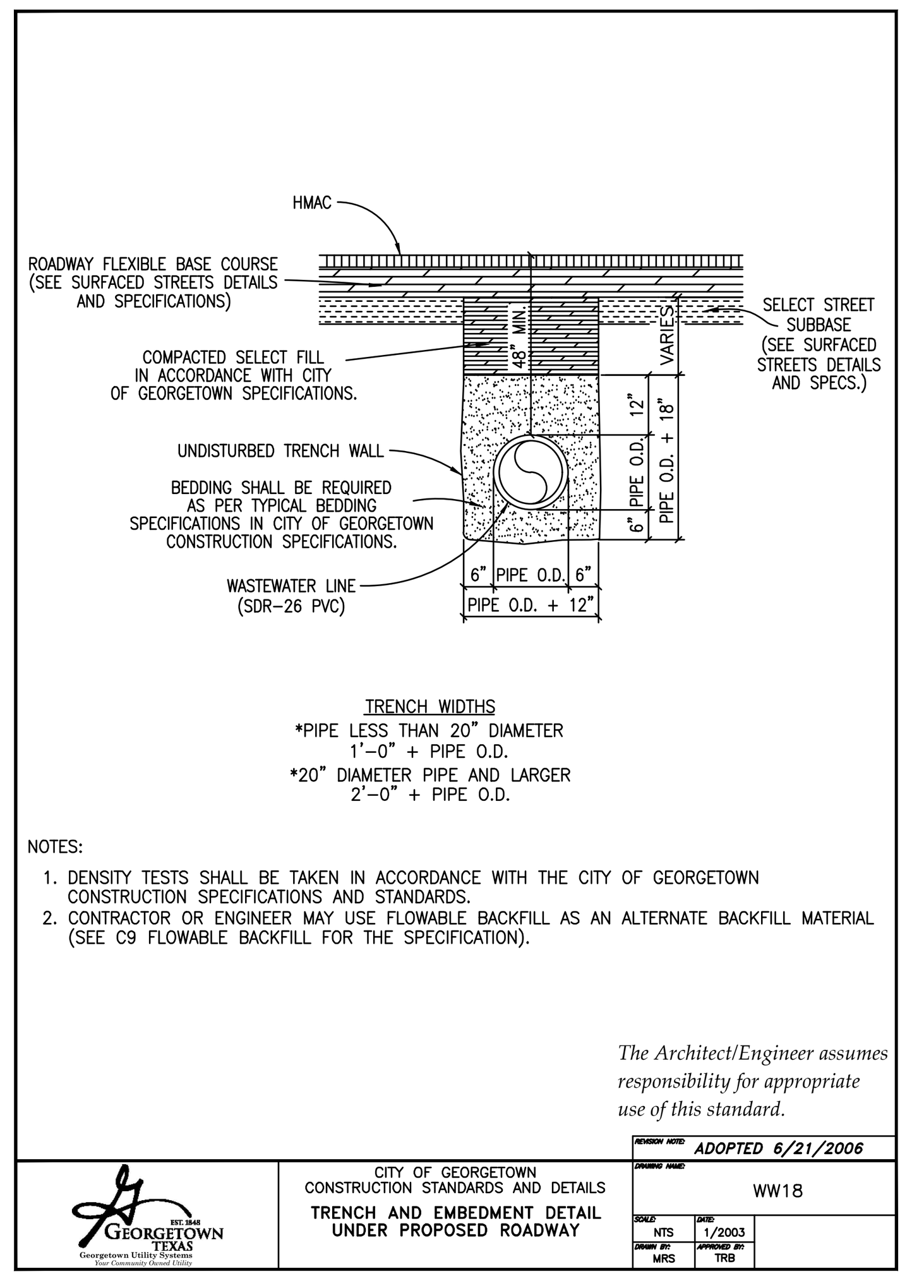
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

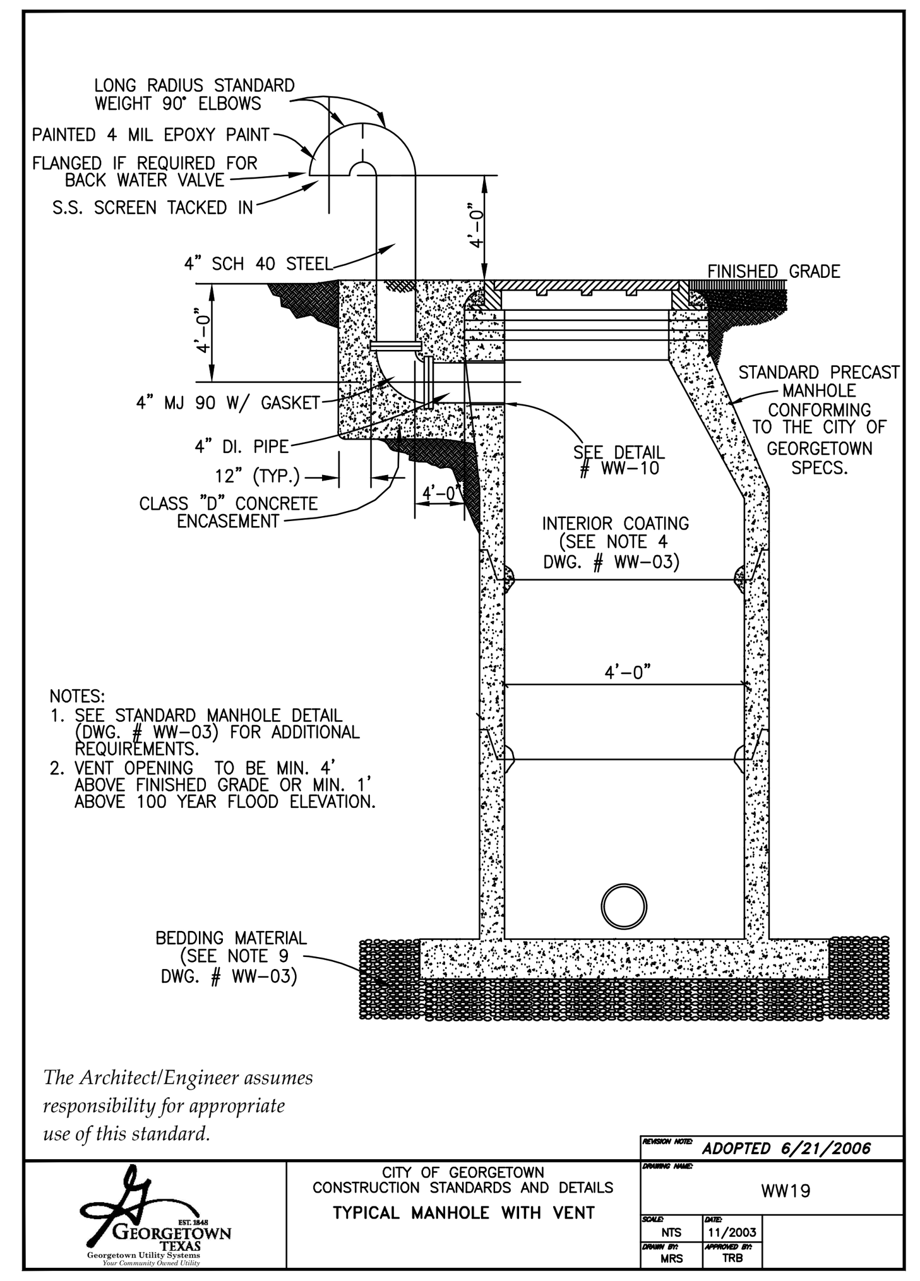
SHEET 60 OF 68

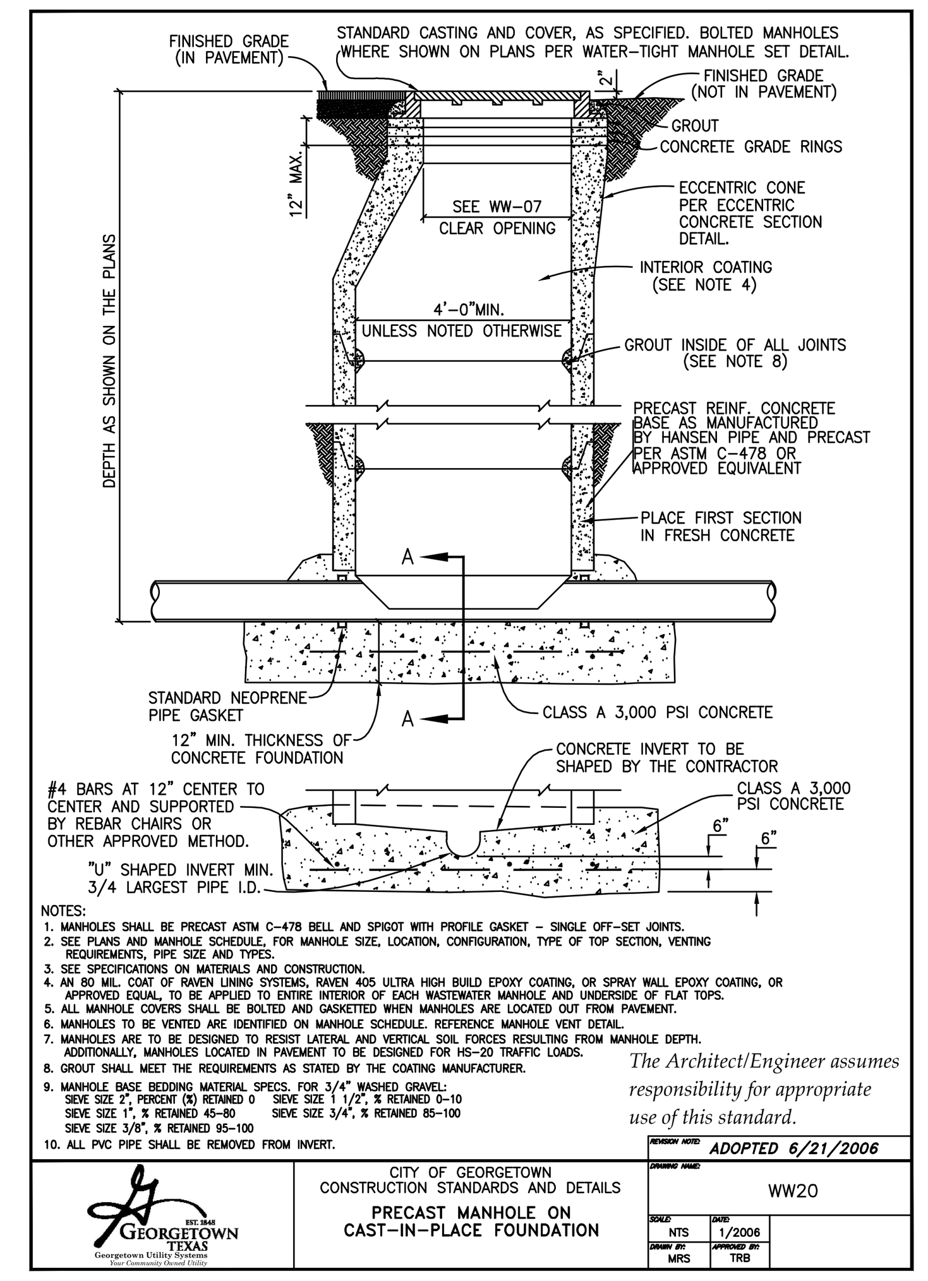
2024-XX-CON

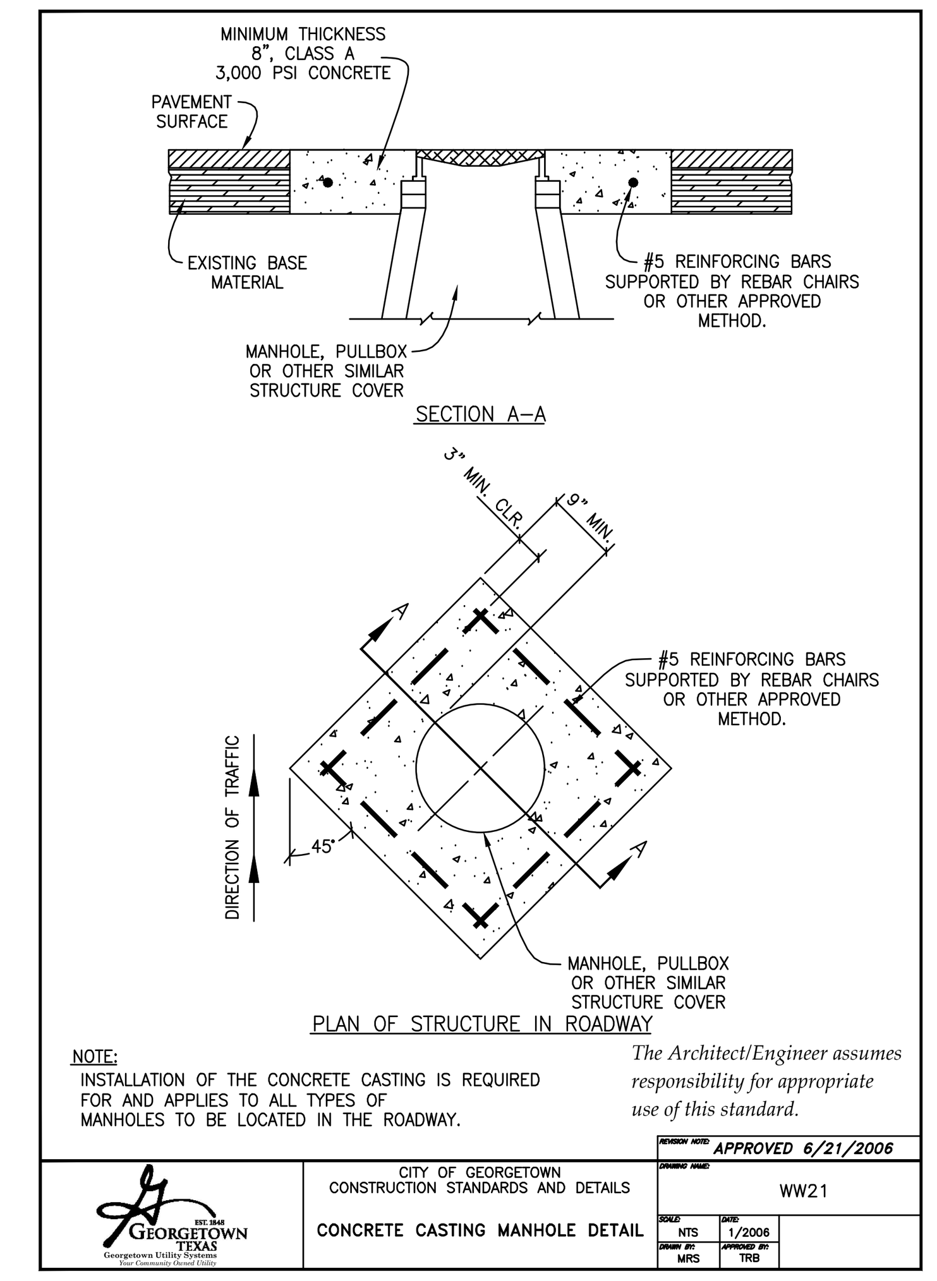
Plot Style: LandDev Global.ctb
Template: LDC_C3D2022.DWT
P:\Blake Magee\Parkside Peninsula\03_ACAD\Plans\m2502006 DTLS.dwg, WASTEWATER DETAILS SHT 1 OF 2, August 30, 2024, 12:43 PM, makai.muhammed

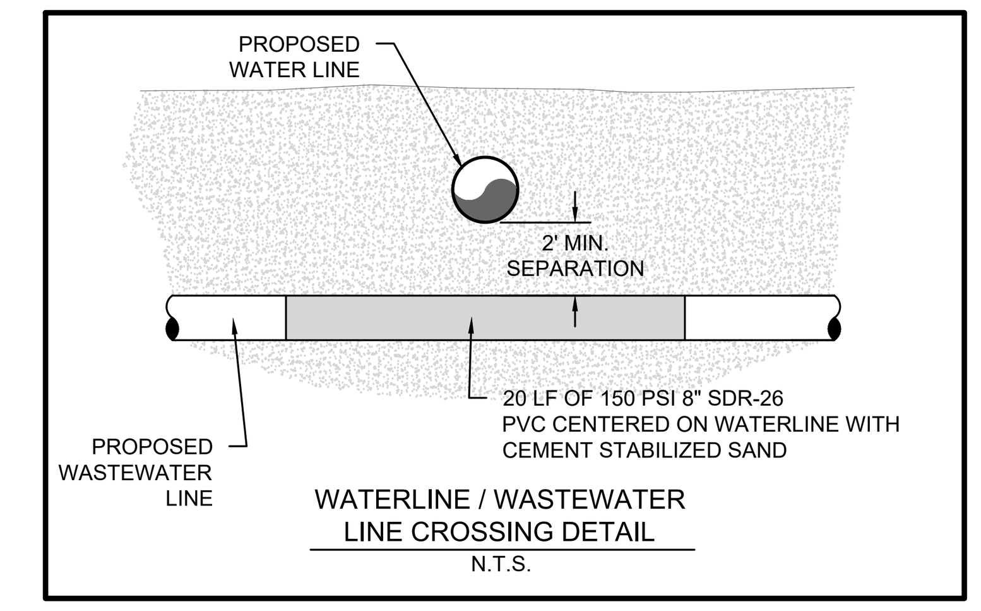


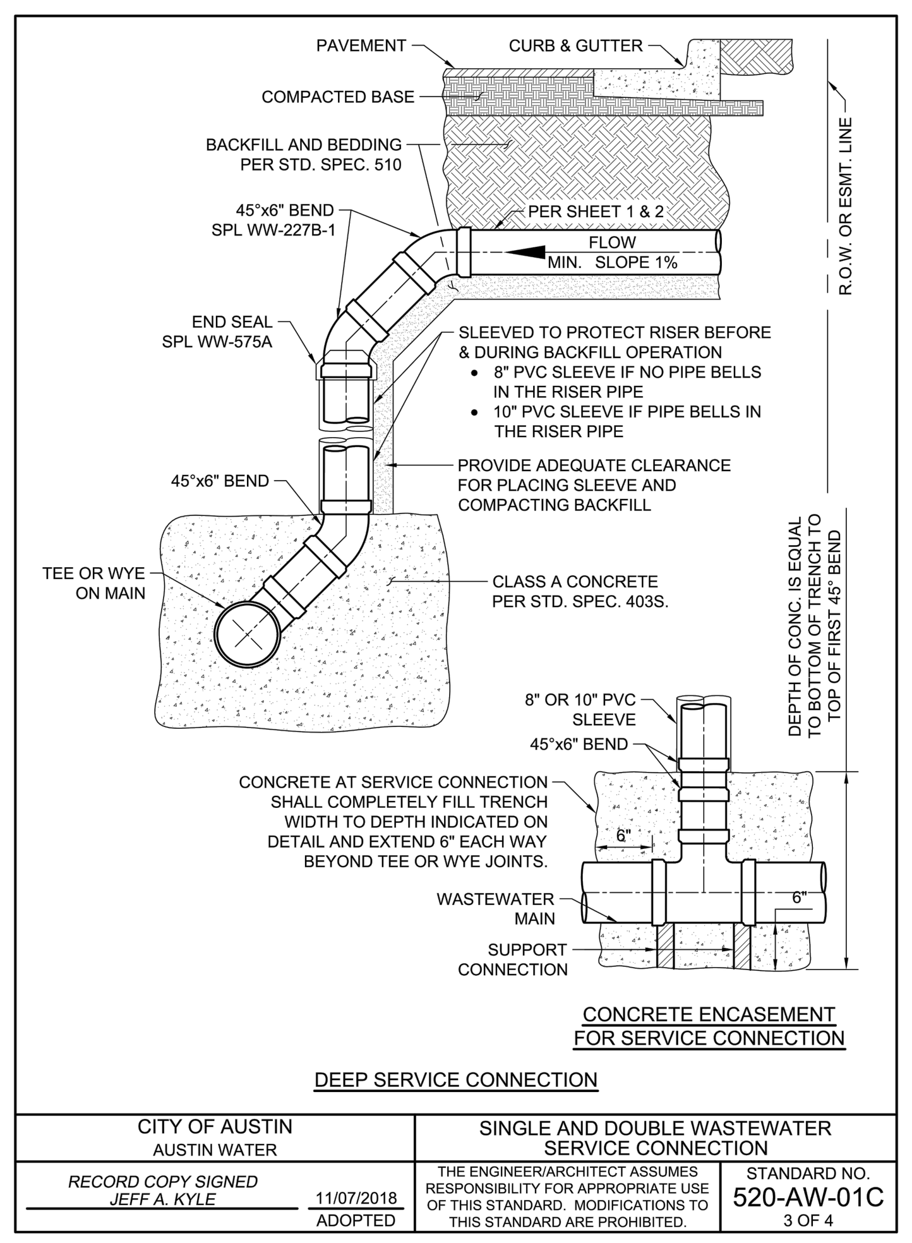












NO. | REVISION | BY | DATE

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08/30/2024

WASTEWATER DETAILS SHT 2 OF 2

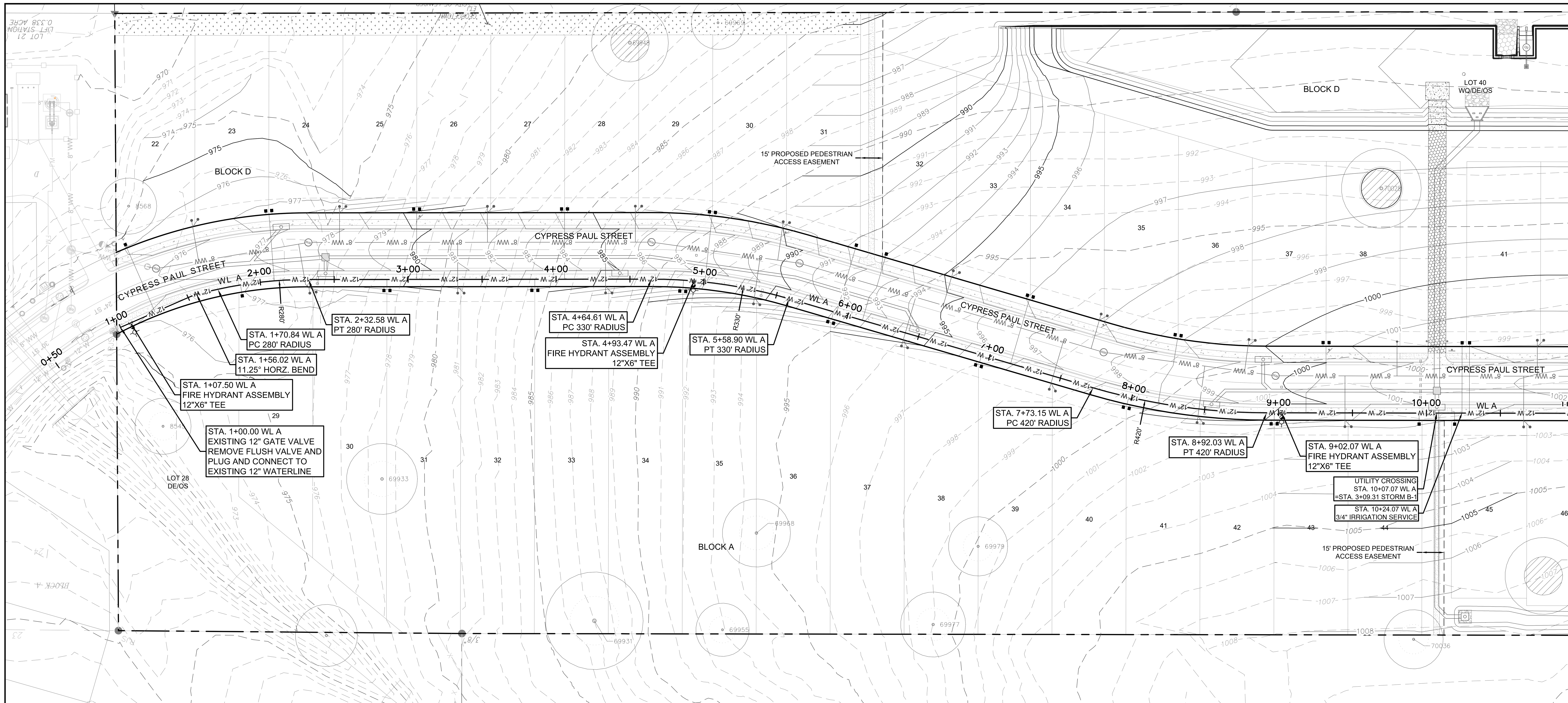
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 61 OF 68

2024-XX-CON



SCALE: 1" = 40'

LEGEND

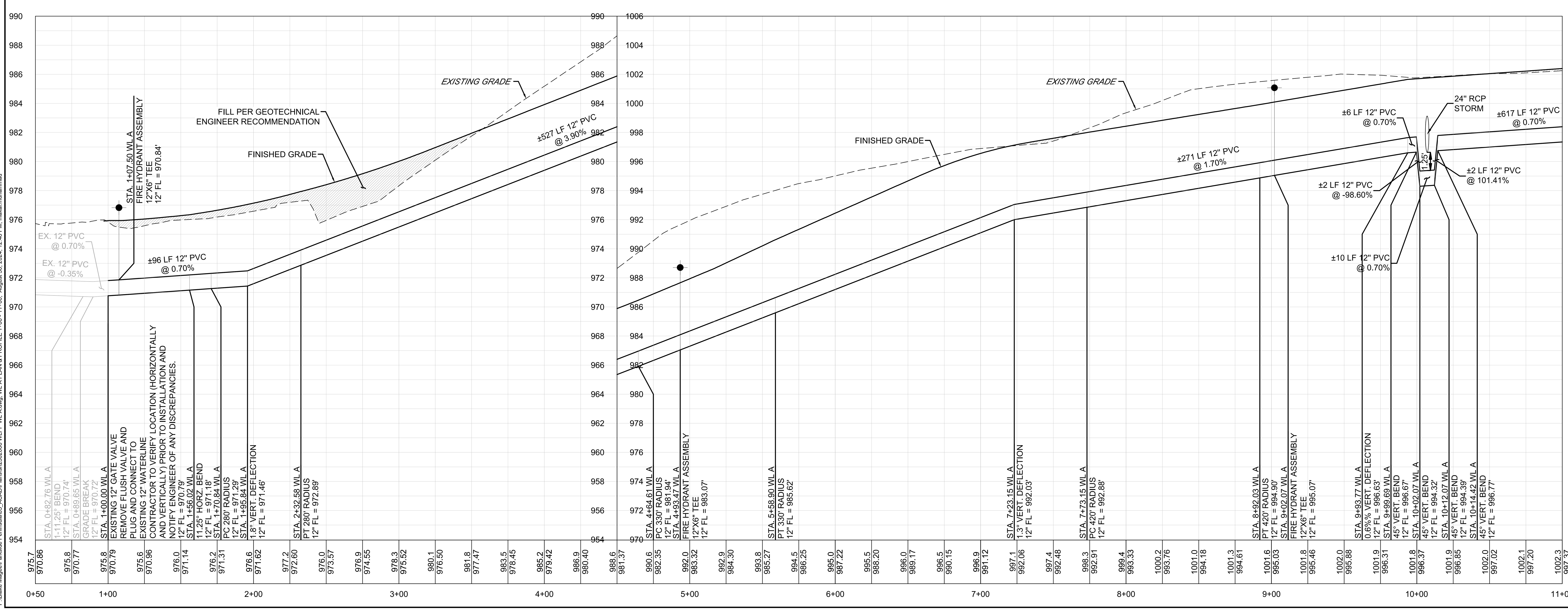
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
- EASEMENT
- PROPOSED WASTEWATER LINE
- PROPOSED STORM LINE
- PROPOSED WATER LINE
- TREES TO REMAIN - HERITAGE
- TREES TO REMAIN - NON-HERITAGE
- FIRE HYDRANT
- WATER VALVE
- TEMP FLUSH VALVE
- AIR RELEASE VALVE
- STORM SEWER MAHNOLE
- WASTEWATER MANHOLE
- CURB INLET
- PROPOSED SINGLE WASTEWATER SERVICE
- PROPOSED DOUBLE WASTEWATER SERVICE
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DOUBLE WATER SERVICE

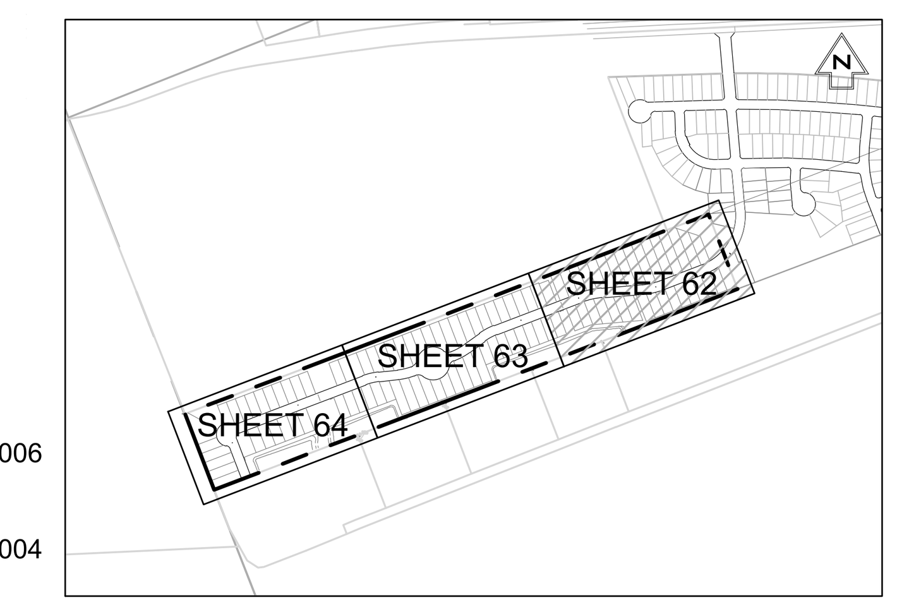
VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 / 997.10 PROPOSED FLOWLINE

WL A





KEY MAP (N.T.S.)

NOTES:

1. ALL PROPOSED WATERLINES EXCEPT FIRE LEADS SHALL BE PVC C900 DR 18 PER CITY OF GEORGETOWN SPECIFICATIONS.
2. THRUST BLOCKING SHALL BE PROVIDED AT BENDS, PI'S, TEES & FITTINGS ACCORDING TO CITY OF GEORGETOWN.
3. ALL JOINT RESTRAINT SHALL BE IN ACCORDANCE TO CITY OF GEORGETOWN SPECIFICATION. REFER TO THE JOINT RESTRAINT TABLE ON SHEET 66.
4. ANY JOINT DEFLECTION VERTICAL OR HORIZONTAL SHALL BE WITHIN THE MANUFACTURES MAXIMUM ALLOWABLE JOINT DEFLECTION.
5. NO PORTION OF THIS PROPOSED DEVELOPMENT LIES WITHIN THE FEMA 100-YR FLOODPLAIN.
6. AT THE CONCLUSION OF CONSTRUCTION AND AS PART OF THE PROCESS FOR THE CITY TO ACCEPT THIS PHASE, THE FIRE HYDRANTS SHALL BE FLOWED AND TESTED. A COPY OF THE REPORT SHALL BE EMAILED INTO THE FIRE DEPARTMENT AND THE HYDRANTS SHALL BE PAINTED AND COLOR CODED.
7. CAUTION: IF PRESSURE REDUCING VALVES WERE INSTALLED IN THIS PHASING, THEY MUST BE SET PRIOR TO FIRE HYDRANT FLOW TESTING.
8. CONTRACTOR AND HOME BUILDER TO ENSURE GATE VALVES ARE ADJUSTED FOR FINISHED SIDEWALK AND PAVEMENT GRADES.
9. CONTRACTOR TO ENSURE ALL GATE VALVES ARE LOCATED OUTSIDE OF PROPOSED CURB AND GUTTER LOCATIONS.
10. HOME BUILDERS ARE EXPECTED TO INSTALL INDIVIDUAL PRESSURE REDUCING VALVES FOR ALL HOMES.

NO	REVISION	BY	DATE

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08/30/2024

WL A PLAN & PROFILE 1+00 - 11+00

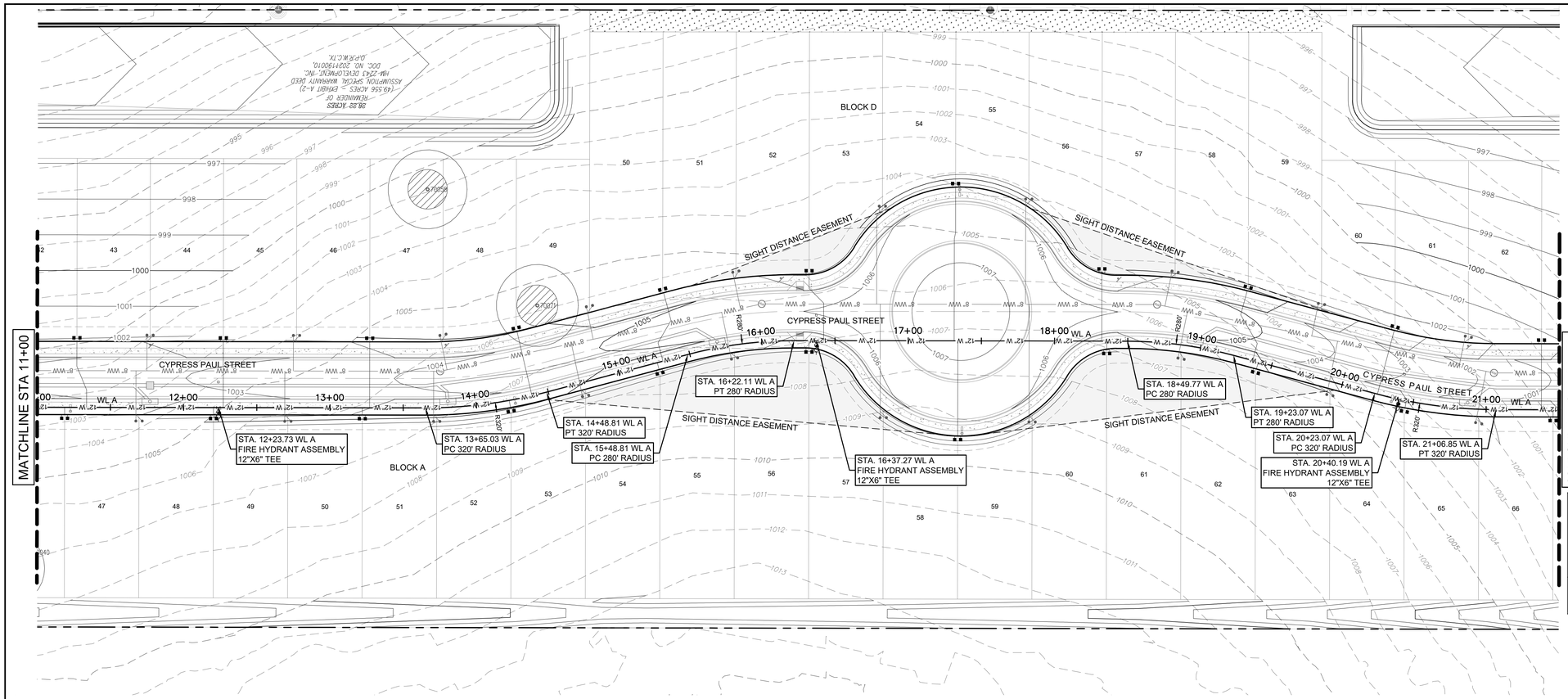
PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 62 OF 68

2024-XX-CON



0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- BOUNDARY
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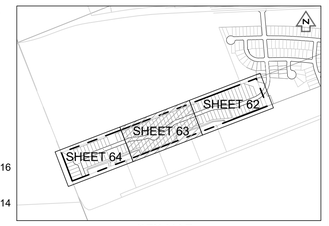
- PROPOSED DOUBLE WATER SERVICE

VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

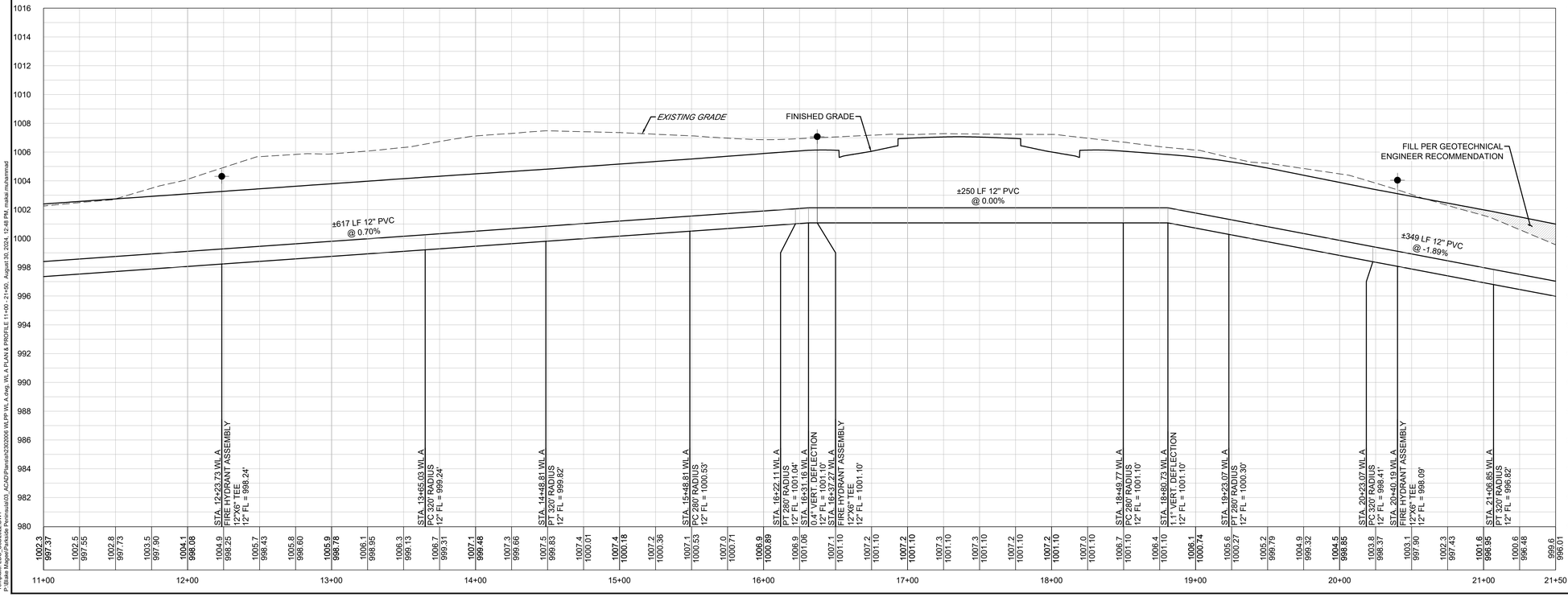
EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

4' 2' 0 VERT. SCALE

EXISTING GROUND 1000.1 999.710 PROPOSED FLOWLINE



KEY MAP
(N.T.S.)



NOTES:

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NO	REVISION	BY	DATE

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08/30/2024

WL A PLAN & PROFILE 11+00 - 21+50

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

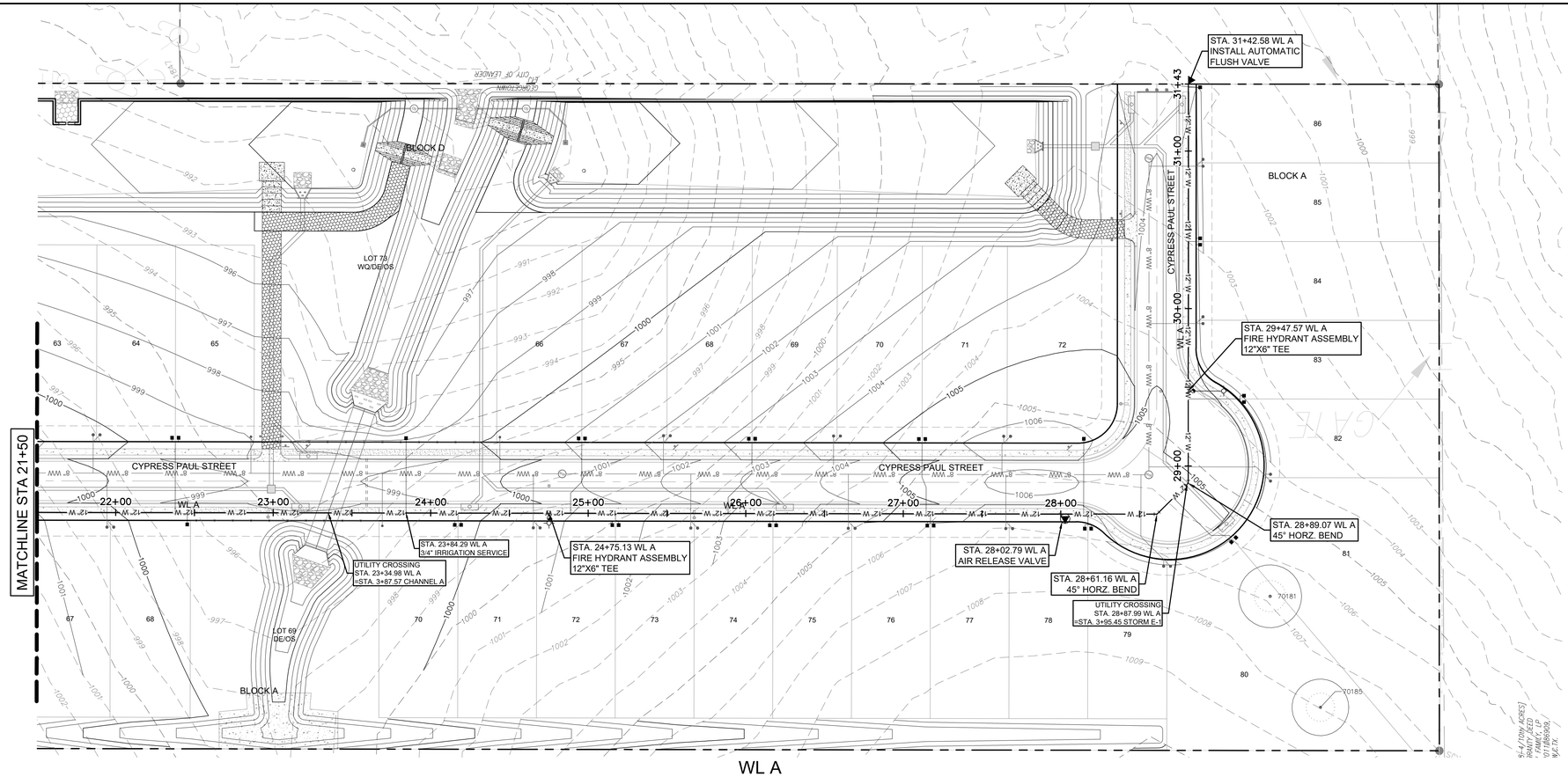
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

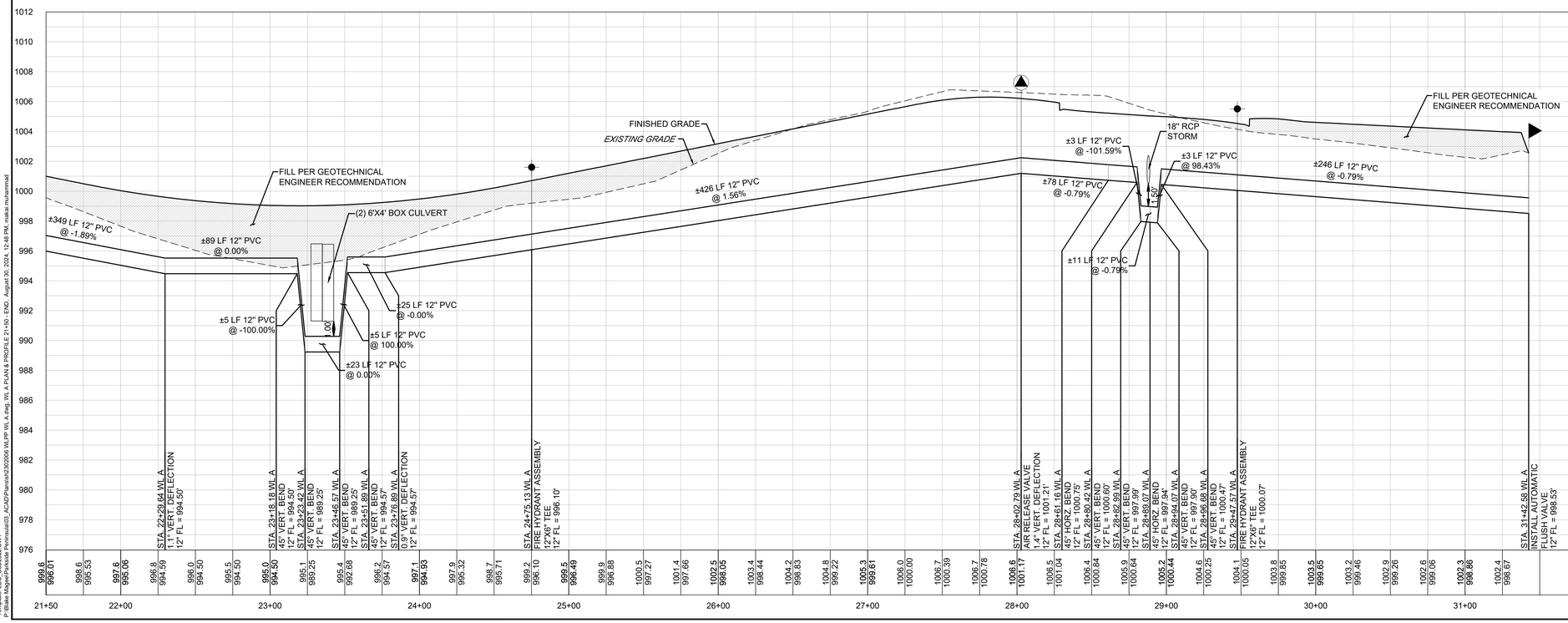
SHEET 63 OF 68

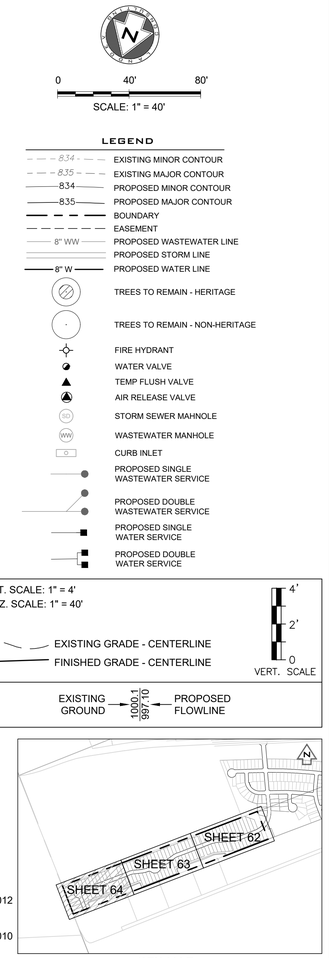
2024-XX-CON

Plot Style: LandDev Global.ctb
Template: LDG_C3D2022.DWT
By: Blake Magee/Parkside Peninsula/03_ACAD/Planset/20240906 WLPP WL A.dwg, WL A PLAN & PROFILE 11+00 - 21+50, August 30, 2024, 12:48 PM, sarkar.muhammad



WL A





KEY MAP (N.T.S.)

0 40' 80'

SCALE: 1" = 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
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VERT. SCALE: 1" = 4'
HORZ. SCALE: 1" = 40'

4' 2' 0 VERT. SCALE

EXISTING GRADE - CENTERLINE
FINISHED GRADE - CENTERLINE

EXISTING GROUND 1000.1 997.10 PROPOSED FLOWLINE

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NO	REVISION	BY	DATE

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08/30/2024

WL A PLAN & PROFILE 21+50 - END

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS

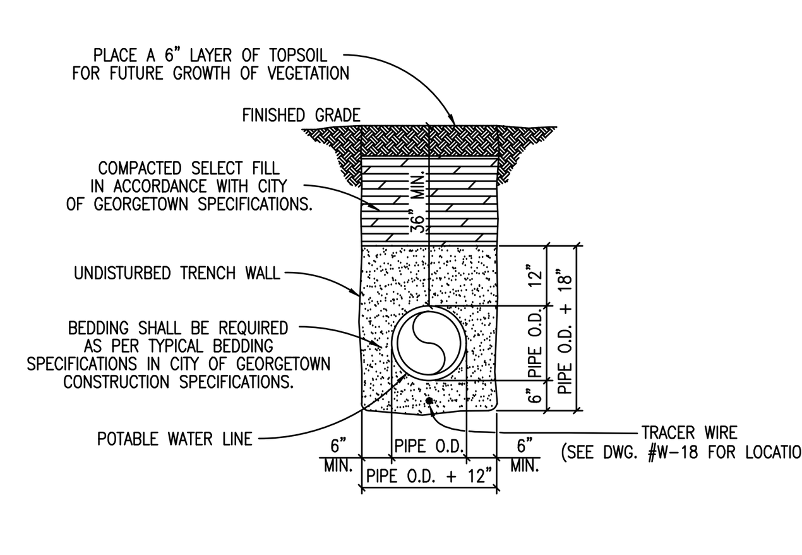
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 64 OF 68

2024-XX-CON

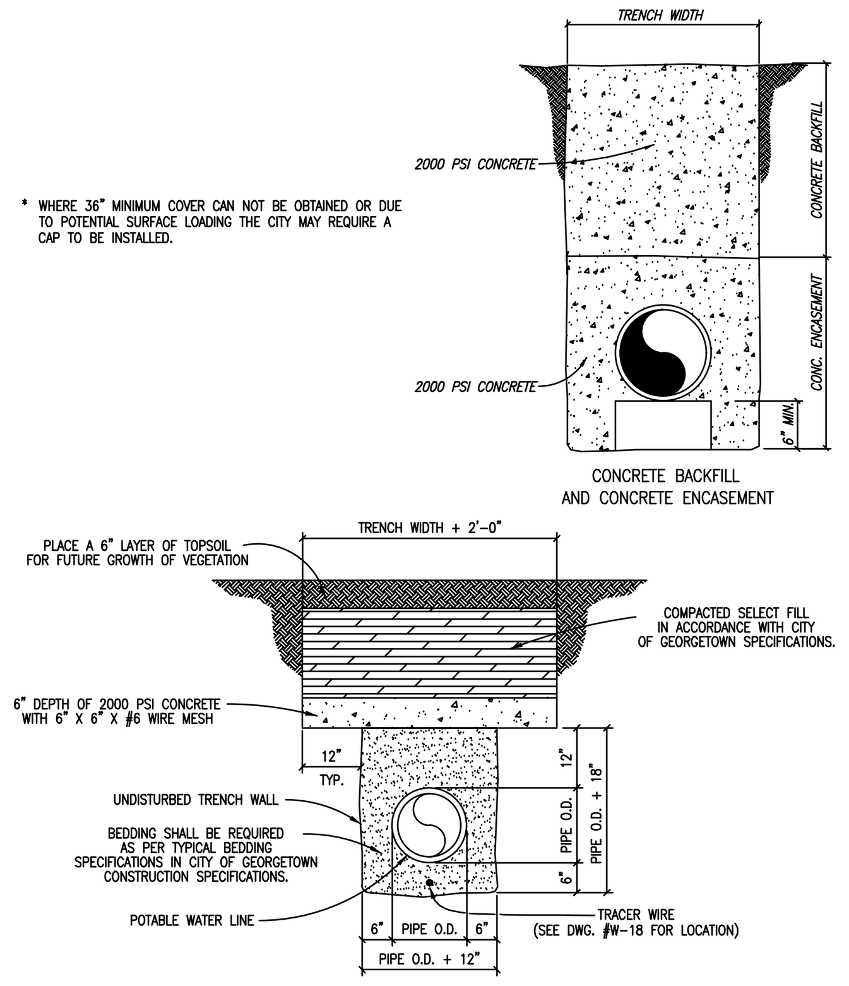
Plot Style: LandDev Global.ctb
Template: LDD_C3D2022.DWT
P:\Blake Magee\Parkside Peninsula\03_ACAD\Planset\20240808 WLPP WL A.dwg, WL A PLAN & PROFILE 21+50 - END, August 30, 2024, 12:45 PM, malak.muhammad



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

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

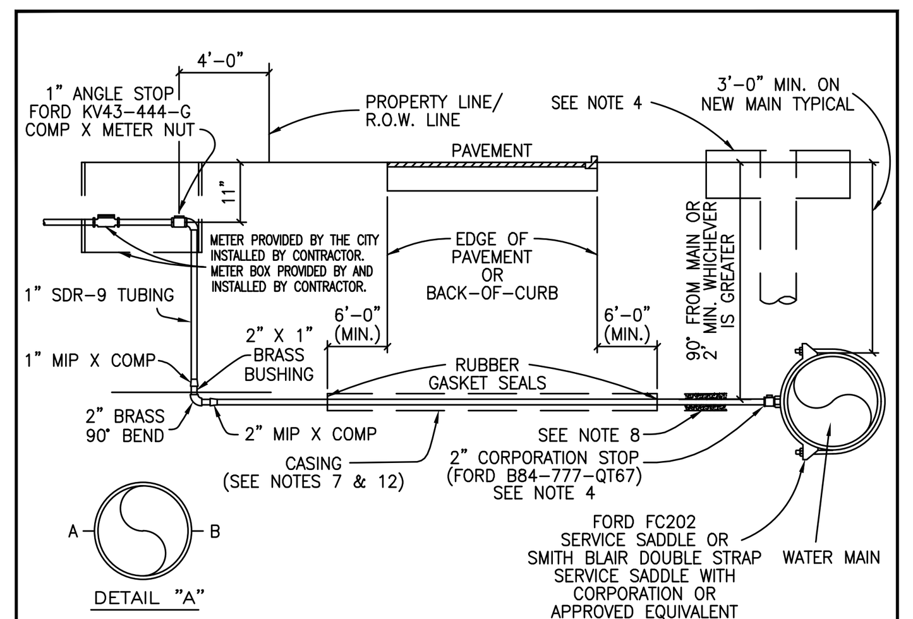
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS
W02 | NTS | 1/2003 | MRS | TRB



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

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

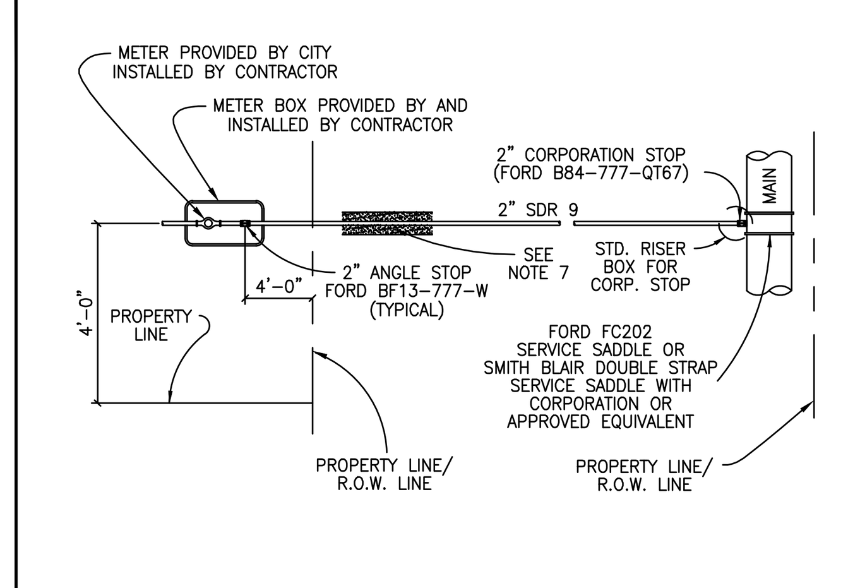
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CONCRETE TRENCH CAP DETAIL
W02A | NTS | 1/2003 | MRS | TRB



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.

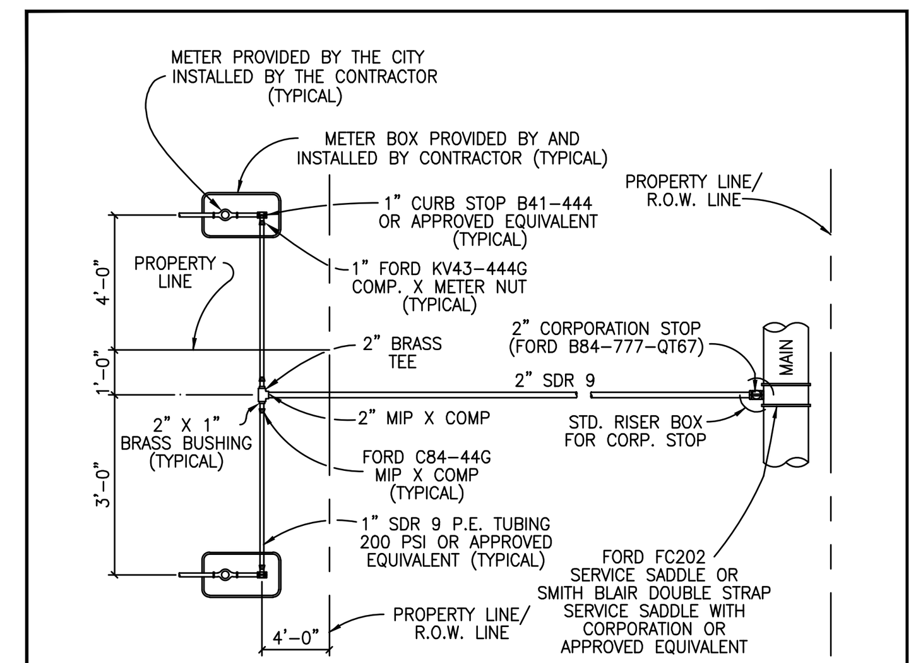
ADOPTED 01/23/2013
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL WATER SERVICE-ELEVATION
W03 | NTS | 1/2013 | – | MH



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.

ADOPTED 01/23/2013
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SINGLE WATER SERVICE PLAN
W04 | NTS | 1/2013 | – | MH



NOTES:
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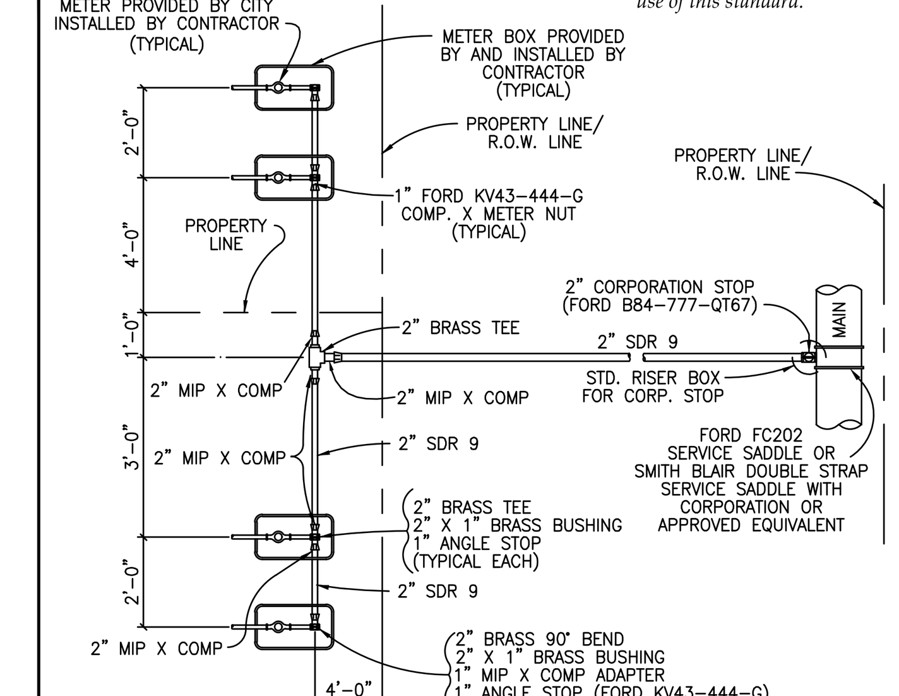
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W-03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

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

ADOPTED 01/23/2013
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DOUBLE WATER SERVICE PLAN
W05 | NTS | 1/2013 | – | MH

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



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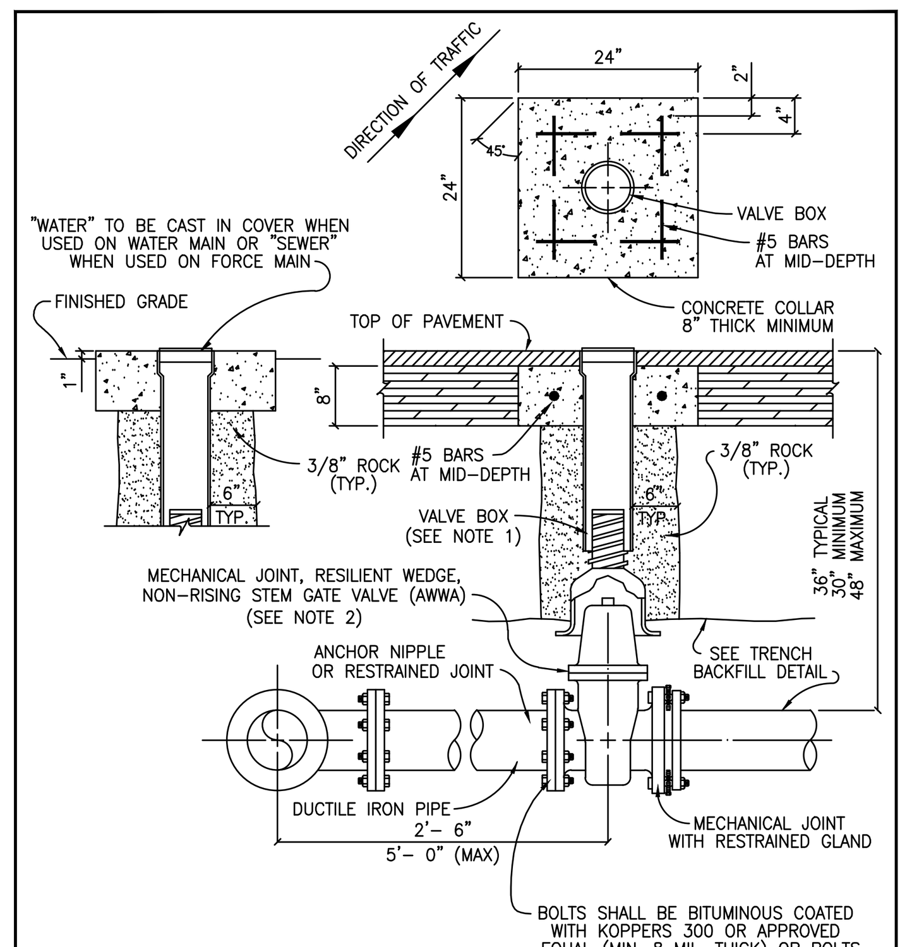
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED 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.

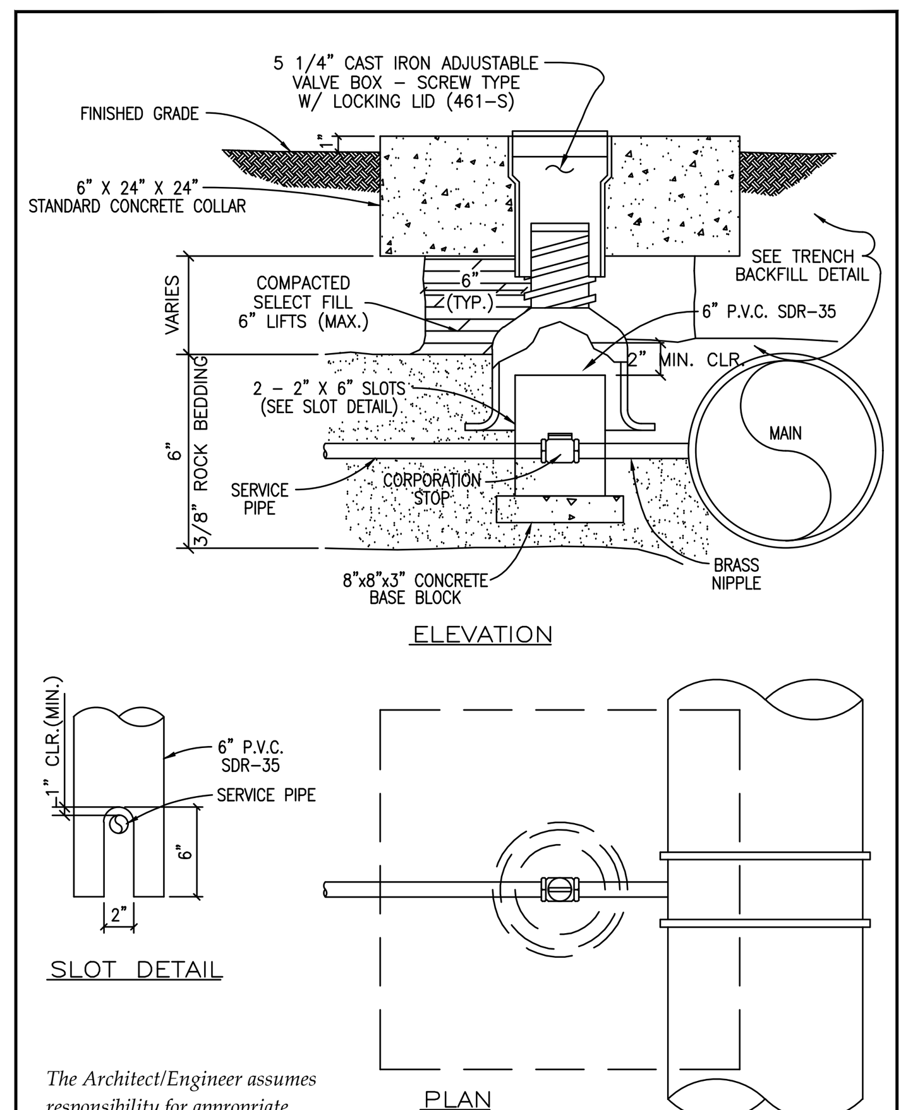
ADOPTED 01/23/2013
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
QUADRUPLE WATER SERVICE PLAN
W06 | NTS | 1/2013 | – | MH



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

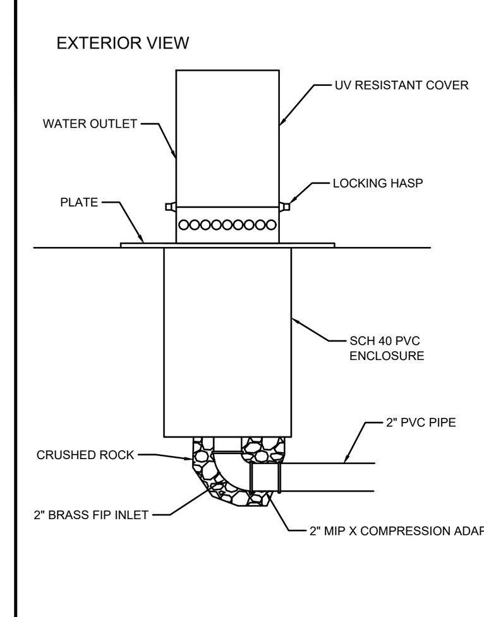
The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL VALVE SETTING
W07 | NTS | 1/2003 | MRS | TRB



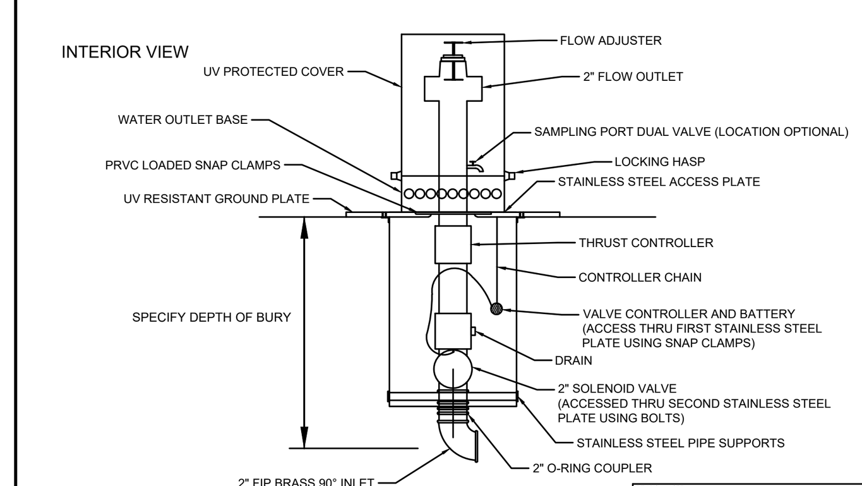
The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD RISER BOX FOR CORPORATION STOP
W08 | NTS | 1/2003 | MRS | TRB

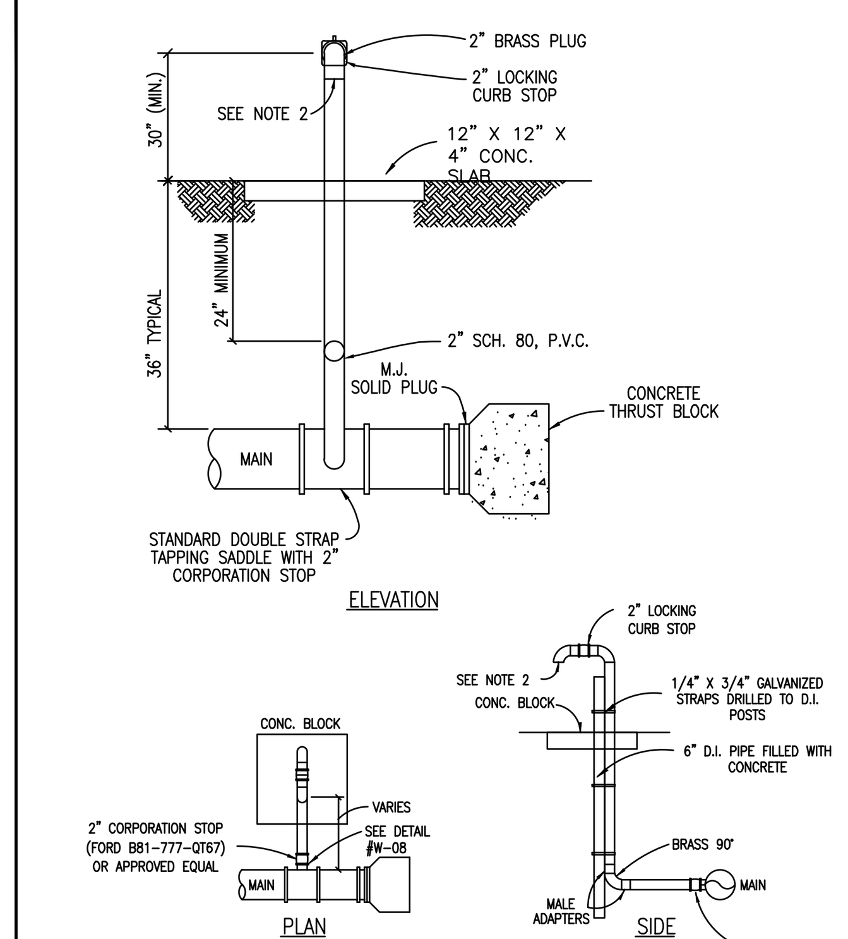


AUTOMATIC FLUSHING DEVICE SHALL HAVE A 2" BRASS FIP INLET, LEADING VERTICALLY INTO A 2" AUTOMATIC SOLENOID VALVE. AUTOMATIC SOLENOID VALVE SHALL HAVE INTERNAL, SELF-CLEANING SCREEN, AND HAVE A 220 PSI RATING. EACH UNIT SHALL BE FURNISHED WITH A STAND-ALONE VALVE CONTROLLER. VALVE CONTROLLER WILL NOT REQUIRE A SECOND HAND DEVICE FOR PROGRAMMING. MUST HAVE A MINIMUM OF 9 POSSIBLE FLUSHING CYCLE PER DAY, SHALL BE SUBMERSIBLE TO 12 FEET, OPERATE WITH A 9 VOLT BATTERY, AND HAVE FRESH-SEALED ELECTRICAL COMPONENTS. SOLENOID SHALL HAVE NO LOOSE PARTS WHEN REMOVED FROM VALVE. EACH UNIT SHALL HAVE A DOUBLE-VALVE. ALL BRASS SAMPLING POINT, AND A UV RESISTANT GROUND PLATE. WATER SHALL EXIT UNIT HORIZONTALLY THROUGH HOLE LOCATED NEAR GROUNDLINE AND WATER FLOW SHALL BE ADJUSTABLE WITHOUT ACCESSING 2" SOLENOID VALVE. REMOVAL OF 2" SOLENOID VALVE SHALL BE POSSIBLE VIA AN O-RING CONNECTOR LOCATED UNDER THE VALVE AFTER REMOVAL OF THE STAINLESS STEEL ACCESS PLATE. UNDERGROUND PARTS SHALL BE HOUSED IN A PVC ENCLOSURE AND EACH UNIT SHALL BE SELF-DRAINING, NON FREEZING. ALL ABOVE GROUND COMPONENTS SHALL BE CONTAINED WITHIN A UV RESISTANT LOCKING GOMES COVER.

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



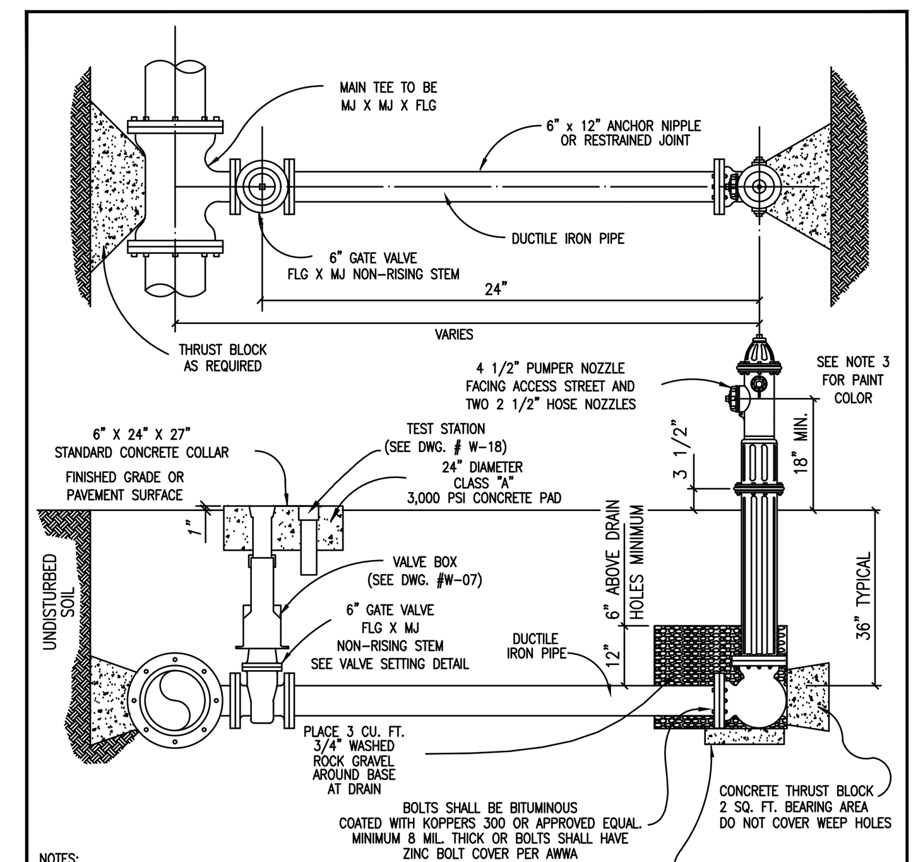
TRANSFERED FROM TCTSUD
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
AUTOMATIC FLUSHING VALVE
W-08C | NTS | 7/2015 | TP | –



NOTE:
1. ATTACH FIRE HYDRANT CONNECTION AT THE END OF THE BLOW OFF VALVE.

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

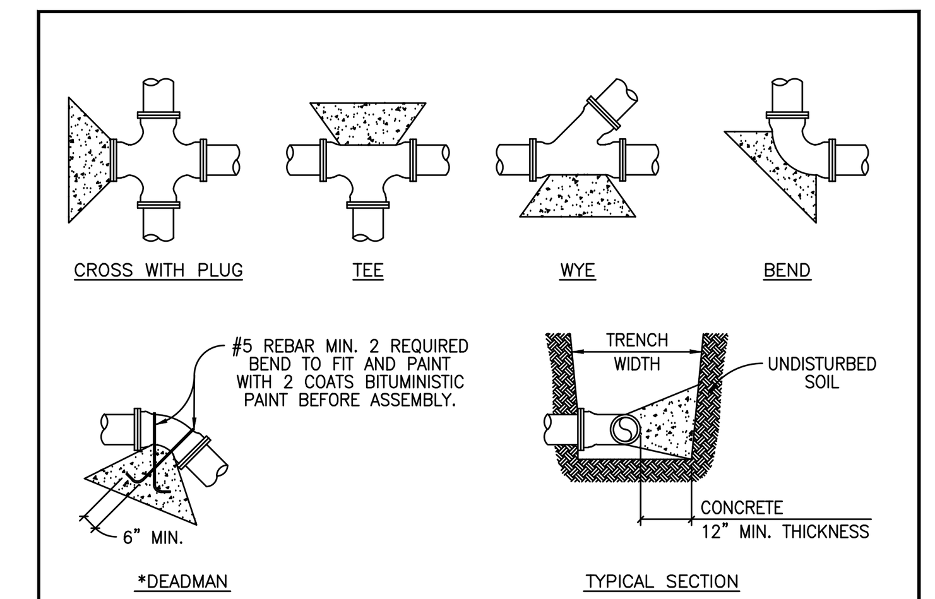
ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD BLOW-OFF
W09 | NTS | 1/2003 | MRS | TRB



NOTES:
1. FIRE HYDRANT SHALL BE INSTALLED ON SAME SIDE OF ROAD AS WATER MAIN.
2. FIRE HYDRANT SHALL BE INSTALLED PLUMB AND TRUE.
3. ALL FIRE HYDRANT EXTERIORS SHALL BE FACTORY PRIMED AND PAINTED SILVER USING A HIGH GRADE ENAMEL.
4. HEEL AND THRUST BLOCKS TO REST IN UNDISTURBED SOIL.
5. THE ONLY FIRE HYDRANTS ACCEPTABLE ARE:
   A. KENNEDY – K81
   B. AMERICAN DARLING – B84B
   C. CLOW MEDALLION
6. DOUBLE BLUE REFLECTOR "HYE-LITES" BRAND, MANUFACTURED BY PAVEMENT MARKERS INC. TO BE INSTALLED AT CENTERLINE OF STREET PERPENDICULAR TO HYDRANT.
7. ALL METALLIC PIPES AND FITTINGS SHALL BE WRAPPED WITH 8 MILL. POLYETHELENE FILM.

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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL FIRE HYDRANT INSTALLATION
W10 | NTS | 1/2003 | MRS | TRB



ALL THRUST BLOCKS SHALL BE FORMED. LAID FORMS SHALL BE INSPECTED BY THE CITY OF GEORGETOWN PRIOR TO THE POURING OF CONCRETE AND SHALL ALSO BE INSPECTED BY THE CITY OF GEORGETOWN PRIOR TO COVERING. TYPICAL LOCATIONS WHICH REQUIRE CONCRETE REACTION (THRUST) BLOCKS, FOR PRESSURE MAINS FOUR INCHES (4") AND GREATER. CONCRETE SHALL HAVE 2,500 P.S.I. MINIMUM STRENGTH AT TWENTY EIGHT (28) DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS, AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, MAXIMUM PRESSURE IN PIPE, AND BEARING CAPACITY OF SOIL. PROTECT FITTINGS, BOLTS, ETC. BY COVERING WITH VISQUEEN OR OTHER ACCEPTABLE MATERIAL. CONCRETE SHALL BE A MINIMUM OF TWELVE INCHES (12") THICK.

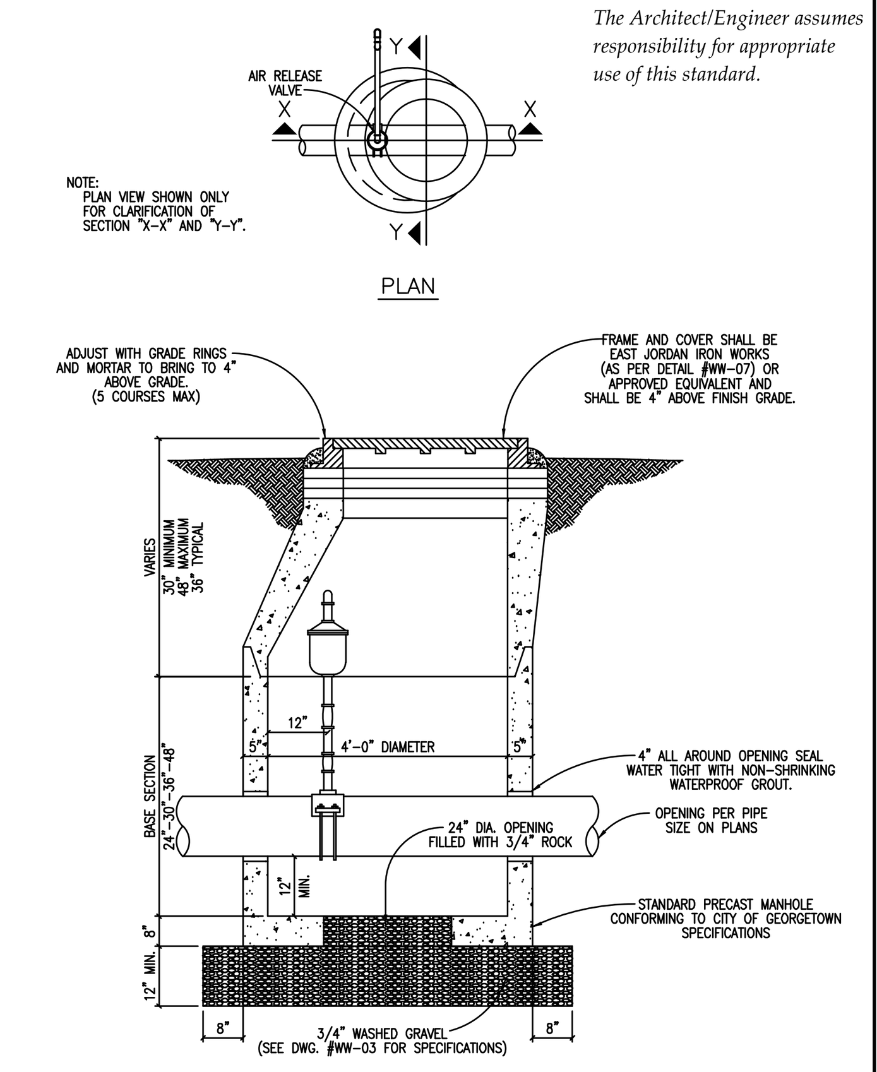
PIPE SIZE	THRUST BLOCK AREA REQUIRED	PIPE SIZE	THRUST BLOCK AREA REQUIRED	REMARKS
4"	2.0 SQ. FT.	18"	30.0 SQ. FT.	VALUES ARE FOR 90° BENDS, BASED ON 2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. PLUS 33% SAFETY FACTOR FOR OTHER SOILS AND PRESSURES, THE AREA REQUIRED IS IN DIRECT PROPORTION.
6"	4.0 SQ. FT.	20"	37.0 SQ. FT.	
8"	6.6 SQ. FT.	24"	53.0 SQ. FT.	
10"	10.0 SQ. FT.	27"	80.0 SQ. FT.	
12"	14.0 SQ. FT.	30"	98.0 SQ. FT.	
14"	18.0 SQ. FT.	36"	127.0 SQ. FT.	
16"	24.0 SQ. FT.			

* THE ENGINEER OF RECORD SHALL CALCULATE THE SIZE OF THE DEADMAN REQUIRED AS WELL AS ANY INSTALLATION WHICH IS NOT COVERED BY THE ABOVE.

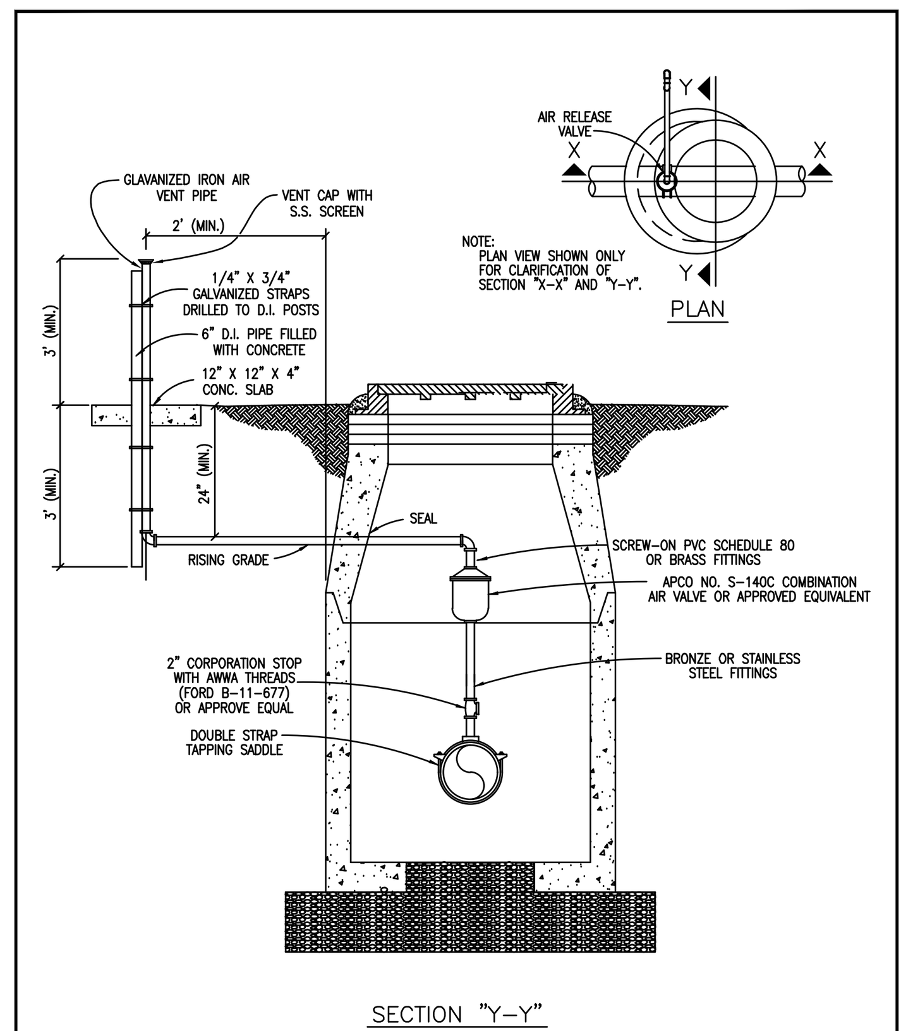
The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL THRUST BLOCKS FOR WATER AND FORCE MAIN
W11 | NTS | 1/2003 | MRS | TRB

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

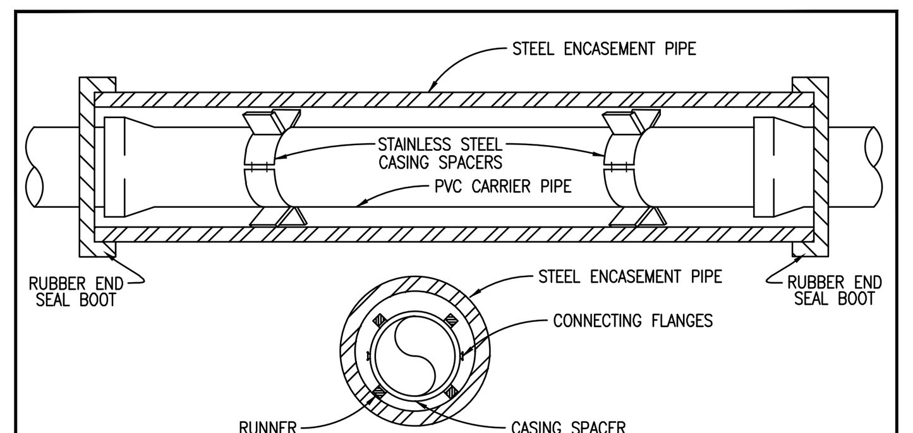


ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR WATER MAIN
W12 | NTS | 1/2003 | MRS | TRB



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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR WATER MAIN
W13 | NTS | 1/2003 | MRS | TRB

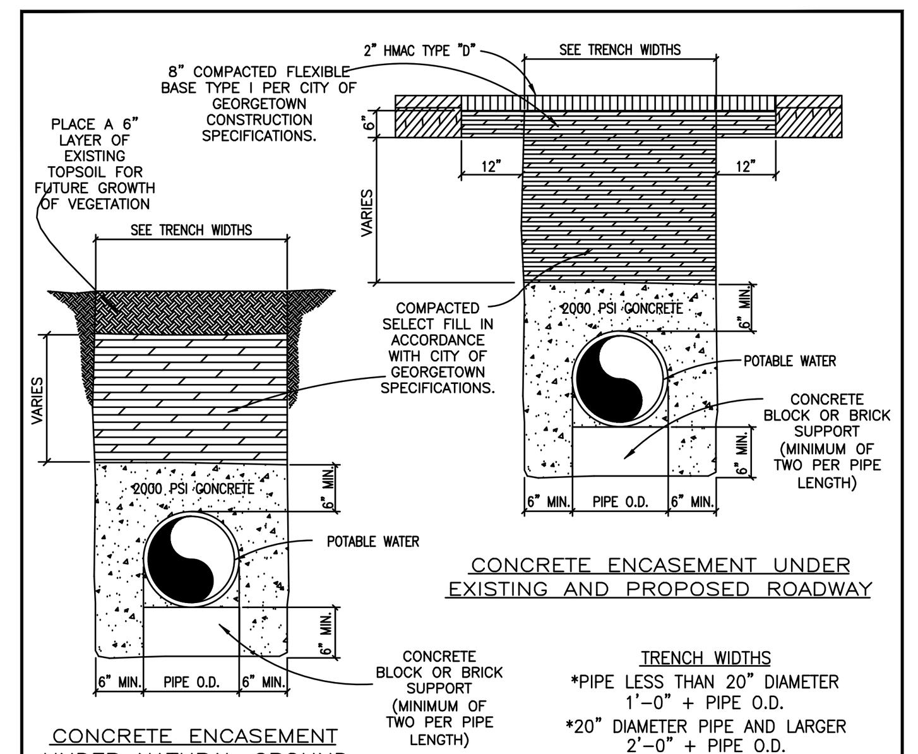


NOTES:
1. CASING SPACERS SHALL BE BOLT ON STYLE WITH A SHELL MADE IN TWO SECTIONS OF HEAVY T-304 STAINLESS STEEL. CONNECTING FLANGES SHALL BE RIBBED FOR EXTRA STRENGTH. CASING SPACERS SHALL BE MADE BY CASCADE WATERWORKS MFG. CO. OR APPROVED EQUAL.
2. CASING SPACERS SHALL HAVE RUNNERS MADE OF ULTRA HIGH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

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

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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
INSTALLATION OF P.V.C. PIPE THROUGH CASING
W14 | NTS | 1/2003 | MRS | TRB

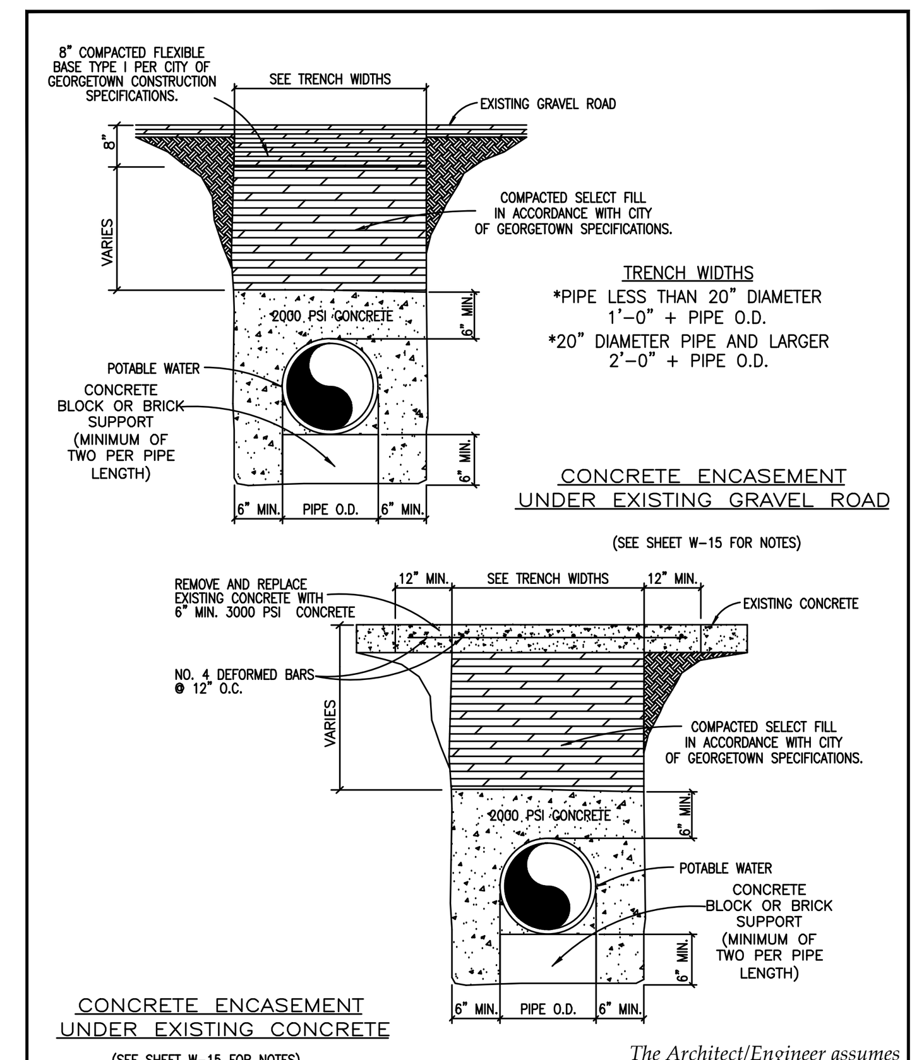


TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:
1. ENCASEMENT TO BE CONSTRUCTED WHERE SEWER LINES PASS OVER OR UNDER A WATER MAIN WITH LESS THAN TWELVE INCHES (12") CLEAR DISTANCE.
2. AT CROSSINGS, ENCASEMENT SHALL EXTEND TEN FEET (10'-0") ON EITHER SIDE OF CROSSING.
3. BEGINNING AND ENDING OF ENCASEMENTS SHALL NOT BE MORE THAN SIX INCHES (6") FROM A PIPE JOINT.
4. WHERE WATER AND SEWER LINES PARALLEL WITH LESS THAN TEN FEET (10'-0") HORIZONTAL CLEAR DISTANCE, NO ENCASEMENT IS REQUIRED IF BOTH LINES ARE 150 PSI PRESSURE PIPE.
5. RAW WATER MAINS SHALL BE 150 PSI PRESSURE RATED WHEN PARALLELING POTABLE WATER MAINS WITH LESS THAN NINE FEET (9'-0") HORIZONTAL CLEARANCE.
6. WHERE MINIMUM COVER, THIRTY SIX INCHES (36") IS NOT AVAILABLE, ENCASEMENT WILL BE REQUIRED.
7. ALL CONCRETE ENCASEMENTS MUST BE FORMED AND INSPECTED BY THE CITY OF GEORGETOWN INSPECTOR PRIOR TO PLACING CONCRETE AND BACKFILLING.
8. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

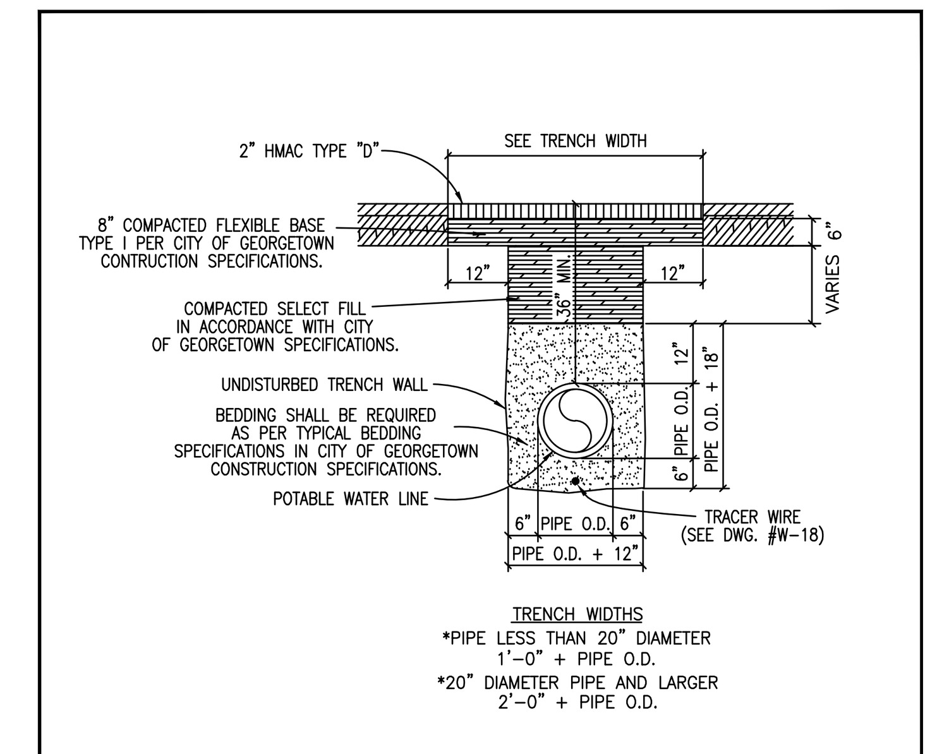
The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CONCRETE ENCASEMENT DETAIL
W15 | NTS | 1/2003 | MRS | TRB



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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CONCRETE ENCASEMENT DETAIL
W16 | NTS | 1/2003 | MRS | TRB



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

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

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

ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY
W17 | NTS | 1/2003 | MRS | TRB

NO.	REVISION	BY	DATE

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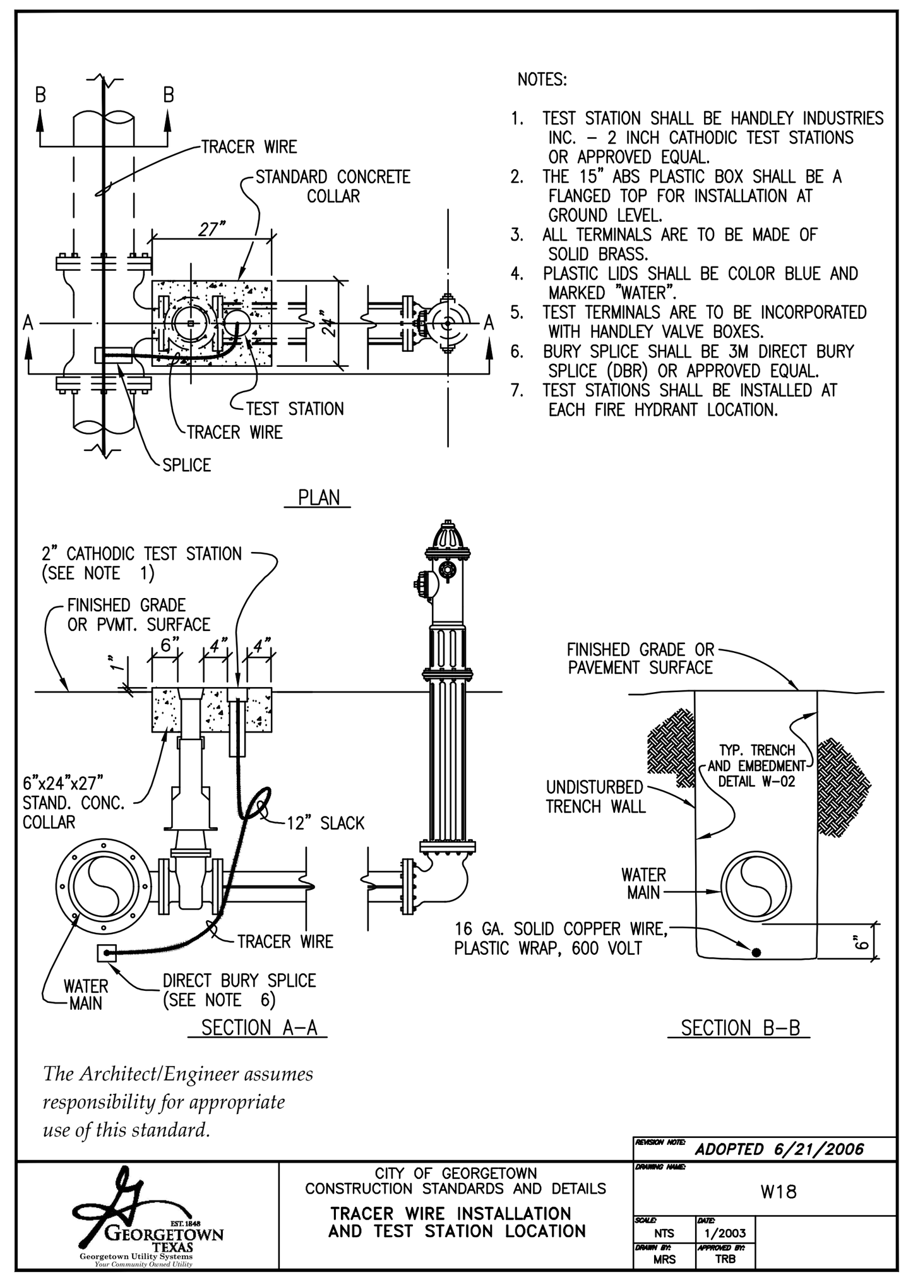
STATE OF TEXAS CHRISTINE N. CAMPBELL 142536 LICENSED PROFESSIONAL ENGINEER
08/30/2024

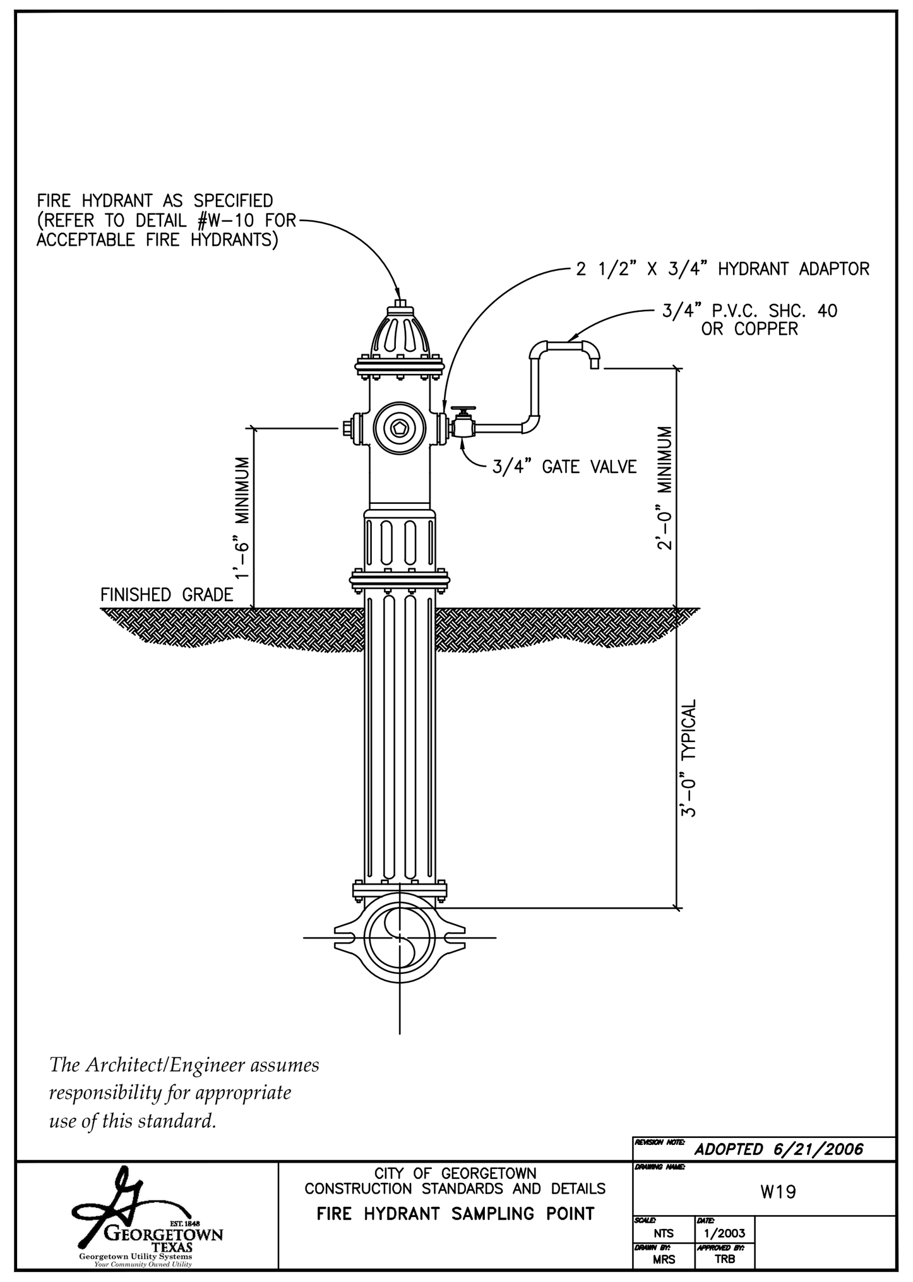
WATER DETAILS SHT 1 OF 2

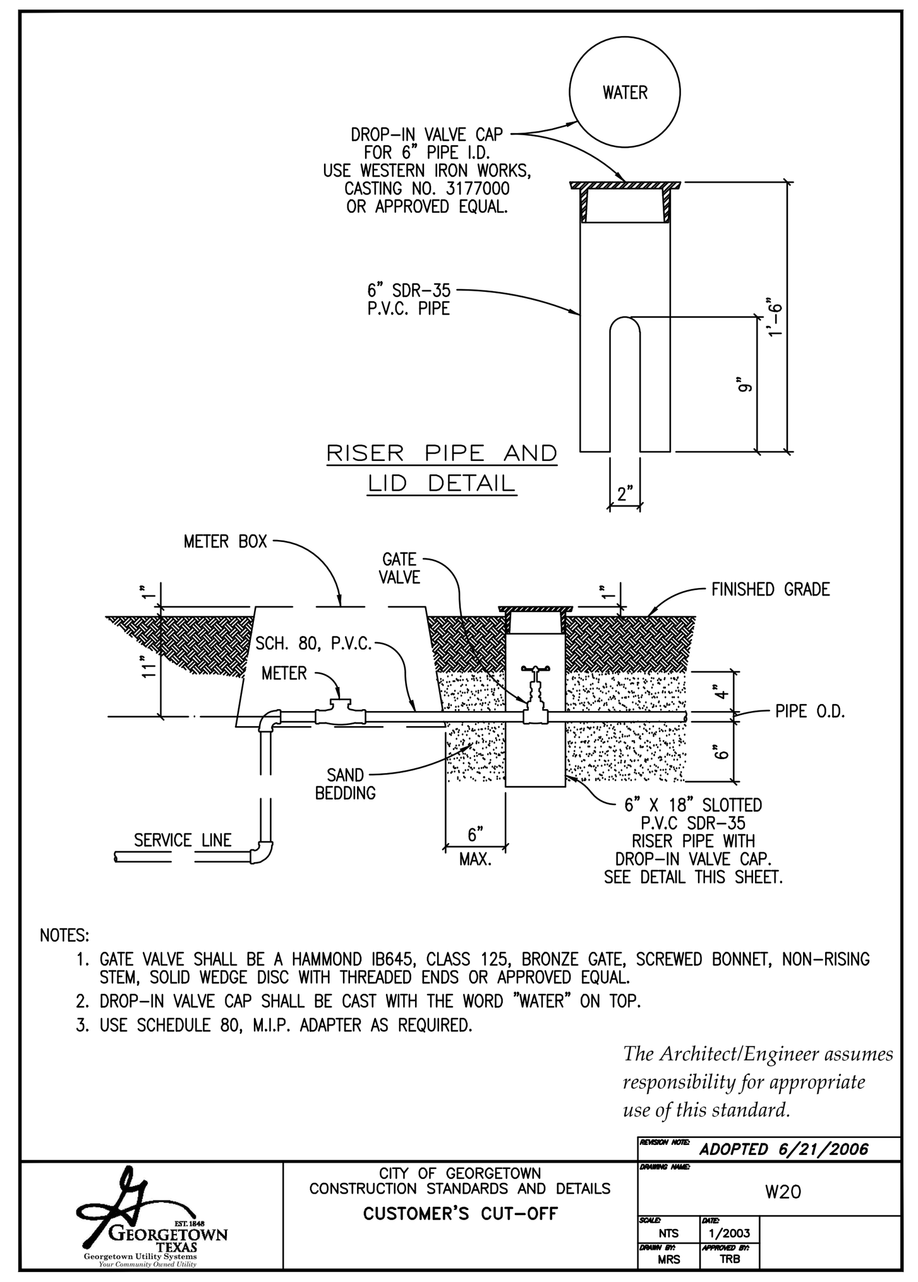
PARKSIDE PENINSULA PHASE 3 CONSTUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

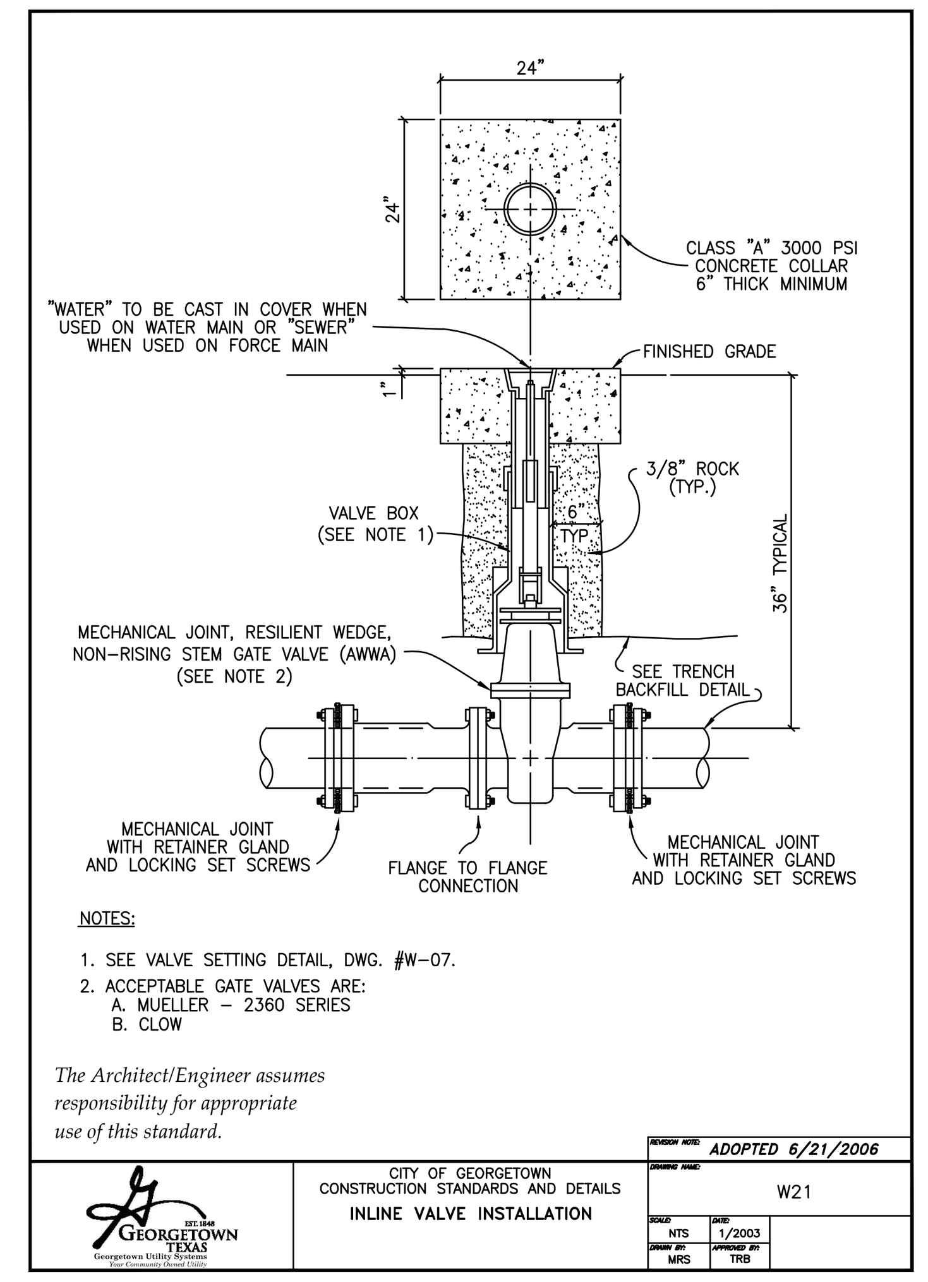
DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

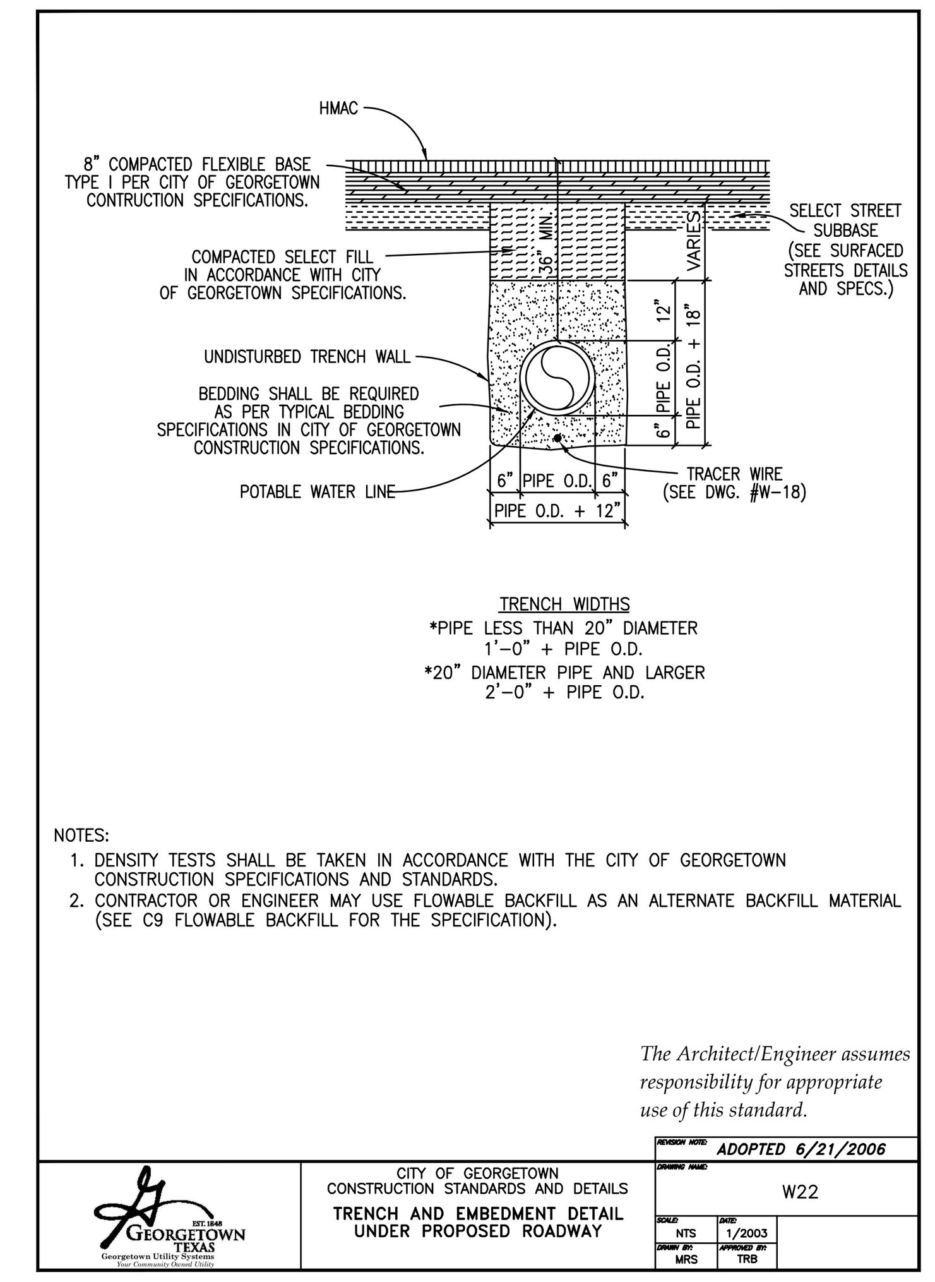
SHEET 65 OF 68
2024-XX-CON

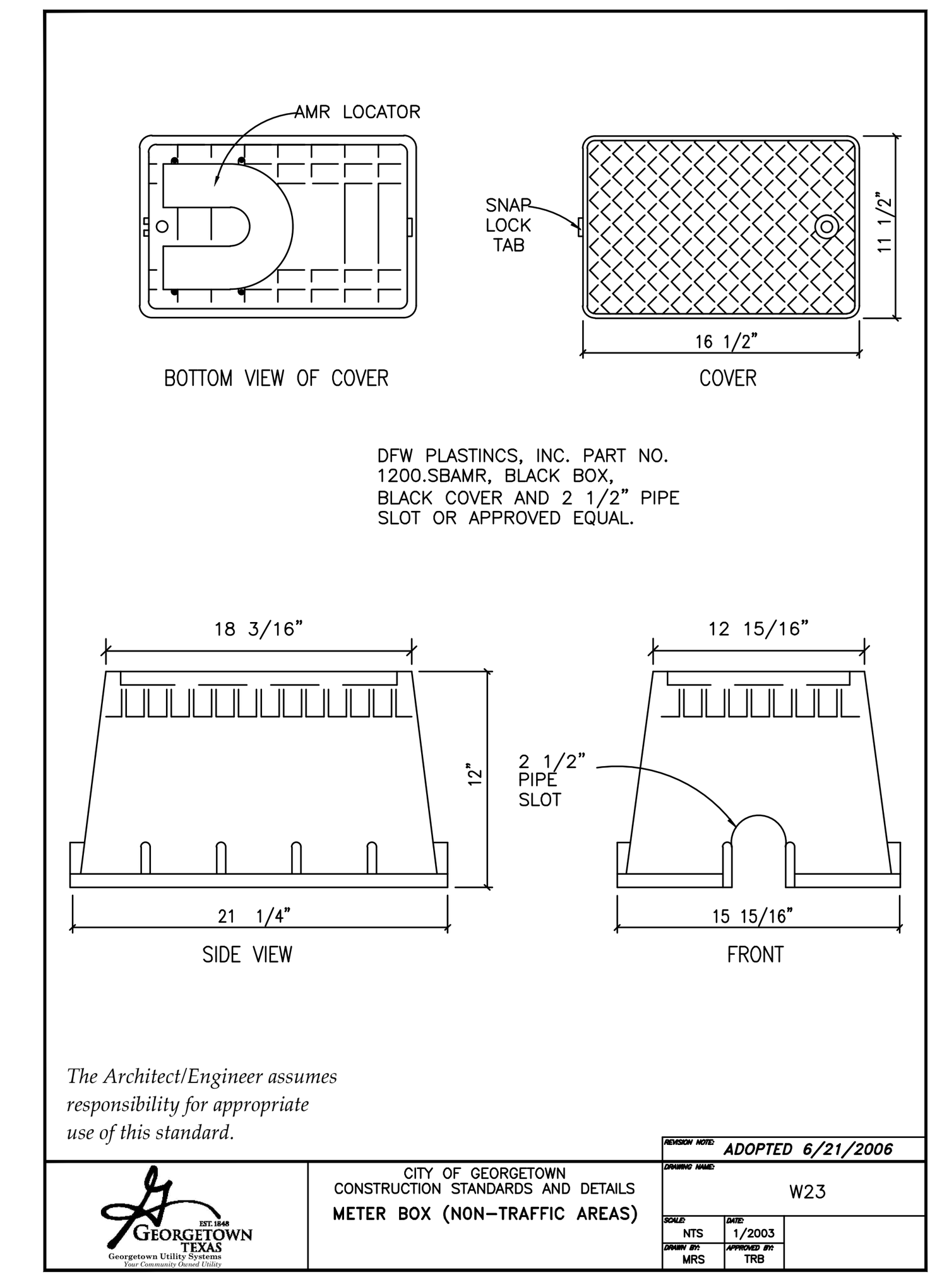

NOTES:
1. TEST STATION SHALL BE HANDLEY INDUSTRIES INC. - 2 INCH CATHODIC TEST STATIONS OR APPROVED EQUAL.
2. THE 15" ABS PLASTIC BOX SHALL BE A FLANGED TOP FOR INSTALLATION AT GROUND LEVEL.
3. ALL TERMINALS ARE TO BE MADE OF SOLID BRASS.
4. PLASTIC LIDS SHALL BE COLOR BLUE AND MARKED "WATER".
5. TEST TERMINALS ARE TO BE INCORPORATED WITH HANDLEY VALVE BOXES.
6. BURY SPLICE SHALL BE 3M DIRECT BURY SPLICE (DBR) OR APPROVED EQUAL.
7. TEST STATIONS SHALL BE INSTALLED AT EACH FIRE HYDRANT LOCATION.
PLAN
SECTION A-A
SECTION B-B
The Architect/Engineer assumes responsibility for appropriate use of this standard.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRACER WIRE INSTALLATION AND TEST STATION LOCATION
ADOPTED 6/21/2006
W18
NTS
1/2003
MRS
TRB


FIRE HYDRANT AS SPECIFIED (REFER TO DETAIL #W-10 FOR ACCEPTABLE FIRE HYDRANTS)
2 1/2" X 3/4" HYDRANT ADAPTOR
3/4" P.V.C. SHC. 40 OR COPPER
3/4" GATE VALVE
FINISHED GRADE
The Architect/Engineer assumes responsibility for appropriate use of this standard.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FIRE HYDRANT SAMPLING POINT
ADOPTED 6/21/2006
W19


WATER
RISER PIPE AND LID DETAIL
METER BOX
FINISHED GRADE
SERVICE LINE
NOTES:
1. GATE VALVE SHALL BE A HAMMOND IB645, CLASS 125, BRONZE GATE, SCREWED BONNET, NON-RISING STEM, SOLID WEDGE DISC WITH THREADED ENDS OR APPROVED EQUAL.
2. DROP-IN VALVE CAP SHALL BE CAST WITH THE WORD "WATER" ON TOP.
3. USE SCHEDULE 80, M.I.P. ADAPTER AS REQUIRED.
The Architect/Engineer assumes responsibility for appropriate use of this standard.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CUSTOMER'S CUT-OFF
ADOPTED 6/21/2006
W20


24"
CLASS "A" 3000 PSI CONCRETE COLLAR 6" THICK MINIMUM
FINISHED GRADE
VALVE BOX (SEE NOTE 1)
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.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
INLINE VALVE INSTALLATION
ADOPTED 6/21/2006
W21


HMAC
TRENCH WIDTHS
NOTES:
1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).
The Architect/Engineer assumes responsibility for appropriate use of this standard.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY
ADOPTED 6/21/2006
W22


AMR LOCATOR
BOTTOM VIEW OF COVER
COVER
DFW PLASTINCS, INC. PART NO. 1200.SBAMR, BLACK BOX, BLACK COVER AND 2 1/2" PIPE SLOT OR APPROVED EQUAL.
SIDE VIEW
FRONT
The Architect/Engineer assumes responsibility for appropriate use of this standard.
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
METER BOX (NON-TRAFFIC AREAS)
ADOPTED 6/21/2006
W23

PVC C900 Joint Restraints			
Pipe Size	Fitting	Bend Angle	Restraint Length
8"	Horizontal Bend	11.25	4'
8"	Horizontal Bend	22.5	8'
8"	Horizontal Bend	45	16'
8"	Horizontal Bend	90	38'
8"	Vertical Bend	11.25	11'
8"	Vertical Bend	22.5	21'
8"	Vertical Bend	45	43'
8"	Gate Valve	-	103'
12"	Horizontal Bend	11.25	6'
12"	Horizontal Bend	22.5	11'
12"	Horizontal Bend	45	22'
12"	Horizontal Bend	90	53'
12"	Vertical Bend	11.25	15'
12"	Vertical Bend	22.5	30'
12"	Vertical Bend	45	61'
12"	Reducer (12" to 8")	-	78'
12"	Gate Valve	-	146'

* Assumes 4' bury depth, 200 psi test pressure, trench type of 5, safety factor of 2.0, and CH granular soil

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STATE OF TEXAS
CHRISTINE N. CAMPBELL
142536
LICENSED PROFESSIONAL ENGINEER
08/30/2024

WATER DETAILS SHT 2 OF 2

PARKSIDE PENINSULA PHASE 3 CONSTRUCTION PLANS
GEORGETOWN, WILLIAMSON, TEXAS

DESIGNED BY: CC
DRAWN BY: MM
CHECKED BY: SN
APPROVED BY:

SHEET 66 OF 68

2024-XX-CON