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: Dick Nichols Park Water Quality Pond Retrofit						**2. Regulated Entity No.:** RN102136652			
3. Customer Name: City of Austin						**4. Customer No.:** CN600135198			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			109 acres (2 acres LOC)
9. Application Fee:	$8,000		**10. Permanent BMP(s):**			Retention Irrigation Pond			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Travis		**14. Watershed:**			Williamson Creek			

Application Distribution

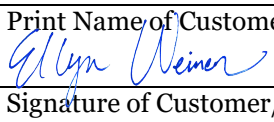
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which 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.)	___	1	___
Region (1 req.)	___	_1_	___
County(ies)	___	_1_	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	_1_Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	_1_Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Ellyn Weimer, PE
Print Name of Customer/Authorized Agent  11-10-2023 Signature of Customer/Authorized Agent Date

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

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: Ellyn Weimer, PE

Date: 11-10-2023

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Dick Nichols Park Water Quality Pond Retrofit
2. County: Travis
3. Stream Basin: Williamson Creek
4. Groundwater Conservation District (If applicable): Barton Springs Zone
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Charles Kaough, P.E.
   Entity: City of Austin
   Mailing Address: 505 Barton Springs Rd #11
   City, State: Austin, TX Zip: 78704
   Telephone: 512-658-0858 FAX: _____
   Email Address: Charles.Kaough@austintexas.gov

8. Agent/Representative (If any):

   Contact Person: Ellyn Weimer
   Entity: CDM Smith, Inc.
   Mailing Address: 8310-1 N. Capital of Texas Hwy, Suite 250
   City, State: Austin, TX Zip: 78731
   Telephone: 512-652-5329 FAX: _____
   Email Address: weimerej@cdmsmith.com

9. Project Location:

   ☒ The project site is located inside the city limits of Austin.
   ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
   ☐ The project site is not located within any city's limits or ETJ.

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

    Dick Nichols Park Water Quality Pond Retrofit is located at 8011, Beckett RD Austin, Texas 78749

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: TCEQ to Coordinate a site visit with the city

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

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

15. Existing project site conditions are noted below:

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

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.

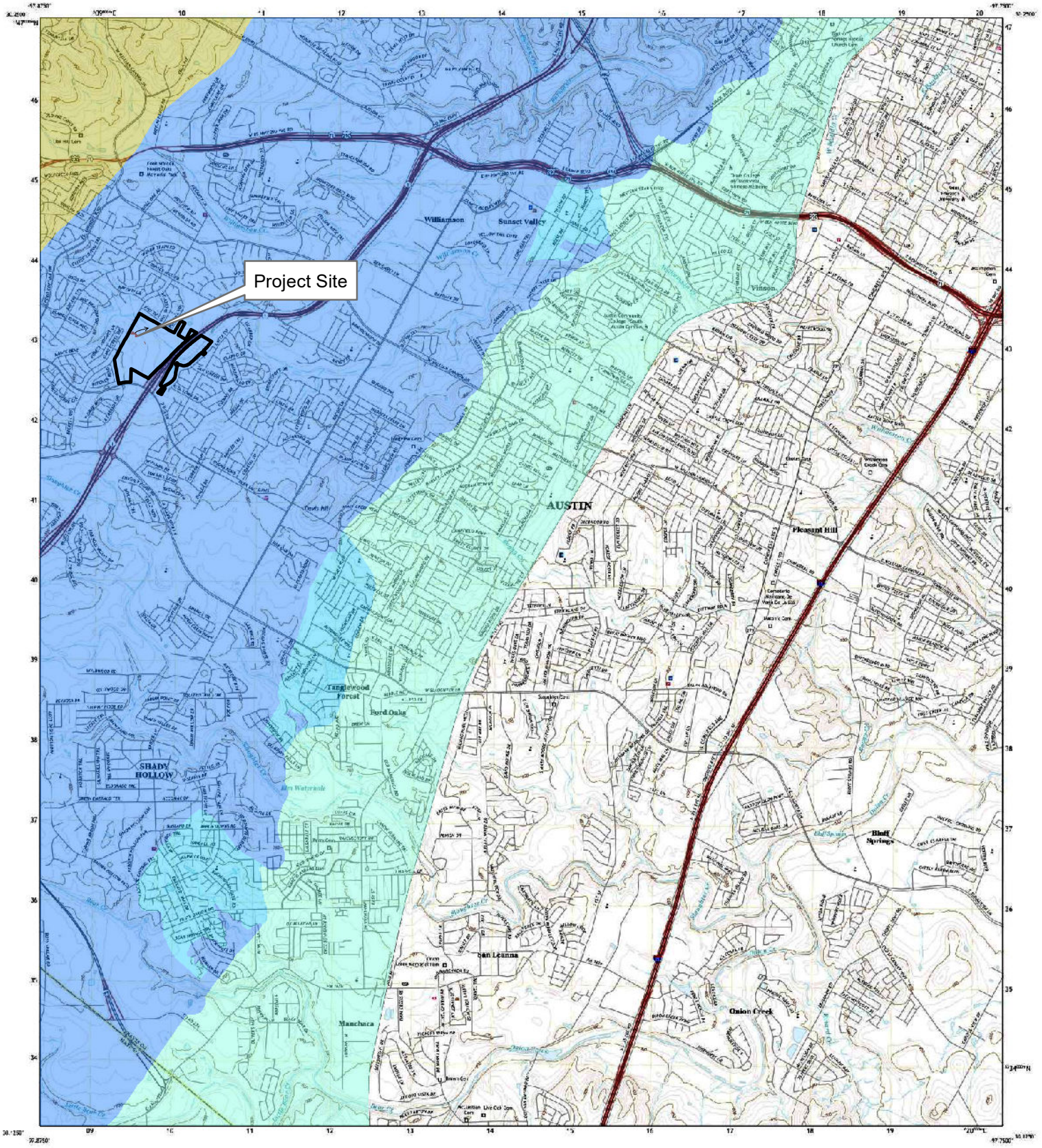
Dick Nichols Pond
Project Limits
Park Boundary

0 300 600 Feet

Attachment A: Road Map
Dick Nichols Water Quality Pond Rehabilitation
Travis County, Texas

CDM Smith

Attachment B: Edwards Aquifer Recharge Zone Map, Dick Nichols Water Quality Pond Rehabilitation
Travis County, Texas



City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The Dick Nichols Park Water Quality Pond Retrofit project is intended to rehabilitate the permanent BMP feature (the retention-irrigation pond) for runoff from the parking lot and pool deck for the Dick Nichols Park. The existing pond is in a state of disrepair with a non-functioning filter and failed irrigation system. The improvements will add a new liner to the retention pond and add a pump and diffuser system behind the pool for irrigation.

The entire park is 109 acres, but the limits of construction are limited to the pond and comprise of 2 acres of the park. Due to the nature of the project being pond rehabilitation, the impervious cover will not change between existing and proposed conditions. Note that the improvements to the pond will be sized to capture and treat 100% of the contaminants draining to the pond since the feature is a retention-irrigation system and located in the Barton Springs Zone. The intended use of the site as a public park will not change.

ZARA
ENVIRONMENTAL LLC
Integrity | Science | Expertise
2104 Hunter Road
San Marcos, Texas 78666
512-291-4555
www.zaraenvironmental.com

GEOLOGIC ASSESSMENT FOR THE DICK NICHOLS DISTRICT PARK WATER QUALITY POND RETROFIT PROJECT, TRAVIS COUNTY, TEXAS

Dick Nichols District Park water quality pond and pool house.

Prepared for
AmaTerra Environmental, Inc.
11842 Rim Rock Trail
Austin, Texas 78737

27 October 2023

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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: Date: 10/27/2023

Kara Posso, P.G. (15382) Telephone: 512-291-4555 (Zara Office)

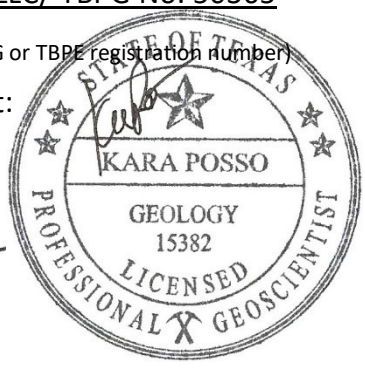
Aubri A. Jenson, P.G. (11007) Fax: 866-908-9137

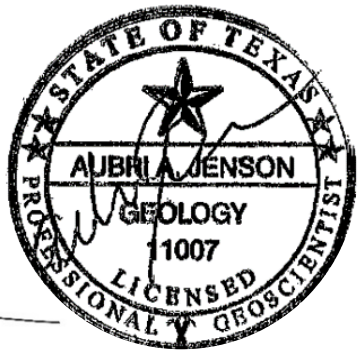
Representing (Name of Company and TBPG or TBPE registration number):

Zara Environmental LLC/ TBPG No. 50365

(Name of Company and TBPG or TBPE registration number)

Signature of Geologist:





Regulated Entity Name: City of Austin Dick Nichols District Park

Project Information

1. Date(s) Geologic Assessment was performed: 9/26/2023
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)
SsC – Speck Clay loam, moist, 1 to 5 percent slopes, stony	D	1.5

** 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. NOTE: Attachment B in the 2019 GA remains valid.

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" = 30'
   Site Geologic Map Scale: 1" = 30'
   Site Soils Map Scale (if more than 1 soil type): 1" = 500'

9. Method of collecting positional data:

☒ Global Positioning System (GPS) technology.

☒ Other method(s). Please describe method of data collection: Faults & Geology derived from Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome, et al. 2005); Utility locations from the City of Austin (Austin Water 2023), Caves and karst feature locations from the Texas Speleological Survey (TSS 2023); Cave data for District Park Cave and Lotus Cave from the Austin Water (Austin Water 2023).

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.

☒ No 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.

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: City of Austin Dick Nichols District Park

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 (FT)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FT)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
MB-01	30.214439	-97.863033	MB	30	Kprd	275	120	6	-	-	-	-	N, F	20	55		X		X	Pond
MB-02*	30.213988	-97.862838	MB	30	Kprd	0.5	0.5	unk	-	-	-	-	X	5	10	X		NA		Trench
MB-03*	30.212715	-97.858143	MB	30	Kkg	1	1	unk	-	-	-	-	X	10	40	X		NA		Trench
MB-04	30.214536	-97.860739	MB	30	Kprd	0.5	0.5	unk	-	-	-	-	X	0	30	X		NA		Drainage
F-01*	30.213844	-97.860643	F	20	Kprd/Kkg	unk	unk	unk	50	10	-	-	F	10	30	X			X	Hillside
DN-01a	30.213287	-97.861185	SF/Z	30	Kprd/Kkg	3.5	0.5	2	50	10	3/30	0.3 x 3.5	N,F,O,V	25	65		X	X		Hillside
DN-01b	30.213345	-97.861129	SF/Z	30	Kprd/Kkg	4	0.3	5	300	10	3/30	0.5 x 1.5	N,F,O,V	20	60		X	X		Hillside
DN-01c	30.213371	-97.861119	SH/Z	30	Kprd/Kkg	3.5	1	0.5	120	10	3/30	0.3 x 0.4	N,F,O,V	20	30		X	X		Hillside
District Park Cave	30.21273	-97.8588	C	30	Kkg	245	-	44	-	-	2/10	-	N,FS,F,O	35	65		X		X	Hillside
Lotus Cave	30.21277	-97.8588	C	30	Kkg	50	-	10	-	-	2/10	-	N,FS,F,O	35	65		X		X	Hillside

*Features MB-02 (water main), MB-03 (wastewater main), and F-01 (mapped fault) are linear alignments; the GPS coordinate above represents a single location for that feature class within the Survey Area. The location and orientation of these features may be seen on Figure 3 and Attachment D. +DATUM: NAD 1983.

2A	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 a geologist as defined by 30 TAC Chapter 213.

KARA POSSO
GEOLOGY
15382
LICENSED
PROFESSIONAL GEOSCIENTIST

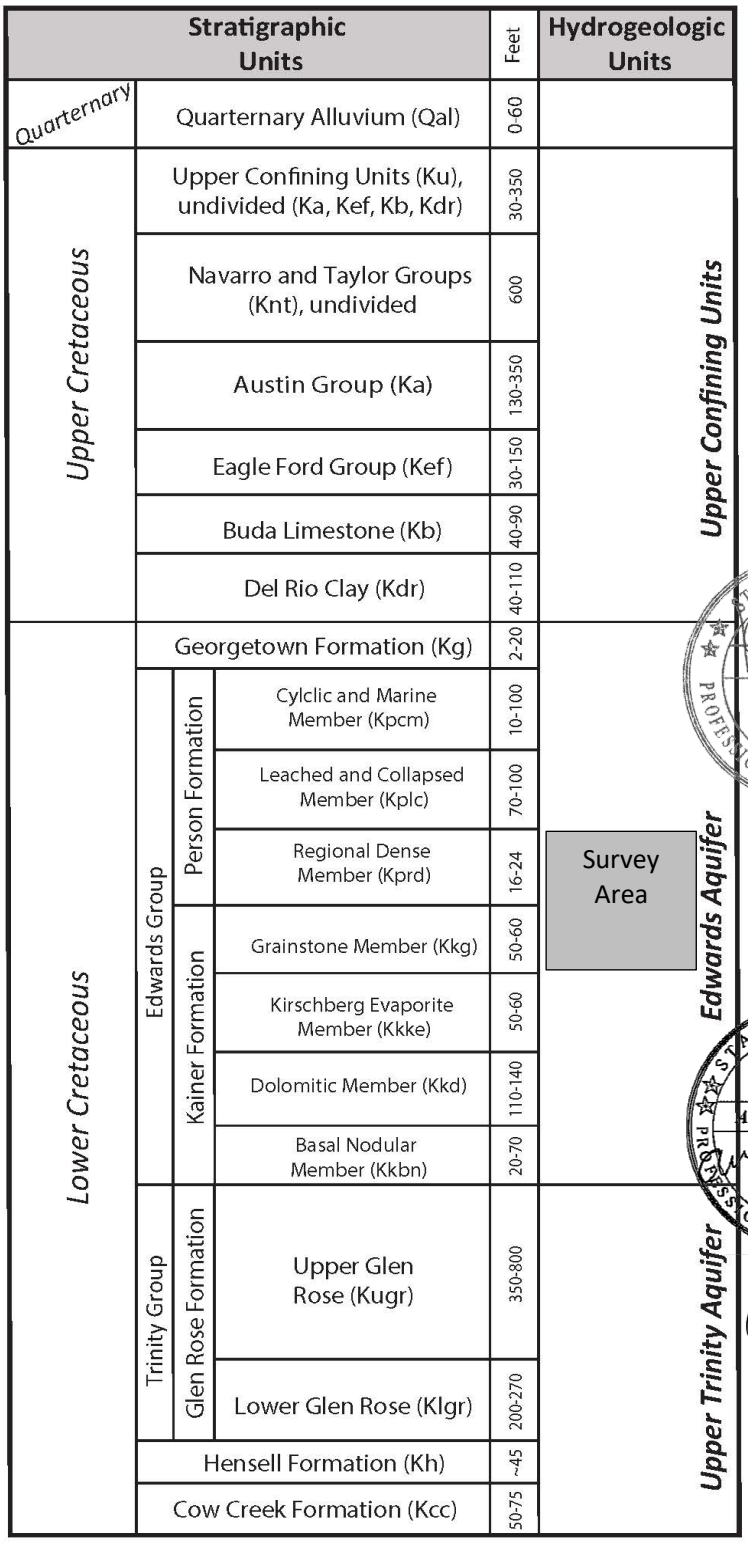
STATE OF TEXAS
AUBRI A. JENSON
GEOLOGY
11007
LICENSED
PROFESSIONAL GEOSCIENTIST

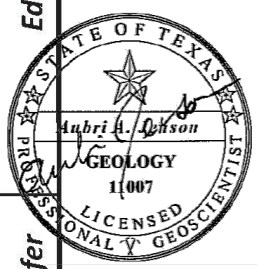
Date 9/26/2023

Sheet 1 of 2

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

ATTACHMENT B





Stratigraphic column of geologic units in the Sunset Valley area, modified from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) and Geologic Atlas of Texas (GAT 2010). Outcropping unit(s) are specified.

ATTACHMENT C

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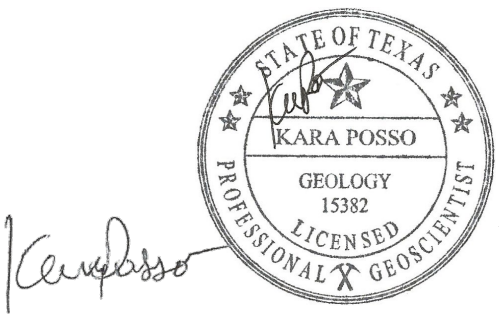
GEOLOGIC ASSESSMENT FOR THE DICK NICHOLS DISTRICT PARK WATER QUALITY POND RETROFIT PROJECT, TRAVIS COUNTY, TEXAS

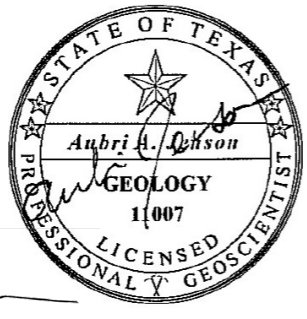
Prepared for
AmaTerra Environmental, Inc.
11842 Rim Rock Trail
Austin, Texas 78737

27 October 2023

In accordance with the Texas Board of Professional Geologists rules at 22 Texas Administrative Code, Part 39, Chapter 851, Subchapter C, §851.156, this report is signed and sealed on the title page to assure the user that the work has been performed by or directly supervised by the following professional geologist who takes full responsibility for this work.

The computer-generated seal appearing on this document was authorized by Kara Posso, PG #15382 and Aubri A. Jenson, PG # 11007, on 27 October 2023.





Kara Posso, Texas Professional Geoscientist No. 15382
Aubri A. Jenson, Texas Professional Geoscientist No. 11007
Zara Environmental LLC Geoscience Firm Registration No. 50365

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Introduction

A Geologic Assessment (GA) was conducted on 19.79 acres of the 121-acre City of Austin Dick Nichols District Park (Survey Area) in support of the approximately 1.7-acre Dick Nichols District Park Water Quality Pond Retrofit Project (Project) in Austin, Travis County, Texas (Figure 1). The Dick Nichols District Park Water Quality Pond Retrofit Project has been proposed to rehabilitate the existing 0.4-acre retention-irrigation pond that captures discharge and runoff from the community pool and parking lot at Dick Nichols District Park. The existing pond is in a state of dysfunction as its liner has eroded since original construction, and it no longer holds or filters water as intended. The proposed Project will replace the pond liner and add a pump and diffuser system behind the pool for site irrigation. The regulated activities required to rehabilitate the pond will primarily occur within a 1.7-acre area that surrounds the pond (Project Limits; Figure 1) and will include installation of erosion and sedimentation controls; excavation and subgrade preparation for the new pond liner; excavation, grading, utility, and electrical for the new pump station; and utility and grading work for the new diffuser system. All disturbed areas will be revegetated after construction is completed, and an existing unpaved access road parallel to the diffuser system will be re-established for maintenance access. The associated electrical work for this project will include trenching through the paved parking lot to the existing electrical building and repaving the trench to the pump station.

The Project is entirely inside the Edwards Aquifer Recharge Zone and the proposed construction activities meet the Texas Commission of Environmental Quality's (TCEQ) requirements for regulation under the Edwards Rules at Title 30 Texas Administrative Code (TAC) Chapter 213.5. As standard practice, TCEQ requires that the entire legal boundary of a property be surveyed for a Geologic Assessment; however, because the Project will only require regulated activities over the approximately 1.7 acres of the approximately 121-acre property boundary, the Survey Area for this Geologic Assessment has been defined with a legal metes and bound description in order to reduce area required for survey (Supplemental Attachment 1). To ensure due diligence, a Survey Area totaling 19.79 acres was delineated by calculating the area within Dick Nichols District Park that has the potential to be receive runoff from the proposed Project Limits.

Land within the Survey Area is largely undeveloped except for the public park amenities near Beckett Road, which include community water features (pool and splash pad), a parking lot, tennis courts, and a cleared recreational field. Beyond these developments, the park hosts relatively undisturbed vegetation and a variety of paved, crushed granite, and single-track dirt trails for pedestrian and cyclist use. A detailed walking survey of the Survey Area was conducted on 26 September 2023, resulting in documentation of 10 features.

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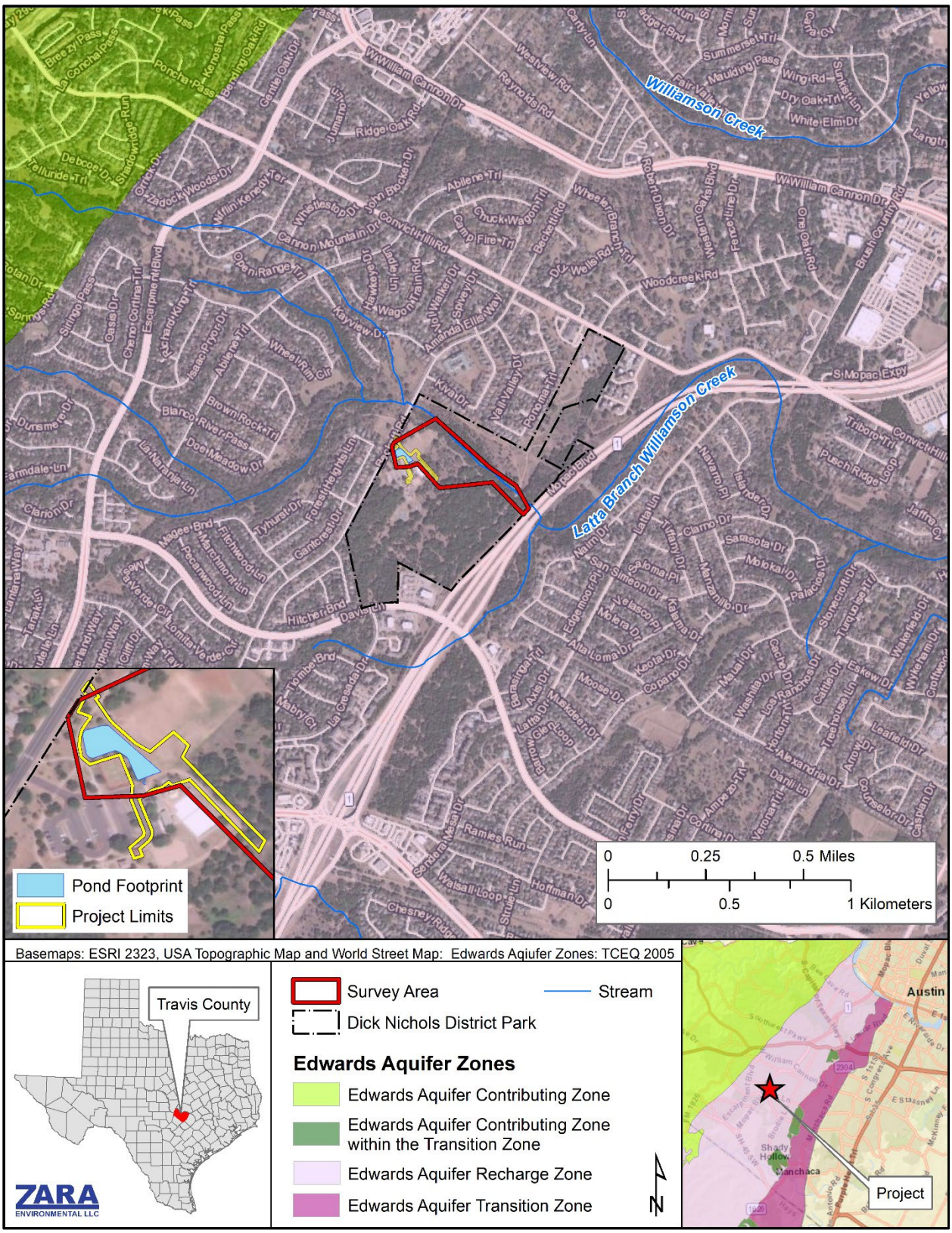

Figure 1. Location map of the Dick Nichols District Park Water Quality Retrofit Project Limits and Survey Area.

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Methods

Background Data Collection

Various publicly available sources were reviewed for data pertaining to the Survey Area. The United States Geological Survey (USGS) 7.5-Minute Topographic Map of the Oak Hill Quadrangle was reviewed for general site information and elevation contours (USGS 2017). Surface geology and faults were obtained from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005). Well records were reviewed from the Texas Water Development Board (TWDB 2023). Soil descriptions were obtained from the Web Soil Survey of the Natural Resources Conservation Service ([NRCS] 2023). Floodplain maps from the Federal Emergency Management Agency ([FEMA] 2023) were also reviewed. A data request was submitted to the Texas Speleological Survey (TSS) for any documented caves or karst features within the Survey Area or within 0.5-mile, and an on-line search of the TCEQ Central Registry (TCEQ 2023) was performed for related geologic information. Additionally, hydrogeologists at the City of Austin Balcones Canyonland Preserve were contacted for data on caves and karst features in the vicinity of the Survey Area and provided previous bodies of work as well cave footprint data (personal comms. Hauwert, Nico 2023). Location and orientation of water utilities, stormwater drainage lines, and sanitary sewers were obtained from GIS files maintained the City of Austin (Austin Water 2023).

Field Survey

Karst survey methods followed protocols outlined in TCEQ Instructions to Geologists for Geologic Assessments (TCEQ 2004). Walking ground surveys, as defined by Veni and Reddell (2002), TCEQ (2004), and Barrett (2005), were conducted throughout the Survey Area and reconnaissance excavations were conducted at all potential karst features. Positions of all features were documented using handheld Garmin S64 GPS units (+/- 10 feet) and were cross-verified against digital orthoimagery. All features identified were evaluated by a licensed professional geoscientist for potential impact to Edwards Aquifer recharge. This is completed by ranking the recharge sensitivity of each feature using the point scheme defined by TCEQ (2004). Fieldwork was conducted by two Zara personnel, Kara Posso (P.G. #15382) and Ethan Perrine, on 26 September 2023.

Results

Background Data

Site Soils

The USDA (2023) identified one soil map unit within the Survey Area (Figure 2). The Speck stony clay, moist, 1 to 5 percent slopes, stony (SsC) is a slowly permeable residual soil derived from indurated Cretaceous limestone. It forms a profile up to 14 inches deep consisting of reddish brown to dark brown loam overlying bedrock. The soil forms blocky, angular peds and commonly contains chert fragments and a few, fine calcium carbonate concretions. Runoff is high on slopes of 1 to 5%. It has the capacity to transmit water at moderately low to moderately high rates (0.06 to 0.57 inches per hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil covers 100% of the Survey Area.

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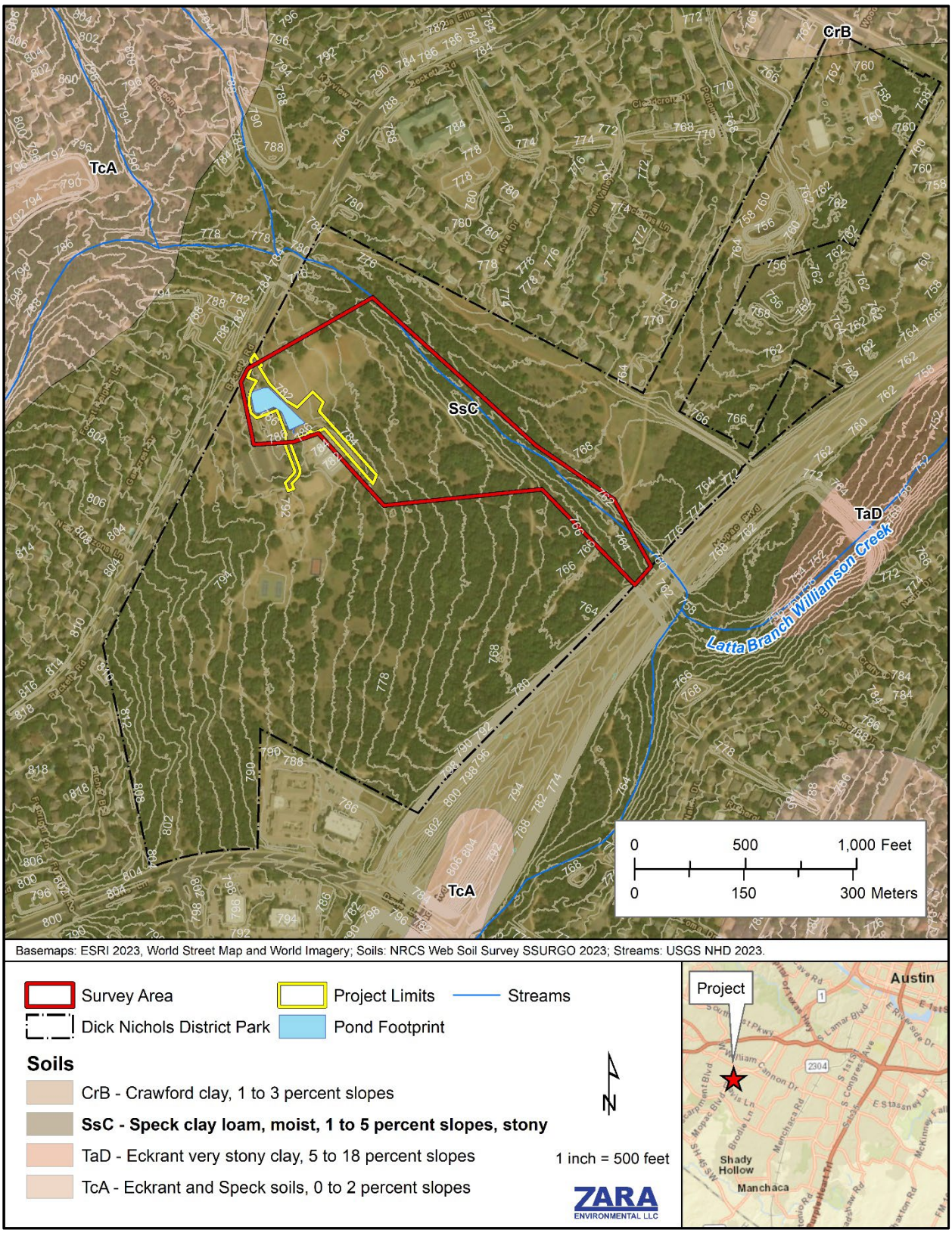

Figure 2. Soils map of the Dick Nichols District Park Water Quality Retrofit Project Survey Area.

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Site Geology

The mapped surface geology from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) is presented in Figure 3 and Attachment D. The units mapped within the Survey Area are the Regional Dense Member of the Person Formation (Kprd) and the Grainstone Member of the Kainer Formation (Kkg). One fault is mapped within the Survey Area, trending roughly 50° between the Regional Dense Member and the Grainstone Member. A description of the geologic units mapped onsite is presented below and the mapped fault is documented as feature F-01 in the GA form, GA table, and feature descriptions.

Regional Geology

The Survey Area is located in the eastern portion of the Edwards Plateau Physiographic Province of central Texas along the Balcones Escarpment, which is a highly eroded landscape bordering the Edwards Plateau to the south and east. The plateau is typified by higher elevations to the north and west and generally slopes to the southeast. Canyons and drainage basins were formed by surface flow of the Colorado River and its tributaries, including the Latta Branch Tributary of Williamson Creek, which passes through the northwestern portion of the Survey Area.

The geologic formations in the Edwards Plateau are mostly Cretaceous age limestones with some Quaternary alluvium overlaying along surface drainages. The limestone bedrock developed from the accumulation of thick sequences of marine sediments deposited in a lagoon environment on the San Marcos Platform protected by a barrier reef during the Cretaceous about 100 million years ago (Rose 1972). These strata dip slightly to the southeast at about 10 to 15 feet/mile toward the Gulf of Mexico.

Regional Stratigraphy

Stratigraphically, the geologic formations that comprise the Edwards Aquifer are the Georgetown Formation, Person Formation, and Kainer Formation (TCEQ 2004). A stratigraphic column showing regional geology is included as Attachment B.

According to Blome et al. (2005), the Georgetown Formation is the uppermost unit of the Edwards Aquifer. The strata are covered by vegetation and soil in some areas. Bedrock is reddish-brown and gray to light-tan, marly limestone with biomicritic texture and commonly contains the brachiopod *Waconella wacoensis*, pectins, the mollusks *Kingena wacoensis* and *Gryphaea washitaensis* (Young 1967), as well as other pelecypods. The Georgetown Formation is considered an upper confining unit with very low porosity and permeability and has little or no karstification or cavern development (Stein and Ozuna 1995). Thickness ranges from 2 to 20 feet and generally thins from northeast to southwest.

The Person and Kainer Formations comprise the Edwards Group (Rose 1972). The Person Formation is about 130 feet thick in southern Travis County. The composition of the Person Formation ranges from crystalline limestone to grainstone to mudstone and is comprised of three informal hydrogeologic units: the Cyclic and Marine Members, undivided; the Leached and Collapsed Members, undivided; and the Regional Dense Member.

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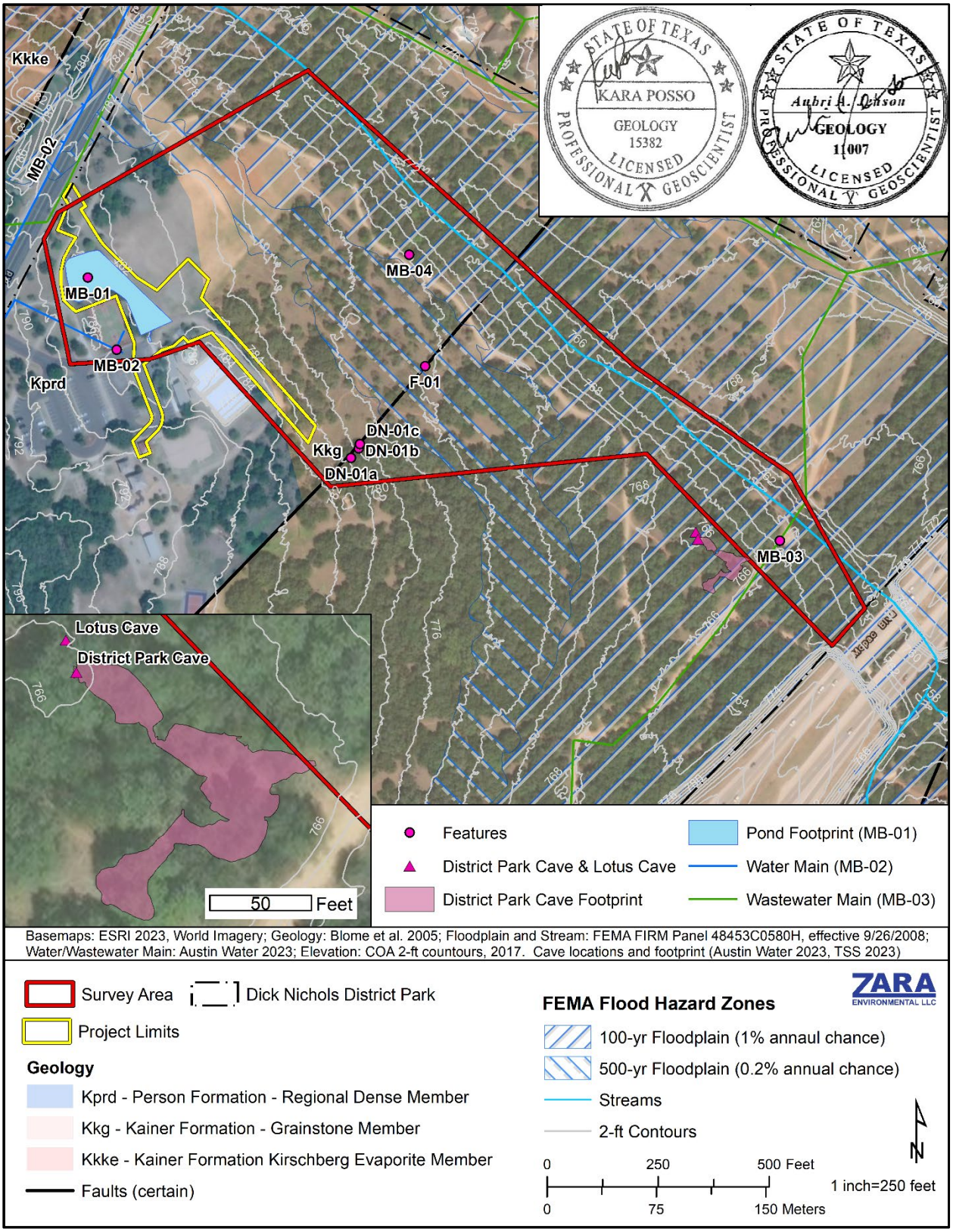

Figure 3. Geology of the Dick Nichols District Park Water Quality Retrofit Survey Area with the locations of all features identified during the field survey.

The Cyclic and Marine Members are composed of chert-bearing wackestones and can be somewhat variable in thickness because of the erosional unconformity between the Person and Georgetown Formations. In southern Travis County these layers are less than 5 feet or not present (Hauwert 2009).

The Leached and Collapsed Members are a light-colored wackestone with interbedded mudstone and grainstone intervals that form one of the more porous and permeable subdivisions of the Edwards Aquifer. The leached member is a dense, bioturbated micrite, and the collapsed member is composed of several one- to five-feet thick zones of collapsed stromatolitic limestone (Rose 1972). The combined thickness of the two members ranges from 70 feet in northern Hays County to less than 25 feet near the Colorado River in Travis County (Hauwert 2009).

The lowermost member of the Person Formation is the Regional Dense Member (RDM), which has a thickness of 15 to 32 feet in southern Travis County and thins towards the Colorado River (Hauwert 2009). The RDM is composed of a dense argillaceous mudstone and is easily identified in the outcrop and on a variety of geophysical logs. Most of the fractures that penetrate the RDM do not appear to be solution enlarged. Caves that breach the RDM are not enlarged but are usually vertical shafts with horizontal caverns developed above or below the RDM. The RDM can function as a confining unit between the upper and lower portions of the Edwards Aquifer (i.e., between the Kainer and the Person Formation); however, caves, faults, and fractures may greatly reduce the vertical confining ability of the RDM. The RDM is probably not an effective barrier to lateral flow at faults because of the relatively thin section. The flow of water tends to circumvent the RDM because of the impermeable nature of this unit.

The Kainer Formation has an approximate total thickness of 300 feet in southern Travis County. The lithology of the Kainer Formation ranges from mudstone to miliolid grainstone to crystalline limestone. The Kainer is subdivided into four informal members that include the Grainstone, Kirschberg Evaporite, Dolomitic, and Basal Nodular Members.

The Grainstone Member is the uppermost unit of the Kainer Formation and is 45 to 60 feet thick in southern Travis County (Hauwert 2009). It is composed of thick sequences of dense, tightly cemented, miliolid grainstone. Primary matrix porosity, as measured on geophysical logs, is some of the lowest in the Edwards Aquifer. Secondary fracture porosity accounts for the bulk of effective porosity in this aquifer unit.

The Kirschberg Evaporite Member underlies the Grainstone Member and is 40 to 75 feet in thickness in this area. This hydrogeologic unit consists of crystalline limestone and chalky pulverulite with chert nodules and lenses (Hauwert 2009). Collapse features are common. The member's porosity has been described as boxwork (Maclay and Small 1976) because of the configuration of the voids and the secondary neospar and travertine deposits. The boxwork porosity does not seem to be prevalent throughout the entire thickness or extent of the member but occurs sporadically within more massive limestone. Dissolution of evaporite minerals, such as gypsum and anhydrite, and the existence of contorted beds in the Kirschberg Evaporite result in extensive secondary porosity, which creates one of the most permeable subdivisions in the Edwards Aquifer.

The Dolomitic Member is a resistant, highly bedded wackestone with interbedded grainstone, burrowed mudstone, and some chert nodules. The Dolomitic member has a total thickness of about 140 feet in this area (Hauwert 2009). Effective porosity and probable pathways of water in this unit are restricted to solution enlarged bedding planes, joints, fractures, and faults.

The Basal Nodular Member is the lowermost unit of the Edwards Group and is 45 to 65 feet of fossiliferous, nodular limestone (Hauwert 2009). In the subsurface, the Basal Nodular Member has negligible porosity and permeability (Maclay and Small 1984) and can function as part of the lower confining unit; however, in outcrop the Basal Nodular Member often displays extensive karstification, which has generated secondary porosity in the form of large lateral caves.

Regional Groundwater

The Edwards Aquifer is one of the most permeable and productive karst aquifers in the United States and is the primary groundwater source for much of central Texas. Karst aquifers are, by their nature, extremely vulnerable to contamination. Soils in karst areas tend to be thin and patchy. Thus, the filtration of diffuse recharge afforded by soils is at best low and is only decreased by human activity. Recharge in karst systems commonly occurs as point recharge into specific karst features, bypassing what little filtration a limited soil zone might afford. The humid subtropical climate of this region can produce thermal convection thunderstorms, and many of the rainfall events can produce excessive amounts of precipitation in short periods of time. Some of this water makes its way into the aquifers, usually through concentrated areas along creeks and rivers in outcrop areas of the recharge zone.

The Survey Area is contained within the Recharge Zone of the Barton Springs Segment of the Edwards Aquifer, as delineated by the TCEQ Edwards Rules (30 TAC §213). The Barton Springs Segment covers about 155 square miles in Travis and Hays counties. It is composed of limestone that is highly faulted, fractured, and dissolved, forming a very prolific karst aquifer ranging from 0 to 450 feet thick (BSEACD 2021). The Recharge Zone of the Edwards Aquifer is defined as the land surface area where caves, sinkholes, faults, fractures, or other permeable features provide pathways for recharge of surface waters into the Edwards Aquifer. This zone is regulated due to the vulnerability of the aquifer to pollution. Recharge into the Edwards Aquifer occurs primarily in losing streams, where surface water from the contributing zone flows over faults, fractures, and karst features that have been solutionally enlarged in the Recharge Zone (Sharp and Banner 1997).

Water Wells

According to online records from the Texas Water Development Board (TWDB 2023), there are no wells present within the Survey Area or within the boundaries of Dick Nichols District Park. No water wells were noted during the field survey.

Floodplains

According to the FEMA Flood Zone Map (2023), the 100-year and 500-year floodplains are mapped over portions the Survey Area along the Latta Branch of Williamson Creek (Figure 3 and Attachment D). These mapped floodways do not intersect the Dick Nichols District Park Pond or the proposed Project.

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Previously Identified Features

A review of previous reports by Zara, information provided by City of Austin Balcones Canyonland Preserve staff (N. Hauwert, personal communications, 2023), and data requested from the TSS (2023) indicate that the entrance to 10 caves and 5 other karst features (sinkholes or solution cavities) are known within a 0.5-mile radius of the Survey Area boundary (Figure 4). Of the 15 features, most are located to the south of the Survey Area within the Karst Preserve at Western Oaks south of Davis Lane and west of Mopac, the Deer Park at Maple Run Preserve south of Davis Lane and east of Mopac, or within the annexed portion of Dick Nichols District Park east of Mopac from the Survey Area. Two of the features identified during background review, District Park Cave and Lotus Cave, have entrances that are within 45 feet of the Survey Area or have a footprint that intersects the Survey Area. Both of these caves are documented on the GA form, GA table, and will be further discussed in the feature descriptions below.

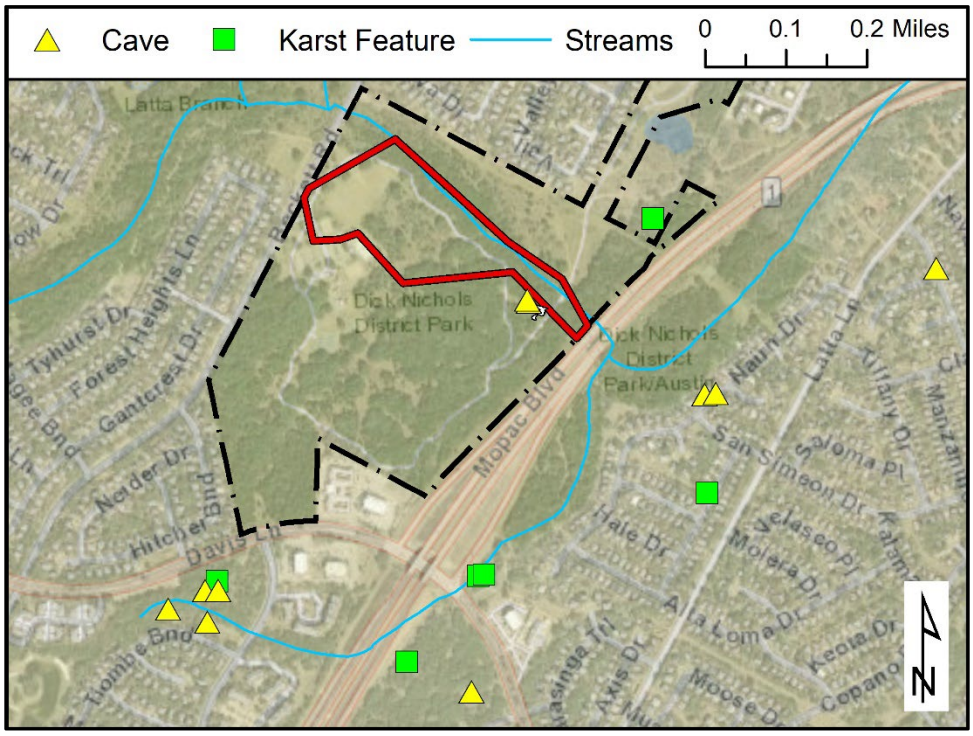

Figure 4. Documented caves and karst features identified within 0.5-mile of the Survey Area identified through background data collection.

Description of Features

Results of the surface karst feature survey are presented in the TCEQ Geologic Assessment Table (Attachment A) and are discussed below. Ten features were identified within or adjacent to the Survey Area, including four manmade features in bedrock, a mapped fault, a zone of three karst features, and two known caves. All features were ranked for recharge sensitivity according to TCEQ criteria. Feature locations are displayed on maps in Figure 3 and Attachment D. Each feature is discussed in detail below.

ATTACHMENT C

MB-01; Manmade Feature in Bedrock (Dick Nichols District Park Pond)

This feature is a water quality pond designed to capture surface water runoff from park facilities, and also receives drainage from regular maintenance of the community pool. The City of Austin proposes improving the pond as part of the Dick Nichols District Park Water Quality Pond Retrofit Project to restore its ability to function and provide irrigation to park facilities. The pond was approximately 275 feet long and 120 feet wide by 6 feet in depth, with a catchment area greater than 1.6 acres. There was one visible inlet on the south end of the pond that connected directly to the parking lot. The pond contained mowed grasses and larger woody vegetation such as shrubs and trees. At the base of the pond there was exposed bedrock, consistent with the Regional Dense Member of the Person Formation. The exposed bedrock indicates that the materials used to line the pond during original construction have since eroded, allowing water to permeate through the base of the pond into the subsurface, particularly during high-capacity events such pool draining or heavy storms. The base of the pond was inspected for potential karst features and no open apertures or conduits were noted. Although there were no open karst features noted within the pond, due to the size of the catchment area and the lack of an effective pond liner, this feature is rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 5. Overview of the Dick Nichols Park Pond (MB-01) looking towards the community pool facility.

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Figure 6. Overview of the Dick Nichols Park Pond (MB-01) looking towards Beckett Road.

Figure 7. Outcropping bedrock visible at the base of the Dick Nichols Park Pond (MB-01).

ATTACHMENT C

MB-02; Manmade Feature in Bedrock (Water Main and associated infrastructure)

Infrastructure associated with a water main was identified at Dick Nichols Park near the community pool in the northeastern portion of the Survey Area (Figure 3, Figure 8, and Attachment D). Infrastructure included a fire hydrant in the parking lot and a pool house with various connections to the water main. The City of Austin-owned water main was identified through background data review of Austin Water GIS files (2023). The depth of the water main is unknown; however, GIS files indicate the line is 6 inches in diameter (Austin Water 2023). There is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 8. Evidence of the water main and infrastructure associated with MB-02.

ATTACHMENT C

MB-03; Manmade Feature in Bedrock (Wastewater Main and associated infrastructure)

Infrastructure associated with a wastewater main was identified at Dick Nichols Park cutting across the southeast portion of the Survey Area (Figure 3, Figure 9, and Attachment D). A wastewater manhole cover was observed along a trail that crosses that portion of the Survey Area. The City of Austin-owned wastewater main was identified through background data review of Austin Water GIS files (2023). The depth of the water main is unknown; however, GIS files indicate the line is 12 inches in diameter (Autin Water 2023). There is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 9. Evidence of the wastewater main and infrastructure associated with MB-03.

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MB-04; Manmade Feature in Bedrock (Water Discharge Pipe)

A six-inch-diameter buried PVC pipe was identified discharging water into a drainage adjacent to a trail within the Survey Area (Figure 3, Figure 10, and Attachment D). Water flowed from the pipe for approximately 10 to 15 feet before soaking into natural substrates. The water was likely municipal in origin based on the clarity and faint odor of chlorine; however, the origin of the pipe could not be determined during the field survey, and no records were found in GIS databases. As the pipe is a discharge feature and appeared to be buried shallowly (less than 1 foot in depth), the potential for the pipe to rapidly transmit water to the subsurface is low assuming proper construction and maintenance, although water discharging from the pipe is likely able to infiltrate the subsurface as it is discharged into the adjoining drainage. The pipe is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 10. Water discharge pipe (MB-04) with pooling water.

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F-01; Mapped Fault

Feature F-01 is a mapped fault located towards the center of the Survey Area that was identified by review of geologic maps (Figure 3 and Attachment D). According to Blome et al. (2005), F-01 is mapped as a certain fault trending approximately 50°. The fault is present between the Regional Dense Member of the Person Formation (Kprd) and the Grainstone Member of the Kainer Formation (Kkg) on the western portion of the Survey Area but is mapped within the Grainstone Member on the eastern portion of the Survey Area, suggesting there is little to no displacement. The mapped fault was evaluated during the field survey and much of the surface along the fault trend consisted of bedrock obscured by soil and vegetation; however, there was a zone of three karst features (DN-01a, DN-01b, DN-01c) documented near the mapped fault with a similar trend between each feature (Figure 3). It is highly possible that these features are related to dissolution guided by faulting in this portion of the Survey Area, however further investigation would be required for confirmation. Each of these three features are described separately below. Beyond the zone of features associated with DN-01, there were no other indications that water was rapidly infiltrating into the subsurface along the mapped fault line, therefore it has not been rated as sensitive per the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

DN-01; Zone of Karst Features

DN-01 was identified as a zone of three karst features (DN-01a, DN-01b, DN-01c) located proximal to a mapped fault line on a hillside in the western portion of the Survey Area (Figure 3 and Attachment D). The zone of features spans approximately 30 feet along a trend of 50°, which is the same trend as a mapped fault (F-01). DN-01a was approximately 15 feet southwest of DN-01b, and DN-01b was approximately 8 feet southwest from DN-01c (Figure 3, Figure 11, and Figure 12). These features were located between 43 feet and 50 feet of the Project Limits (Figure 3). Minor hand excavation was done on each feature as a part of the evaluation to determine sensitivity.

DN-01a was a solution enlarged fracture that extended at least 3.5 feet at a trend of 50° (Figure 11 and Figure 13. The fracture was 0.5 foot across at the widest opening and was approximately 2 feet in depth. The interior consisted of bedrock walls and the floor was filled with approximately 14 inches of leaf litter and modern, organic rich soils (Figure 14). The feature receives sheet flow from an upslope area of less than 10 square feet.

DN-01b was a solution enlarged fracture with an aperture that was approximately 0.5 foot wide and 1.5 feet long (Figure 12 and Figure 15). The feature extended as a 0.3-foot-wide fracture or at least 2.5 feet beyond the aperture at a trend of 300°. The feature trend was roughly 60° from the overall feature trend, which is typical of development along a joint of the primary fault or fracture trend. The interior consisted of bedrock walls and ceiling, and the floor was filled with approximately 4 to 6 inches of leaf litter and modern, organic rich soils (Figure 16). The feature receives sheet flow from an upslope area of less than 10 square feet.

DN-01c is a sinkhole with a horizonal solution cavity at its base (Figure 12 and Figure 17). The sinkhole was roughly 2 feet in diameter with a depth of 1 foot and the horizontal solution cavity was approximately 0.5 inch wide and at least 1.5 feet long at a trend of 120°. The feature trend

was roughly 70° from the overall feature trend, which indicates that it could be developed along a joint of the primary fault or fracture trend. The interior consisted of bedrock walls and ceiling, but the floor was filled with approximately 4 to 6 inches of leaf litter and modern, organic rich soils (Figure 18). The feature receives sheet flow from a limited upslope area that was less than 10 square feet.

As all three features associated with DN-01 have open apertures that are within a 30-foot zone along trend of 50° and are proximal to a mapped fault that also has a trend of roughly 50°, these features have been rated as sensitive per the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

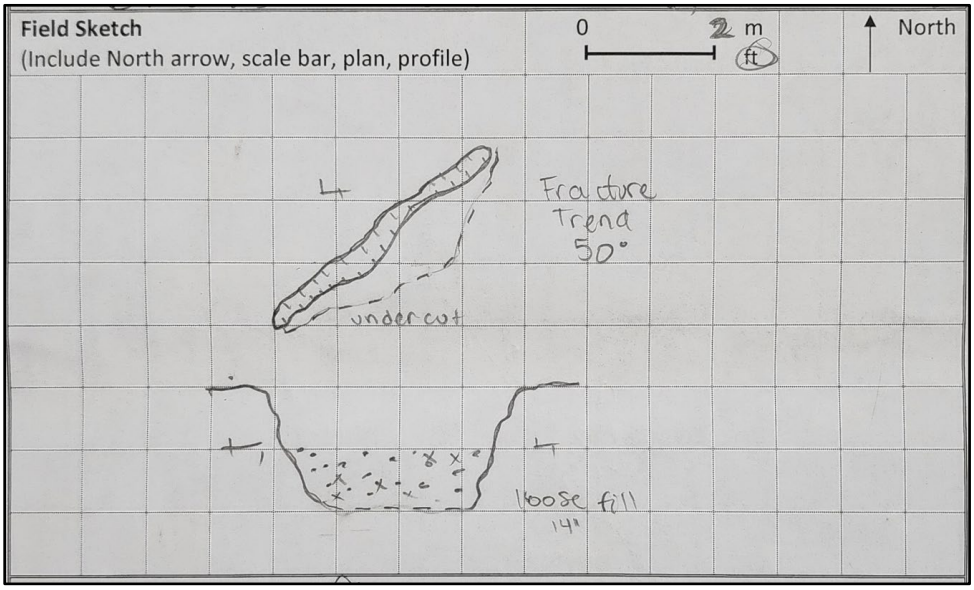

Figure 11. Plan and profile field sketch of feature DN-01a.

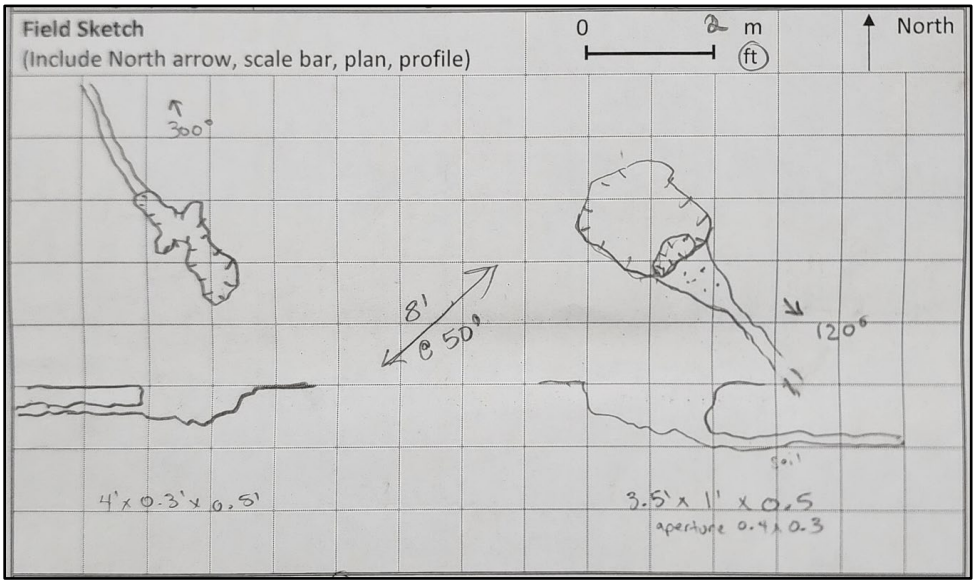

Figure 12. Plan and profile field sketches of feature DN-01b and DN-01c.

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Figure 13. Overview of DN-01a looking northeast.

Figure 14. Interior of DN-01a.

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Figure 15. Overview of DN-01a looking northwest.

Figure 16. Interior of DN-01b.

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Figure 17. Overview of DN-01c looking north.

Figure 18. Interior of DN-01c.

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District Park Cave and Lotus Cave; Cave

The entrances to District Park Cave and Lotus Cave are located approximately 16.5 feet apart in a single depression surrounded by a stone gabion that lies approximately 45 feet outside of the Survey Area boundary and 828 feet from the Project Limits (Figure 3, Figure 19, Figure 20, and Attachment D). These caves were identified through review of available TSS and City of Austin files and were not entered during the field survey. According to the map of District Park Cave (Figure 21), the surveyed length is 245 feet, and the maximum depth is 44 feet. Lotus Cave does not have a map, but TSS records indicates that the cave is approximately 50 feet long and 10 feet deep. While a connection between caves is not humanly traversable, they are believed to be hydrologically connected, and thus are being described as a single feature for the purposes of this GA. These caves have been rated as sensitive per the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Hydrogeologic studies conducted by City staff were reviewed to evaluate if and/or how these caves may be impacted by the proposed Project. In 2012, Dr. Nico Hauwert, a hydrogeologist with the City of Austin Balcones Canyonland Preserve conducted a cursory drip water study in District Park Cave with the intent of partially delineating the subsurface catchment area of the cave. Drip rates within District Park Cave were monitored following draining and discharge of the community pool to the Dick Nichols Park Pond (MB-01) on 05 September 2012. Although some issues arose with drip monitoring stations inside of the cave, drip rates did not respond strongly to substantial pulse of pool water discharged to the pond system. Therefore, Dr. Hauwert concluded that the pond is likely outside of the subsurface catchment area for District Park Cave, although he acknowledged the need for additional study. A summary email of the preliminary study results is included as Supplemental Attachment 2.

Based on the results of the drip study, the distance of the caves from the Project Limits (greater than 800 feet), and the existing surface best management practices (BMPs) (stone gabion), it is unlikely that District Park Cave and Lotus Cave will be negatively impacted as a result of the Project.

ATTACHMENT C

Figure 19. Entrance to District Park Cave.

Figure 20. Entrance to Lotus Cave.

ATTACHMENT C

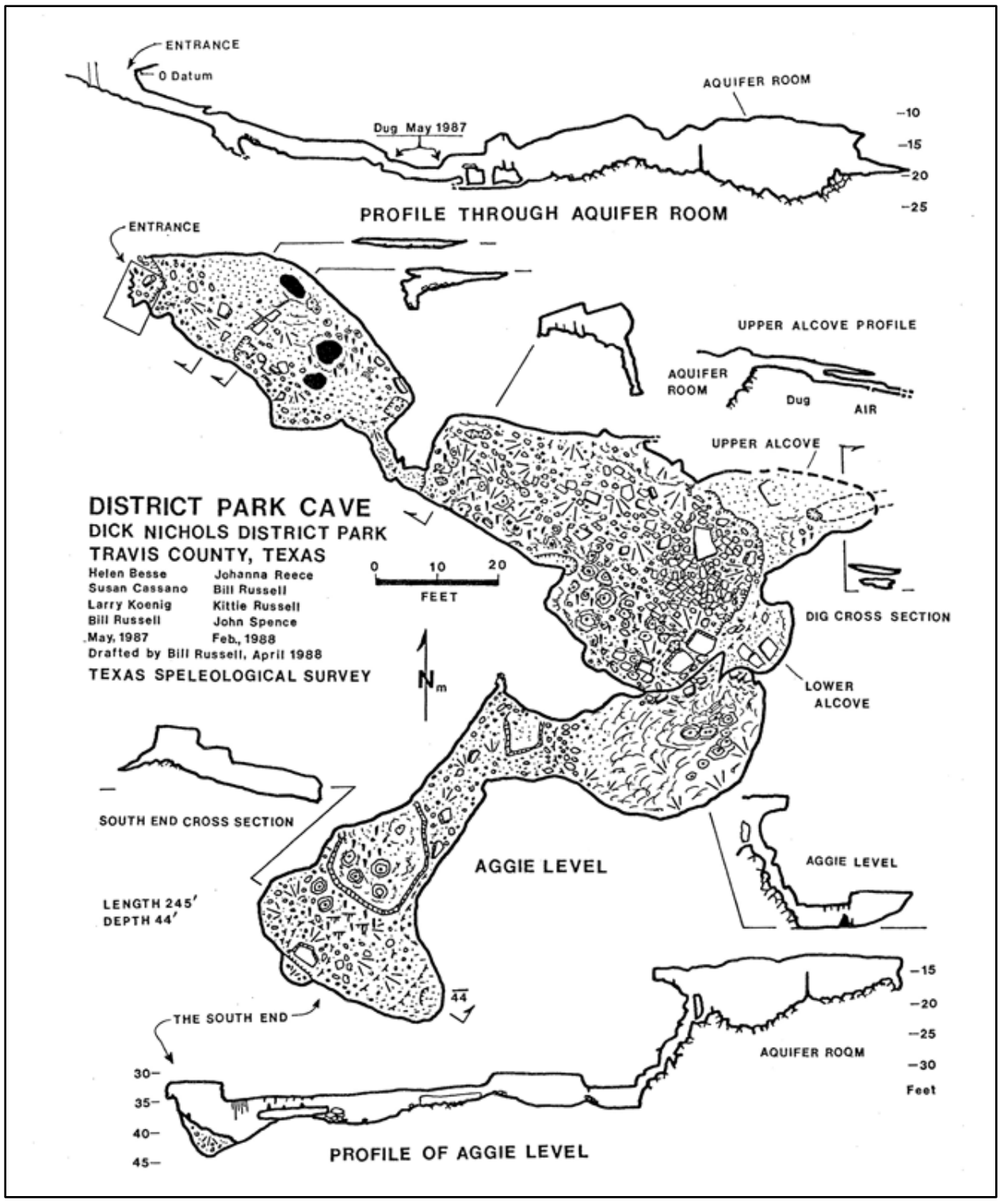

Figure 21. Cave map of District Park Cave.

ATTACHMENT C

Discussion and Recommendations

A GA was conducted on 19.79 acres of Dick Nichols District Park on 26 September 2023 in support of the Project. A total of ten features were documented during the field survey including four manmade features in bedrock, one mapped fault, a zone of three unenterable karst features, and two previously documented caves. Six of the ten features have been designated as sensitive features per the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

One manmade feature in bedrock, the Dick Nichols District Park Pond (MB-01), was designated as sensitive due to its large catchment area and current condition of disrepair. The Project aims to restore and improve the function of the pond for water quality protection purposes. Following completion of the Project, this feature would be unlikely to qualify as a sensitive feature.

A zone of three non-enterable karst features (DN-01a, DN-01b, DN-01c) were documented along a mapped fault (F-01). These were deemed sensitive based on their trend and location relative to the mapped fault, their density, and their individual karstic characteristics. As these features were located 50 feet (DN-01a), 46 feet (DN-01b), and 45 feet (DN-01c) from the Project Limits, they have a moderate risk of being adversely affected by the Project. However, these features are located to the southeast of the Project Limits whereas the natural drainage slopes to the northeast, thus they are unlikely to receive runoff directly from the Project Limits under typical flow conditions. Still, a protective buffer of at least 50 feet is recommended for each feature and proper BMPs should be placed, monitored, and maintained surrounding the Project Limits to ensure untreated or sediment laden runoff is unable to reach any of these features.

The entrances to District Park Cave and Lotus Cave were located approximately 45 feet outside of the Survey Area and have been included as features documented in this GA due to their proximity and hydrogeologic significance. Each cave is a sensitive karst feature. However, due to their distance from the Project Limits (greater than 800 feet), the lack of evidence suggesting their subsurface catchment area includes the pond, and the existing surface BMPs surrounding the cave entrances, the Project is unlikely to adversely affect these features. It is recommended that these caves are monitored during the Project for any potential degradation related to construction activities.

No other hydrologically sensitive karst features requiring protection were identified within the Survey Area. Care should be taken when working around the other documented manmade features in bedrock and public utilities including electrical lines. General recommendations include the use of proper stormwater BMPs prior to and during construction activities for protection of water quality in Latta Branch of Williamson Creek. To ensure compliance, BMPs should be installed, monitored, and maintained throughout the Project in accordance with TCEQ requirements under the Edwards Aquifer Protection Program and revegetation should occur swiftly after Project completion. If any karst features are discovered during excavation, all work within 50 feet of the feature should stop and a Professional Geoscientist should evaluate the feature sensitivity and coordinate with the TECQ Edwards Aquifer Protection Program as appropriate.

ATTACHMENT C

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ATTACHMENT D

Attachment D. Site Geologic Maps

Kkg

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Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Main: Austin Water 2023; Elevation: COA 2-ft countours, 2017. Cave locations and footprint (Austin Water 2023, TSS 2023)

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- Streams
- 100-yr Floodplain (1% annaul chance)
- 500-yr Floodplain (0.2% annual chance)

1 inch=30 feet

0 30 60 Feet

0 9 18 Meters

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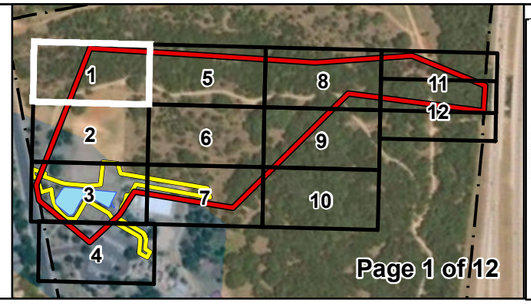

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Kkg

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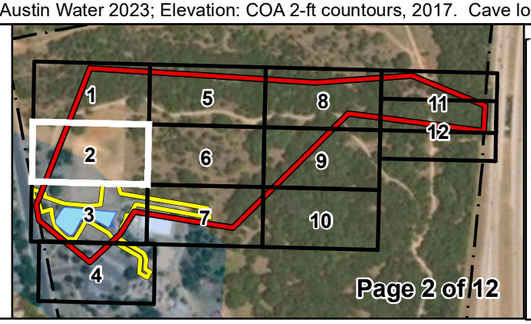

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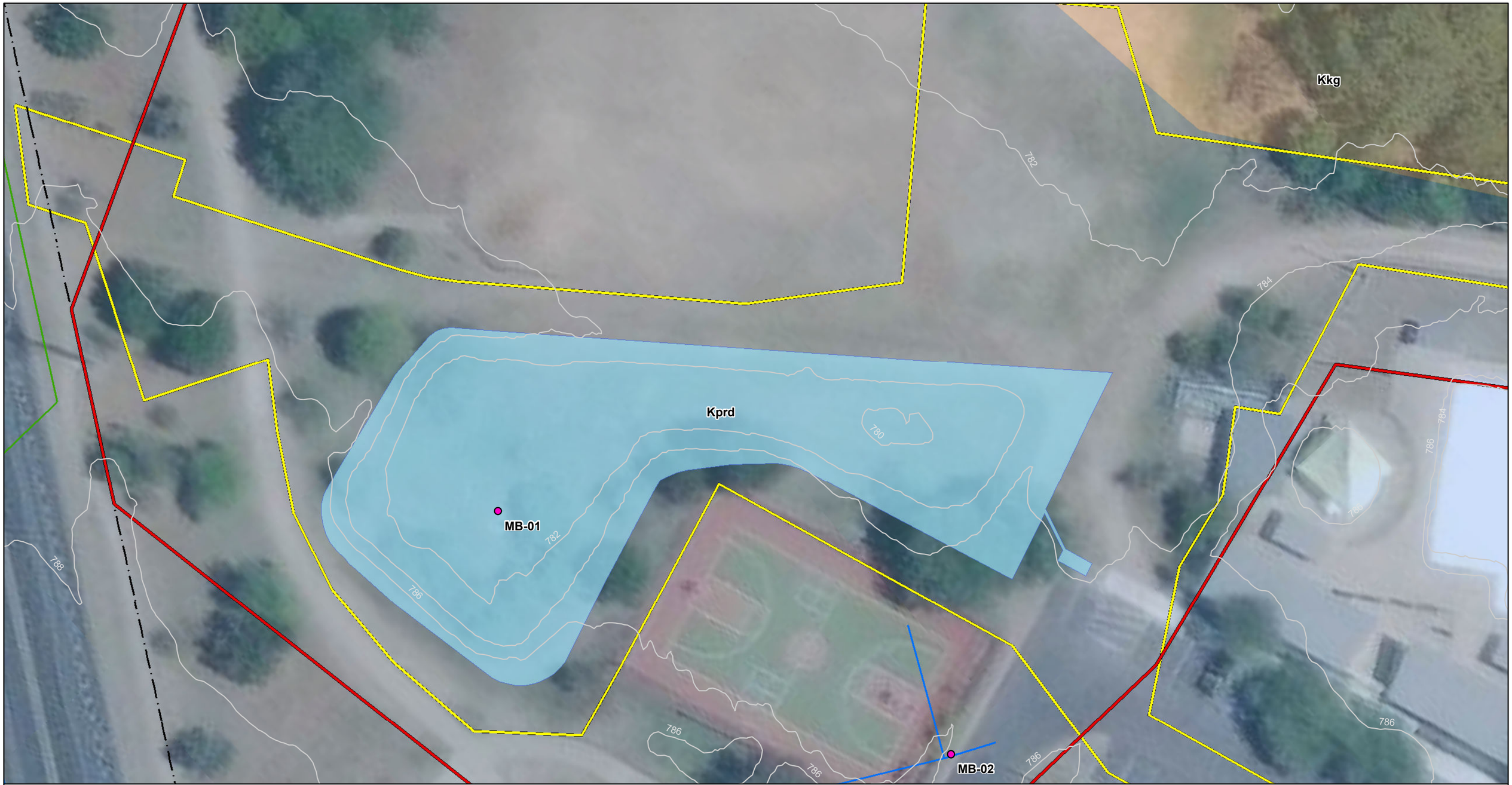

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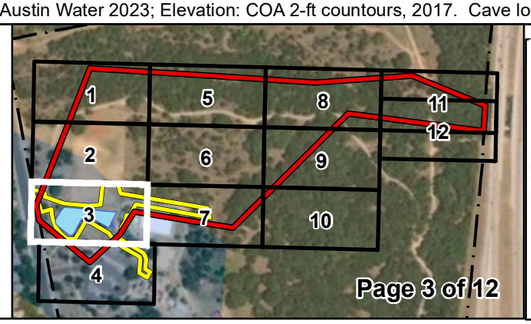

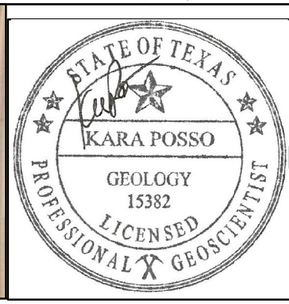

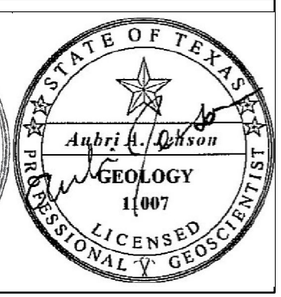

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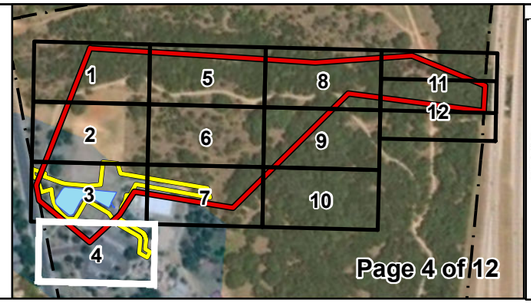

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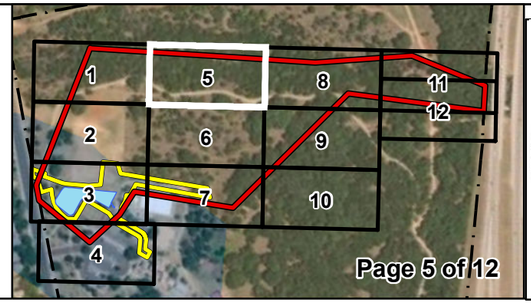

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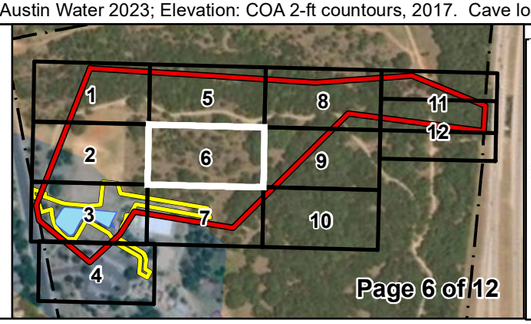

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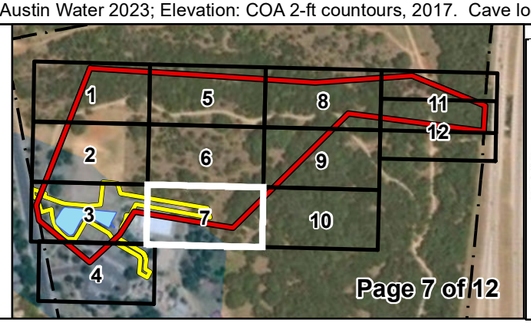

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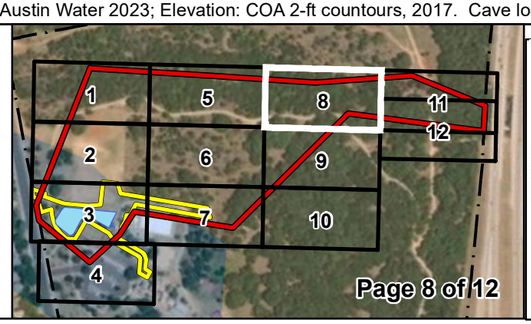

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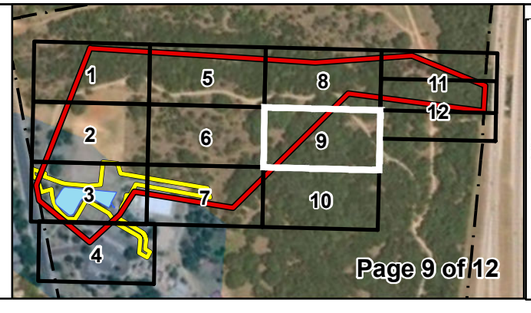

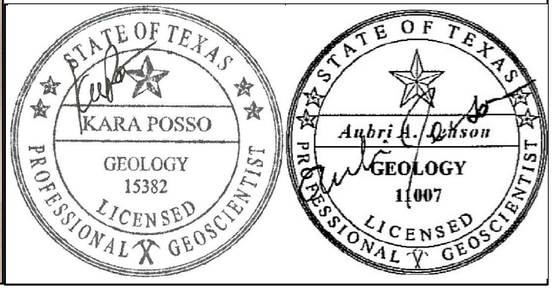

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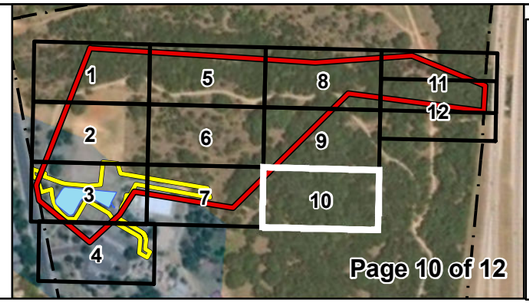

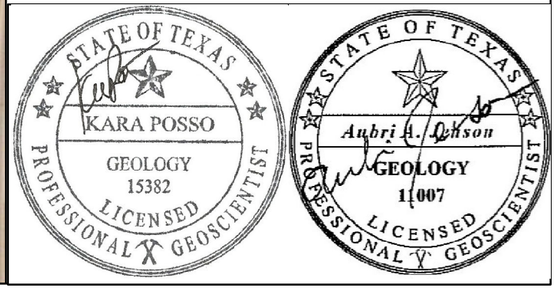

Kkg

MB-03

Locus Cave

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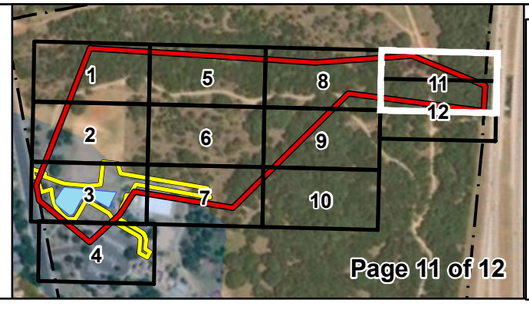
- 500-yr Floodplain (0.2% annual chance)

1 inch=30 feet

0 30 60 Feet

0 9 18 Meters

ZARA ENVIRONMENTAL LLC



STATE OF TEXAS
KARA POSSO
GEOLOGY
15382
LICENSED
PROFESSIONAL GEOSCIENTIST

STATE OF TEXAS
Aubri A. Ohnson
GEOLOGY
11007
LICENSED
PROFESSIONAL GEOSCIENTIST

MB-03

Kkg

Locus Cave

District Park Cave

764 766 768 760 762 770 772 774 776 778 780

Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Main: Austin Water 2023; Elevation: COA 2-ft countours, 2017. Cave locations and footprint (Austin Water 2023, TSS 2023)

- Survey Area
- Project Limits
- Dick Nichols District Park

Geology

- Regional Dense Member (Kprd)
- Grainstone Member (Kkg)
- Faults (certain)

- Features
- District Park Cave & Lotus Cave
- District Park Cave Footprint
- Pond Footprint (MB-01)
- Water Main (MB-02)
- Wastewater Main (MB-03)

FEMA Flood Hazard Zones

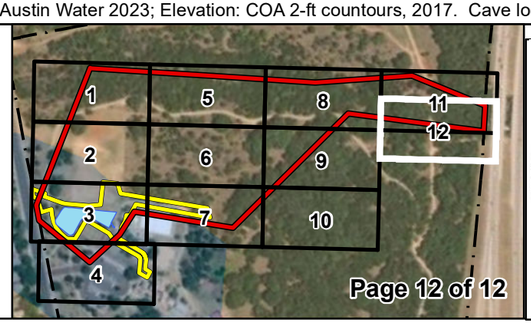
- Streams
- 100-yr Floodplain (1% annaul chance)
- 500-yr Floodplain (0.2% annual chance)

1 inch=30 feet

0 30 60 Feet

0 9 18 Meters

ZARA ENVIRONMENTAL LLC



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Supplemental Attachment 1

Supplemental Attachment 1. Survey Area Metes and Bounds Description

DICK NICHOLS DISTRICT PARK
DESCRIPTION OF GEOLOGIC SURVEY AREA

DESCRIPTION OF A 19.786-ACRE GEOLOGIC SURVEY AREA LOCATED IN THE T. ANDERSON SURVEY NUMBER 17, ABSTRACT NUMBER 2, IN TRAVIS COUNTY, TEXAS, BEING A PORTION OF A CALLED 109.732-ACRE TRACT OF LAND CONVEYED TO THE CITY OF AUSTIN IN A WARRANTY DEED RECORDED IN VOLUME 07103, PAGE 01795 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS; SAID 19.786-ACRE TRACT OF LAND BEING SHOWN ON THE ACCOMPANYING SKETCH AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING at the northwest property corner of a called 109.723-acre tract of land out of the T. Anderson Survey Number 17, Abstract Number 2 said 109.732 acres being conveyed to the City of Austin in a Warranty Deed recorded in Volume 07103, Page 01795 of the Real Property Records of Travis County, Texas; said property corner being in the southeast right-of-way line of Beckett Road and also being the southwest corner of Lot 81, Block A of the Beckett Meadows Section 1 Subdivision, a lot conveyed to Mary S. Quinn in an Executor Deed recorded in Document Number 2018005575 of the Real Property Records of Travis County, Texas;

THENCE, following the southeast right-of-way line of Beckett Road, South 29°53'00" West, a distance of 732.71 feet to the **POINT OF BEGINNING** in the northwest boundary of said 109.723-acre tract, said **POINT OF BEGINNING** also being in the southeast right-of-way line of Beckett Road;

THENCE, departing the **POINT OF BEGINNING** and traversing the interior of said 109.723-acre tract, North 62°19'18" East, a distance of 642.15 feet, crossing Kitcheon Branch Creek to a point;

THENCE, generally paralleling the northeast bank of Kitcheon Branch Creek and traversing the interior of said 109.723-acre tract the following five courses and distances:

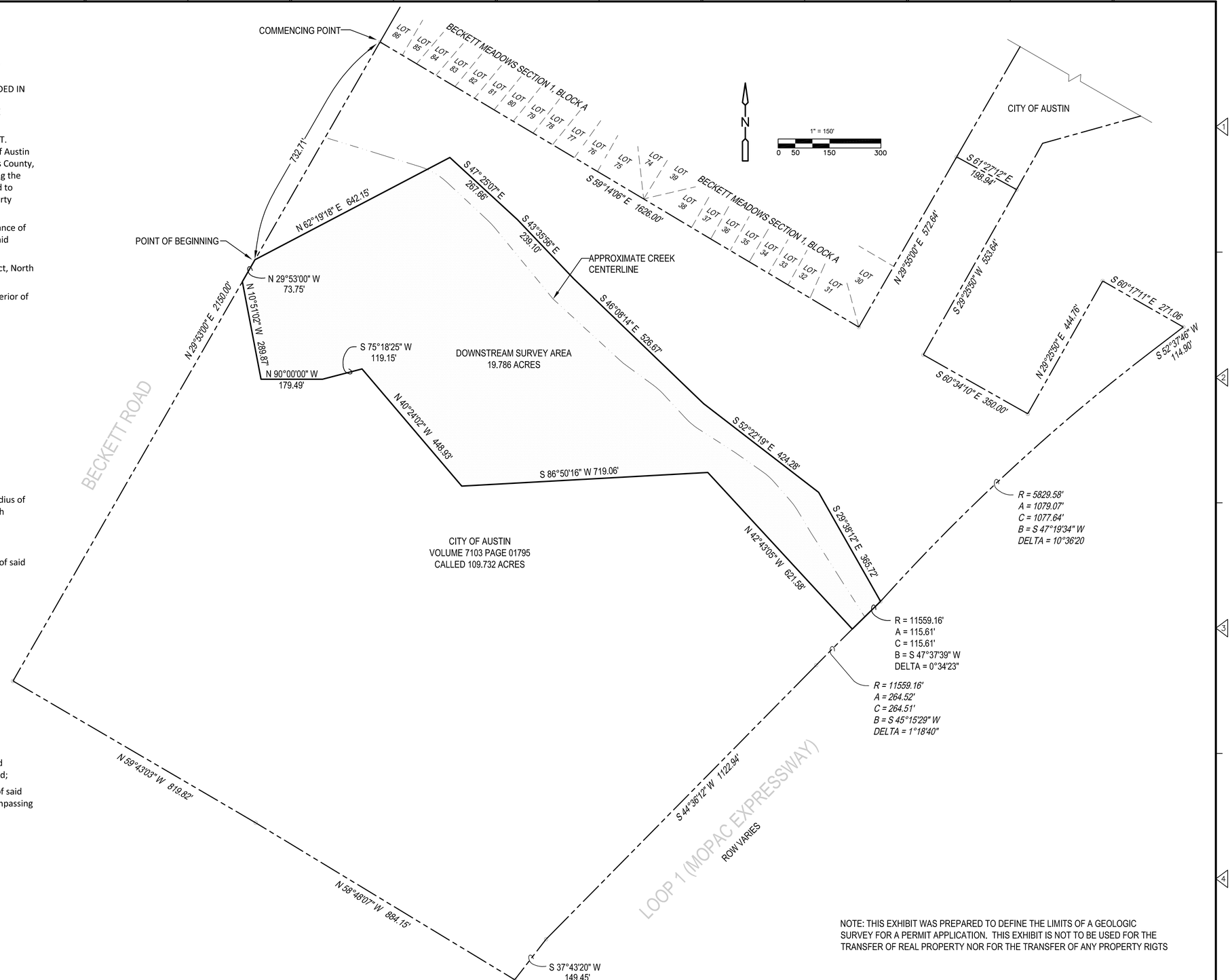
1. South 47°25'07" East, a distance of 267.66 feet to a point,
2. South 43°35'56" East, a distance of 239.10 feet to a point,
3. South 46°08'14" East, a distance of 526.67 feet to a point,
4. South 52°22'19" East, a distance of 424.28 feet to a point,
5. South 29°38'12" East, a distance of 365.72 feet to a point in the southeast boundary of said 109.723-acre tract, said point also being a point of compound curvature in the northwest right-of-way line of Loop 1 (Mopac Expressway);

THENCE, following the northwest right-of-way line of Loop 1, along a curve to the south with a radius of 11,559.16 feet, a central angle of 0°34'23", a chord length of 115.61 feet, a chord bearing of South 47°37'39" West and an arc length of 115.61 feet to a point in the southeast boundary of said 109.723-acre tract and in the northwest right-of-way line of Loop 1;

THENCE, departing the southeast boundary of said 109.723-acre tract and traversing the interior of said 109.723-acre tract the following six courses and distances:

1. North 42°43'05" West, a distance of 621.58 feet to a point,
2. South 86°50'16" West, a distance of 719.06 feet to a point,
3. North 40°24'02" West, a distance of 448.93 feet to a point,
4. South 75°18'25" West, a distance of 119.15 feet to a point,
5. North 90°00'00" West a distance of 179.49 feet to a point,
6. North 10°51'02" West, a distance of 289.87 feet to a point in the northwest boundary of said 109.723-acre tract, said point also being in the southeastern right-of-way line of Beckett Road;

THENCE, following the southeast right-of-way line of Beckett Road and the northwest boundary of said 109.723-acre tract, North 29°53'00", a distance of 73.75 feet to the **POINT OF BEGINNING**, encompassing 19.786 acres, more or less.



NOTE: THIS EXHIBIT WAS PREPARED TO DEFINE THE LIMITS OF A GEOLOGIC SURVEY FOR A PERMIT APPLICATION. THIS EXHIBIT IS NOT TO BE USED FOR THE TRANSFER OF REAL PROPERTY NOR FOR THE TRANSFER OF ANY PROPERTY RIGTS

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY:
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: MARCH, 2023

CDM Smith
9430 Research Blvd., Suite 1-200
Austin, TX 78759
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS
DICK NICHOLS DISTRICT PARK
KARST SURVEY AREA
8011 BECKETT ROAD, AUSTIN, TEXAS 78749

SKETCH ACCOMPANYING DESCRIPTION OF A 19.786-ACRE SURVEY AREA

PROJECT NO. 2048-220538
FILE NAME:
SHEET NO.

Supplemental Attachment 2

Supplemental Attachment 2. District Park Drip Study Summary Email

From: Hauwert, Nico
Sent: Monday, October 01, 2012 11:46 AM
To: Singh, Joan; Sanders, Mark; Avila, Rene; Papke, David; White, Jeff [PARD]; Todd Bayless
Subject: FW: Pool Draining did not appaer to affect Dick Nichols Park drips

All:
I started monitoring drips in District Park Cave in Dick Nichols Park as a start for a better understanding of drip sources to the cave. As projects occur in the area, such as Walk for a Day trails, I figured I'll get asked one day what is the subsurface catchment area to the cave. So the annual pool draining of Dick Nichols Park seemed like a good opportunity to test areas that feed to the cave. If the pond where the pool is drained naturally contributes to the drips in the cave, then I estimated the water volume is sufficient that we should see a rise in the drip rate. The pool is about 1,340 ft from the cave entrance. The pond elevation is about 782 ft msl based on surface contours, the cave entrance is about 757 ft msl based on a 2004 gps location, or 766 ft msl based on two feet contour coverages. The drip elevations were based on the GPS surface elevation (757 ft msl) and cave map depth of 10ft to the ceiling of Aquifer Room (747 ft msl) and 35 ft to the ceiling of the Aggie Room (722 ft msl).

The upper Aquifer Room drip is only about 35 feet lower than the pond and its drips are intermittent, in fact dry both times I looked at them in August and Sept 2012. Mark Sanders pointed to a location where he saw water dripping in the past, and I tried to set a bucket under that location, but did not measure any drips. It is likely I did not have it directly under a real drip so I relocated it for next time. The bucket was found overturned on Sept 22 and a tip on Aug 22 probably corresponded to when it was knocked over, presumably by a raccoon. A dead raccoon carcass was observed by rangers Matt and Jeff White near the entrance on 9/22.

The lower Aggie Room had a wet floor where an active drip was suggested, though no drips were observed. The drip elevation of 722 ft msl is about 60 feet below the elevation of the pond 1,340 ft to the west. The drip rate was fairly constant from 8/4/12 to 9/8/12. The bucket was also found overturned, and this appeared to have occurred between 9/8 0:30 and 9/8 20:00. From the pool draining event estimated to have occurred on 9/5 between noon and 3pm (15:00) there was 2.5 days of uninterrupted monitoring before the bucket was overturned. I would have estimated that perched water should have reached the drip within 2 days if it actually goes there, although it is possible it arrived later. While not a perfect test, the indications are that the Dick Nichols pond is outside the subsurface catchment area for the District Park Cave drip in the Aggie Room and Aquifer Room. While I have to drip monitoring set up, if is helpful to continue monitoring drip rate and temperature over the year, and perhaps test another pool draining next year.

Attached is a map of the cave and pool locations, the cave map, drip rate data, and air temperature data.

Thanks for your help!

Nico M. Hauwert, Ph.D., P.G.
Sr. Hydrogeologist, Senior Environmental Scientist City of Austin Watershed Protection Department
(Mailing address) PO Box 1088

Austin, Texas 78767
(Physical address) 505 Barton Springs Road, 11th Floor
Austin, Texas 78704
(512) 974-2148; cell 695-4597
nico.hauwert@austintexas.gov

Free web seminar, "Caves and Karst - The World Beneath our Feet" Thursday, October 11th, 8:00-9:30 p.m. Central Standard Time. Go to http://batslive.pwnet.org to register!

From: Avila, Rene
Sent: Friday, September 28, 2012 3:30 PM
To: Hauwert, Nico
Subject: RE: Dick Nichols Park drips

Nico, I approved the discharge on 9-5-12 at 09:41 am. The discharge probably occurred between 12:00 and 15:00 (as PARD staff leaves around 15:30).
Let me know if you need the time to be a little more specific. I might be able to get it from PARD.
Rene Avila

From: Hauwert, Nico
Sent: Friday, September 28, 2012 2:22 PM
To: Avila, Rene
Cc: Sanders, Mark
Subject: Dick Nichols Park drips

Rene:
I downloaded two drip gauges in District Park cave last weekend, both had been turned over at some pointlikely by raccoons (there was a dead one in the entrance area). We may have captured the time of the pool draining however, at least with one. Do you recall what date and rough time the pool was drained?

Nico M. Hauwert, Ph.D., P.G.
Sr. Hydrogeologist, Senior Environmental Scientist City of Austin Watershed Protection Department
(Mailing address) PO Box 1088
Austin, Texas 78767
(Physical address) 505 Barton Springs Road, 11th Floor
Austin, Texas 78704
(512) 974-2148; cell 695-4597
nico.hauwert@austintexas.gov

Celebrate **GROUNDWATER AWARENESS WEEK** March 11-17 by watching the **"Austin Underground" film series.** If you're a teacher, **register for the FREE** 3-day field-trip based **Groundwater to the Gulf Summer Institute** scheduled for June 18-21.

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Ellyn Weimer P.E.

Date: 11-10-2023

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Dick Nichols Park Water Quality Pond Retrofit
   Original Regulated Entity Name: _____
   Regulated Entity Number(s) (RN): RN102136652
   Edwards Aquifer Protection Program ID Number(s): 11-00092601, 11-91072501, 11-92080701
   ☒ The applicant has not changed and the Customer Number (CN) is: CN600135198
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☒ 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;
   - ☐ 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;
   - ☐ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	109	109
Type of Development	Park	Park
Number of Residential Lots	_____	_____
Impervious Cover (acres)	_____	NA - no change
Impervious Cover (%	_____	NA - no change
Permanent BMPs	Retention Irrigation Pond	Retention Irrigation Pond
Other	_____	_____

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	_____	_____
Pipe Diameter	_____	_____
Other	_____	_____

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	_____	_____
Volume of USTs	_____	_____
Other	_____	_____

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☒ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☐ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☒ Acreage has not been added to or removed from the approved plan.

8. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional

copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

Attachment A: Original Approval Letter

TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

August 28, 1992

Mr. Thomas Randall
City of Austin
Parks and Recreation Department
200 South Lamar Blvd.
Austin, Texas 78704

Re: Edwards Aquifer, Travis County
NAME OF PROJECT: City of Austin - Dick Nichols District Park, 8011 Beckett Road, Austin, Texas.
TYPE OF PLAN: Request for Approval of Water Pollution Abatement Plan (WPAP); 31 Texas Administrative Code (TAC) §313.4. Edwards Aquifer Protection Program.

Dear Mr. Randall:

The Texas Water Commission (TWC) has completed its review of the WPAP for the referenced proposed project that was submitted by you on behalf of the City of Austin to this Office on August 7, 1992.

The proposed project will consist of 156 acres located at 8011 Beckett Road. The project will involve the construction of park infrastructure and a variety of recreational facilities.

The park is located within the City of Austin's ETJ and is owned by the City of Austin. The proposed impervious cover will be 2.9 acres (1.8%) and will consist of structures/roofing, paved surfaces, and parking area.

The proposed restrooms will serve approximately 300 people per day (a maximum of 1500 gallons per day of domestic wastewater) and will be connected to an existing sewerage service lateral for conveyance to the South Austin Regional S.T.P. for treatment and disposal. The system will comply with the TWC requirements of 31 TAC §313.5 (c)(9). The potable water supply will be provided by the Village at Western Oaks MUD.

Construction shall be in accordance with the City of Austin's Parks and Recreation Construction in Parks Specifications and the Environmental Criteria Manual.

The proposed water pollution abatement plan is in general agreement with the conditions of 31 TAC §313; therefore, approval of the WPAP is hereby granted with the specific conditions listed below.

Please be reminded that 31 TAC §313.4(c) requires the owner/ developer to: (1) record in the county deed records that this

property is subject to the approved WPAP; (2) within 30 days of receiving written notice of approval of the water pollution abatement plan from the Executive Director, submit to the Executive Director proof of application for recordation of notice in the county deed records; and (3) prior to commencing construction, submit to the appropriate district office proof of application for recordation of notice in the county deed records. Enclosed is a suggested format you may wish to use to deed record your approved WPAP.

Prior to commencing construction, the applicant shall submit copies of any TWC required changes to the plans and specifications to this Office and all other permitting authorities. **Additionally, all contractors conducting regulated activities associated with this proposed regulated project shall be provided with copies of this approval letter and the entire contents of the submitted WPAP so as to convey to the contractors the specific conditions of this approval.** During the course of these regulated activities, the contractors shall be required to keep on-site copies of the WPAP and this approval letter.

The temporary E&S controls for the entire project shall be installed prior to beginning any other construction work on this project.

The appropriate E&S control(s) that shall be used during the construction of the project should be determined as follows: (1) **Silt fences** should be used when the drainage area is less than 2 acres and the slope is less than 10%. (2) **Rock berms with filtration** should be used when the drainage areas are greater than two acres or when the slopes are in excess of 10%. The bottom edge of the filter fabric must be buried at least 4 inches below grade.

Stormwater runoff from the proposed impervious cover will be routed by sheet flow across vegetated filter strips of adequate size to remove the total suspended solids (TSS), total phosphorus (TP), and oil and grease (O/G). The vegetated filter strips are based on the Lower Colorado River Authority's "Lake Travis Non-Point Source Pollution Control Ordinance, Technical Manual - January 1991".

The TWC may monitor stormwater discharges from the site to evaluate the adequacy of the temporary erosion and sedimentation control measures. Additional protection may be necessary if excessive solids are being discharged from the site. Upon completion of the project, the applicant shall reseed or sod all areas disturbed during construction.

According to the geologic assessment included with the submittal, the site and downgradient areas are Edwards Limestone Formation. One fault trends about N45°E along the east bank of the creek east

of MoPac and a smaller fault or fracture system exists about 100 feet west of the MoPac bridge in the creek channel. Bedrock fractures are common at almost all outcrops in the park. Soils in the park are Speck stony clay loam (SsC) and Tarrant Soils (TaD) in the creek bottom east of MoPac. The site area is characterized by open grassy fields with scattered live oaks in the west to heavily vegetated woodlands around the creek in the east. Numerous features of possible karst origin were observed, but none were considered significant recharge features. District 14's site inspection of June 24, 1991, found the site to be essentially as described in the Geologic Assessment.

31 TAC §313.4(d)(2) requires that if any additional significant recharge features, such as solution openings or sinkholes, are discovered during construction or core sampling, all regulated activities near the significant recharge feature must be suspended immediately and may not be resumed until the Executive Director has reviewed and approved the methods proposed to protect the aquifer from any potential adverse impacts. Upon discovery of the significant recharge features, the developer shall immediately notify this office.

According to the WPAP, there are no known wells located on or near the project site. If abandoned wells are found during construction of the proposed project, they shall be plugged in accordance with the plugging procedures of the local underground water conservation district, if applicable; 31 TAC §287.50(a) of this title (relating to Standards for Plugging Wells that Penetrate Undesirable Water Zones); or an equivalent method, as approved by the Executive Director. Pursuant to 31 TAC §287.48(e), the person that plugs such a well shall, within 30 days after plugging is complete, submit a Water Well Completion and Plugging Report to the Executive Director through the District 14 Office and to the local underground water conservation district (if applicable).

Any drill holes resulting from core sampling on-site or down-gradient of the site shall be plugged with concrete, from the bottom of the hole to the top of the hole, so as to not allow water or contaminants to enter the subsurface environment.

No waste-disposal wells, new confined animal feeding operations, land disposal of Class I wastes, or use of sewage holding tanks as parts of organized collection systems shall be allowed on the recharge zone of this regulated development.

During the course of the construction related to the referenced regulated project, the owner/developer shall comply with all applicable provisions of 31 TAC §313.4. Construction which is initiated and abandoned, or not completed, shall be returned to a permanent condition such that groundwater in the Edwards Aquifer is

protected from potential contamination. Additionally, the City of Austin, applicant, shall remain responsible for the provisions and special conditions of this approval until such responsibility is legally transferred to another person or entity, upon which that person or entity shall assume responsibility for all provisions and specific conditions of this approval.

Pursuant to 31 TAC §313.4(d)(1), prior to commencing construction the applicant must notify the District 14 Office in Austin when the regulated activity will commence.

Any substantial modification, as outlined in 31 TAC §313.4(e), to this approved WPAP must be reported to the District 14 Office and approved by the Executive Director.

Please note that 31 TAC §313.4(g) states that this approval expires two years from this date unless, prior to the expiration date, construction has commenced on the regulated project.

Failure to comply with any of the aforementioned conditions, the deed recordation requirement, or any other specific conditions of approval is a violation of these rules. Pursuant to §26.136 of the Texas Water Code, any violations of the Edwards Aquifer Rules may result in administrative penalties of up to $10,000 for each act of violation and for each day of violation.

If you have any questions or require additional information, please contact a representative of the Edwards Aquifer Protection Program Representative at the District 14 Office (512) 463-7803.

Sincerely,

Jesús Garza
Executive Director

JEB:jeb

Enclosure

cc: Austan Librach, Environmental & Conservation Services Dept.
The Honorable Don Wilson, Travis County Judge, Austin, Texas
Bill Couch, Barton Springs/Edwards Aquifer Conservation Dist.
Rob Conti, Edwards Aquifer Coordinator, TWC
Cindy Stanislawski, Field Support, TWC

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The Dick Nichols Park Water Quality Pond is located within the Dick Nichols District Park located at 8011 Beckett Road, Austin, Texas.

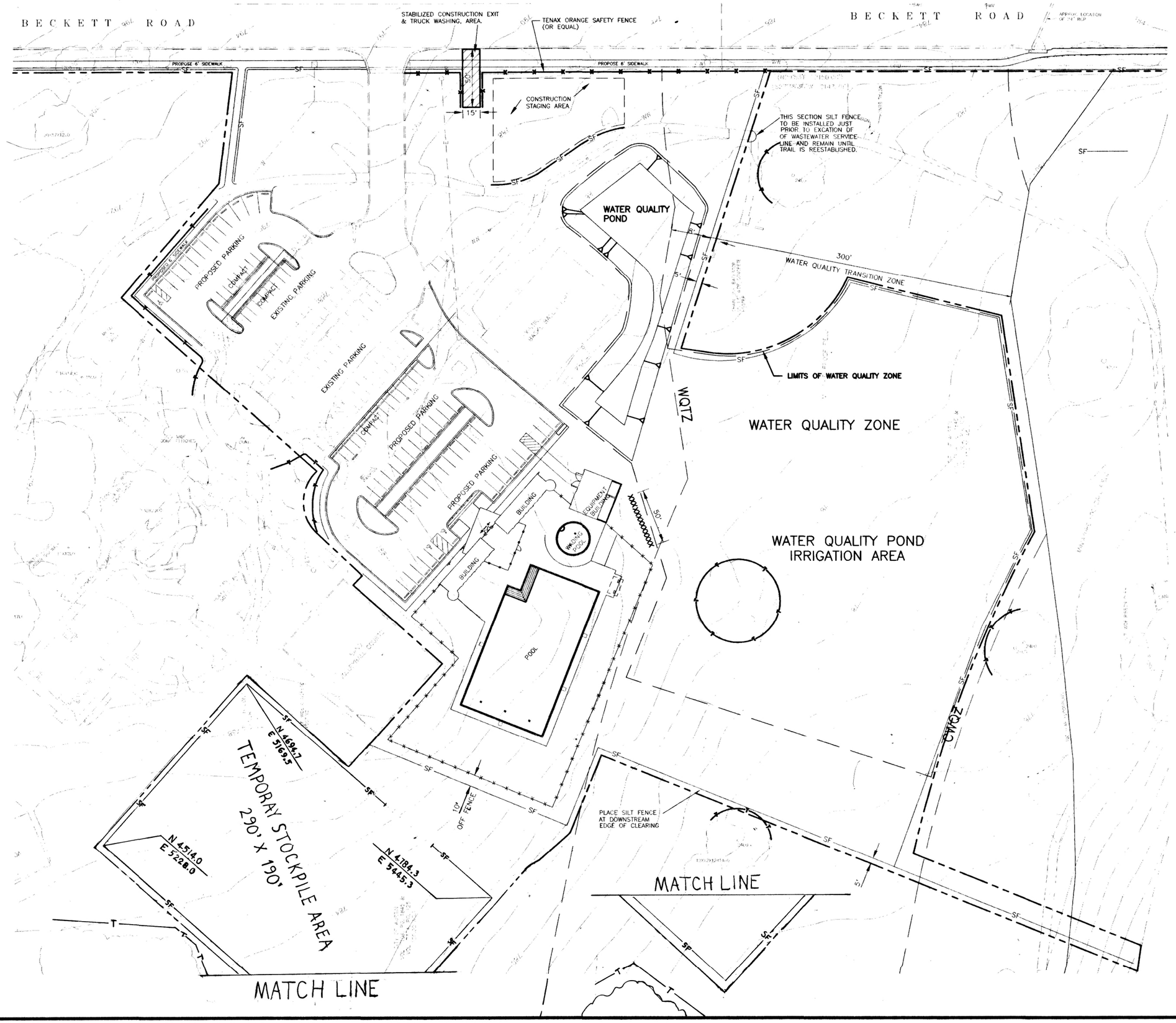
1. Approved Water Pollution Abatement Plan

The previous Water Pollution Abatement Plan for Dick Nichols Park was approved by TCEQ August 28, 1992. The original approved WPAP permitted the park infrastructure and recreational facilities, including the swimming pool, parking lot, and associated water quality retention-irrigation pond.

2. Proposed Modification to the Site

The proposed work will repair and modify the non-functioning water quality pond at the park. Improvements include adding a geotextile liner to the retention pond and adding a new pump station that will send treated water to an above ground diffuser behind the swimming pool that will run overland into the wooded area and eventually down to Kicheon Branch thence to Williamson Creek. No impervious cover will be added to the site due to the nature of the project being updating the permanent best management practice (BMP) on the property. Note that the pond will be sized to capture and treat 100% of the contaminants draining to the pond due to the nature of the BMP and its location over the Barton Springs Zone. Water Quality is intended to be improved after the construction is complete.

Attachment C: Current Site Plan



SCALE: 1" = 40'

LEGEND

●	IRON ROD FOUND - SIZE AS NOTED
ANC	ANCHOR
AS	ASPHALT
BBQUE	BARBECUE GRILL
BC	BACK OF TOP OF CURB
BP	METAL BARRIER POST
BRC	BACK OF RIBBON CURB
COC	CORNER OF CONCRETE
COP	CORNER OF CONCRETE PAD
CL	CENTERLINE OF ASPHALT
CLCW	CENTERLINE OF CONCRETE WALK
CO	CLEANOUT
DL	DRIPLINE
EB	EDGE OF BRUSH LINE
EC	EDGE OF CONCRETE
ECW	EDGE OF CONCRETE WALK
EM	ELECTRIC METER
○ EMH	ELECTRIC MANHOLE
□ EPB	ELECTRIC PULLBOX
FL	FLOWLINE
G	GROUND
GB	GROUND AT GRADE BREAK
GBEB	GRADE BREAK AT EDGE OF BRUSH LINE
GEB	GROUND AT EDGE OF BRUSH LINE
GP	GROUND AT POLE
GR	GUARDRAIL
GU	GUTTER
H.C.P.S.	HANDICAP PARKING SPACE
O LP	LIGHT POLE
MGP	METAL GOAL POST
○ PP	POWER POLE
○ PPR	POWER POLE WITH RISER
PS	PARKING STRIPE OR PARKING SPACE
⊕ QC	QUICK-CONNECT BOX - SPRINKLER SYSTEM
⋈ SCV	SPRINKLER CONTROL VALVE
SP	SIGN POST
STMH	STORM SEWER MANHOLE
WM	WATER METER
WV	WATER VALVE
WW	SHOT ON WING WALL
12CD	12" CEDAR
12X12X12X14LO	MULTI-TRUNKED 12", 12", 12" & 14" LIVE OAK
	CHAIN LINK FENCE
SF	SILT FENCE
	ROCK BERM
	LIMITS OF CONSTRUCTION
T	TREE PROTECTION FENCE

SEE SHEET C-13 FOR DETAILS AND NOTES ON EROSION/SEDIMENTATION CONTROL

REVIEWED BY:

Dwayne Owens 10-25-95

CITY OF AUSTIN DEPARTMENT OF PLANNING AND DEVELOPMENT — DATE

FOR CITY USE ONLY:

SITE PLAN RELEASE Sheet 5 of 18

FILE NUMBER: SP-95-0185C EXPIRATION DATE: SEP. 19, 1998

CASE MANAGER: ADAMS APPLICATION DATE: MAY 8, 1995

APPROVED ADMINISTRATIVELY ON: _____

APPROVED BY PLANNING COMMISSION ON: SEP. 19, 1995

APPROVED BY CITY COUNCIL ON: _____

under Section 646D of Chapter 13-1 of the Austin City Code.

Katherine F. Fraser

Director, Department of Planning and Development

DATE OF RELEASE: OCT. 25, 1995 Zoning: P

Rev. 1 _____ Correction 1 _____

Rev. 2 _____ Correction 2 _____

Rev. 3 _____ Correction 3 _____

SPC-95-0185C

Turner Collie & Braden Inc
ENGINEERS • PLANNERS • PROJECT MANAGERS

ARCHITECTURE PLUS
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STATE OF TEXAS
DAVID P. SMITH
56239
REGISTERED
PROFESSIONAL ENGINEER
10-25-95

DICK NICHOLS POOL

8101 BECKETT RD.

CITY OF AUSTIN C.I.P. 853 867 0846, 853 867 0897, 852 867 0186

EROSION/SEDIMENTATION AND TREE PROTECTION LAYOUT

ISSUE DATE: JUNE 5, 1995

DRAWN BY: DATE:

CHECKED BY: DATE:

REVISIONS

NO	DATE	REMARKS

SHEET C-5 5 OF 18

C.I.P. NUMBER: DIC-ES

PROJECT NUMBER: SP-95-0185C

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Ellyn Weimer, PE

Date: 11-10-2023

Signature of Customer/Agent:

Regulated Entity Name: Dick Nichols Park Water Quality Pond Retrofit

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☐ Commercial
   ☐ Industrial
   ☒ Other:Water Quality Pond Retrofit

2. Total site acreage (size of property):109 acres (2 acres LOC)

3. Estimated projected population:NA

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops		÷ 43,560 =	
Parking		÷ 43,560 =	
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover		÷ 43,560 =	

Total Impervious Cover NA **÷ Total Acreage** NA **X 100 =** NA**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

    Width of pavement area: _____ feet.
    L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
    Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

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

15. Wastewater will be disposed of by:

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

- ☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- ☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☐ Sewage Collection System (Sewer Lines):

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

- ☐ The SCS was previously submitted on_____.
- ☐ The SCS was submitted with this application.
- ☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☐ The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is:

☐ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 30'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Flood Map - 48453C0580H

19. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

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

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

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

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

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

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

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

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

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

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

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

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The construction activities associated with the Dick Nichols Park Water Quality Pond Retrofit improvements include minimal additions of impervious cover therefore it will not significantly affect the surface water quality directly.

The project is intended to rehabilitate the non-functioning permanent BMP at the Dick Nichols Park that will add a geotextile liner and change the irrigation sprinkler system into an above ground diffuser. These activities will not add impervious cover to the site and are intended to improve the water quality to the receiving surface stream once construction is complete. The retention-irrigation pond is intended to treat contaminants to 100% removal based on City of Austin criteria over the Barton Springs Zone.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The Dick Nichols Park Water Quality Pond is currently a developed water quality pond. The site's topography and site boundaries minimize the potential for off-site runoff to flow onto and across the project site. The water quality pond lies at the bottom of the drainage basin in order to capture and treat upstream impervious cover.

The project improvements will not increase the amount of impervious cover on the site. Currently, the site's overall impervious cover based on the area draining to the BMP (4.59 acres) is 2.35 acres (51.3%), and the site's overall impervious cover after the proposed improvements have been constructed will not change.

Site-generated runoff that discharges from the site will generally flow in a northeasterly direction before exiting from the northeastern edge of the property. Stormwater discharges will predominately be discharged as overland flow from this relatively flat project site to the Williamson Creek watershed.

Impervious Cover Impact

The Dick Nichols Park Water Quality Pond Retrofit has a drainage area of 4.59 acres out of the 109 acres of parkland boundary.

Water Quality Impacts (Post Development)

The volume of on-site generated stormwater runoff is determined from the size of the drainage area, average annual rainfall, and percent impervious cover.

$Pv = DA \times Pd \times Rv$

Where: Pv = annual runoff volume (cubic feet)
DA = drainage area (sq ft)
Pd = average annual precipitation depth (in)
Rv = runoff coefficient = $0.546(IC)^2 + 0.328\ (IC) + 0.030$

Runoff Coefficients (Rv):

$Rv = 0.546\ (0.513)^2 + 0.328\ (0.513) + 0.030 = \underline{0.341}$ (pre/post-development)

Existing Annual Runoff Volume (PreV)

$Pv = 4.59*(43{,}560) \times 32/12 \times 0.341 = 182{,}321$ cf/yr

Increase in annual runoff volume is:
$(182{,}321 - 182{,}321\ )/\ 182{,}321 \times 100 = 0.0\%$ increase

Water Quality Impacts

Required Load Reduction

L=27.2*(An*P)

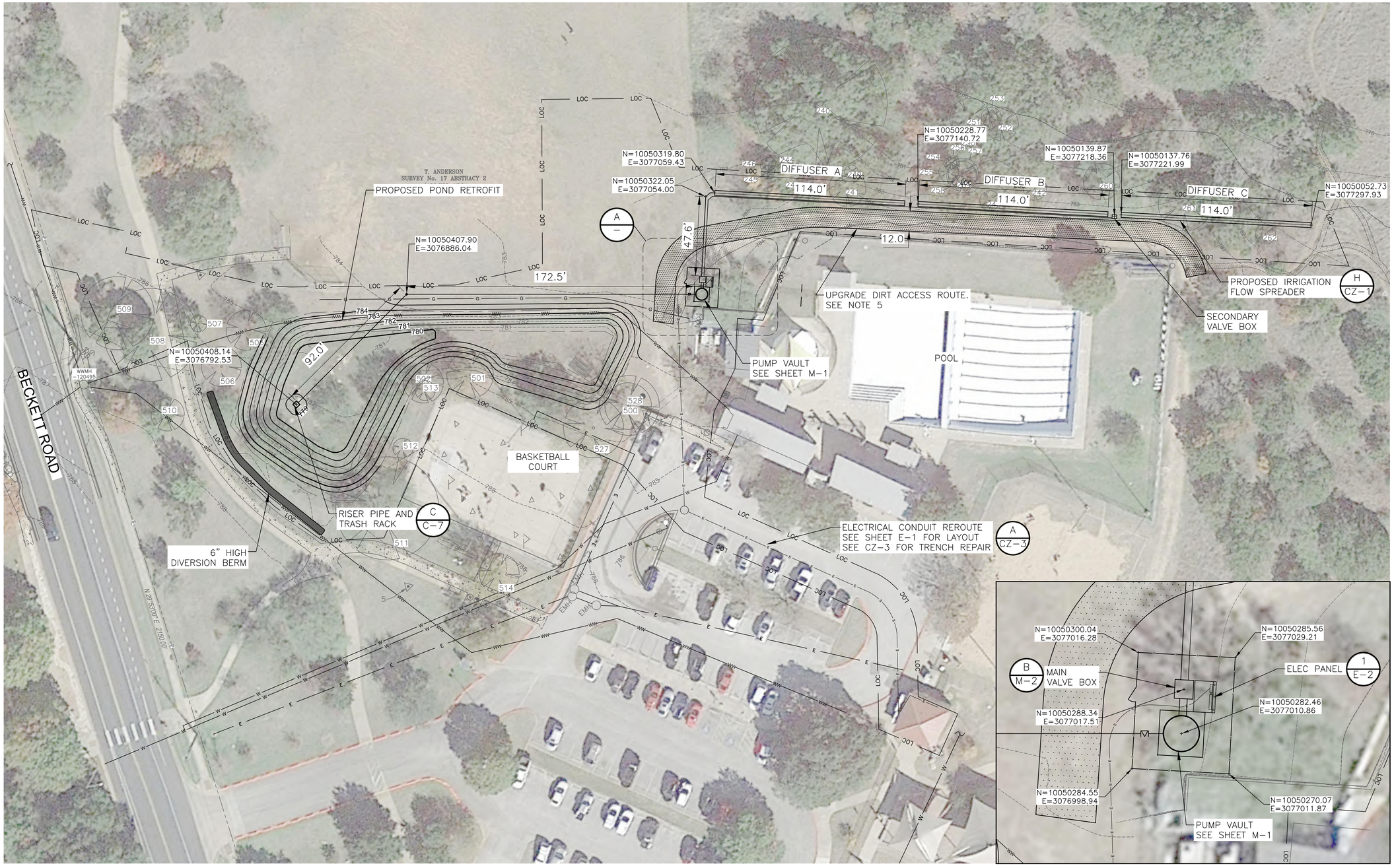
P=Precipitation (inches)

An=Net Increase in Impervious Area (acres)

Total Required Load Reduction

L = 27.2*(0*32) = 0 lbs/yr TSS

Note that although there is no increase in impervious cover, the project is intended to rehabilitate the existing permanent BMP at the park that will improve the water quality discharging from the site and into the receiving stream. The prescribed BMP and associated improvements are presented in Attachment F of the Permanent Stormwater Section and within the Temporary Stormwater Section of this WPAP request.



DETAIL A
1" = 10'

0 10' 20' 30' 60'
SCALE IN FEET
1" = 30'

NOTES:

1. THE EXISTING POND IS SUBJECT TO INUNDATION DURING AND AFTER RAINFALL EVENTS. THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT WORK AND EQUIPMENT FROM FLOODING.
2. NO EQUIPMENT AND/OR MATERIALS SHALL BE STOCKPILED IN THE POND.
3. CONTRACTOR SHALL CONDUCT ALL OPERATIONS AND SHALL SEQUENCE CONSTRUCTION IN A MANNER THAT DOES NOT CAUSE BACKWATER OF RAINFALL RUNOFF INTO THE PARKING LOT, SIDEWALKS AND/OR BUILDINGS.
4. CONTRACTOR SHALL BE ALLOWED TO BLOCK FLOW FROM ENTERING THE POND WHILE PERFORMING GRADING, LINER INSTALLATION AND FINAL GRADING. RUNOFF THAT OCCURS DURING THESE ACTIVITIES IS ALLOWED TO PASS OVER THE SPLITTER WEIR IN THE EXISTING SPLITTER INLET IN THE PARKING LOT.
5. CONTRACTOR TO FILL ANY LOW POINTS IN ACCESS ROUTE WITH CRUSHED LIMESTONE BASE MATERIAL AND GRADE IN DIRECTION OF EXISTING FLOW.
6. ALL DAMAGED PAVEMENT AND SIDEWALK SHALL BE REPAIRED IN ACCORDANCE TO DETAIL A AND DETAIL B ON SHEET CZ-3.

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
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TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

SITE PLAN

PROJECT NO. 0590-279471
FILE NAME: C003STPL

SHEET NO.
C-3
SHEET 7 OF 21

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

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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: Ellyn Weimer, PE

Date: 11-10-2023

Signature of Customer/Agent:

Regulated Entity Name: Dick Nichols Park Water Quality Pond Retrofit

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: Williamson Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

No hazardous substances or hydrocarbons will be stored or used in excess on the construction site. Reportable contaminant quantities will be determined and based on 30 TAC §327. In the event of any spill of hydrocarbon products or hazardous substances of reportable quantities the following spill response actions will be taken:

1. The nature and extent of the spill will be assessed, and measures will be taken to protect self and all personnel.
2. City of Austin Fire Department will be notified of the nature and extent of the spill via telephone (911 or 512-974-0130).
3. TCEQ Spill Reporting 24-hour Hotline will be notified of the nature and extent of the spill via telephone (800-832-8224).
4. The source of the spill will be stopped and confined before spill response cleanup activities take place.
5. Spills will be reported prior to any spill response activities.
6. Absorbent materials will be used to contain small scale spill incidents immediately.
7. Absorbent containment booms will be used to contain the discharge of larger scale spill incidents immediately.
8. Any spill response action will follow applicable OSHA health and safety regulations.
9. Any water materials generated by spill response actions will be properly stored and disposed in accordance with local, state, and federal regulations.
10. The City of Austin Watershed Protection Department is the responsible party and may be contacted at 505 Barton Springs Road, Suite 11, Austin, Texas 78704 or 512-974-2550.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

Potential sources of contamination related to this project include:

- Sediment from spoil piles transported during stormwater events
- Accidental leakage of fuels from vehicles or equipment during construction activities

All necessary actions to minimize impacts of contamination will be taken before, during, and after the proposed project and in coordination with Attachment A, Spill Response Actions. Other than a potential incidental leak from construction vehicles or equipment, all additional runoff will be from natural sources.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The sequence for the construction of the proposed project improvements at Dick Nichols Park Water Quality Pond Retrofit site are planned as follows:

- Following issuance of notice-to-proceed, Contractor installs silt fencing, tree protection, and stabilized construction entrance.
- Contractor clears site areas and prepares site for construction (2 acres).
- Contractor locates existing utilities prior to construction.
- Contractor regrades retention pond and adds new liner system.
- Contractor constructs new partial pump and diffuser along access road.
- Contractor constructs new electrical duct bank to pumps.
- Contractor completes site construction and initiates site clean-up (2 acres).
- Contractor inspects and maintains temporary erosion and sedimentation controls throughout the term of the project.
- Contractor restores disturbed soil areas with loaming and hydro-seeding.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

Temporary erosion and sedimentation control measures will include:

- Silt fencing;
- Rock Berm;
- Mulch Sock;
- Tree protection;
- Inlet protection;
- Stabilized Construction Entrance (SCE);

Silt fencing shall be placed downgradient from the proposed site areas to control and filter any stormwater that may be generated from the proposed project site. Silt fencing shall also be placed around the perimeter of any storm drain inlets located on or downgradient of the proposed project area. No significant runon from upgradient stormwater flows are anticipated due to the silt fencing. The silt fencing will further serve to control any stormwater generated by the proposed project site before it is allowed to discharge as stormwater-sediment flow from the site. Silt fencing is shown on the project drawings submitted with this application.

Rock berms shall be placed downgradient of proposed site areas to control and filter any concentrated stormwater that may be generated from the proposed project site.

Mulch socks shall be placed at the base of slopes downgradient of the proposed site area to control and filter any overland stormwater that may be generated from the proposed project site.

Tree protection will be placed around the critical root zone (CRZ) of protected trees on the proposed project site. This control measure will prevent erosion near the roots and protect the roots from being damaged by construction activities.

Inlet protection will be placed around any inlets that may contribute to a stormwater system. This control measure will control any stormwater generated by the proposed project site before it is allowed to discharge as stormwater-sediment flow from the site.

A stabilized construction entrance will be installed at the entrance of the construction area to minimize the tracking of sediments from the project site. All access to the construction site will use this SCE.

The area will remain vegetated where possible.

These temporary erosion and sedimentation control measures are indicated on the site drawings and will be put in place before the start of construction and shall remain in place for the duration of site construction activities.

City of Austin

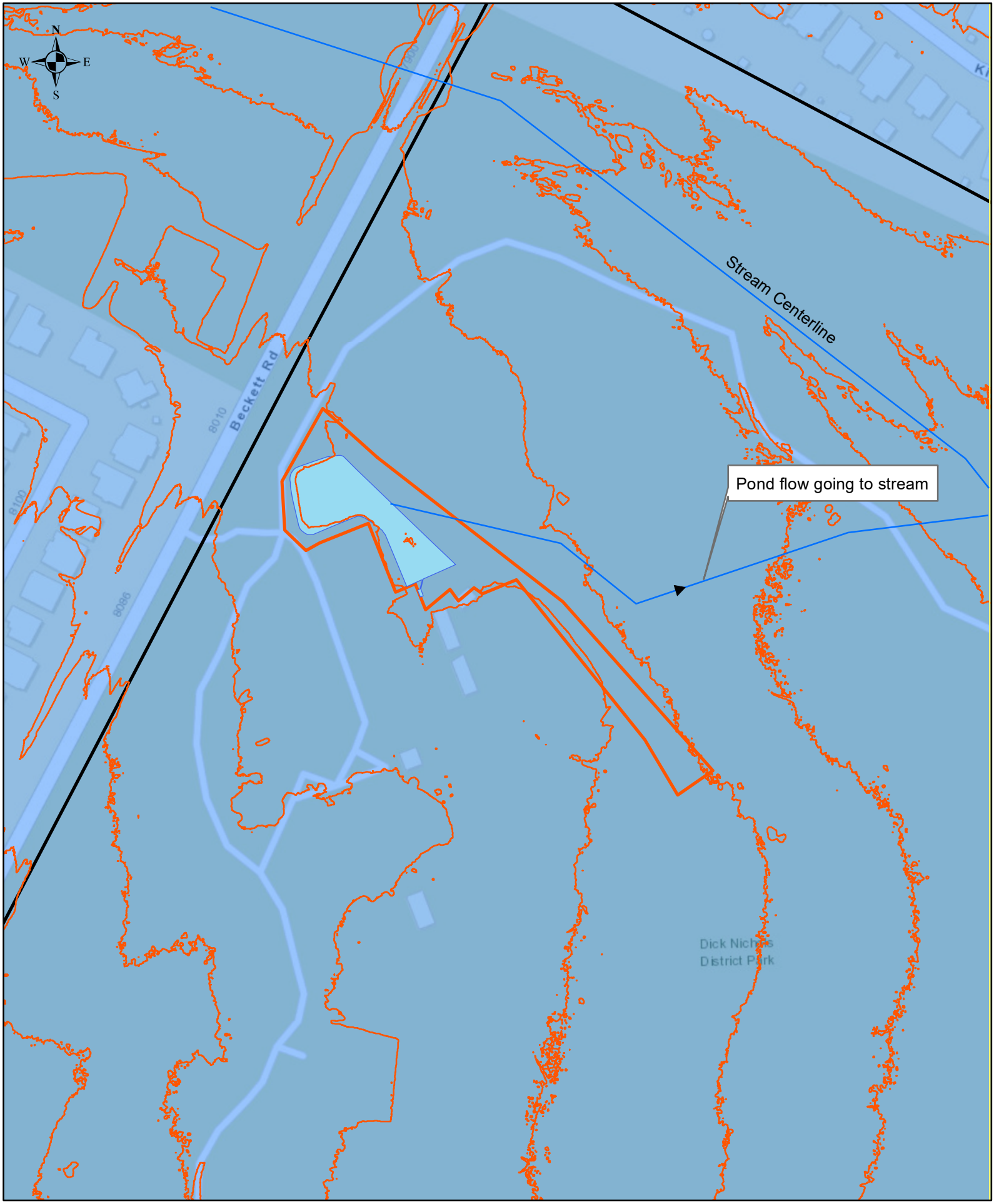
Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

Structural Practices that will be used to limit the runoff discharge of sediments and pollutants from exposed areas of the proposed project include the following practices:

- Silt fencing;
- Rock berm;
- Stabilized Construction Entrance (SCE)

These practices are described in Attachment D, Temporary BMPs and Measures. No structural facilities, such as sedimentation ponds, will be constructed or used during construction activities.



Contours
Dick Nichols Park Boundary
Project Site
Edwards Aquifer Recharge Zone

0 125 250 Feet

Attachment G: Drainage Area Map
Dick Nichols Water Quality Pond Rehabilitation
Travis County, Texas

CDM Smith

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

Silt fencing, rock berms, mulch sock, and the stabilized construction entrance shall be inspected once per week and following every significant rainfall event (of at least 0.1 inch or greater). If such inspections reveal that additional measurements are needed to prevent movement of sedimentation to offsite areas, the Contractor shall promptly install additional erosion control devices as may be required.

Silt fences shall be maintained and repaired as follows:

- Remove accumulated sediment once build up reaches 6 inches
- Replace torn or damaged filter fabric
- Make any other repairs or adjustments, as needed, to ensure the silt fencing is functioning properly

Rock berms shall be maintained and repaired as follows:

- Remove accumulated sediment once build up reaches 6 inches
- Repair any loose wire sheathing or reshape as needed
- Make any other repairs or adjustments, as needed, to ensure the rock berm is functioning properly

Mulch socks shall be maintained and repaired as follows:

- Remove accumulated sediment once build up reaches one third of the exposed height of the mulch sock
- Replace torn or damaged filter fabric or gaps between joints of adjacent ends of the socks so that no water flows under or around the sock
- Make any other repairs or adjustments, as needed, to ensure the mulch sock is functioning properly

Inlet protection shall be maintained and repaired as follows:

- Repair any damaged fabric, or patch with a two (2) foot minimum overlap
- Replace any damaged sandbags
- Remove accumulated sediment once build up reaches 3 inches
- Check placement of device to prevent gaps between device and curb

The stabilized construction entrance will also be inspected following precipitation events and stone will be replaced if silt accumulation is found to hinder the role of this BMP to minimize the off-site tracking of sediment.

Note that the inspections of the temporary BMPs will be documents in an inspection report. The inspection reports will document maintenance activities, sediment removal, and modifications to the sediment and erosion controls as necessary.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

Temporary soil stabilization practices will include minimizing soil disturbance during construction and hydroseeding of temporary vegetation in disturbed areas. These temporary soil stabilization practices will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. These interim measures will be inspected, maintained, and will remain in place for the duration of the construction phase of the project. These control measures will be planned and implemented in accordance with the Edwards Aquifer Technical Guidance Manual and the City of Austin Environmental Criteria Manual.

Permanent soil stabilization and site restoration will occur prior to project completion. Permanent soil stabilization measures will include the loaming, hydroseeding, and re-vegetation of the disturbed areas using a native grass mix that is properly monitored and managed until long-term vegetation stabilization has occurred.

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Ellyn Weimer, P.E.

Date: 11-10-2023

Signature of Customer/Agent

Ellyn Weimer

Regulated Entity Name: Dick Nichols Park Water Quality Pond Retrofit

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   ☐ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

☒ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: City of Austin Environmental Criteria Manual

☐ N/A

3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

   ☐ N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☒ The site will not be used for low density single-family residential development.

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

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

6. ☒ **Attachment B - BMPs for Upgradient Stormwater**.

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

☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater**.

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

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

8. ☒ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☐ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☐ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☒ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☒ Signed by the owner or responsible party
    ☒ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☒ A discussion of record keeping procedures

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

14. ☒ The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

    ☐ N/A

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

    ☐ N/A

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The intent of the project is to rehabilitate the existing permanent BMP for the site. The project site is located at the outlet of the drainage area and captures are treats flow from upstream before being discharged to the receiving stream. The site will be maintained during construction to limit runoff to surface streams – see the Temporary Stormwater Section for methods and measures. The rehabilitated retention-irrigation pond will fully treat all upstream storm flows from impervious cover in the drainage basin.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

There is a small potential for stormwater flows from the Dick Nichols Park Water Quality construction. The site will be loamed, hydroseeded, and re-vegetated and the water quality pond rehabilitated to protect stormwater runoff to the Williamson Creek Watershed. There will be no increase in impervious cover due to the construction of the improvements on this site, and the rehabilitation to the existing retention-irrigation pond that serves as the permanent BMP on site will enhance water quality from the site. The on-site stormwater will be filtered by silt fence and inlet protection as the main temporary BMPs to protect the receiving Williamson Creek Watershed during construction.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The Dick Nichols Park Water Quality Pond Retrofit will rehabilitate the non-functioning retention-irrigation pond at the park. After construction this pond will serve as the permanent BMP for the site and treat 100% of the contaminants, including TSS that flow to it from the drainage basin. This will enhance and reduce pollution to the receiving Kincheon Branch, a tributary to Williamson Creek.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

The construction drawings are provided as part of this Water Quality Pond Retrofit design. The project's design drawings provide the civil and environmental drawings including grading, erosion control, pond rehabilitation, and electrical plans. The following permanent BMP is detailed and specified:

- Retention-Irrigation Pond

This pond serves as the existing permanent BMP and is being rehabilitated as part of this project. Rehabilitation efforts include regrading and adding a geotextile liner to the retention pond, installing a pump to send pond flows to a new above ground diffuser system that will act as irrigation to spread flows to a vegetated area behind the park swimming pool and thence into the ground and out to Kincheon Branch, a tributary to Williamson Creek.

Design calculations and construction methods are included on the plan set and are in accordance with the City of Austin Environmental Criteria Manual that will also comply with Edwards Aquifer Rules and Barton Springs Save Our Springs Initiative rules based on the project location.

This permanent control will limit runoff discharge of pollutants from upstream development within the park.

11-1-2023

Ellyn Weimer, PE

CITY OF AUSTIN – DICK NICHOLS WATER QUALITY POND RETROFIT

8011 Beckett Road

Austin, Texas 78749

WATER QUALITY FACILITIES MAINTENANCE PLAN

Prepared by:

CDM Smith, Inc.

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(512) 341-1100

TBPE Firm No. F-3043

November 2023

INTRODUCTION

The City of Austin – Dick Nichols Water Quality Pond Retrofit project contains one water quality control system:

Retention-Irrigation Pond

This system requires regular maintenance and monitoring to operate efficiently. This document is intended to provide a description of the operation of each system and recommended maintenance intervals.

OPERATION

The project will be served by a retention-irrigation pond. Inflow into the pond will be regulated by an inlet splitter box containing a weir wall on the back of the inlet that will serve as a flow splitter. The elevation of the top of the splitter wall defines the operational volume of the proposed pond. After the pond is full, subsequent flow into the splitter box will overflow the wall and will be discharged and redistributed back to overland flow prior to leaving the site. Flow will exit the retention pond through a orifice riser and 6-inch PVC pipe and will be pumped to an above ground diffuser which discharges to a vegetated area behind the park swimming pool. The retention pond will be underlain by a synthetic impermeable liner system designed to prevent the escape of water from the pond into the underlying Edwards formation.

The splitter box is intended to assure that the relatively dirty initial runoff from a storm is captured in the retention pond and relatively clean runoff (after the initial storm flush) bypasses the pond. Once captured, water will slowly (over 60 hours) be pumped out out of the retention pond to the diffuser. Sediment, trash and other pollutants will be captured in the pond and must be periodically removed.

REQUIRED MAINTENANCE ACTIVITIES

All components of the water quality protection system shall be inspected twice annually (in approximate six month increments) to assure proper operation of the system. One of these inspections must occur during or after a rainfall event. At a minimum, the following items shall be inspected and proper operation verified:

A. Splitter Box Assemblies. The splitter assembly shall be kept free of significant debris. Any eroded areas around the inlet shall be regraded and revegetated.

B. Retention Pond Inlets. The pond inlet shall be kept free of significant debris. Any eroded areas around the inlet shall be regraded and revegetated.

C. Retention Pond Vegetation. Pond vegetation must be maintained to provide 95 percent vegetative coverage at all times. Dead or diseased plants shall be removed and replaced in kind.

D. Pond Outflow Orifice and Riser Pipe. The pond outflow orifice and riser pipe shall be kept free of any debris.

E. Pumps and Diffuser System. The pumps and diffuser system must be inspected or tested a minimum of six (6) times per year to show all components are operating as intended. Two (2) of these six (6) inspections should be after rain events to ensure that the diffuser (irrigation) system and all of its components perform as designed. This includes controls such as rain sensors, delays, valves, alarm system, distribution lines, and other components within the system design. The diffuser piping shall be checked to determine if any are broken, clogged do not flow to the vegetated area properly. Clogged discharge pipes can be cleaned by removing them from the PVC sleeves. Remove any woody vegetation growing in the gabion diffuser. Repair any downstream eroded pockets to prevent the development of significant eroded rills and/or gullies and maintain the irrigated area in their natural state and maintain such that the area does not impede the function of diffuser piping. Tree and shrub trimmings and other large debris must be removed from the area immediately downstream of the diffuser system.

F. Embankments. Identify and repair any subsidence, leakage and cracking along the top of pond slope. Identify and repair any structural damage to concrete components including sealing voids, removing vegetation from joints and repairing cracked concrete

G. General Housekeeping. All areas shall be inspected for general cleanliness. Grass areas in and around the pond must be mowed at least twice annually and shall be maintained additionally as required to limit vegetation height to 8 inches. Grass clippings shall be mulched (with a mulching mower) on site or removed after mowing. All debris and litter must be removed and disposed of in a proper manner. Repair grading deficiencies caused by erosion and/or deposition to prevent standing water.

H. All structural elements of the system (inlets, pipe, walls, etc.) shall be inspected for integrity and repaired immediately if defects are identified.

I. The water quality basins are designed to be completely drained in approximately 60 hours. Should draw down time significantly exceed 60 hours, the system shall be inspected and cleaned to assure proper drainage. Should the system drain in less than 24 hours, the system shall be inspected for leaks, broken pipes, etc. and all identified damage repaired promptly.

Inspection and maintenance shall comply with City of Austin Environmental Criteria Manual (ECM) requirements. A copy of these requirements (Section 1.6.3) is attached for reference.

RECORD KEEPING

A written record of the maintenance and operation of the water quality system shall be maintained by the Responsible Party. Records shall be kept under single cover (three ring binder, notebook, etc) and shall be made available for inspection by the TCEQ and or the City of Austin upon reasonable notice. At a minimum, the notebook shall document the following:

A. The date, time and participants in all required inspections.

B. For each required inspection, an indication that each system component was adequately inspected and was either deemed to be in good working order or in need of repair. The date that any required repairs were completed.

C. Inspection and testing reports for the pump and diffuser (irrigation) system as described in the *Required Maintenance Activities* Section E.

D. The dates and a brief description of routine maintenance. Routine maintenance includes semiannual mowing, significant trash removal and significant sediment removal. Weekly maintenance activities associated with overall project site maintenance do not require documentation.

E. A least one assessment annually of the remaining life of each inlet and outlet structure and, if replacement is anticipated within a five year period, an estimate of the replacement cost.

SPARE PARTS

Listed below are major components of the water quality system which may require periodic maintenance and/or replacement.

Pipe Schedule 40 PVC, available at all home improvement centers.

Pumps Spare pumps will be determined when submitted during construction. Liberty ¾ HP submersible effluent pump FL70 series, available from Grainger has been specified.

PERMITTING

It has been verified by Watershed Protection staff that the retention pond will not require an operating permit for this site.

RESPONSIBLE PARTY

The inspection, maintenance, and repair shall be conducted by the City of Austin Watershed Protection Department and are designated as the Responsible Party. This plan is approved as such.

Signature of Responsible Party

Charles W. Kaough, P.E. 11/15/23

_____

1.6.3 Maintenance and Construction Requirements

A. Maintenance Responsibilities. Proper maintenance is as important as engineering design and construction in order to ensure that water quality controls, referred to herein as stormwater control measures (SCMs), will function effectively. Section 25-8-231 of the Land Development Code requires maintenance be performed on SCMs when necessary as defined by this section.

Stormwater control measures required for commercial and multi-family development shall be maintained by the property owner.

Stormwater control measures for single family or duplex residential development shall be maintained by the City of Austin once the facilities have been accepted by the City, unless otherwise determined during the review process. For the City to accept an SCM, the facility must:

1. be constructed per the approved development plan;
2. meet all applicable requirements of Section 1.6.3 and the Drainage Criteria Manual, Section 1.2.4 E.;
3. complete a one-year warranty period, including the completion of all maintenance and rehabilitation activities identified by the Watershed Protection Department; and
4. obtain final warranty release approval from the Watershed Protection Department.

The City will also maintain SCMs designed to service primarily publicly owned roads and facilities. These SCMs must be designed and built according to the appropriate city standards.

B. Maintenance Requirements—Design and Construction.

The design of drainage facilities (including but not limited to headwalls, open channels, storm sewers, area inlets, and detention, retention and stormwater control measures and their appurtenances) shall comply with the requirements of Section 1.2.4.E of the Drainage Criteria Manual. In addition, SCMs shall comply with the following construction requirements:

1. Sediment removed during construction of a detention, retention, or water quality facilities may be disposed of on-site if properly stabilized according to the practices outlined in the erosion and sedimentation control criteria found in Section 1.4.0 of this manual. After the City of Austin has accepted a stormwater facility disposal of sediment must be at an approved landfill.
2. During construction of SCMs, temporary erosion and sedimentation controls shall be maintained.
3. If runoff is to enter the sand filtration chamber of a water quality control facility prior to completion of site construction and revegetation, inspection and maintenance of all temporary erosion/sedimentation controls are required, as described in the Environmental Criteria Manual Section 1.4.4, to prevent heavy sediment loads caused by home construction from clogging the filtration media.
4. In all cases, trees shall be preserved according to the requirements of Section 3 of the Environmental Criteria Manual. The access drive and staging area shall be designed to preserve trees 8" (inches) in diameter and greater to the maximum extent possible. Trees 8" in diameter and larger shall be surveyed and shown for the proposed access easement at the time of construction plan permitting.

5. For filtration systems the design media depth must be verified, accounting for consolidation. If insufficient depth is present, additional media must be added and pre-soaked until the design depth is achieved. Pre-soaking - apply 5—10 gallons of water per square foot of media area within one hour.

6. Retaining Walls - Retaining walls within SCMs require water-tightness. Water-tightness in retaining walls is essential to the function of the structure. Waterstops shall be provided during construction of expansion joints in retaining walls per Standard Specification 414S, Concrete Retaining Walls.

7. Grouted Rock Walls - Grouted rock walls are acceptable only if the design includes an impermeable barrier such as an approved geomembrane liner or reinforced concrete retaining wall. Free standing dry stacked rock walls are not acceptable in any SCM.

8. As-Built Surveys - As-built surveys of all flood detention basins and water quality SCMs shall be submitted to the City upon completion of final grade. Surveys shall be conducted by a licensed surveyor or the engineer of record and include representative survey points with elevations taken at top of wall, bottom of wall, center of basin, inlets, outfalls, overflow structures, and side slopes. Additional survey points may be requested at the discretion of the City Inspector to ensure basin integrity. Water quality basins with a drainage area of less than two (2) acres as well as vegetated filter strips do not require submittal of as-built surveys unless deemed necessary by the City Inspector.

C. Major Maintenance Requirements.

1. The following maintenance activities shall be performed on all SCMs, in addition to the requirements listed for the individual SCM types, to ensure proper function:

   a) Accumulated paper, trash and debris shall be removed every six (6) months or as necessary to maintain proper operation.

   b) Structural integrity shall be maintained at all times. Basins and all appurtenances shall be inspected annually, or more frequently if specified, and repairs shall be made if necessary. When maintenance or repairs are performed, the SCM shall be restored to the original lines and grades.

   c) Corrective maintenance shall occur:

      i. Any time drawdown of the Water Quality Volume does not occur within ninety-six (96) hours (i.e., no standing water is allowed), unless a greater maximum drawdown time is specified in the plans.

      ii. For detention ponds only, any time drawdown does not occur within twenty-four (24) hours.

   d) The inlet and outlet of SCMs shall be maintained unimpeded in order to convey flow at all times. Observed blockages to the inlet and outlet, due to vegetation, sediment, debris, or any other cause, shall be removed.

   e) No unvegetated area shall exceed ten (10) square feet. This performance requirement applies to the entire pond including the pond bottom, side slopes, and areas adjacent to the pond, and is intended to limit erosion.

f) Integrated pest management shall be performed and shall adhere to Section 1.6.2.F, Integrated Pest Management Guidelines.

g) The minimum vegetation height shall be four (4) inches in the SCM and all appurtenances, including the toe of the berm or wall outside the SCM, where applicable.

h) Sediment build-up shall be removed:

i. When the accumulation exceeds six (6) inches in splitter boxes, wet wells and basins.

ii. When sediment traps are full.

iii. When sediment, of any amount, causes standing water conditions or reduces basin storage by more than 10%.

i) When sediment is removed, the following requirements apply:

i. Irrigation shall be provided, as needed, until vegetation is established (well rooted). See Section 1.6.3.D, Irrigation Guidelines.

ii. The design depth of the filtration media shall be verified. See Section 1.6.3.B.5.

iii. Tilling of the filtration medium is not allowed.

j) For subsurface ponds maintenance plan requirements, refer to ECM Section 1.6.2(E).

2. Sedimentation and Filtration SCMs (Section 1.6.5).

a. Vegetation within the SCM shall not exceed eighteen (18) inches in height at any time, except as called for in the design.

b. Vegetation that is mowed or cut shall be removed from the SCM.

3. Detention Basins.

a. Vegetation within the basin shall not exceed eighteen (18) inches in height at any time.

4. Wet Ponds (See Section 1.6.6).

Due to the nature of wet ponds being full of water when in operation, the need for maintenance is not easily visible. However, when the ponds are built in stable upland areas, the need for maintenance of these ponds should be infrequent. Accumulation of sediment in the basin is the primary reason the pond will require intensive maintenance. Because of this, very careful attention should be paid to adequate, well-maintained erosion and sedimentation controls in the contributing drainage area during construction. This, in combination with the sediment forebay, should prevent the requirement of maintenance of the main pool soon after the pond is put online. The following are guidelines for pond maintenance:

During Site Construction - The sediment load to the sediment forebay shall be closely monitored after every storm event. If heavy sediment loads are detected during an inspection, the source should be corrected. Sediment shall be removed from the sediment forebay when one-third of the forebay volume is lost.

Upon Completion of Site Revegetation - Any sediment build-up (greater than 5% volume loss) shall be removed from the forebay upon completion of site revegetation. The sediment build-up

in the main pool shall be checked and if more the ten-percent of the volume is lost, it should be cleaned at that time.

Every Three Months for the First Two Years - During the three month initial inspection cycle, if more than fifteen percent of the volume of the forebay is lost, it shall be cleaned at that time.

Every Three Months - Turf areas around the pond should be mowed. Accumulated paper, trash, and debris shall be removed every three months or as necessary. Cattails, cottonwoods, and willows can quickly colonize shallow water and the edge of the pond. These species or any areas of plant overgrowth may be thinned at this time or as needed.

Annually - The basin should be inspected annually for side slope erosion and deterioration or damage to the structural elements. Any damage shall be repaired. Large areas, which have dead or missing vegetation, shall be replanted.

Every Three Years - The sediment build-up in the sediment forebay shall be checked. The sediment forebay shall be cleaned if more than one-third of the forebay volume is lost.

Every Six Years - The sediment build-up in the main pool shall be checked. Sediment shall be removed from the main pool when twenty percent of the main pool volume is lost.

5. Retention-Irrigation Systems (Section 1.6.7.A).

    a. Basins. Structural integrity of basins shall be maintained at all times. Woody vegetation should be controlled/removed to prevent basin leakage. The ability of the basin to retain the water quality volume shall be evaluated by the COA.

    b. Irrigation Areas. To the greatest extent practicable, irrigation areas are to remain in their natural state. However, vegetation must be maintained in the irrigation area such that it does not impede the spray of water from the irrigation heads. Tree and shrub trimmings and other large debris must be removed from the irrigation area. See requirements in Section 1.6.7.A.3.(g) and (h) regarding requirements for soil and vegetation in irrigation areas.

    c. Pumps and Irrigation System. The pumps and irrigation system must be inspected or tested a minimum of six (6) times per year to show all components are operating as intended. Two (2) of these six (6) inspections should be after rain events to ensure that the irrigation system and all of its components perform as designed. This includes controls such as weather stations or rain sensors, delays, valves, alarm system, distribution lines, or other components as specified in the system design. Sprinkler heads must be checked to determine if any are broken, clogged, or not spraying properly. All inspection and testing reports must be kept on site and accessible to the City of Austin.

    d. The overall system shall be inspected for the ability to retain the water quality volume on site per ECM Section 1.6.7.A.

6. Vegetative Filter Strips (Section 1.6.7.B).

    a. Filter strips shall be managed so that a dense, healthy vegetative cover is preserved.

    b. Unmowed vegetative filter strips are preferred. If mowed the cutting height shall be set to a minimum of four (4) inches for turfgrass and a minimum of 18 inches for bunchgrass. Grass clippings must be removed from the VFS in order to prevent export of nutrients.

c. Bare spots and areas of erosion identified during inspections must be replanted and restored to meet specification.

d. Accumulated sediment shall be removed.

e. Any disturbance to the filter strip as a result of maintenance procedures or other reasons shall be repaired, including re-establishment of the vegetation.

f. Corrective maintenance is required if there is evidence of preferential flow paths around or through the VFS (e.g., upstream "lip" is silted in or installed too low).

g. The level spreaders shall be repaired if damaged or not functioning correctly.

7. Biofiltration and Rain Gardens (Sections 1.6.7.C and 1.6.7.H).

A. Maintenance Considerations in Design.

A lack of maintenance considerations in the design of a landscape commonly results in a site that is more maintenance intensive (i.e., costly) than necessary and/or appropriate for its purpose, and one that requires the routine use of practices that are undesirable (e.g., extensive pesticide use, intensive pruning of plants that grow too large for the spaces they occupy). The designer shall include maintenance considerations and IPM throughout the planning and design phase of a biofiltration project. Landscapes should be designed to allow for the access and aid the maneuverability of maintenance equipment (e.g., if areas of the pond are designed to be mown, acute angles should be avoided in turf areas; wide angles, gentle, sweeping curves, and straight lines are easier to mow).

B. Routine Maintenance.

Once vegetation is established, biofiltration systems should require less maintenance than sand filtration systems because the vegetation protects the filtration media from surface crusting and sediment clogging. Plant roots also provide a pathway for water to permeate down into the media, thus further enhancing the hydraulic performance of the system. Unless damaged by unusual sediment loads, high flows, or vandalism, the biofiltration media should be left undisturbed and allowed to age naturally, and biofiltration pond vegetation shall be managed so that a dense, healthy vegetative cover is preserved. The following maintenance items should be performed depending on frequency and time of year:

Biweekly during first growing season: Inspect vegetation until 95% vegetative cover is established.

Monthly: Check for accumulated sediments, remove as needed.

Quarterly: Remove debris and accumulated sediment; replace soil media in void areas caused by settlement; repair eroded areas; remulch by hand any void areas.

Semi-annually: Remove and replace dead or diseased vegetation that is considered beyond treatment (see planting specifications); treat all diseased trees and shrubs mechanically or by hand depending on the insect or disease infestation. If drawdown exceeds the drawdown time according to Section 1.6.3.C.1, lightly scarify soil with hand cultivator; if standing water remains for greater than 96 hours, remove top layer of sediment, mulch, and potentially vegetation; de-compact soil by scarification, and replace mulch and disturbed vegetation.

Late winter: Trim bunch grasses; mow turf grasses; harvest other types of vegetation according to recommendations in the planting specifications. Adhere to Section 1.6.2.F.

Spring: Remove previous mulch layer and apply new mulch layer by hand (option) once every two to three years.

C. Other items.

a. Signage shall be used to delineate the boundaries of the biofiltration area that are maintained with minimal mowing, no fertilizers, and limited use of organic herbicides.

8. Rainwater Harvesting (Section 1.6.7.D).

Proper monitoring and maintenance is important for any system to work appropriately and efficiently. Each configuration will perform differently. After the system has stabilized, inspection and maintenance might be needed several times a year and/or after heavy rainfall events. A pretreatment filter system (i.e., leaf guards, strainers, roof washers, etc.) is required prior to the cistern.

Maintenance activities shall be performed according to the following schedule:

Post Construction:

- The control and repair of erosion rills, from the irrigation system, should take place after each rainfall event until the vegetation is well established.
- Adjustments to the irrigation area should be considered as the vegetation matures and/or to minimize erosion problem areas.

Quarterly or after each rain event:

- Inspect water tanks periodically to insure proper functioning. Screen inlet and outlet pipes to keep the system closed to mosquitoes. Cap and lock tanks for safety.
- Caps should have access ports for interior inspection and maintenance.
- Clean pretreatment filter system, gutters, inflow, and outflow pipes as needed; sediment, trash, leaves, or other debris should not be allowed to accumulate to a point where it impedes the proper function of the rainwater harvesting system.
- Irrigation systems should be cleaned and damage sprinkler heads replaced.

Other items:

a. The requirements for retention/irrigation systems apply when rainwater harvesting is designed to irrigate a vegetated area - see Section 1.6.3.C.4.

b. The requirements for vegetative filter strips apply when a rainwater harvesting is designed to discharge to a vegetated area to be infiltrated - see Section 1.6.3.C.5.

9. Porous Pavement (Section 1.6.7.E).

General Maintenance

- Verify that the porous pavement receives no off-site runoff.

- Prior to final acceptance it must be demonstrated that the surface saturated hydraulic conductivity of any portion of the porous pavement is at least 20 inches/hour or, if the system is saturated, the entire water quality volume infiltrates into the subgrade within 48 hours.

Use the following testing methods to verify:

- For porous concrete and porous asphalt use ASTM C1701.
- For open-jointed block pavement, permeable interlocking concrete pavement (PICP) or concrete grid pavement (CGP) use ASTM C1781.

Construction and Post construction:

- When installing porous concrete, floating and troweling are not used, as those may close the surface pores.
- Do not seal or repave with non-porous materials.
- No piling of dirt, sand, gravel, or landscape material without covering the pavement first with a durable cover to protect the integrity of the pervious surface.
- All landscape cover must be graded to prevent washing and/or floating of such materials onto or through the pervious surface. No off-site flows allowed onto the porous pavement area.
- All chemical spills inclusive but not limited to petrochemicals, hydrocarbons, pesticides, and herbicides should be reported to the owner so they can prevent uncontrolled migration.
- Chemical migration control may require flushing, and/or the introduction of microbiological organisms to neutralize any impacts to the soil or water.

Monthly:

- Ensure that paving area is clean of debris, ensure that paving dewaters between storms, and ensure that the area is clean of sediments.

Semi-annually:

- Ensure that the porous pavement is protected from clogging due to runoff from landscape areas, rooftops, and other areas that may significantly reduce the long-term permeability by diverting flows away.

Annually:

- To ensure that the entire water quality volume infiltrates into the subgrade within 48 hours the pervious surface should be vacuumed to restore the open permeable pores and lift the sediment or other contaminants out that may reduce the long-term permeability.
- It is required that this frequency be increased for areas where overhanging vegetation, excessive dirt, and pollutants are frequent.
- Inspect the surface for deterioration. As necessary, repair or replace porous pavement or, for open-jointed block pavement or permeable interlocking concrete pavement replenish aggregate within the joints.

10. Non-Required Vegetation (Section 1.6.7.G).

    a. An approved Integrated Pest Management Plan with a recorded Restrictive covenant is required. It is extremely important that fertilizer and chemical use be minimized; otherwise the Non-required vegetation may become a source of pollution instead of a treatment best management practice. Tree Pruning and vegetation management should be modified (i.e., less frequent and less intensive) to maximize the leaf surface area, or Leaf Area Index (LAI), the 25-year growth root system, and the rainfall interception rate to increase future benefits.

    b. As non-required vegetation is to have no off-site runoff and is also required to have porous pavement (or undisturbed natural ground) extended to at least the 25-year growth root system, the porous pavement requirements apply (see 1.6.3.C.8).

    c. Damage to vegetation must be corrected immediately, with replanting done if necessary.

D. Irrigation Guidelines.

Irrigation is necessary to establish plants during the first 12-months after installation. Thereafter irrigation needs should be minimal and an irrigation system whether permanent or temporary may not be necessary depending on the weather, type of plants, and extent of plant establishment.

Supplemental watering after the first 12-months may be required during periods of extended drought if plant replacement occurred after the first year, for more mesic-type plants, and for trees. Trees typically require two to three years of supplemental water. The necessity for continued irrigation after the first year should be made by a landscape professional.

If an irrigation system is proposed, the design shall address both the SCM and plant health needs. In particular, overwatering is unacceptable as it will negatively impact the hydraulic performance and pollutant removal capabilities of SCM.

Treated wastewater effluent (also referred to as reclaimed water) contains nutrients at concentrations higher than stormwater runoff. Because these elevated nutrient concentrations would impair the nutrient removal function of SCM, no temporary or permanent irrigation of SCM may occur with reclaimed water or treated wastewater effluent.

The following minimum criteria will apply for permanent irrigation systems:

1. Soil water moisture sensors shall be installed and connected to the controller at appropriate depths and locations in the biofiltration basin.
2. No irrigation during periods when rainfall is occurring.
3. Irrigation shall not commence until the soil moisture content of the filtration media is ≤ 25% of the Available Water Capacity (AWC). For plants native or adapted to arid and semi-arid conditions, irrigation shall not commence until the soil moisture content is ≤ Wilting Point (WP), or 0% AWC.
4. Irrigation shall cease once the soil moisture content is ≤ 75% AWC; 50% for plants native or adapted to arid and semi-arid conditions.

Source: Rule No. R161-14.26, 12-30-2014 ; Rule No. R161-15.12, 1-4-2016 ; Rule No. R161-16.19, 11-14-16; Rule No. R161-21.03 , 3-9-2021.

City of Austin

Dick Nichols Park Water Quality Pond Retrofit

Water Pollution Abatement Plan

There is a potential for stormwater from the proposed construction area to reach the Williamson Creek Watershed after being treated by recommended control measures. The permanent BMP control is the retention-irrigation pond that is being rehabilitated as part of this project and will treat all upstream flows that will reduce contamination to the downstream watershed. Hydroseeding and re-vegetation of all disturbed areas outside of the retention-irrigation pond will provide permanent erosion and sediment control. There will be no increase in impervious cover of the project area. These measures will provide sufficient reduction in erosion, runoff velocities, and TSS loading to surface streams.

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

I Charles Kaough, P.E.,
Print Name

Engineer C, Project Design and Delivery,
Title - Owner/President/Other

of City of Austin Watershed Protection Department,
Corporation/Partnership/Entity Name

have authorized Ellyn Weimer, PE
Print Name of Agent/Engineer

of CDM Smith, Inc
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

11/1/2023
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Charles Kaough 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 1st day of November, 2023.

Thomas Grauzer
NOTARY PUBLIC

THOMAS A. GRAUZER
Notary Public, State of Texas
Comm. Expires 11-19-2026
Notary ID 12169707

Thomas A. Grauzer
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/19/2026

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Dick Nichols District Park Water Quality Pond Retrofit
Regulated Entity Location: 8011 Beckett RD Austin, Texas 78749
Name of Customer: City of Austin
Contact Person: Charles Kaough Phone: 512-658-0858
Customer Reference Number (if issued):CN CN600135198
Regulated Entity Reference Number (if issued):RN RN102136652
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	109.723 Acres	$ 8,000
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Ellyn Weiner Date: 11-10-2023

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600135198		**RN 102136652**

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:*

City of Austin

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

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

Government: ☒ City ☐ County ☐ Federal ☐ Local ☐ 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 ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:							
	City		**State**		**ZIP**		**ZIP + 4**	

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

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(512) 658-0858		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

City of Austin Dick Nichols Park

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	8011 Beckett RD							
	City	Austin	**State**	TX	**ZIP**	78749	**ZIP + 4**	
24. County	Travis							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	Approximately 700 FT North and 400 FT East of Intersection of New Horizons Lane and Beckett Road				
26. Nearest City			**State**	**Nearest ZIP Code**	
Austin			TX	78749	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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

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

Parkland

34. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	
35. E-Mail Address:								

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

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

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

SECTION IV: Preparer Information

40. Name:	Alisha Meharali	**41. Title:**	Environmental Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 652-5338		**( ) -**	meharaliad@cdmsmith.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:	CDM Smith, Inc.	**Job Title:**	Water Resources Engineer
Name *(In Print):*	Ellyn Weimer, PE	**Phone:**	**(** 512 **)** 652- **5329**
Signature:	Ellyn Weimer	**Date:**	11-10-2023

PID 324380 | 8011 BECKETT RD

GENERAL INFO

ACCOUNT

Property ID: 324380
Geographic ID: 0415370335
Type: R
Zoning: P
Agent:
Legal Description: ABS 2 SUR 17 ANDERSON T ACR 109.723

Property Use:

LOCATION

Address: 8011 BECKETT RD, TX 78749

Market Area:
Market Area CD: _OEXMP
Map ID: 041537

PROTEST

Protest Status:
Informal Date:
Formal Date:

OWNER

Name: CITY OF AUSTIN
Secondary Name: % REAL ESTATE DIVISION
Mailing Address: PO BOX 1088 AUSTIN TX 78767-1088

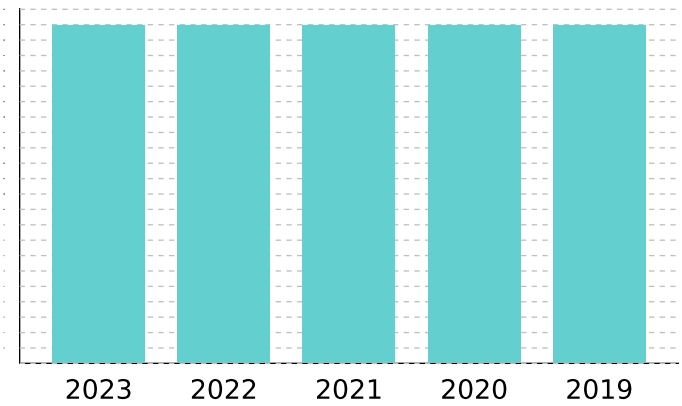
Owner ID: 100058
% Ownership: 100.00
Exemptions: EX-XV - Other Exemptions (including

VALUES

CURRENT VALUES

Land Homesite:	$0
Land Non-Homesite:	$2,194,460
Special Use Land Market:	$0
Total Land:	$2,194,460
Improvement Homesite:	$0
Improvement Non-Homesite:	$0
Total Improvement:	$0
Market:	$2,194,460
Special Use Exclusion (-):	$0
Appraised:	$2,194,460
Value Limitation Adjustment (-):	$0
Net Appraised:	$2,194,460

VALUE HISTORY



Values for the current year are preliminary and are subject to change.

VALUE HISTORY

Year	Land Market	Improvement	Special Use Exclusion	Appraised	Value Limitation Adj (-)	Net Appraised
2023	$2,194,460	$0	$0	$2,194,460	$0	$2,194,460
2022	$2,194,460	$0	$0	$2,194,460	$0	$2,194,460
2021	$2,194,460	$0	$0	$2,194,460	$0	$2,194,460
2020	$2,194,460	$0	$0	$2,194,460	$0	$2,194,460
2019	$2,194,460	$0	$0	$2,194,460	$0	$2,194,460

TAXING UNITS

Unit	Description	Tax Rate	Net Appraised	Taxable Value
01	AUSTIN ISD	0.996600	$2,194,460	$0
02	CITY OF AUSTIN	0.462700	$2,194,460	$0
03	TRAVIS COUNTY	0.318239	$2,194,460	$0
0A	TRAVIS CENTRAL APP DIST	0.000000	$2,194,460	$0
2J	TRAVIS COUNTY HEALTHCARE DISTRICT	0.098684	$2,194,460	$0
68	AUSTIN COMM COLL DIST	0.098700	$2,194,460	$0

DO NOT PAY FROM THIS ESTIMATE. This is only an estimate provided for informational purposes and may not include any special assessments that may also be collected. Please contact the tax office for actual amounts.

IMPROVEMENT

LAND

Land	Description	Acres	SQFT	Cost per SQFT	Market Value	Special Use Value
LAND	Land	109.7230	4,779,533	$0.46	$2,194,460	$0

DEED HISTORY

Deed Date	Type	Description	Grantor/Seller	Grantee/Buyer	Book ID	Volume	Page	Instrument
8/15/80	WD	WARRANTY DEED		CITY OF AUSTIN		07103	01795	

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT

AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

PROJECT ID NO: 5282.139

SUBMITTAL DATE: OCTOBER 25, 2023

OCTOBER 2023

MAYOR
KIRK WATSON

COUNCIL MEMBER NATASHA HARPER-MADISON	COUNCIL MEMBER VANESSA FUENTES
COUNCIL MEMBER JOSE VALASQUEZ	COUNCIL MEMBER JOSE CHITO VELA
COUNCIL MEMBER RYAN ALTER	COUNCIL MEMBER MACKENZIE KELLY
COUNCIL MEMBER LESLIE POOL	COUNCIL MEMBER PAIGE ELLIS
COUNCIL MEMBER ZOHAIB ZO QADRI	COUNCIL MEMBER ALISON ALTER

TRAFFIC CONTROL PLAN NOTE:

THIS NOTE IS BEING PLACED ON THE PLAN SET IN THE ABSENCE OF A TEMPORARY TRAFFIC CONTROL PLAN (TCP) WITH THE FULL UNDERSTANDING THAT AN ENGINEERED TCP SHALL BE REVIEWED AND APPROVED BY THE RIGHT OF WAY MANAGEMENT DIVISION. FURTHERMORE, A TCP SHALL BE SUBMITTED TO THE TCP PORTAL FOR REVIEW A MINIMUM OF 6 WEEKS PRIOR TO THE START OF CONSTRUCTION. THE APPLICANT/PROJECT REPRESENTATIVE FURTHER RECOGNIZES THAT A TCP REVIEW FEE IS REQUIRED FOR THE INITIAL REVIEW AND ALL RE-REVIEWS, AS PRESCRIBED BY THE MOST CURRENT VERSION OF THE CITY'S FEE ORDINANCE.

THIS PROJECT IS SUBJECT TO THE WATERSHED PROTECTION REGULATIONS AND CURRENT WATER QUALITY ORDINANCES.

THE ENTIRETY OF THIS PROJECT LIES WITHIN THE BOUNDARIES OF THE EDWARDS AQUIFER RECHARGE ZONE.

THE ENTIRETY OF THIS PROJECT IS OUTSIDE OF THE BOUNDARIES OF THE 100-YEAR FLOODPLAIN ACCORDING TO DATA FROM THE FEDERAL FLOODPLAIN INSURANCE ADMINISTRATION FIRM PANEL 48453C0580H, DATED SEPTEMBER 26, 2008 FOR TRAVIS COUNTY AND INCORPORATED AREAS.

THIS PROJECT IS LOCATED IN THE WILLIAMSON CREEK WATERSHED WHICH IS CLASSIFIED AS THE BARTON SPRINGS ZONE.

THE ENTIRETY OF THIS PROJECT LIES WITHIN PARKLAND AND IS ZONED AS PUBLIC LAND USE.

THE ENTIRETY OF THIS PROJECT LIES WITHIN THE WATER QUALITY TRANSITION ZONE.

GENERAL PERMIT PROGRAM CORRECTIONS RECORD

NO.	DESCRIPTION	BY	REVISE (R) ADD (D) VOID (V) SHEET NO.'s	TOTAL # SHEETS IN PLAN SET	CITY OF AUSTIN APPROVAL/DATE

LOCATION PLAN

PROJECT INFORMATION

STREET ADDRESS:
8011, BECKETT RD
AUSTIN, TEXAS 78749

OWNER:
CITY OF AUSTIN
CHARLES KAOUGH, P.E
ENGINEER C
PROJECT DESIGN AND DELIVERY
WATERSHED PROTECTION DEPARTMENT
TEL. (512) 658-0858

CONTACT:
CLAUDIA CORSETTI, P.E., CFM, PMP
PROJECT MANAGER
PROJECT MANAGEMENT DIVISION
CITY OF AUSTIN
PUBLIC WORKS DEPT.
TEL. (512) 974-7205

SUBMITTAL PREPARED BY:

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CONTACT:
ALAN D. RHAMES
TEL. (512) 346-1100

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER

DATE 10-25-2023

ALAN D. RHAMES, TEXAS P.E. 72089
CDM SMITH INC.
8310-1 N CAPITAL OF TEXAS HWY, SUITE 250
AUSTIN, TEXAS 78731
512-346-1100

APPROVED BY GENERAL PERMIT HOLDER:

DATE
GENERAL PERMIT HOLDER

DATE
ANNUAL GENERAL PERMIT NUMBER

REVIEWED BY:

DATE
CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS

DATE
CITY OF AUSTIN, AUSTIN WATERSHED PROTECTION DEPARTMENT

DATE
CITY OF AUSTIN, DEVELOPMENT SERVICES DEPARTMENT

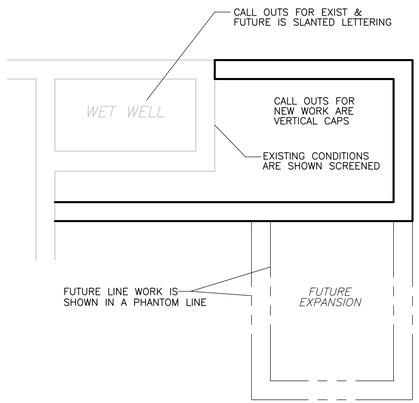
DATE
DEVELOPMENT PERMIT NUMBER

CITY OF AUSTIN, PARKS AND RECREATION DEPARTMENT

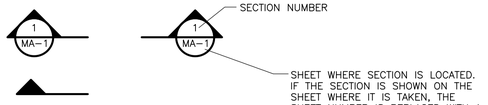
GP-02-2021.WPD
ANNUAL GENERAL PERMIT NUMBER

GENERAL PERMIT PROGRAM

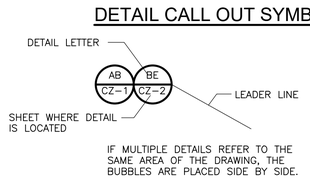
EXISTING OR FUTURE CONDITION DESIGNATION



SECTION CUT SYMBOLS



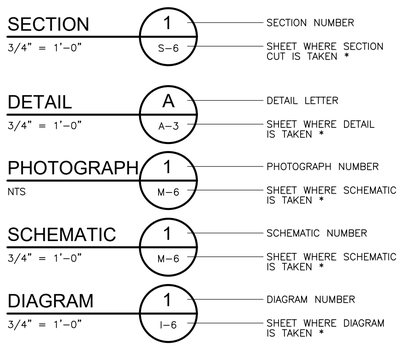
DETAIL CALL OUT SYMBOLS



DRAWING, SECTION & DETAIL TITLES

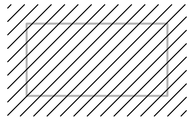
SUBTITLE OR DESCRIPTION (AS REQ'D)
PLAN
1/4" = 1'-0"

SUBTITLE OR DESCRIPTION (AS REQ'D)
ELEVATION
1/4" = 1'-0"

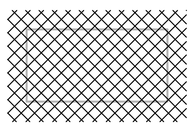


* IF SECTION, DETAIL, SCHEMATIC, OR DIAGRAM IS DRAWN ON THE SAME SHEET WHERE IT IS TAKEN, THE SHEET NUMBER IS REPLACED WITH A HYPHEN. IF THE SECTION CUT APPEARS ON MULTIPLE SHEETS, THE SHEET NUMBER SHOWN INDICATES THE FIRST SHEET THE SECTION IS TAKEN FROM.

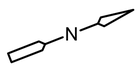
ITEMS TO BE REMOVED



ITEMS TO BE DEMOLISHED



NORTH ARROW ORIENTATION



TRUE NORTH

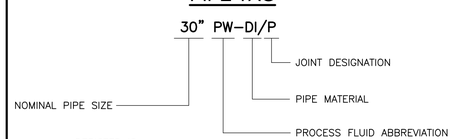
BOUNDARY & MARKER SYMBOLS

SYMBOL	FEATURE
	CHAIN LINK FENCE
	WOOD FENCE
	GUARD RAIL
	LIMITS OF CLEARING AND GRUBBING
	PROPERTY LINE / RIGHT OF WAY (ROW)
	EASEMENT LINE
B-7	BORING
TBM	BENCHMARK
	25 YR FLOOD PLAIN
	100 YR FLOOD PLAIN
	CRITICAL WATER QUALITY ZONE
LOC LOC	LIMITS OF CONSTRUCTION

TRAVELED WAY SYMBOLS

SYMBOL	FEATURE
	UNIMPROVED DIRT ROAD OR GRAVELED ROAD
	ASPHALT PAVED ROAD
	CONCRETE PAVING WITH CURB
	CONCRETE PAVING
	SIGN

PIPE TAG



DEPICTED IS:
30" DIAMETER DUCTILE IRON PIPE WITH
PUSH ON JOINTS SCHEDULED TO TRANSPORT POTABLE WATER.

LANDSCAPE & DRAINAGE SYMBOLS

SYMBOL	FEATURE
	BUILDING OR STRUCTURE FOOTPRINT
	EXISTING TREE
	EXISTING TREE PROTECTION
	EXISTING TREE TO BE REMOVED
	EDGE OF WOODS OR BRUSH
	DIRECTION OF FLOW FOR STORMWATER
SF SF	SILT FENCE
MS MS	MULCH SOCK
	ROCK BERM
	EROSION CONTROL BLANKET
SCE	STABILIZED CONSTRUCTION ENTRANCE

SURFACE ELEVATION SYMBOLS

SYMBOL	FEATURE
84	DEPRESSION CONTOUR
84	EXISTING INTERMEDIATE CONTOUR LINE & ELEVATION DESIGNATION
85	EXISTING INDEX CONTOUR LINE & ELEVATION DESIGNATION
84	PROPOSED INTERMEDIATE CONTOUR LINE & ELEVATION DESIGNATION
85	PROPOSED INDEX CONTOUR LINE & ELEVATION DESIGNATION
365.7	SPOT ELEVATION
	EXISTING EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)
	PROPOSED EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)
P-1	PERMEABILITY TEST HOLE
B-1	BORE HOLE

UNDERGROUND/OVERHEAD UTILITY SYMBOLS

SYMBOL	FEATURE
	1/2" IRON ROD FOUND
X	CUT "X" FOUND
	LIGHT POLE
	POWER POLE
	DOWN GUY
	FIRE HYDRANT
	WATER VALVE
	WATER METER
E	ELECTRIC BOX
EM	ELECTRIC METER
G	GAS METER
G	GAS VALVE
OE	OVERHEAD ELEC. LINE
E	BURIED ELEC. LINE
G	GAS LINE
W	WATER LINE
WW	WASTE WATER LINE
EMH	ELECTRIC MANHOLE
WWMH	WASTEWATER MANHOLE
SSMH	STORMSEWER MANHOLE
TMH	TELEPHONE MANHOLE
WTRMH	WATER MANHOLE
CO	WASTEWATER CLEANOUT
	BOLLARD
	BENCHMARK
(H)	HERITAGE TREE
(M)	MULTI-TRUNK TREE

SHEET INDEX

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY: –
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

SHEET INDEX AND GENERAL LEGEND

PROJECT NO. 0590-279471
FILE NAME: G001NFIX.DWG
SHEET NO.
G-1
SHEET 2 OF 21

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL UNCOVER AND VERIFY THE DEPTHS AND HORIZONTAL LOCATION OF ALL EXISTING WATER AND WASTEWATER MAINS TO BE EXTENDED TO, ALTERED OR SUBJECT TO DAMAGE OR INCONVENIENCE BY THIS PROJECT PRIOR TO COMMENCING CONSTRUCTION.
2. THE LOCATION AND ELEVATION OF ALL EXISTING WASTEWATER AND STORM SEWER LINES TO BE CONNECTED TO SHALL BE CONFIRMED PRIOR TO THE INSTALLATION OF ANY UTILITY LINE. THE CONTRACTOR SHALL CONFIRM WITH THE ENGINEER THE GRADE OF THE FINAL SEGMENT OF CONNECTING PIPE AS NECESSARY TO MEET THE FLOWLINE ELEVATION OF THE EXISTING PIPE.
3. THE CONTRACTOR SHALL PROVIDE ALL TRENCH SAFETY AS NECESSARY AND IN STRICT ACCORDANCE WITH CITY OF AUSTIN SPECIFICATION 509S AS A MINIMUM.
4. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL AS NECESSARY TO PERFORM THE CONSTRUCTION IN A SAFE MANNER TO PROTECT THE PUBLIC SAFETY.
5. THE CONTRACTOR SHALL PROVIDE PLUGS AT ALL PIPE STUB-OUTS.
6. THE CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT ALL PERMITS NECESSARY TO LEGALLY PERFORM THE WORK HAVE BEEN OBTAINED PRIOR TO COMMENCING CONSTRUCTION.
7. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION OF THE CITY'S ONE STOP SHOP (OSS) 974-6360 OR 974-7034 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.
8. FOR SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)
9. ALL SITE WORK MUST COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
10. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
12. REFERENCE SPECS FOR ADDITIONAL REQUIREMENTS FOR TREE PROTECTION.
13. AREA IS SUBJECT TO FLOODING. CONTRACTOR TO TAKE PRECAUTIONS TO PROTECT EQUIPMENT AND WORK.

CITY OF AUSTIN 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 AUSTIN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. CONTRACTOR SHALL CALL THE ONE CALL CENTER (472-2822) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.
3. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION OF THE CITY'S ONE STOP SHOP (OSS) AT 974-6360 OR 974-7034 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.
4. FOR SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 509S AND APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)
5. ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
6. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.: RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT (INSIDE THE CITY LIMITS)
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS.
8. DESIGN PROCEDURES ARE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF THE CITY OF AUSTIN DRAINAGE CRITERIA MANUAL EXCEPT AS OTHERWISE NOTED.
9. PROJECT BENCHMARKS INCLUDING DESCRIPTIONS, ELEVATIONS AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR.
10. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY OF AUSTIN, CONSULTING ENGINEER, CONTRACTOR, COUNTY ENGINEER (IF APPROPRIATE), AND ANY OTHER AFFECTED PARTIES. NOTIFY TPSD, CONSTRUCTION INSPECTION DIVISION, 974-7180.
11. THE CONTRACTOR SHALL GIVE THE CITY A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION, CALL CONSTRUCTION INSPECTION DIVISION, 974-7180.
12. IF BLASTING IS PLANNED BY THE CONTRACTOR, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.
13. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
14. THE LOCATION OF ANY WATER AND/OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE WATER AND WASTEWATER DEPARTMENT.
15. USE ONE CALL UTILITY SYSTEM: DIAL 1-800-344-8377, 48 HOURS BEFORE YOU DIG.
16. ALL STORM SEWER PIPES TO BE CLASS III RCP UNLESS NOTED OTHERWISE.
17. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES ARE MAINTAINED. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THE CONTRACTOR.

DEVELOPER INFORMATION

CHARLES KAOUGH, P.E. – CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	512-658-0858
OWNER	PHONE #
505 BARTON SPRINGS ROAD #11, AUSTIN, TEXAS 78704	
OWNER ADDRESS	
CDM SMITH	512-340-1100
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS	PHONE #
CDM SMITH	512-340-1100
PERSON OR FIRM RESPONSIBLE FOR EROSION/ SEDIMENTATION CONTROL MAINTENANCE	PHONE #
CDM SMITH	512-340-1100
PERSON RESPONSIBLE FOR TREE/ NATURAL AREA PROTECTION MAINTENANCE	PHONE #

ENVIRONMENTAL CRITERIA MANUAL POND MAINTENANCE NOTES (ECM 1.6.3)

1. THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED ON ALL SCMS, IN ADDITION TO THE REQUIREMENTS LISTED FOR THE INDIVIDUAL SCM TYPES, TO ENSURE PROPER FUNCTION:

A) ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED EVERY SIX (6) MONTHS OR A NECESSARY TO MAINTAIN PROPER OPERATION. STRUCTURAL INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. BASINS AND ALL APPURTENANCES SHALL BE INSPECTED ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED, AND REPAIRS SHALL BE MADE IF NECESSARY. WHEN MAINTENANCE OR REPAIRS ARE PERFORMED, THE SCM SHALL BE RESTORED TO THE ORIGINAL LINES AND GRADES.

B) CORRECTIVE MAINTENANCE SHALL OCCUR:

I. ANY TIME DRAWDOWN OF THE WATER QUALITY VOLUME DOES NOT OCCUR WITHIN NINETY-SIX (96) HOURS (I.E., NO STANDING WATER IS ALLOWED), UNLESS A GREATER MAXIMUM DRAWDOWN TIME IS SPECIFIED IN THE PLANS.

II. FOR DETENTION PONDS ONLY, ANY TIME DRAWDOWN DOES NOT OCCUR WITHIN TWENTY-FOUR (24) HOURS.

D) THE INLET AND OUTLET OF SCMS SHALL BE MAINTAINED UNIMPEDED IN ORDER TO CONVEY FLOW AT ALL TIMES. OBSERVED BLOCKAGES TO THE INLET AND OUTLET, DUE TO VEGETATION, SEDIMENT, DEBRIS, OR ANY OTHER CAUSE, SHALL BE REMOVED.

E) NO UNVEGETATED AREA SHALL EXCEED TEN (10) SQUARE FEET. THIS PERFORMANCE REQUIREMENT APPLIES TO THE ENTIRE POND INCLUDING THE POND BOTTOM, SIDE SLOPES, AND AREAS ADJACENT TO THE POND, AND IS INTENDED TO LIMIT EROSION.

F) INTEGRATED PEST MANAGEMENT SHALL BE PERFORMED AND SHALL ADHERE TO SECTION 1.6.2.F, INTEGRATED PEST MANAGEMENT GUIDELINES.

G) THE MINIMUM VEGETATION HEIGHT SHALL BE FOUR (4) INCHES IN THE SCM AND ALL APPURTENANCES, INCLUDING THE TOE OF THE BERM OR WALL OUTSIDE THE SCM, WHERE APPLICABLE.

H) SEDIMENT BUILD-UP SHALL BE REMOVED:

IJ. WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SPLITTER BOXES, WET WELLS AND BASINS.

II. WHEN SEDIMENT TRAPS ARE FULL.

III. WHEN SEDIMENT, OF ANY AMOUNT, CAUSES STANDING WATER CONDITIONS OR REDUCES BASIN STORAGE BY MORE THAN 10%.

I) WHEN SEDIMENT IS REMOVED, THE FOLLOWING REQUIREMENTS APPLY:

I. IRRIGATION SHALL BE PROVIDED, AS NEEDED, UNTIL VEGETATION IS ESTABLISHED (WELL ROOTED). SEE ECM SECTION 1.6.3.D, IRRIGATION GUIDELINES.

II. THE DESIGN DEPTH OF THE FILTRATION MEDIA SHALL BE VERIFIED. SEE ECM SECTION 1.6.3.B.5.

III. TILLING OF THE FILTRATION MEDIUM IS NOT ALLOWED.

J) FOR SUBSURFACE PONDS MAINTENANCE PLAN REQUIREMENTS, REFER TO ECM SECTION 1.6.2(E).

2. SEDIMENTATION AND FILTRATION SCMS (SECTION 1.6.5).

A. VEGETATION WITHIN THE SCM SHALL NOT EXCEED EIGHTEEN (18) INCHES IN HEIGHT AT ANY TIME, EXCEPT AS CALLED FOR IN THE DESIGN.

B. VEGETATION THAT IS MOWED OR CUT SHALL BE REMOVED FROM THE SCM.

3. DETENTION BASINS.

A. VEGETATION WITHIN THE BASIN SHALL NOT EXCEED EIGHTEEN (18) INCHES IN HEIGHT AT ANY TIME.

APPENDIX P-2. CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.
3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
5. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DRIP LINE) , FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL), OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ABORIST;
   C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
6. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED;
   B. WHERE PERMEABLE PAVING IS TO BE INSTALLED WITHIN A TREE'S DRIP LINE, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA (PRIOR TO SITE GRADING SO THAT THIS AREA IS GRADED SEPARATELY PRIOR TO PAVING INSTALLATION TO MINIMIZED ROOT DAMAGE);
   C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE TO ALLOW 6 TO 10 FEET OF WORK SPACE BETWEEN THE FENCE AND THE BUILDING;
   D. D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST AT 974-1876 TO DISCUSS ALTERNATIVES.
   E. SPECIAL NOTE: FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.
7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
8. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
10. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
11. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
12. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.).
13. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE CITY ARBORIST).
14. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.

APPENDIX P-1: EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTIVE FENCING, AND CONDUCT "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN 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 ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTION MEASURES AND "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE DEVELOPMENT SERVICES DEPARTMENT, 512-974-2278 OR BY EMAIL AT ENVIRONMENTAL.INSPECTIONS@AUSTINTEXAS.GOV, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.
5. 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. MAJOR REVISIONS MUST BE APPROVED BY AUTHORIZED COA STAFF. 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.
6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR THAT IS EITHER A LICENSED ENGINEER (OR PERSON DIRECTLY SUPERVISED BY THE LICENSED ENGINEER) OR CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC OR CPESC – IT), CERTIFIED EROSION, SEDIMENT AND STORMWATER – INSPECTOR (CESSWI OR CESSWI – IT) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC OR CISEC – IT) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY OR BI-WEEKLY INTERVALS AND AFTER ONE-HALF (½) INCH OR GREATER 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 OR ONE-THIRD (⅓) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.
7. 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.
8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:
   A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES.
      TOPSOIL SALVAGED FROM THE EXISTING SITE IS ENCOURAGED FOR USE, BUT IT SHOULD MEET THE STANDARDS SET FORTH IN 601S.
      AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE CRITERIA OF STANDARD SPECIFICATION 601S BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.
      SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL.

      THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

      TEMPORARY VEGETATIVE STABILIZATION:
      1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH OR INCLUDE A COOL SEASON COVER CROP: (WESTERN WHEATGRASS (PASCOPYRUM SMITHII) AT 5.6 POUNDS PER ACRE, OATS (AVENA SATIVA) AT 4.0 POUNDS PER ACRE, CEREAL RYE GRAIN (SECALE CEREALE) AT 45 POUNDS PER ACRE. CONTRACTOR MUST ENSURE THAT ANY SEED APPLICATION REQUIRING A COOL SEASON COVER CROP DOES NOT UTILIZE ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) OR PERENNIAL RYEGRASS (LOLIUM PERENNE). COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.
      2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE OR A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.
         A. FERTILIZER SHALL BE APPLIED ONLY IF WARRANTED BY A SOIL TEST AND SHALL CONFORM TO ITEM NO. 606S, FERTILIZER. FERTILIZATION SHOULD NOT OCCUR WHEN RAINFALL IS EXPECTED OR DURING SLOW PLANT GROWTH OR DORMANCY. CHEMICAL FERTILIZER MAY NOT BE APPLIED IN THE CRITICAL WATER QUALITY ZONE.
   B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.
   C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95% TOTAL COVERAGE SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR TEMPORARY STABILIZATION ARE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.
   D. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, AND STANDARD SPECIFICATION 604S OR 609S.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATION	APPLICATION RATES
100% OR ANY BLEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL (EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0-3 MONTHS	MODERATE SLOPES; FROM FLAT TO 3:1	1,500 TO 2,000 LBS PER ACRE

APPENDIX P-3: ADDITIONAL EROSION CONTROL NOTES FOR BARTON SPRINGS CONTRIBUTING ZONE:

1. DESIGNATION OF AN ENVIRONMENTAL PROJECT MANAGER WHO IS ON SITE >90% OF THE TIME, WHO IS REQUIRED TO BE AT THE PRECONSTRUCTION AND MID-CONSTRUCTION MEETINGS, AND IS RESPONSIBLE FOR COMPLIANCE ON SITE OF THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS. THE ENVIRONMENTAL PROJECT MANAGER IS RESPONSIBLE FOR ENSURING COMPLIANCE OF THE CONTROLS DURING THE CONSTRUCTION PERIOD. SHOULD THE PROJECT MANAGER NEED TO BE ABSENT FROM THE SITE FOR AN EXTENDED PERIOD (IN EXCESS OF ONE WEEK), THE ENVIRONMENTAL INSPECTOR WITH THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT SHOULD BE INFORMED OF THE NAME OF A DESIGNATED REPLACEMENT.
2. THE MAXIMUM LENGTH OF TIME BETWEEN CLEARING AND FINAL REVEGETATION OF A PROJECT SHALL NOT EXCEED 18 MONTHS, UNLESS EXTENDED BY THE DIRECTOR OF THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT (THIS DOES NOT AFFECT THE EXPIRATION OF THE SITE PLAN OR BUILDING PERMIT. THIS REQUIREMENT APPLIES TO SITES THAT HAVE SUSPENDED WORK AND ARE EXPERIENCING EROSION CONTROL PROBLEMS DUE TO DISTURBED SOIL CONDITIONS.) DISTURBED AREAS MUST BE MAINTAINED TO PREVENT EROSION AND SEDIMENT LOADING OF ANY WATERWAYS OR DRAINAGE FACILITIES.
3. IT IS A VIOLATION OF THE CODE AND THIS DEVELOPMENT PERMIT TO ALLOW SEDIMENT FROM A CONSTRUCTION SITE TO ENTER A CLASSIFIED WATERWAY DUE TO A FAILURE TO MAINTAIN THE REQUIRED EROSION AND SEDIMENTATION CONTROLS OR TO FOLLOW THE APPROVED CONSTRUCTION SEQUENCE.

APPENDIX P-1: EROSION CONTROL NOTES CONTINUED:

PERMANENT VEGETATIVE STABILIZATION:
1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE-HALF (½) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH TABLE 2 BELOW. ALTERNATIVELY, THE COOL SEASON COVER CROP CAN BE MIXED WITH BERMUDAGRASS OR NATIVE SEED AND INSTALLED TOGETHER, UNDERSTANDING THAT GERMINATION OF WARM-SEASON SEED TYPICALLY REQUIRES SOIL TEMPERATURES OF 60 TO 70 DEGREES.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE WITH A PURITY OF 95% AND A MINIMUM PURE LIVE SEED (PLS) OF 0.83. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL. PERMANENT VEGETATIVE STABILIZATION CAN ALSO BE ACCOMPLISHED WITH A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.
   A. FERTILIZER USE SHALL FOLLOW THE RECOMMENDATION OF A SOIL TEST. SEE ITEM 606S, FERTILIZER. APPLICATIONS OF FERTILIZER (AND PESTICIDE) ON CITY-OWNED AND MANAGED PROPERTY REQUIRES THE YEARLY SUBMITTAL OF A PESTICIDE AND FERTILIZER APPLICATION RECORD, ALONG WITH A CURRENT COPY OF THE APPLICATOR'S LICENSE. FOR CURRENT COPY OF THE RECORD TEMPLATE CONTACT THE CITY OF AUSTIN'S IPM COORDINATOR.
   B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.
   C. WATER THE SEEDED AREAS IMMEDIATELY AFTER INSTALLATION TO ACHIEVE GERMINATION AND A HEALTHY STAND OF PLANTS THAT CAN ULTIMATELY SURVIVE WITHOUT SUPPLEMENTAL WATER. APPLY THE WATER UNIFORMLY TO THE PLANTED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS OR SOIL. MAINTAIN THE SEEDBED IN A MOIST CONDITION FAVORABLE FOR PLANT GROWTH. ALL WATERING SHALL COMPLY WITH CITY CODE CHAPTER 6-4 (WATER CONSERVATION), AT RATES AND FREQUENCIES DETERMINED BY A LICENSED IRRIGATOR OR OTHER QUALIFIED PROFESSIONAL, AND AS ALLOWED BY THE AUSTIN WATER UTILITY AND CURRENT WATER RESTRICTIONS AND WATER CONSERVATION INITIATIVES.
   D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95 PERCENT FOR THE NON-NATIVE MIX, AND 95 PERCENT COVERAGE FOR THE NATIVE MIX SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR STABILITY MUST BE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.
   E. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, ITEMS 604S AND 609S.

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATION	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS 10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2,500 TO 4,000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)
FIBER REINFORCED MATRIX (FRM)	65% ORGANIC DEFIBRATED FIBERS 25% REINFORCING FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3,000 TO 4,500 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)

APPENDIX P-4: – STANDARD SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE USED FOR ALL DEVELOPMENT. THE APPLICANT IS ENCOURAGED TO PROVIDE ANY ADDITIONAL DETAILS APPROPRIATE FOR THE PARTICULAR DEVELOPMENT.

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED SITE PLAN OR SUBDIVISION CONSTRUCTION PLAN AND IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION, INITIATE TREE MITIGATION MEASURES AND CONDUCT "PRE – CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE).
2. THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT THE DEVELOPMENT SERVICES DEPARTMENT, ENVIRONMENTAL INSPECTION, AT 512-974-2278, 72 HOURS PRIOR TO THE SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.
3. THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.
4. ROUGH GRADE THE POND(S) AT 100% PROPOSED CAPACITY. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A SUMP PIT OUTLET AND AN EMERGENCY SPILLWAY MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL AND/OR THE ENVIRONMENTAL CRITERIA MANUAL, AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL INSTALLATION OF THE PERMANENT WATER QUALITY POND(S).
5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE.
6. BEGIN SITE CLEARING/CONSTRUCTION (OR DEMOLITION) ACTIVITIES.
7. IN THE BARTON SPRINGS ZONE, THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR WILL SCHEDULE A MID-CONSTRUCTION CONFERENCE TO COORDINATE CHANGES IN THE CONSTRUCTION SCHEDULE AND EVALUATE EFFECTIVENESS OF THE EROSION CONTROL PLAN AFTER POSSIBLE CONSTRUCTION ALTERATIONS TO THE SITE. PARTICIPANTS SHALL INCLUDE THE CITY INSPECTOR, PROJECT ENGINEER, GENERAL CONTRACTOR AND ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR. THE ANTICIPATED COMPLETION DATE AND FINAL CONSTRUCTION SEQUENCE AND INSPECTION SCHEDULE WILL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR.
8. PERMANENT WATER QUALITY PONDS OR CONTROLS WILL BE CLEANED OUT AND FILTER MEDIA WILL BE INSTALLED PRIOR TO/CONCURRENTLY WITH REVEGETATION OF SITE.
9. COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING.
10. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE BEARING THE ENGINEER'S SEAL, SIGNATURE, AND DATE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
11. UPON COMPLETION OF LANDSCAPE INSTALLATION OF A PROJECT SITE, THE LANDSCAPE ARCHITECT SHALL SUBMIT A LETTER OF CONCURRENCE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT THE REQUIRED LANDSCAPING IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
12. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. CONDUCT ANY MAINTENANCE AND REHABILITATION OF THE WATER QUALITY PONDS OR CONTROLS.

SOURCE: RULE NO. R161-17.03 , 3-2-2017.

NOTE: CONTRACTOR SHALL IMMEDIATELY CEASE WORK IF ASBESTOS AND/OR TRANSITE PIPE IS ENCOUNTERED AND NOTIFY THE OWNER FOR INSTRUCTION PRIOR TO PROCEEDING.

NOTE: ACCESS MUST BE PROVIDED FOR EXISTING AIRFIELD OPERATIONS AT ALL TIMES. CONTRACTOR SHALL MANAGE AND PHASE WORK TO ALLOW EXISTING OPERATION TO REMAIN VIABLE.

NOTE: CONTACT AUSTIN ENERGY BEFORE COMMENCING WORK NEAR THE INTERSECTION OF FREIGHT AND CARGO.

NOTE: GENERAL CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL CONFINED SPACES AND FOLLOWING OSHA REQUIREMENTS BEFORE COMMENCING ANY CONFINED SPACE RELATED WORK.

STATE OF TEXAS ★ ALAN D. RHAMES 72089 REGISTERED PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY: –
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
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TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

CIVIL NOTES I

PROJECT NO. 0590-279471
FILE NAME: G002NFNT.DWG
SHEET NO. G-2
SHEET 3 OF 21

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ALAN D. RHAMES
STATE OF TEXAS
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY: –
DATE: SEPTEMBER 2023

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CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

CIVIL NOTES II

PROJECT NO. 0590-279471
FILE NAME: G003NFNT.DWG

SHEET NO.
G-3
SHEET 4 OF 21

0 40' 80'
SCALE IN FEET
1" = 40'

NOTES:

1. ALL COORDINATES AND BEARINGS REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983 (1986) (GRID FEET).
2. ELEVATIONS AND CONTOURS ARE BASED ON (NAVD 88) BENCHMARKS AS FOLLOWS:

   B–17–4001, CITY OF AUSTIN CONTROL POINT A BRASS DISC IN CONCRETE. W. SLAUGHTER LANE NEAR BARSTOW AVE.

   B–17–4002, CITY OF AUSTIN CONTROL POINT A BRASS DISC IN CONCRETE. W. SLAUGHTER LANE NEAR BARSTOW AVE.

CONTROL POINTS				
Point #	Northing	Easting	Elevation	Description
4001	10049065.39	3067647.81	936.33	B–17–4001
4002	10047886.02	3068699.48	897.25	B–17–4002

3. A GEOTECHNICAL INVESTIGATION WAS PERFORMED IN FEBRUARY 2023. SEE SPECIFICATION SECTION 00220.

LEGEND:

- B-1 — BORE HOLE
- P-1 — PERMEABILITY TEST HOLE
- XXX — EXISTING TREE

Alan D. Rhames
STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
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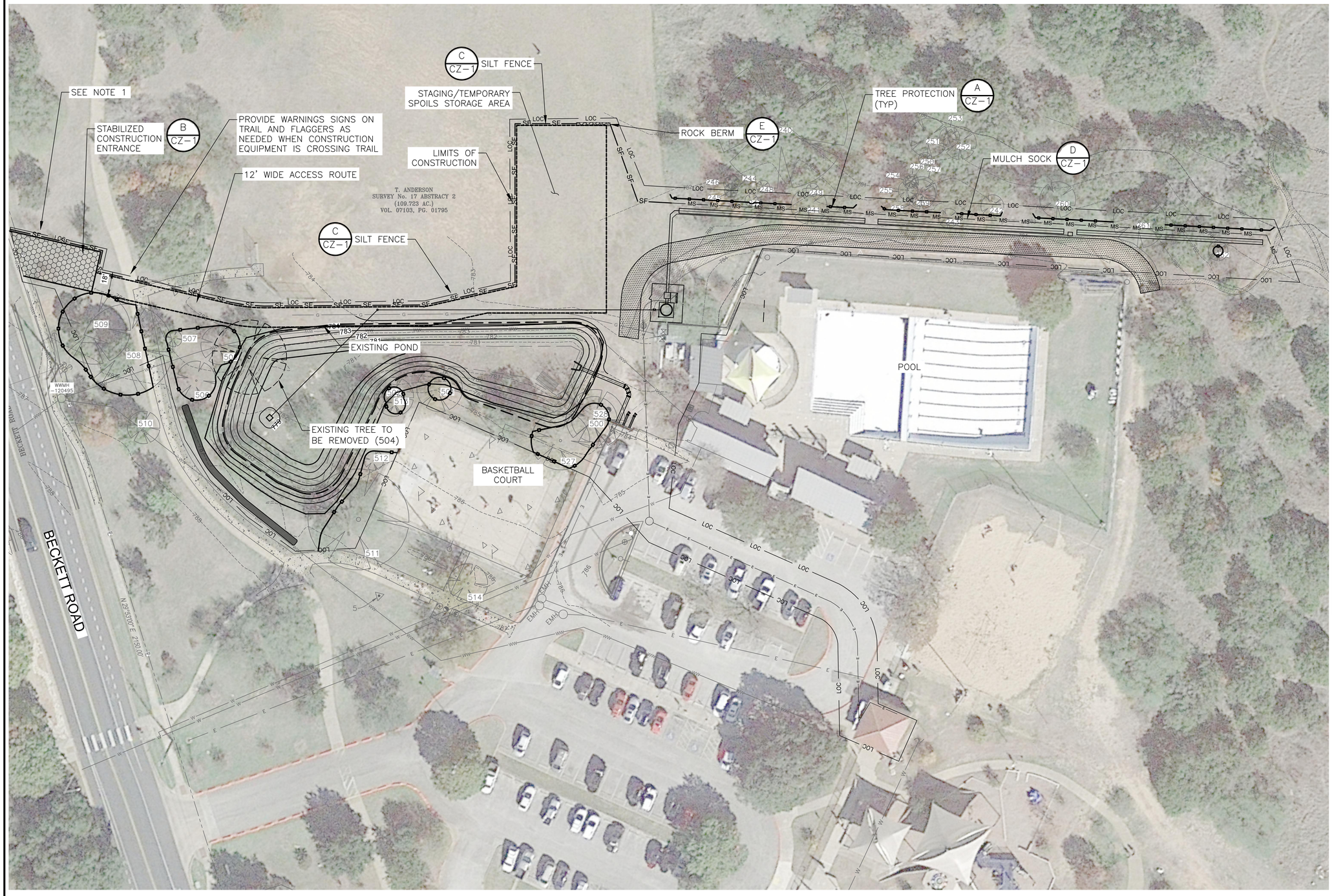
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

EXISTING SITE CONDITIONS, BORING LOCATIONS AND CONTROL POINTS

PROJECT NO. 0590–279471
FILE NAME: C001STPL

SHEET NO.
C-1
SHEET 5 OF 21



0 10' 20' 30' 60'
SCALE IN FEET
1" = 30'

TREE LIST

TREE NO.	CALIPER (DBH)	TYPE	STATUS
241	11	LIVE OAK	REMAIN*
242	7	SPANISH OAK	REMAIN
243	6	SPANISH OAK	REMAIN*
244	5	SPANISH OAK	REMAIN
245	4	SPANISH OAK	REMAIN
246	4	SPANISH OAK	REMAIN
247	4	SPANISH OAK	REMAIN
248	4	SPANISH OAK	REMAIN
249	4	CEDAR ELM	REMAIN
250	4	SPANISH OAK	REMAIN
251	12	LIVE OAK	REMAIN
252	10	LIVE OAK	REMAIN
254	4	SPANISH OAK	REMAIN
255	6	SPANISH OAK	REMAIN
256	4	LIVE OAK	REMAIN
257	9	LIVE OAK	REMAIN
258	9	LIVE OAK	REMAIN
259	4	SPANISH OAK	REMAIN
260	11	HACKBERRY	REMAIN
261	16	HACKBERRY	REMAIN*
262	6	SPANISH OAK	REMAIN
500	14	OAK	REMAIN
501	14	OAK	REMAIN
502	12	OAK	REMAIN
504	MS-23	HUISACHE	REMOVE
505	12	ELM	REMAIN
506	12	ELM	REMAIN
507	5	TWIN MAPLE	REMAIN
508	MS-28	CEDAR	REMAIN
509	MS-22	CEDAR	REMAIN
510	10	ELM	REMAIN
511	MS-31	MESQUITE	REMAIN
512	6	MAPLE	REMAIN
513	6	OAK	REMAIN
514	12	OAK	REMAIN
527	18	OAK	REMAIN
528	18	OAK	REMAIN

*TREE TO REMAIN DOES NOT MEET CODE CRITERIA

LEGEND:

- SF — SILT FENCE
- EXISTING TREE TO REMAIN
- EXISTING TREE PROTECTION
- EXISTING TREE TO BE REMOVED

NOTES:

1. INSTALL ORANGE SAFETY FENCE ALONG BOTH SIDES OF VEHICLE ACCESS PATH FROM CURB LINE TO BACKSTOP. MINIMUM CLEAR WIDTH SHALL BE 18 FEET.
2. CONTRACTOR TO PROVIDE PEDESTRIAN DETOUR ROUTE DURING CONSTRUCTION.

Alan D. Rhames
STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-25-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
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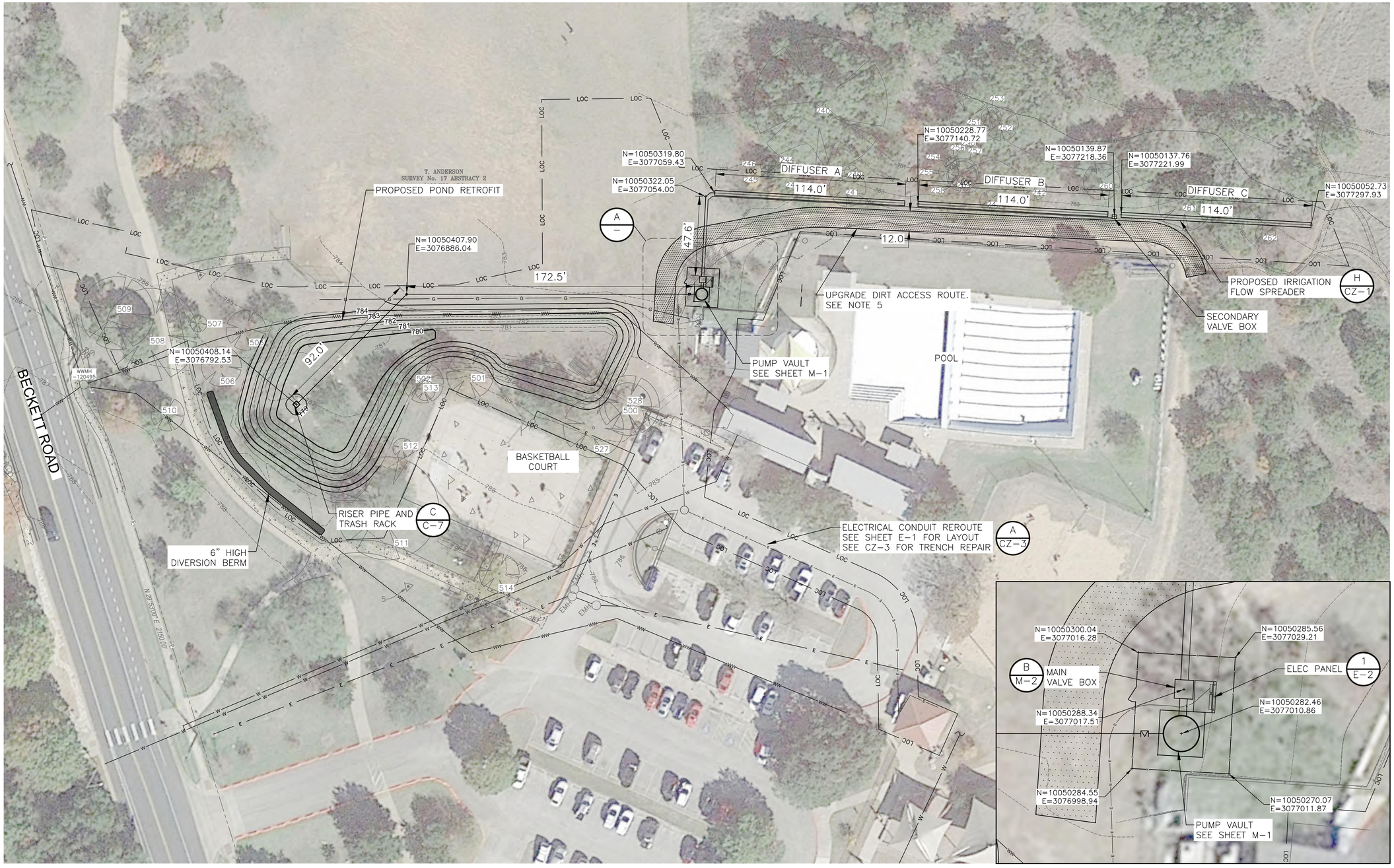
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

TEMPORARY EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN

PROJECT NO. 0590-279471
FILE NAME: C002STPL

SHEET NO.
C-2
SHEET 6 OF 21



DETAIL A
1" = 10'

0 10' 20' 30' 60'
SCALE IN FEET
1" = 30'

NOTES:

1. THE EXISTING POND IS SUBJECT TO INUNDATION DURING AND AFTER RAINFALL EVENTS. THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT WORK AND EQUIPMENT FROM FLOODING.
2. NO EQUIPMENT AND/OR MATERIALS SHALL BE STOCKPILED IN THE POND.
3. CONTRACTOR SHALL CONDUCT ALL OPERATIONS AND SHALL SEQUENCE CONSTRUCTION IN A MANNER THAT DOES NOT CAUSE BACKWATER OF RAINFALL RUNOFF INTO THE PARKING LOT, SIDEWALKS AND/OR BUILDINGS.
4. CONTRACTOR SHALL BE ALLOWED TO BLOCK FLOW FROM ENTERING THE POND WHILE PERFORMING GRADING, LINER INSTALLATION AND FINAL GRADING. RUNOFF THAT OCCURS DURING THESE ACTIVITIES IS ALLOWED TO PASS OVER THE SPLITTER WEIR IN THE EXISTING SPLITTER INLET IN THE PARKING LOT.
5. CONTRACTOR TO FILL ANY LOW POINTS IN ACCESS ROUTE WITH CRUSHED LIMESTONE BASE MATERIAL AND GRADE IN DIRECTION OF EXISTING FLOW.
6. ALL DAMAGED PAVEMENT AND SIDEWALK SHALL BE REPAIRED IN ACCORDANCE TO DETAIL A AND DETAIL B ON SHEET CZ-3.

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

SITE PLAN

PROJECT NO. 0590-279471
FILE NAME: C003STPL

SHEET NO.
C-3
SHEET 7 OF 21

0 50' 100'
SCALE IN FEET
1" = 50'

NOTE:

1. NO PROPOSED IMPERVIOUS COVER IS INTENDED TO BE ADDED UNDER THIS SCOPE OF WORK.
2. SHEET ROTATED FOR CLARITY.
3. SEE C-5 FOR DRAINAGE CALCULATIONS.

LEGEND:

TIME OF CONCENTRATION PATH

DIRECTION OF FLOW

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. RHAMES
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
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CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

DRAINAGE AREA MAP

PROJECT NO. 0590-279471
FILE NAME: C004DRPL

SHEET NO.
C-4
SHEET 8 OF 21

Catchment:	Total Area (sf)	Impervious Cover (sf)	Lawn (sf)	C2	C10	C25	C100
DA-1A	165,572	69,706	95,866	0.46	0.52	0.57	0.65
DA-1B	150,021	81,101	68,919	0.52	0.59	0.63	0.71
DA-2	40,498	12,591	27,907	0.41	0.46	0.51	0.58
DA-3	9,339	8,819	520	0.72	0.80	0.85	0.94
COMBINED	**365,429**	**172,217**	**193,213**	**0.49**	**0.55**	**0.59**	**0.67**

Catchment:	Total Area (ac)	Tc (min)	i2 (in/hr)	i10 (in/hr)	i25 (in/hr)	i100 (in/hr)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
DA-1A	3.80	10.99	4.9	7.4	9.1	11.8	8.5	14.7	19.5	29.0
DA-1B	3.44	9.53	5.1	7.8	9.6	12.5	9.2	15.8	20.8	30.6
DA-2	0.93	6.51	5.9	8.9	10.9	14.3	2.2	3.8	5.2	7.7
DA-3	0.21	5.00	6.3	9.6	11.8	15.4	1.0	1.6	2.1	3.1
COMBINED	**8.39**	**10.99**	**4.9**	**7.4**	**9.1**	**11.8**	**19.8**	**34.0**	**45.1**	**66.8**

Runoff Coefficient Based on COA DCM

Runoff Coefficient, C	2 YR	10 YR	25 YR	100 YR
Lawn	0.25	0.30	0.34	0.41
Impervious Cover	0.75	0.83	0.88	0.97

Intensity-Duration-Frequency based on COA DCM (Zone 1)

Fitting Parameter	2 YR	10 YR	25 YR	100 YR
a	45.24	61.25	69.96	77.31
b	9.339	8.352	7.941	6.832
c	0.7399	0.7147	0.6954	0.6524

Time of Concentration

	Overland Sheet Flow					Shallow Concetrated Flow				Open Channel Flow										
Catchment	Length (ft)	Mannings n	slope (ft/ft)	P2 (in)*	Ts (min)	Length (ft)	slope (ft/ft)	Paved/ Unpaved	Tsc (min)	Length (ft)	Manning n	slope (ft/ft)	XS Type	Base b (ft)	Height y (ft)	Side Slope (z:1)	XS Area	XS Pw	Hydraulic Radius (Rh)	Tc (min)	Total Tc
DA-1A	100.00	0.15	0.03	4.14	7.32	300.00	0.03	Unpaved	1.84	243.00	0.060	0.02	triangular	0.00	1.00	6.00	6.00	12.17	0.49	1.82	10.99
DA-1B	100.00	0.13	0.03	4.14	7.03	100.00	0.02	Unpaved	0.84	405.00	0.015	0.01	triangular	0.00	0.50	2.00	0.50	2.24	0.22	1.66	9.53
DA-2	76.00	0.13	0.04	4.14	4.70	249.00	0.02	Unpaved	1.82												6.51
DA-3	25.00	0.02	0.01	4.14	0.65	182.00	0.00	Paved	3.68												4.33

*2-year, 24-hour precipitation depth from COA DCM (Zone 1) Table 2-1B

APPENDIX R-5 RETENTION/IRRIGATION POND CALCULATIONS

DRAINAGE DATA

Drainage Area to Control (DA)	4.59	Ac
Drainage Area Impervious Cover	51.29	%
Capture Depth (CD)*	1.40	In

Capture Depth based on RCE and SLAT Tool for Non-Degredation Requirements in BSZ

	Required	Provided	
WATER QUALITY CONTROL CALCULATIONS			
The Water Quality Control is to be Retention Irrigation			
25-year Peak Flow Rate to Control (Q25)	45.1 cfs		
100-year Peak Flow Rate to Control (Q100)	66.8 cfs		(15.5 cfs inlet capacity)
Water Quality Volume (WQV = CD*DA*3630)	23,326 cf	28,048 cf	
Retention Pond Volume	23,326 cf	28,048 cf	
Water Quality Elevation	783.26 ft msl		
Elevation of Splitter/Overflow Weir		783.26 ft msl	
Length of Splitter Weir		15 ft	
Required Head to Pass Q100	maximum 1.0 ft	1.3 ft	
Pond Freeboard Provided to Pass Q100	minimum 0.25 ft	0.44 ft	

IRRIGATION AREA CALCULATIONS

Soil Permeability	minimum 0.03 in/hr	0.59 in/hr	(1)
Pond Drawdown Time	maximum 72 hrs	60.00 hrs	
Irrigation Rate	maximum 0.20 in/hr	0.20 in/hr	(2)
Irrigation Area		0.64 ac	

Irrigation Area assumes 342' long diffuser discharging to 82' wide field

(1) Measured Rate
(2) 0.2 in/hr assumed for design

STAGE-AREA STORAGE TABLE

Retention Pond

Stage (ft msl)	Area (sf)	Storage (cf)
779.00	114	-
780.00	3,507	1,811
781.00	7,058	7,093
782.00	8,978	15,111
783.00	11,019	25,109
783.26	11,590	28,048
784.00	13,216	37,227

10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

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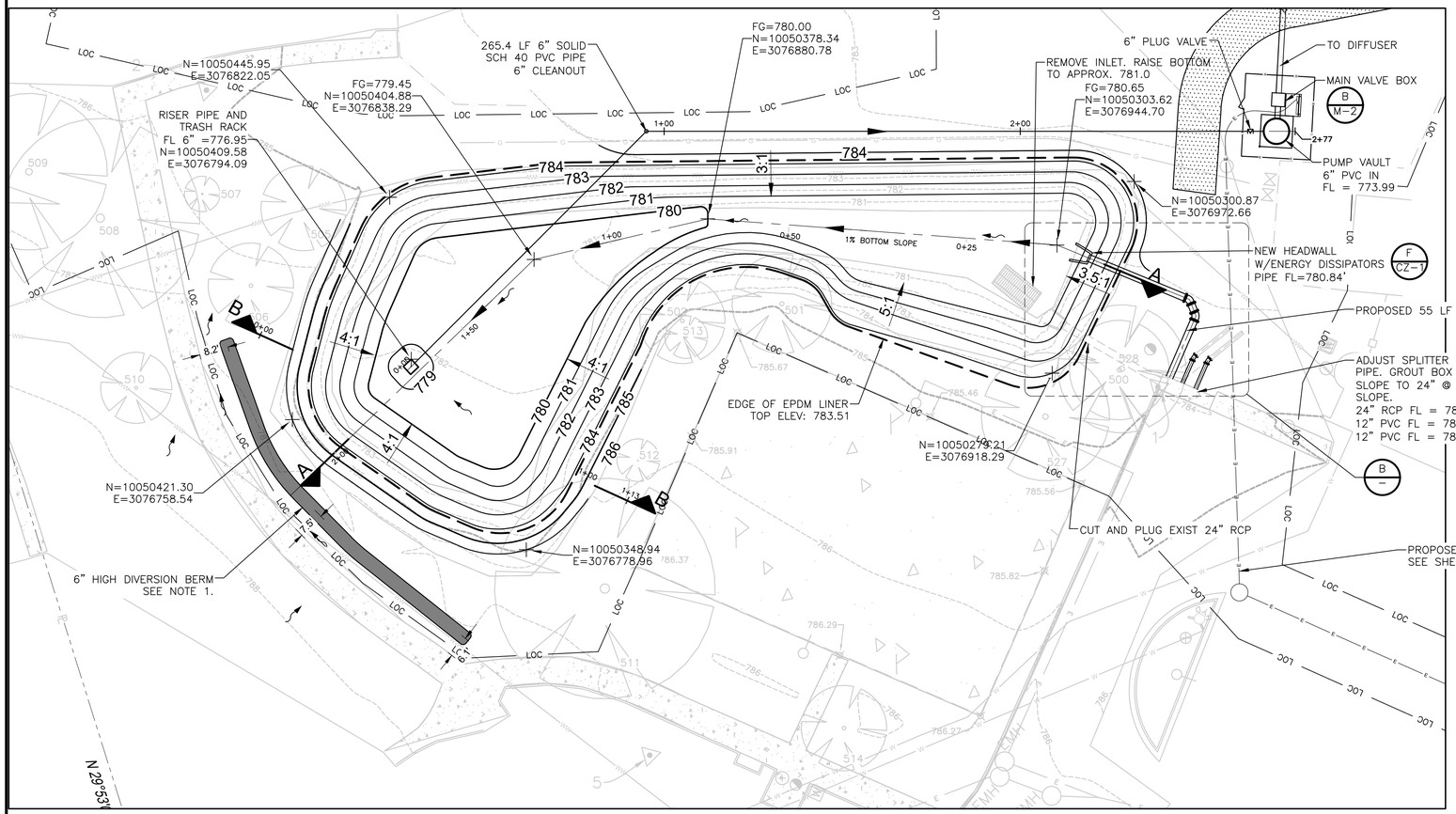
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

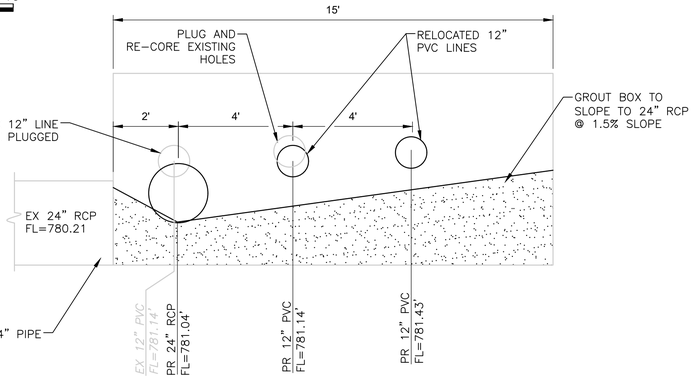
DRAINAGE AREA AND WATER QUALITY POND CALCULATIONS

PROJECT NO. 0590-279471
FILE NAME: C005DRPL

SHEET NO.
C-5
SHEET 9 OF 21

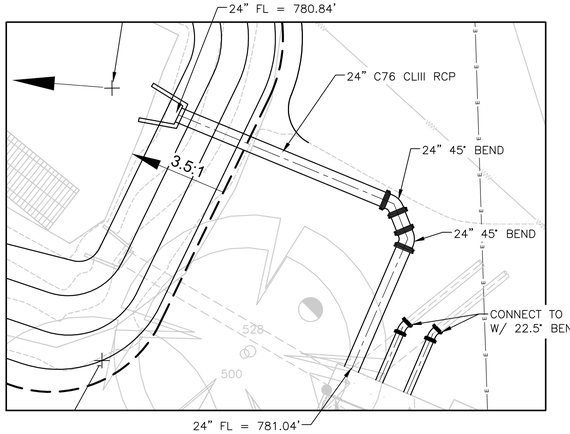


0 20' 40'
SCALE IN FEET
1" = 20'



GROUTED SPLITTER INLET PROFILE VIEW

DETAIL A
NTS

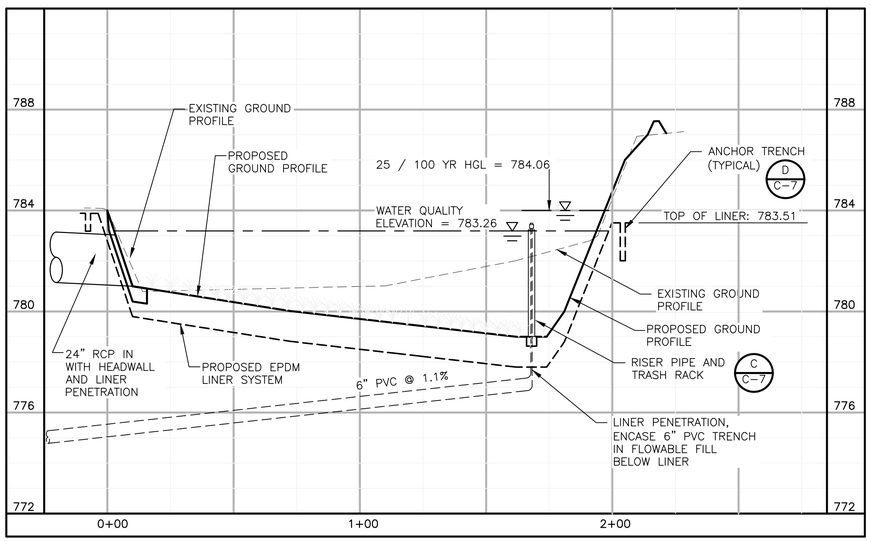


DETAIL PLAN B VIEW

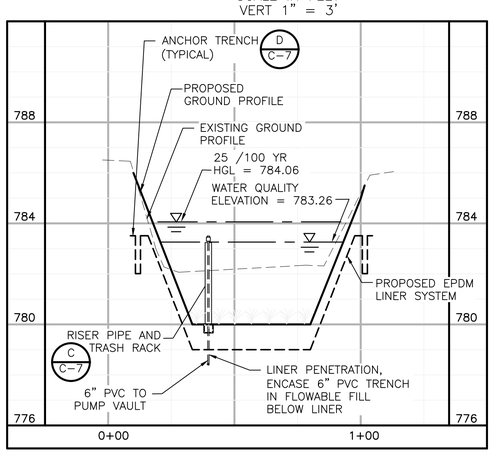
DETAIL B
NTS

0 10' 20' 30' 60'
SCALE IN FEET
HORIZ 1" = 30'

0 3 6
SCALE IN FEET
VERT 1" = 3'



CROSS SECTION A-A



CROSS SECTION B-B

NOTES:

1. 6" TALL DIVERSION BERM TO BE MINIMUM 18" TOP WIDTH WITH 3:1 SIDE SLOPES.
2. ALL RCP PIPE MUST BE GASKETED AND WATERTIGHT.

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

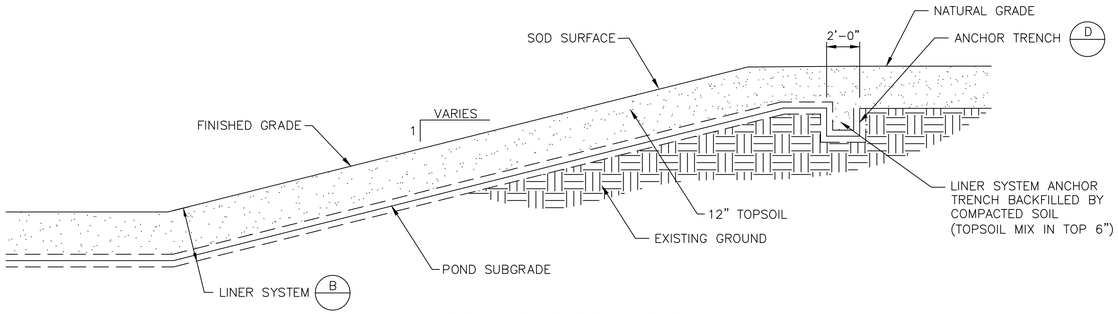
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

WATER QUALITY POND GRADING PLAN AND SECTIONS

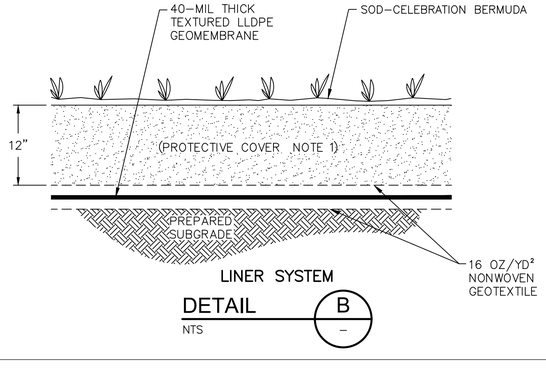
PROJECT NO. 0590-279471
FILE NAME: C006STPL

SHEET NO.
C-6
SHEET 10 OF 21



TYPICAL POND EMBANKMENT

DETAIL A
NTS

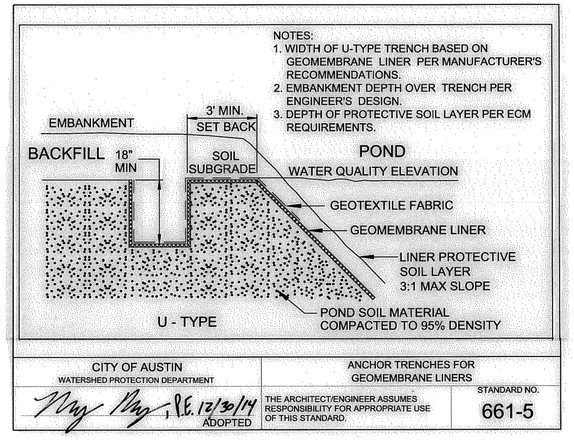


LINER SYSTEM

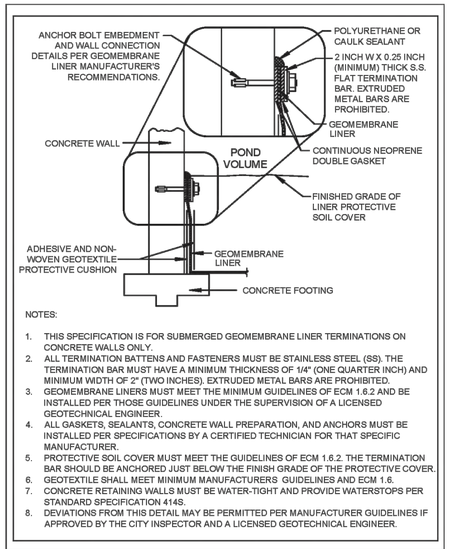
DETAIL B
NTS

NOTE:

1. EXISTING LINER MATERIAL MAY BE USED AS PROTECTIVE COVER.



DETAIL D
NTS

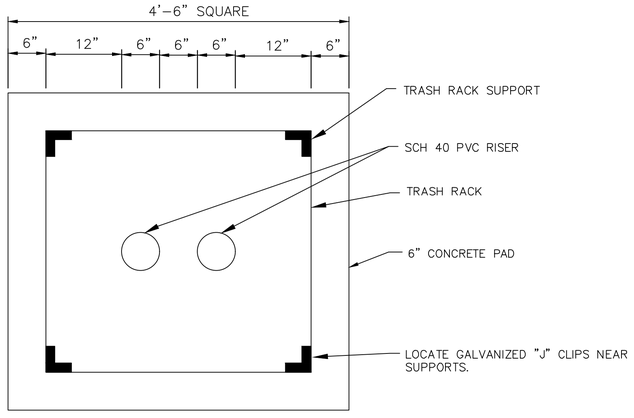


NOTES:

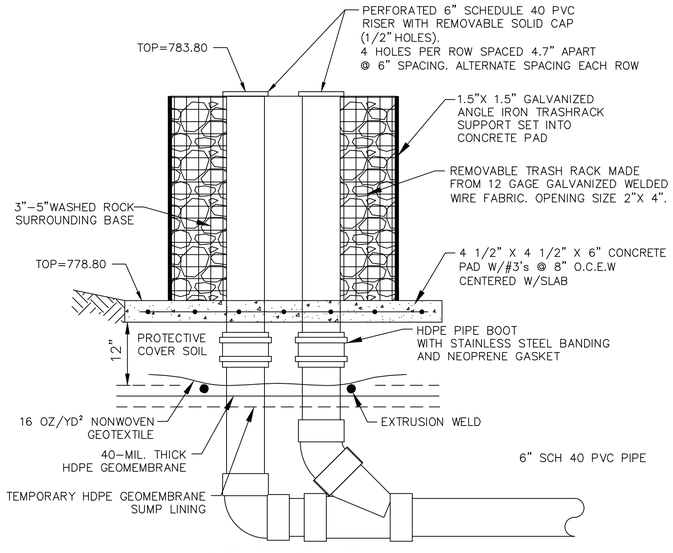
1. THIS SPECIFICATION IS FOR SUBMERGED GEOMEMBRANE LINER TERMINATIONS ON CONCRETE WALLS ONLY.
2. ALL TERMINATION BATTENS AND FASTENERS MUST BE STAINLESS STEEL (SS). THE TERMINATION BAR MUST HAVE A MINIMUM THICKNESS OF 1/4" (ONE QUARTER INCH) AND MINIMUM WIDTH OF 2" (TWO INCHES). EXTRUDED METAL BARS ARE PROHIBITED.
3. GEOMEMBRANE LINERS MUST MEET THE MINIMUM GUIDELINES OF ECM 1.6.2 AND BE INSTALLED PER THOSE GUIDELINES UNDER THE SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER.
4. ALL GASKETS, SEALANTS, CONCRETE WALL PREPARATION, AND ANCHORS MUST BE INSTALLED PER SPECIFICATIONS BY A CERTIFIED TECHNICIAN FOR THAT SPECIFIC MANUFACTURER.
5. PROTECTIVE SOIL COVER MUST MEET THE GUIDELINES OF ECM 1.6.2. THE TERMINATION BAR SHOULD BE ANCHORED JUST BELOW THE FINISH GRADE OF THE PROTECTIVE COVER.
6. GEOTEXTILE SHALL MEET MINIMUM MANUFACTURERS GUIDELINES AND ECM 1.6.
7. CONCRETE RETAINING WALLS MUST BE WATER-TIGHT AND PROVIDE WATERSTOPS PER STANDARD SPECIFICATION 414S.
8. DEVIATIONS FROM THIS DETAIL MAY BE PERMITTED PER MANUFACTURER GUIDELINES IF APPROVED BY THE CITY INSPECTOR AND A LICENSED GEOTECHNICAL ENGINEER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	CONCRETE WALL GEOMEMBRANE LINER ATTACHMENT
3/23/2023 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 661-4A

DETAIL E
NTS



PLAN VIEW OF RISER



SIDE VIEW OF RISER

RISER WITH PIPE BOOT

DETAIL C
NTS

Alan D. Rhames
STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

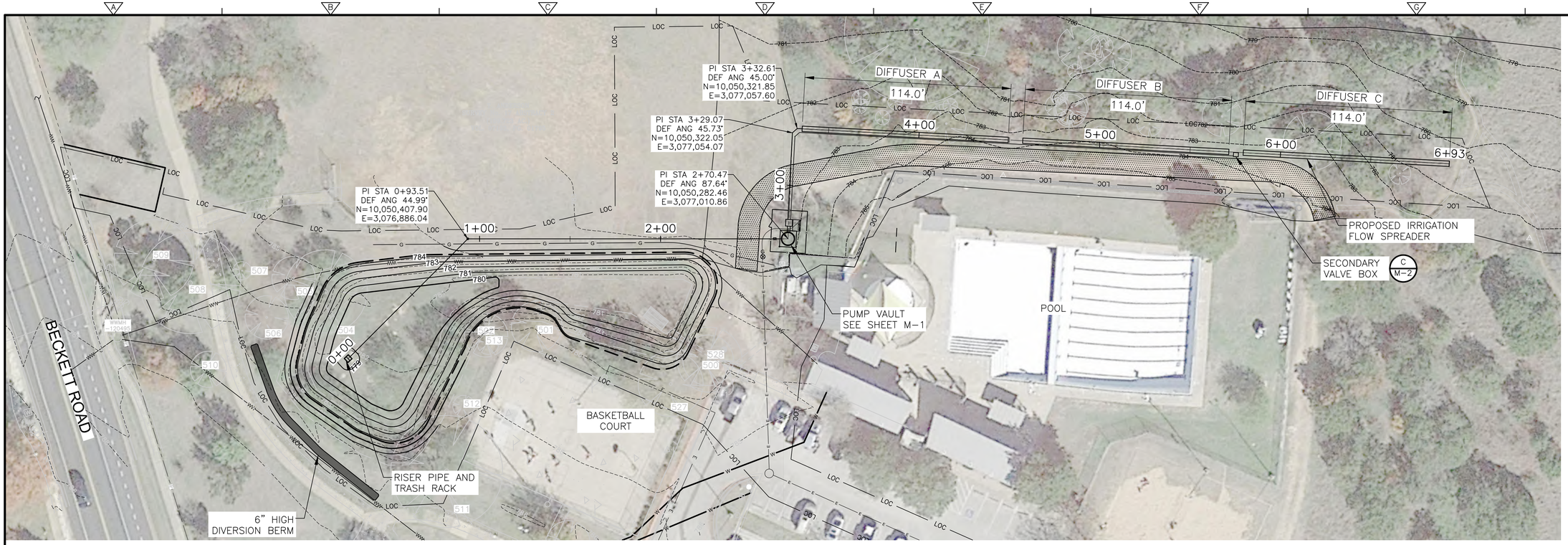
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

WATER QUALITY POND LINER DETAILS

PROJECT NO. 0590-279471
FILE NAME: C007STDT

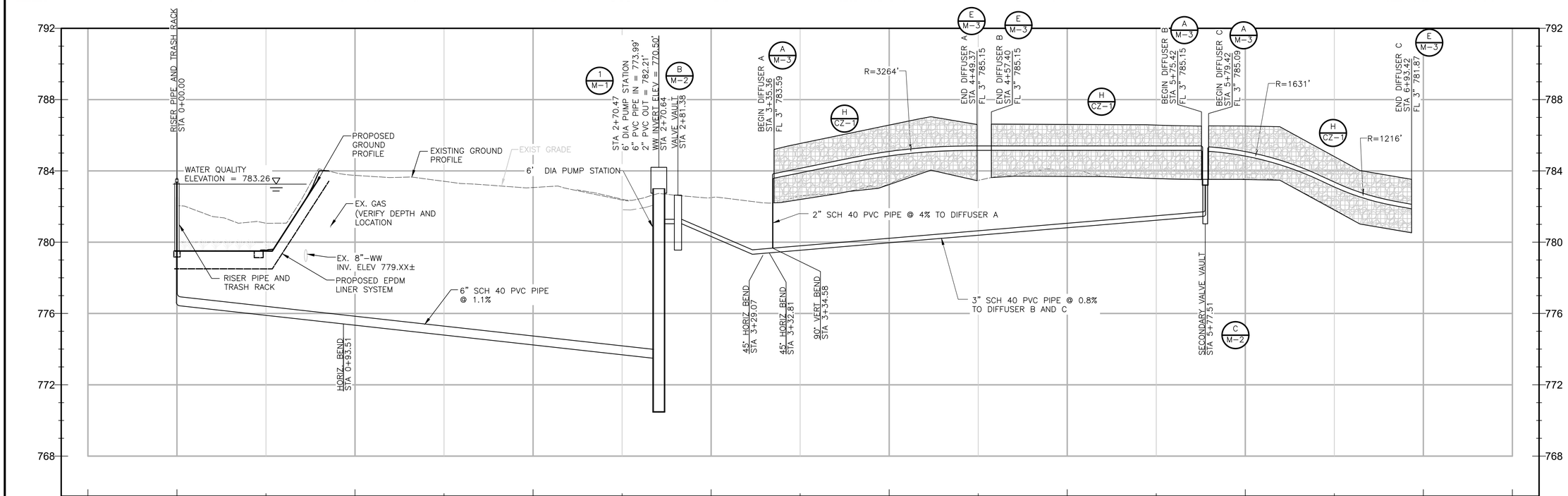
SHEET NO.
C-7
SHEET 11 OF 21



0 10' 20' 30' 60'
SCALE IN FEET
HORIZ: 1" = 30'
VERT: 1" = 3'

NOTES:

1. SEE SHEET M-3 FOR DIFFUSER CONNECTION DETAILS.



ALAN D. RHAMES
STATE OF TEXAS
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

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Austin, TX 78731
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TBPE Firm Registration No. F-3043

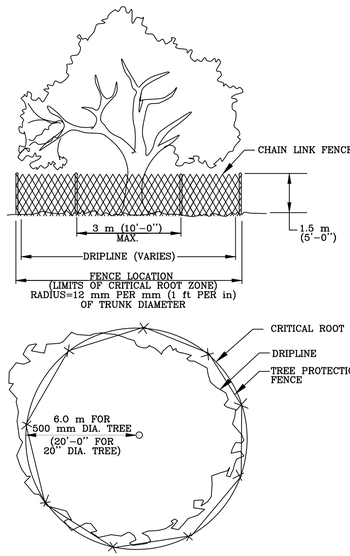
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

DIFFUSER PLAN AND PROFILE

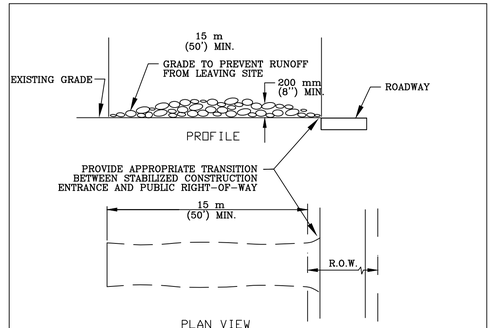
PROJECT NO. 0590-279471
FILE NAME: CP01STPL

SHEET NO.
CP-1
SHEET 12 OF 21



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROPTECTION FENCE TYPE A – CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S–2

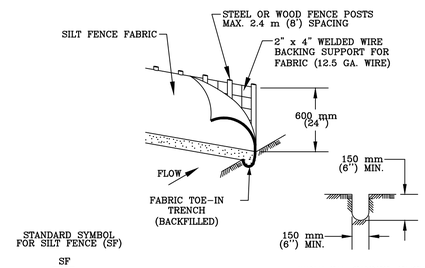
DETAIL A
NTS



NOTES:
1. STONE SIZE: 75–125 mm (3–5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S–1

DETAIL B
NTS



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

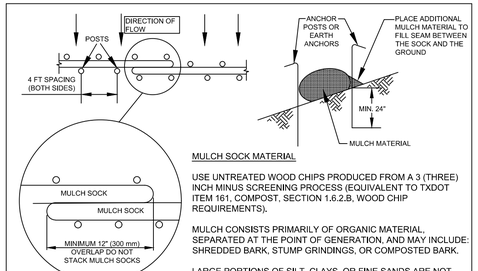
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S–1

DETAIL C
NTS



MULCH SOCK MATERIAL

USE UNTREATED WOOD CHIPS PRODUCED FROM A 3 (THREE) INCH MINUS SCREENING PROCESS (EQUIVALENT TO TXDOT ITEM 161, COMPOST, SECTION 1.6.2.B, WOOD CHIP REQUIREMENTS).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE, POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.

2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OFMULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).

3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.

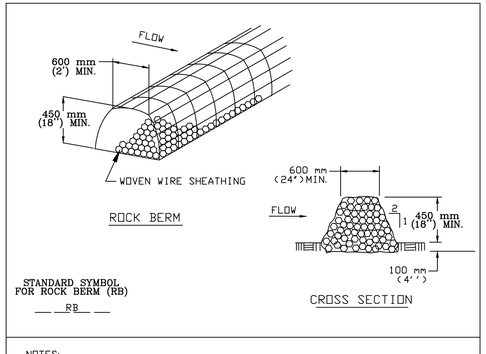
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.

5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.

6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	MULCH SOCK	
RECORD COPY SIGNED BY MORGAN BYARS 08/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 648S–1

DETAIL D
NTS

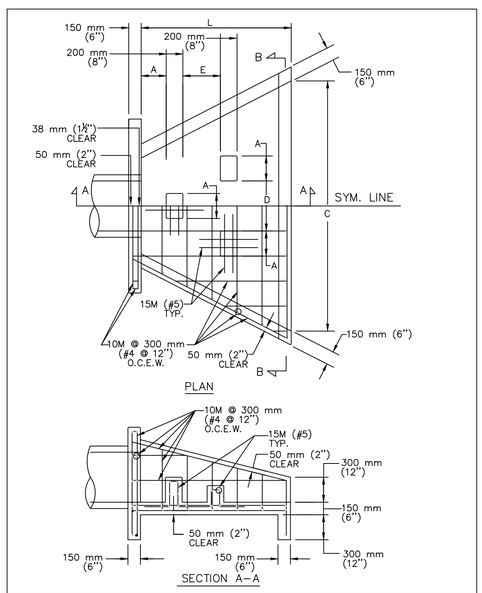


NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE–WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE–THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

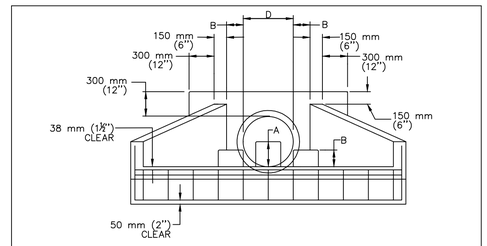
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
RECORD COPY SIGNED BY MORGAN BYARS 8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S–1

DETAIL E
NTS



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
RECORD COPY SIGNED BY BILL GARDNER 08/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S–13 1 OF 2

DETAIL F
NTS



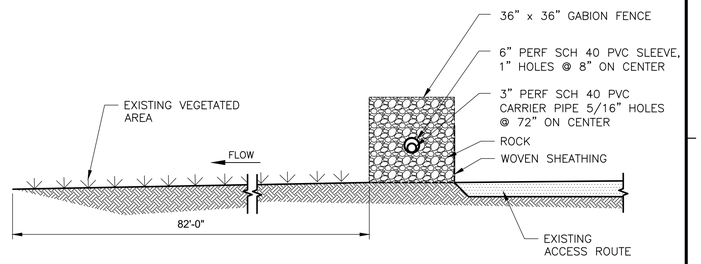
NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S, CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	3.43 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")

DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).
DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
RECORD COPY SIGNED BY BILL GARDNER 08/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S–13 2 OF 2

DETAIL G
NTS



GRAVITY DIFFUSER

DETAIL H
NTS

10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. RHAMES
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY:
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

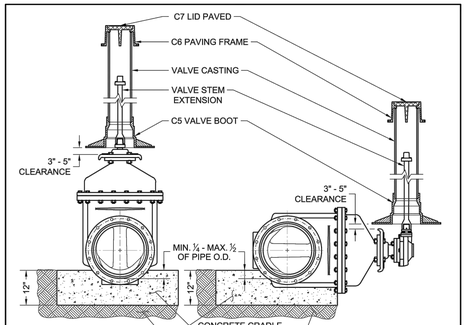
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

CIVIL DETAILS I

PROJECT NO. 0590–279471
FILE NAME: C001ZDET

SHEET NO.
CZ-1
SHEET 13 OF 21



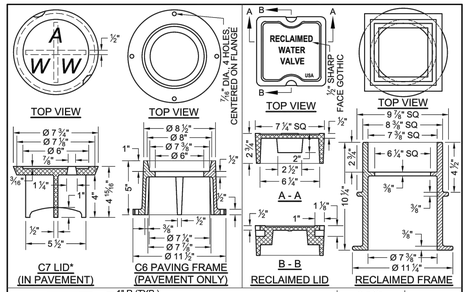
VERTICAL VALVE

HORIZONTAL VALVE
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:
1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT. [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE **"RECLAIMED WATER"** CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4

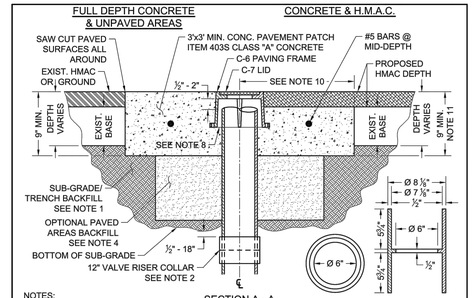


NOTES:
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:
C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1 ½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4



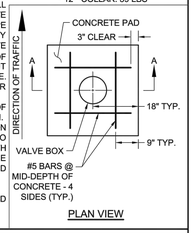
NOTES:
1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

SECTION A - A

TOP VIEW

COLLAR *

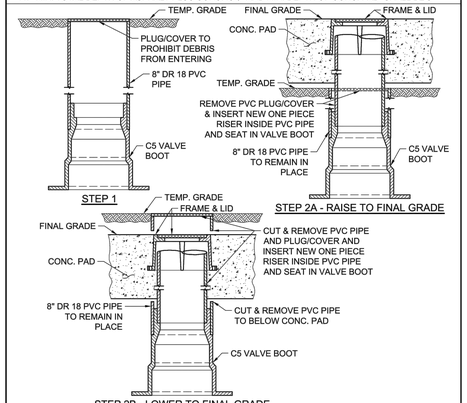
12" VALVE RISER COLLAR
* 12" COLLAR: 39 LBS



PLAN VIEW

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

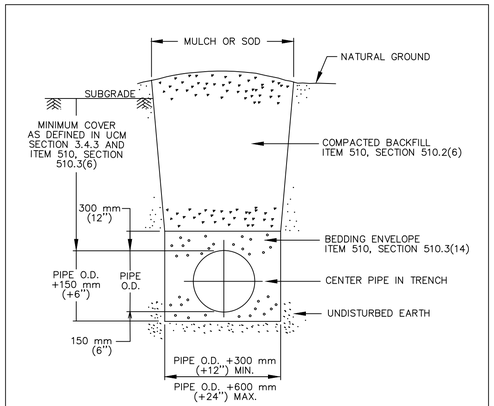
NOTES (CON'T):
8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4

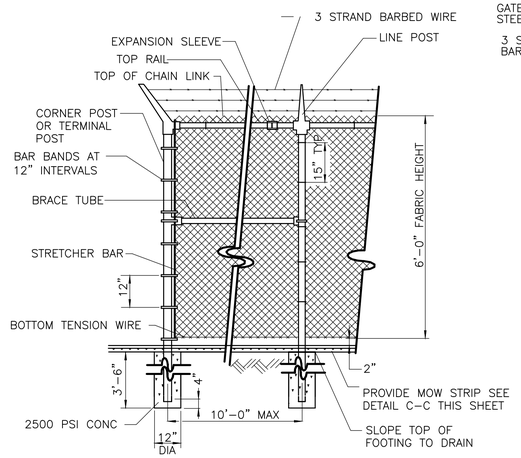
DETAIL A – NTS



REFERENCES:
1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

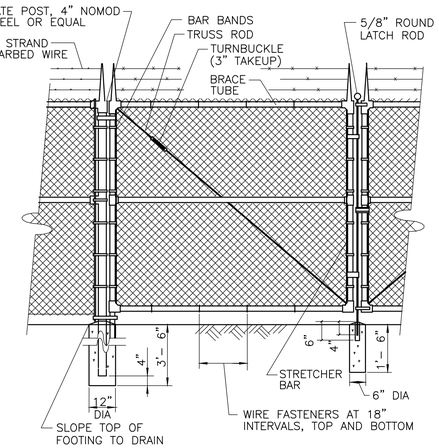
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5

DETAIL B – NTS



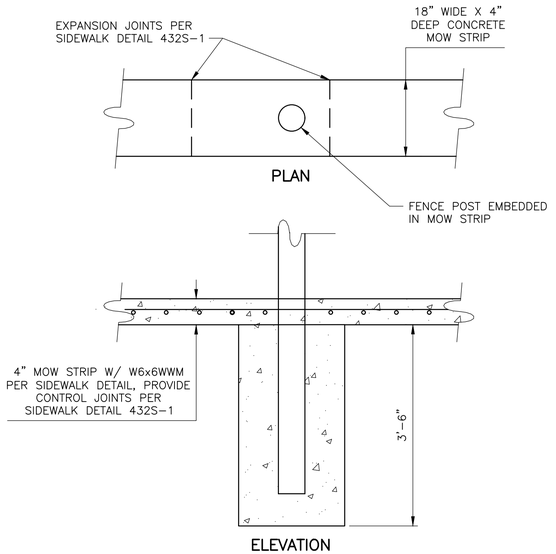
CHAIN LINK FENCE

DETAIL C – NTS



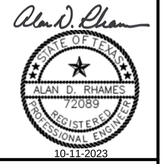
CHAIN LINK FENCE–DOUBLE GATE

DETAIL D – NTS



MOW STRIP

DETAIL C-C – NTS



10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. RHAMES
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

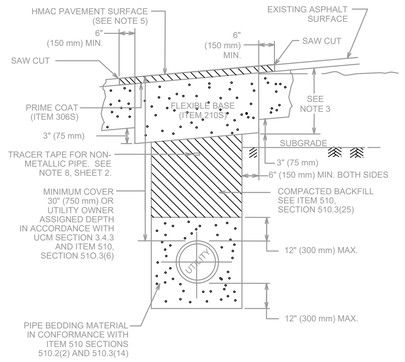
DICK NICHOLS PARK WATER QUALITY POND RETROFIT

CIVIL DETAILS II

PROJECT NO. 0590-279471
FILE NAME: C002ZDET

SHEET NO.
CZ-2
SHEET 14 OF 21

TRENCH REPAIR IN ASPHALTIC SURFACE OVER FLEXIBLE BASE (UCM SECTION 5.8.0)



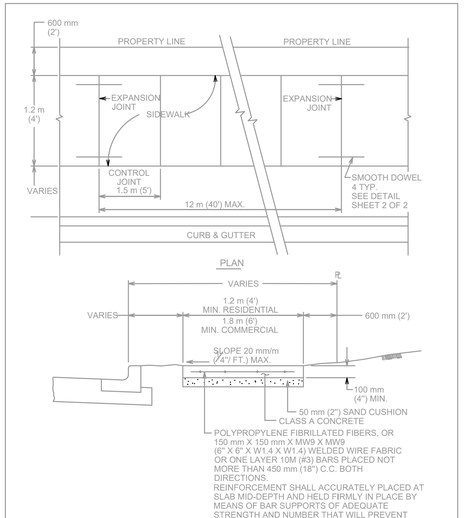
NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12" (300 mm) WIDER THAN UNDISTURBED SIDES OF THE TRENCH AND SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAC. TEMPORARY MIX SHALL BE PLACED OVER FLEXIBLE BASE.
3. ROAD BASE SHALL BE REPLACED IN KIND WITH BASE THICKNESS EQUAL TO EXISTING BASE THICKNESS PLUS 3" (75 mm), BUT IN NO CASE LESS THAN 12" (300 mm).
4. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE THICKNESS OF 10" (250 mm) OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
5. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.

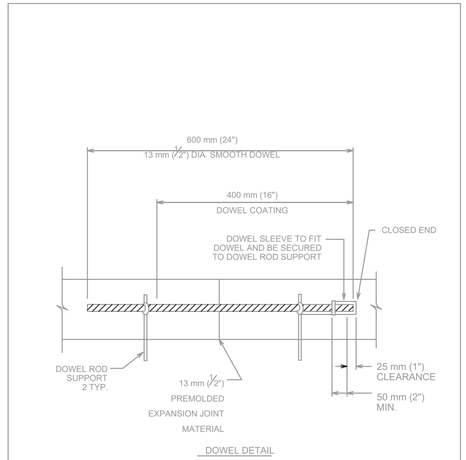
   SEE ITEM 340S, SECTION 340S.4.
6. CLASS "J" PC CONCRETE (ITEM 403S) OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
7. TACK COAT ALL EXPOSED EDGES AND SURFACES (SPEC ITEM 307S).
8. AS PER CITY OF AUSTIN STANDARD SPECIFICATION 510, SECTION 510.2(8)(K)5, FOR ALL NON-METALLIC PIPE, DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND A MINIMUM OF 12" (300 mm) BELOW THE SUBGRADE, OR A MINIMUM OF 18" (450 mm) BELOW FINISHED GRADE ON AREAS OUTSIDE THE LIMITS OF PAVEMENT, SHALL BE PLACED INDUCTIVE TRACER TAPE IN ACCORDANCE WITH THE MANUFACTURER'S RE-QUIREMENTS. THE TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.

CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
RECORD COPY SIGNED BY KERI JUAREZ — 01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2, 1 OF 2
CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
RECORD COPY SIGNED BY KERI JUAREZ — 01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2, 2 OF 2

DETAIL A – NTS

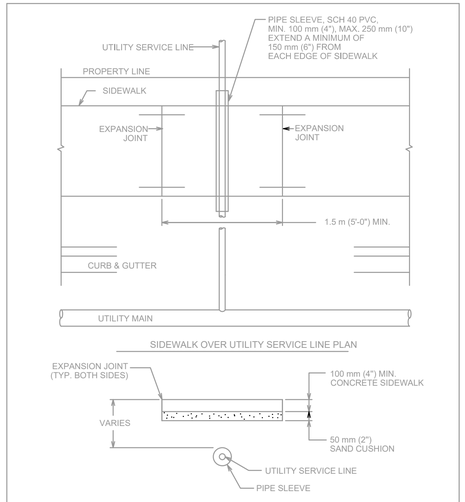


CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS	SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1, 1 OF 3



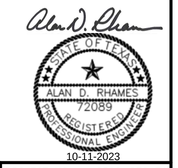
CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS	SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1, 2 OF 3

DETAIL B – NTS



NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN, DEPARTMENT OF PUBLIC WORKS	SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1, 3 OF 3



10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. RHAMES
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

CDM Smith
8310-1 N Capital of Texas Hwy, Suite 250
Austin, TX 78731
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

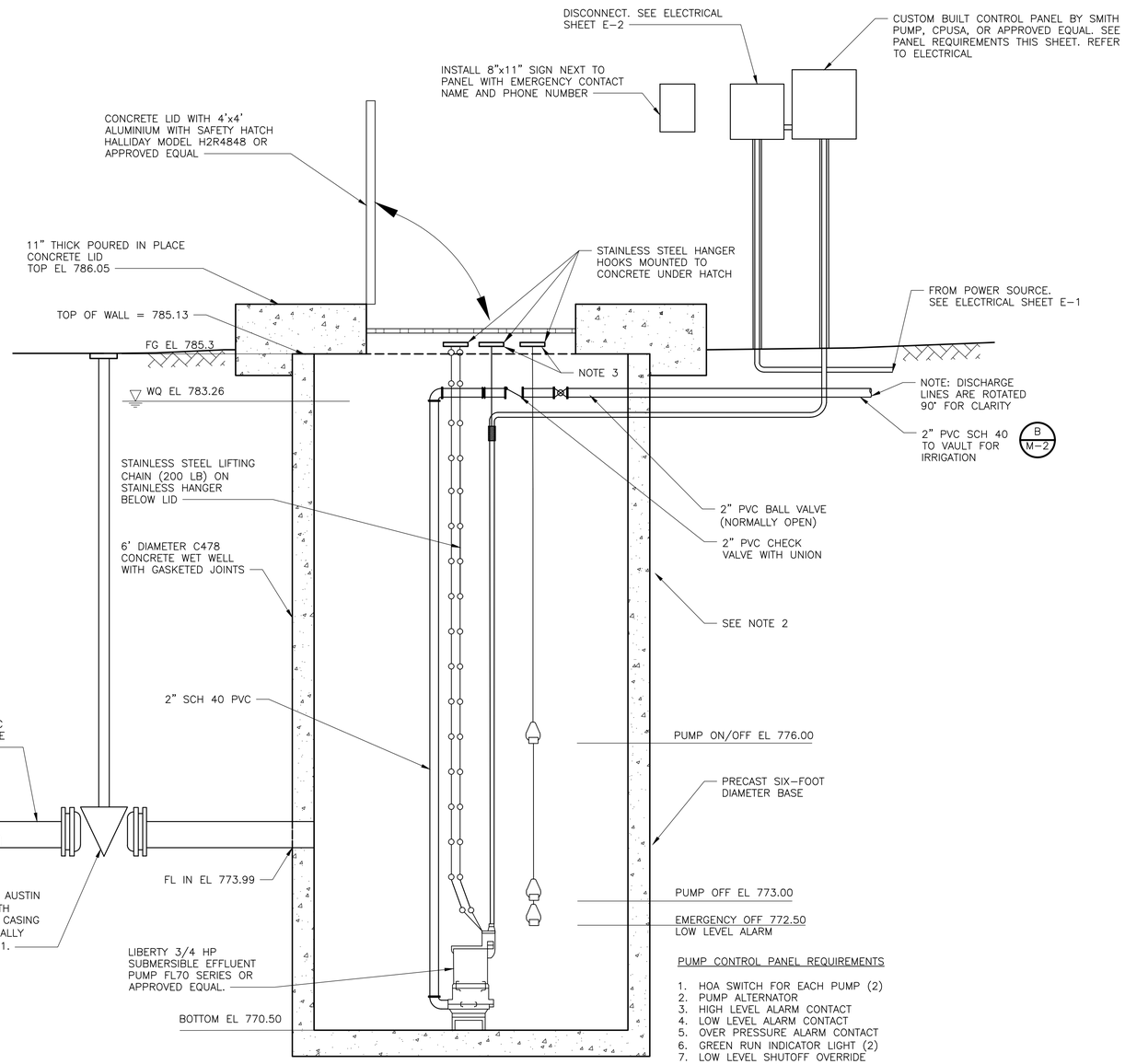
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

CIVIL DETAILS III

PROJECT NO. 0590-279471
FILE NAME: C003ZDET

SHEET NO.
CZ-3
SHEET 15 OF 21



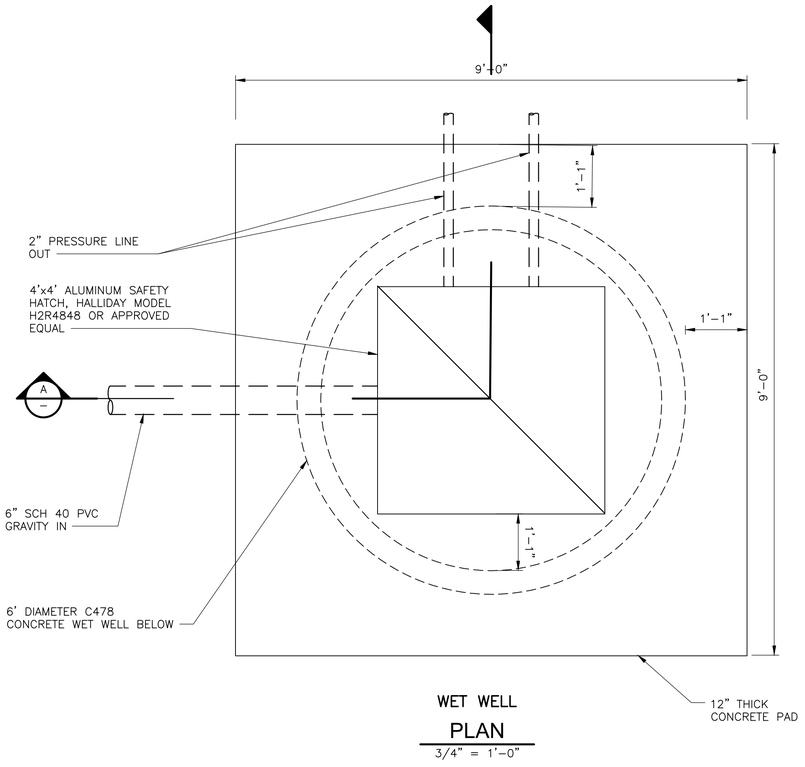
SECTION 1
1/4" = 1'–0"

NOTE:

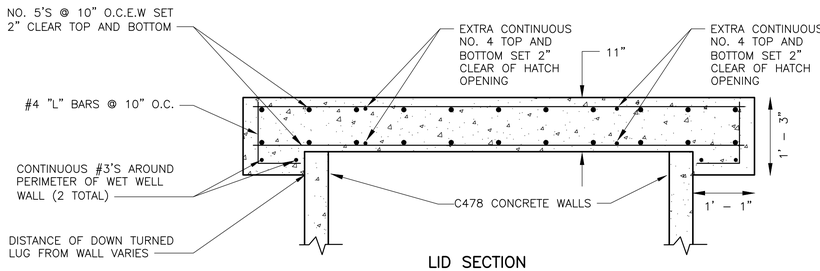
1. INSTALL PLUG VALVE SIMILAR TO GATE VALVE DETAIL ON SHEET CZ–2 WITH GENERIC CASING LID.
2. ALL WALL JOINTS IN THE WET WELL WALLS SHALL BE GASKETED AND SHALL BE WATER TIGHT.
3. INSTALL KELLEM GRIP SUPPORTS FOR FLOAT HANGERS AND FOR PUMP WIRING.

PUMP CONTROL PANEL REQUIREMENTS

1. HOA SWITCH FOR EACH PUMP (2)
2. PUMP ALTERNATOR
3. HIGH LEVEL ALARM CONTACT
4. LOW LEVEL ALARM CONTACT
5. OVER PRESSURE ALARM CONTACT
6. GREEN RUN INDICATOR LIGHT (2)
7. LOW LEVEL SHUTOFF OVERRIDE
8. ALARM LIGHT (RED)
9. ADJUSTABLE PUMP RUN/REST TIMER
10. RUN TIME METERS (2)
11. RAIN SENSOR
12. PUMP SEAL FAILURE LIGHT (2)
13. PUMP 12–HOUR DELAY ON START
14. HIGH PRESSURE ALARM AND STOP
15. LOW PRESSURE ALARM AND STOP
16. MOTOR PROTECTION ALARM W/OVER TEMPERATURE, SEAL FAILURE AND OVER AMP.
17. IRRIGATION ZONE ALTERNATOR (3 ZONES) – ADJUSTABLE TIME
18. MOTOR STARTERS



WET WELL
PLAN
3/4" = 1'–0"



NOTE: TRIM TOP AND BOTTOM STEEL MATS 1.5" CLEAR OF HATCH OPENING AND 1.5" CLEAR OF THE SIDE OF LID

LID SECTION
PLAN
3/4" = 1'–0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
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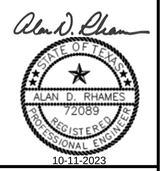
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

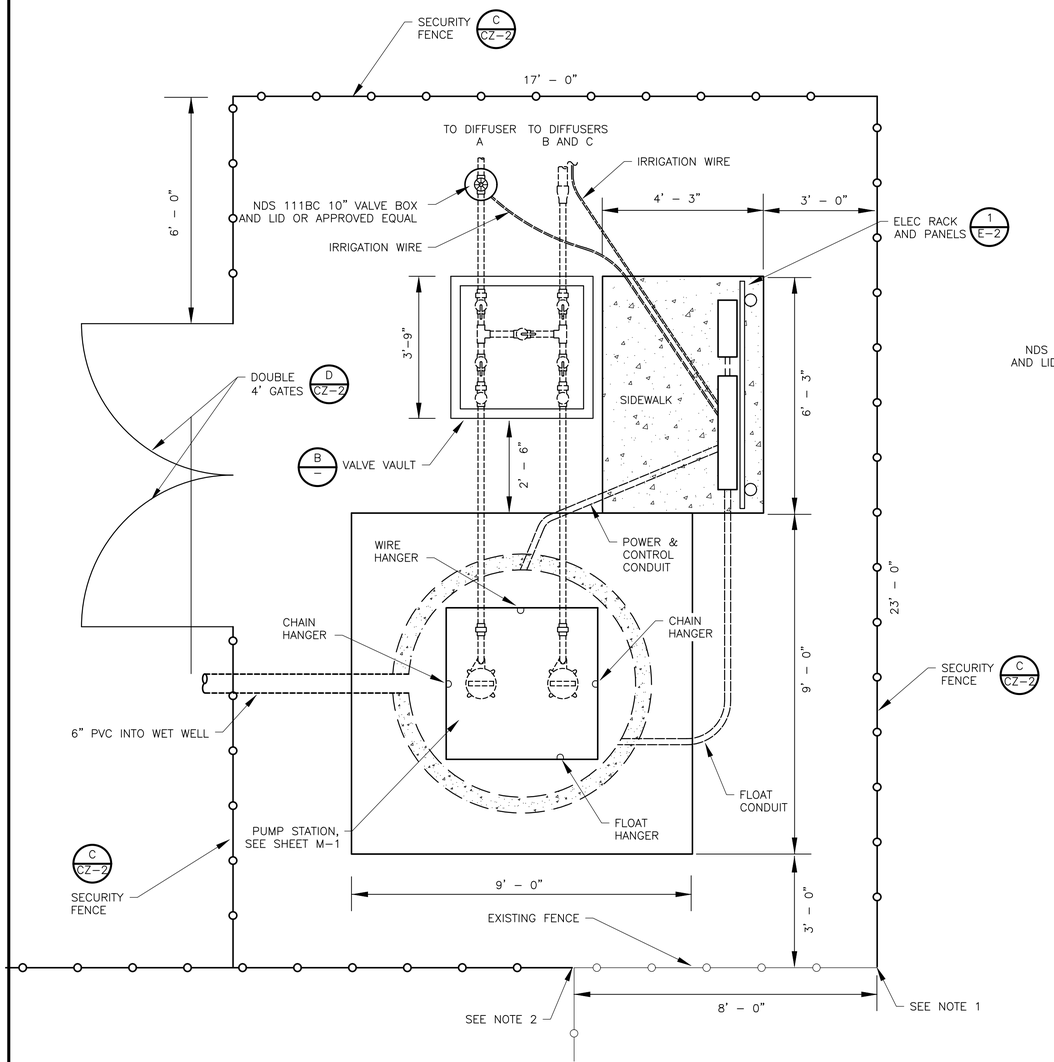
PUMP STATION PLAN AND SECTION



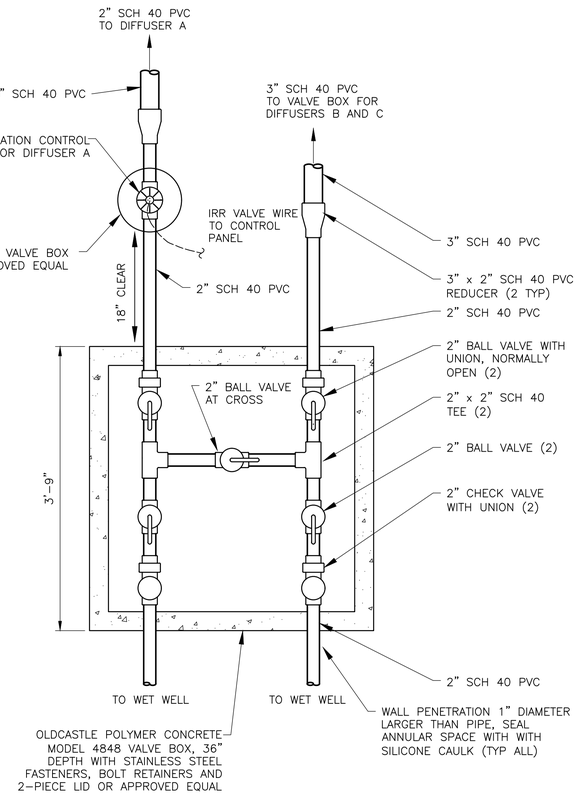
10-11-2023

PROJECT NO. 0590–279471
FILE NAME: M001NFDT

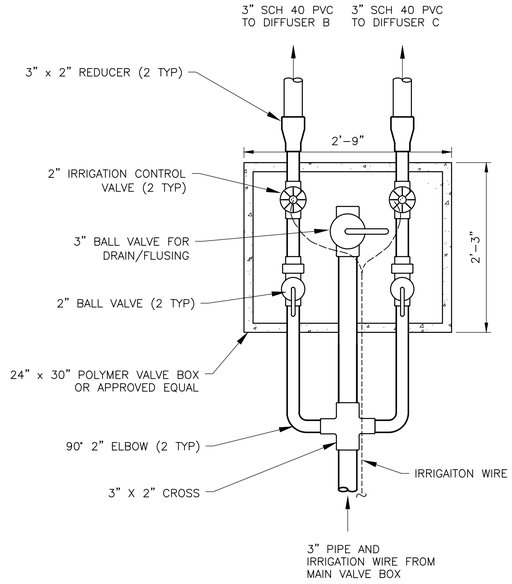
SHEET NO.
M-1
SHEET 16 OF 21



PUMP STATION LAYOUT A
1/2" = 1'–0"



MAIN VALVE BOX DETAIL B
1" = 1'–0"



SECONDARY VALVE BOX DETAIL C
1" = 1'–0"

FENCING NOTES

1. INSTALL CORNER POST AT EXISTING FENCE; TIE EXISTING FENCE FABRIC TO NEW POST
2. CONNECT NEW FENCE TO CORNER POST OF EXISTING FENCE

STATE OF TEXAS
ALAN D. RHAMES
72089
REGISTERED
PROFESSIONAL ENGINEER
10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
CROSS CHK'D BY: M. STIGGINS
APPROVED BY:
DATE: SEPTEMBER 2023

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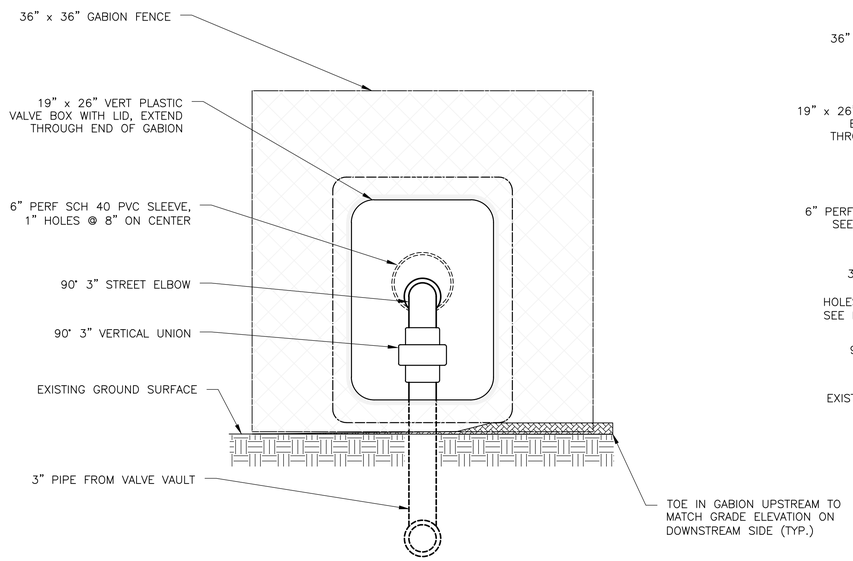
CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

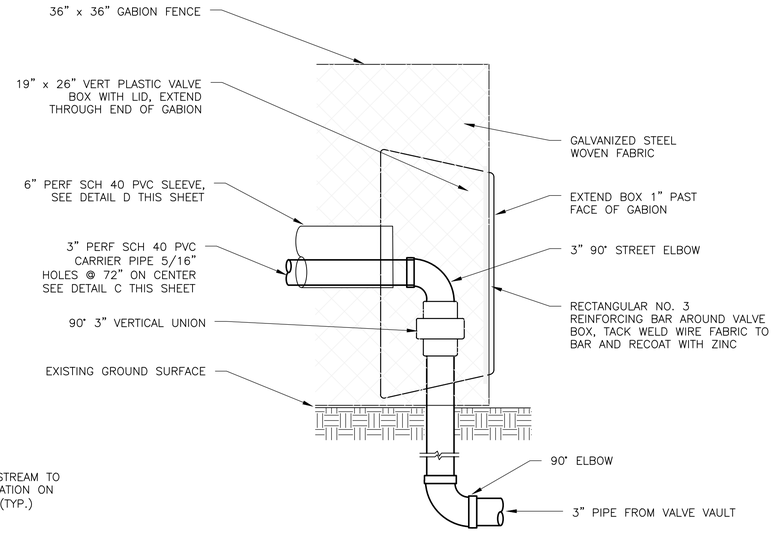
PUMP STATION LAYOUT AND VALVE BOX DETAILS

PROJECT NO. 0590-279471
FILE NAME: M002NFDT

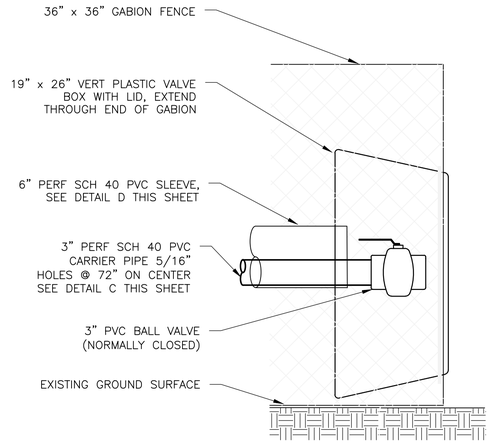
SHEET NO.
M-2
SHEET 17 OF 21



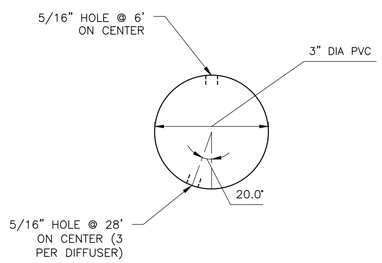
DIFFUSER CONNECTION DETAIL A
1-1/2" = 1'-0"



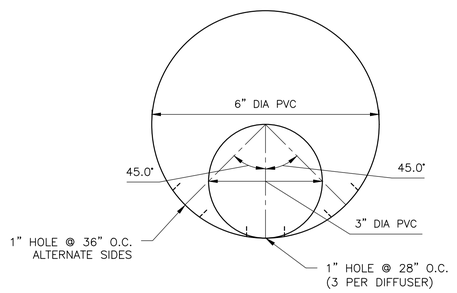
DIFFUSER CONNECTION SECTION B
1-1/2" = 1'-0"



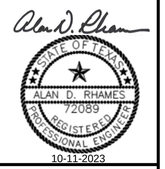
DIFFUSER END DRAIN E
1-1/2" = 1'-0"



3" PERFORATED DIFFUSER PIPE PROFILE C
NTS



6" PERFORATED DIFFUSER PIPE PROFILE D
NTS



10-11-2023

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. WEIMER
DRAWN BY: S. SRIHARI
SHEET CHK'D BY: A. RHAMES
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CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

DIFFFUSER CONNECTION DETAILS

PROJECT NO. 0590-279471
FILE NAME: M003NFDT

SHEET NO.
M-3
SHEET 18 OF 21

ELECTRICAL ABBREVIATIONS

AMPERE	A(AMP)
ABOVE	ABV
ABOVE FINISHED FLOOR	AFF
ABOVE FINISHED GRADE	AFG
AIR CONDITIONING	A/C
ALUMINUM	AL
APPROXIMATE(LY)	APPROX.
ARCHITECT(URAL)	ARCH('L).
AUTHORITY HAVING JURISDICTION	AHJ
BELOW	BLW
BREAKER	BKR
BUILDING	BLDG.
CARD READER	CR
CEILING	CLG
CIRCUIT	CKT
CONCRETE MASONRY UNIT	CMU
CONDENSATE DRAIN	COND.
COPPER	CU
CONDUIT	C.
COUNTER	CTR
CURRENT TRANSFORMER	CT
DEMOLISH(ITION)	DEMO.
DEPARTMENT	DEPT.
DETAIL	DET.
DISCONNECT	DISC.
DIVISION	DIV.
DRAWING(S)	DWG(S)
EACH	EA.
ELECTRICAL CONTRACTOR	EC
ELECTRIC(AL)	ELEC.
ELECTRIC WATER COOLER	EWC
ELEVATOR	ELEV.
EMERGENCY	EM,EMER
ENGINEER	ENGR.
EQUIPMENT	EQPT.
ETCETERA	ETC.
EXHAUST FAN	EF
EXISTING	EXIST.,(E)
EXISTING RELOCATED	ER
EXISTING TO REMAIN	ETR
FIRE ALARM	F/A
FIRE ALARM CONTROL PANEL	FACP
FIRE ALARM ANNUNCIATOR PANEL	FAAP
FIRE / SMOKE DAMPER	F/S
FOOT/FEET	FT.
GALVANIZED	GALV.
GENERAL CONTRACTOR	GC
GROUND	GND,G
GROUNDING ELEC. CONDCTOR	GEC
GROUND FAULT CIRCUIT INTERRUPTER	GFCI,GF
HEATING, VENTILATION & AIR CONDITIONING	HVAC
INFORMATION	INFO
INTERIOR	INT.
ISOLATED GROUND	IG
JUNCTION BOX	JB,(J-BOX)
KILOAMPERE INTERRUPTING CAPACITY	kAIC
KILOVOLT-AMPS	kVA
LIGHTING CONTACTOR	LC
LIGHTING CONTROL PANEL	LCP
MAIN CIRCUIT BREAKER	MCB
MAIN LUG ONLY	MLO
MANUFACTURE(R)	MFR.
MAXIMUM	MAX
MAXIMUM OVERCURRENT PROTECTION	MOCP
MECHANICAL	MECH.
MINIMUM	MIN.
MINIMUM CURRENT AMPACITY	MCA
MISCELLANEOUS	MISC.
MOUNTING HEIGHT TO CENTER LINE OF DEVICE AFF OR AFG	+(#)"
NATIONAL ELECTRICAL CODE	NEC
NEMA 1, NEMA 3R, NEMA RATING (AS NOTED)	N1,N3R,N_
NIGHT LIGHT	NL
NOMINAL	NOM.
NOT APPLICABLE	N/A
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
NUMBER	NO.,#
PANEL	PNL
PARTIAL	PART.
PHASE	PH.,Ø
PHOTOCELL	PC
POLE	P
POLYVINYL CHLORIDE	PVC
POWER POLE	PP
QUANTITY	QTY
RECEPTACLE	RECEPT.
REFER TO / REFERENCE	REF.
REQUIRE(D)	REQ.('D)
RIGID GALVANIZED STEEL	RGS
ROOM	RM
SERVICE DISTRIBUTION ENCLOSURE	SDE
SPECIFICATION(S)	SPEC.(S)
SQUARE	SQ.
SQUARE FEET	SF
STRUCTURED MEDIA CENTER	SMC
SURGE PROTECTIVE DEVICE	SPD
SWITCH	SW.
TELEPHONE / DATA COMBO	TELEDATA
TELEPHONE	TEL.
TELEPHONE MOUNTING BOARD	TMB
TELEVISION	TV
TEXAS	TX
THROUGH	THRU
TIMECLOCK	TC
TRANSFORMER	XFMR
TYPICAL	TYP
UNDERGROUND	UG
UNDERWRITER LABORATORIES INC.	UL
UNINTERRUPTIBLE POWER SUPPLY	UPS
UNLESS NOTED OTHERWISE	UNO
UTILITY	UTIL.
VOLT-AMPS	VA
VOLTAGE / VOLTS	V
WEATHER PROOF	WP
WEATHER RESISTANT	WR
WITH	W/
WITHOUT	W/O

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

APPLICABLE CODES
2021 IBC
2020 NEC
2021 IECC
2012 TAS
2021 IFC
LOCAL CODES AND ORDINANCES

VOLTAGE DROP TABLE (20A CIRCUITS ONLY)		
	208V, 1Ø	120V, 1Ø
#12 AWG	0 - 90 FT.	0 - 50 FT.
#10 AWG	91 - 150 FT.	51 - 90 FT.
#8 AWG	151 - 250 FT.	91 - 140 FT.
#6 AWG	251 - 390 FT.	141 - 225 FT.
#4 AWG	391 - 630 FT.	226 - 300 FT.
(VERIFY MINIMUM VOLTAGE DROP AND CONDUIT SIZE, PER N.E.C.)		

ELECTRICAL LEGEND

NOTES: MOUNTING HEIGHTS LISTED BELOW INDICATE HEIGHT TO CENTER OF OUTLET BOX. ALL SYMBOLS SHOWN ON LEGEND ARE NOT NECESSARILY USED.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	1X4 LINEAR FIXTURE W/ DESIGNATION		PANELBOARD OR LOAD CENTER - SURFACE MOUNT, RECESSED MOUNT
A	2X2 LINEAR FIXTURE W/ DESIGNATION		TRANSFORMER
A	2X4 LINEAR FIXTURE W/ DESIGNATION		DISCONNECT SWITCHES - NON-FUSED, FUSED. FUSE SIZES NOTED ON DRAWINGS WITH "AF".
	EMERGENCY LIGHT FIXTURE (HALF-SHADED FOR ANY FIXTURE)		MAGNETIC MOTOR STARTER
A	LINEAR 6" OR SLOT FIXTURE W/ DESIGNATION		COMBINATION STARTER AND DISCONNECT
A	LINEAR STRIP FIXTURE W/ DESIGNATION		VARIABLE FREQUENCY DRIVE (VFD), COMBINATION VFD AND DISCONNECT
A	RECESSED DOWNLIGHT FIXTURE W/ DESIGNATION		MOTOR
A	SURFACE DOWNLIGHT FIXTURE W/ DESIGNATION		PUSHBUTTON - SINGLE, MUSHROOM HEAD
A	PENDANT FIXTURE W/ DESIGNATION		METER - PLAN VIEW, ONE-LINE DIAGRAM
A	WALL WASH FIXTURE W/ DESIGNATION, DIRECTION INDICATED BY TRIANGLE		METER BANK
A	WALL MOUNT LINEAR FLUORESCENT FIXTURE W/ DESIGNATION		UNISTRUT RACK
A	WALL MOUNT FIXTURE W/ DESIGNATION		LIGHTING CONTROLS
	SPOTLIGHT	O V	OCCUPANCY SENSOR, VACANCY SENSOR - CEILING MOUNTED
	CEILING W/ FACE INDICATED; WALL W/ FACE, EMERGENCY HEADS, AND DIRECTIONAL ARROWS (INSTALL FACES AND ARROWS AS INDICATED)	O V	OCCUPANCY SENSOR, VACANCY SENSOR - MOUNTED HIGH ON WALL
	EMERGENCY BATTERY FIXTURE	PC	PHOTOELECTRIC CELL
	CEILING FAN	LC	LIGHTING CONTACTOR
	POLE LIGHT (ARM MOUNT, POST-TOP MOUNT)	TC	TIMECLOCK
	BOLLARD FIXTURE	LCP	LIGHTING CONTROL PANEL
	SINGLE 20A RECEPTACLE AT 18" UNLESS NOTED	DZ	DAYLIGHT ZONE SENSOR
	20A DUPLEX RECEPTACLE AT 18" UNLESS NOTED	$	LIGHT SWITCH AT 48" UNLESS NOTED
	20A GFI DUPLEX RECEPTACLE AT 18" UNLESS NOTED	D	DIMMER SWITCH AT 48" UNLESS NOTED
	DOUBLE 20A DUPLEX RECEPTACLE AT 18" UNLESS NOTED	$	LOW-VOLTAGE SMART LIGHT SWITCH AT 48" UNLESS NOTED
	20A DUPLEX RECEPTACLE 6" ABOVE COUNTER UNLESS NOTED	SUBSCRIPTS	
	20A DUPLEX RECEPTACLE SPECIAL MOUNT (FLOOR, CEILING)	3	3-WAY SWITCH
IG	20A ISOLATED GROUND RECEPTACLE	4	4-WAY SWITCH
WP	20A RECEPTACLE WITH WEATHERPROOF "EXTRA DUTY" COVER AND WEATHER-RESISTANT GFCI RECEPTACLE	F	SINGLE POLE CEILING FAN & LIGHT SWITCH WITH 3-SPEED FAN CONTROL TO ALLOW CONTROL OF FAN INDEPENDENT OF LIGHT KIT
	COMBINATION DUAL USB WITH DUPLEX RECEPTACLE	K	KEY-OPERATED SWITCH
30	SPECIAL RECEPTACLE (RATING NOTED)	M	MOTOR-RATED SWITCH
	COMBINATION TELEPHONE/DATA (TELE-DATA) OUTLET (18" ON WALL, 6" ABOVE COUNTER)	O	OCCUPANCY SENSOR SWITCH
	COMBINATION TELEPHONE/DATA (TELE-DATA) OUTLET SPECIAL MOUNT (FLOOR, CLG)	P	SWITCH WITH PILOT LIGHT
	TELEPHONE OUTLET, DATA OUTLET	R	RED EMERGENCY BRANCH SWITCH
	TELEVISION CABLE CONNECTION AT 58" A.F.F. UNLESS OTHERWISE NOTED.	T	TIMER SWITCH
CR FOB	LOW-VOLTAGE OR DATA OUTLET INTENDED FOR SPECIFIC PURPOSE (CARD READER, FOB SECURITY DEVICE SHOWN)	V	VACANCY SENSOR SWITCH (AUTO OFF, MANUAL ON)
J	J-BOX (CEILING/WALL, FLOOR)	a	LOWER CASE LETTER AT FIXTURES AND SWITCHES (a, b, ETC.) INDICATES SWITCHING CONTROL.
S SH	SPEAKER - CEILING MOUNTED, WALL MOUNTED	FACP	FIRE ALARM CONTROL PANEL
W	WIFI OUTLET - CEILING MOUNTED	FAAP	FIRE ALARM ANNUNCIATOR PANEL
	CONDUIT RUN EXPOSED OR CONCEALED	F	MANUAL PULL STATION DOUBLE ACTION
	CONDUIT RUN BELOW FLOOR OR GRADE		GENERAL ALARM COMBINATION HORN/STROBE (AUDIO/VISUAL) (WALL, CLG)
	ITEM TO BE REMOVED		FIRE ALARM STROBE (VISUAL DEVICE) (WALL, CLG)
	SWITCHLEG		SMOKE/IONIZATION DETECTOR
	MECHANICAL EQUIPMENT MOUNTED ABOVE CEILING		HEAT DETECTOR
	CIRCUIT HOMERUN, #12, THWN/THHN & QTY AS REQ'D, W/ GND, 3/4"C., UNLESS NOTED		DUCT DETECTOR
	CIRCUIT HOMERUN CONTAINING 3 HOTS, NEUTRAL, GROUND, AND ISOLATED GROUND		COMBINATION SMOKE / CARBON MONOXIDE DETECTOR
	CONDUIT STUB-UP - CAP & MARK	B	BEAM DETECTOR
	CONDUIT OR CIRCUIT BREAK/CONTINUATION (DIAGRAMMATIC ONLY)	FS	SPRINKLER SYSTEM FLOW SWITCH
	GROUND	TS	SPRINKLER SYSTEM TAMPER SWITCH
			ELECTRIC DOOR HOLDER

ELECTRICAL GENERAL NOTES

1. THESE DRAWING NOTES ACCOMPANY THE PUBLISHED CONSTRUCTION DOCUMENT SPECIFICATION BOOK (PROJECT MANUAL).
2. EXISTENCE AND LOCATION OF DEVICES, FIXTURES, EQUIPMENT, CIRCUITING, ETC. THAT ARE SHOWN TO BE EXISTING WAS TAKEN FROM EXISTING DRAWINGS AND/OR VISUAL INSPECTION AND SHOULD BE VERIFIED IN FIELD PRIOR TO ANY PRICING OR WORK.
3. COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS, REFLECTED CEILING PLANS, AND ELEVATIONS.
4. ELECTRICAL CONTRACTOR SHALL VISIT SITE AND SHALL BECOME FAMILIAR WITH SITE CONDITIONS AND VERIFY DIMENSIONS AND WORK TO BE INSTALLED PRIOR TO SUBMITTING A BID: BY SUBMITTING A BID, CONTRACTOR CERTIFIES FAMILIARITY WITH EXISTING JOBSITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK; FAILURE TO DO SO WILL NOT BE CAUSE FOR EXTRA WORK COMPENSATION.
5. ALL MATERIAL SHALL BE NEW AND SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
6. WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR AT LEAST 75°C. (CU/AL) OR AS NOTED IN MANUFACTURER'S INSTRUCTIONS, WHICHEVER IS GREATER.
7. FURNISH ALL MATERIAL, LABOR, EQUIPMENT AND PERMITS TO PROVIDE A COMPLETE, OPERATIONAL ELECTRICAL SYSTEM CONSISTENT WITH THE INTENT OF THE DRAWINGS. WHERE THE WORD "PROVIDE" IS USED, IT SHALL MEAN, "FURNISH AND INSTALL COMPLETE AND READY FOR USE".
8. INSTALLATIONS FOUND NOT COMPLYING WITH SPECIFIED WORKMANSHIP PRACTICES SHALL BE REVISED TO COMPLY AT NO ADDITIONAL COST TO THE OWNER.
9. ELECTRICAL CONTRACTOR SHALL PERFORM WORK IN A SAFE MANNER AND MAINTAIN ADEQUATE PROTECTION OF WORK, THE OWNER'S PROPERTY AND ALL PERSONS ON SITE FROM INJURY, DAMAGE OR LOSS.
10. FIELD-COORDINATE LOCATION OF PANELS, CONDUITS AND DEVICES WITH STRUCTURAL MEMBERS AND EQUIPMENT FROM OTHER TRADES. CAREFULLY COORDINATE INSTALLATION SCHEDULES WITH OTHER TRADES AND GENERAL CONTRACTOR. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN. COORDINATE LOCATION AND INSTALLATION OF OWNER-FURNISHED ITEMS AFFECTING THIS TRADE.
11. ALL WIRING SHALL BE IN CONDUIT. ALL WIRING SHALL BE #12 AWG MINIMUM COPPER CONDUCTORS. ALUMINUM CONDUCTORS WILL NOT BE ALLOWED.
12. FEEDER CONDUCTORS, BRANCH WIRING, PANEL BUSS AND GROUND BUSS SHALL BE COPPER, UNLESS NOTED OTHERWISE.
13. WIRING DEVICES THAT OCCUR TOGETHER SHALL BE GANGED UNDER A COMMON WALL PLATE, UNLESS NOTED OTHERWISE.
14. ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE GENERAL ELECTRIC, EATON, SQUARE D OR SIEMENS.
15. ELECTRICAL CONTRACTOR SHALL ASSIGN CIRCUITS IN FIELD ON ALL PANELBOARDS TO MAKE LOADS ON EACH PHASE AS BALANCED AS POSSIBLE.
16. ELECTRICAL CONTRACTOR SHALL ASSEMBLE AND PROVIDE TO THE OWNER AS PART OF CLOSE-OUT SUBMISSION REQUIREMENTS, ORGANIZED BINDER WITH TECHNICAL DATA, CUT SHEETS, MAINTENANCE REQUIREMENTS, ADJUSTMENT PROCEDURES, TEST REPORTS, APPROVALS, WARRANTIES, PHONE NUMBERS OF SERVICE PERSONNEL, SOURCES OF REPLACEMENT PARTS AND OTHER PERTINENT INFORMATION.
17. BEFORE BEGINNING EXCAVATIONS OR DEMOLITION OF ANY NATURE WHATSOEVER, CONTRACTOR SHALL LOCATE ALL SERVICES AND UTILITIES OCCURRING WITHIN THE BOUNDS OF THE PROJECT. THE CONTRACTOR SHALL THEN PROCEED WITH CAUTION IN HIS WORK SO THAT NO UTILITY OR LINE SERVING AREAS THAT ARE TO REMAIN BE DAMAGED WITH A RESULTANT LOSS OF SERVICE. VERIFY THE SOURCE AND SERVICE OF EACH AND EVERY LINE ENCOUNTERED AND RECORD SERVICE, SIZE AND LOCATION ON RECORD DRAWINGS.
18. COORDINATE EACH AND EVERY INTERRUPTION OF SERVICES AND UTILITIES WITH THE OWNER AND UTILITY COMPANIES TO ENSURE MINIMUM SHUT-DOWN TIMES ARE ACCEPTABLE.
19. FOR EACH EQUIPMENT CONNECTION SHOWN, PROVIDE THE DEVICE, OUTLET, DISCONNECT SWITCH, OR JUNCTION BOX REQUIRED TO CONNECT THE EQUIPMENT.
20. NO SINGLE CONDUIT SHALL CONTAIN MORE THAN 6 CURRENT CARRYING CONDUCTORS, UNLESS NOTED OTHERWISE AND PROPERLY DERATED.
21. REVIEW CIVIL AND OTHER DRAWINGS PRIOR TO BID.
22. INSTALL ALL MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO INSTALLATION.
23. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
24. ELECTRICAL CONTRACTOR TO PROVIDE MEANS (REQUEST AND INSTALLATION OF) TEMPORARY CONSTRUCTION POWER.

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
10-06-23

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8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 23004.MS.AUS

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: JRS
DRAWN BY: JRS
SHEET CHK'D BY: SSB
CROSS CHK'D BY: MM
APPROVED BY: SSB
DATE: OCTOBER 2023

CDM Smith
9430 RESEARCH BLVD., SUITE 1-200
Austin, TX 78759
Tel: (512) 346-1100
TBPE Firm Registration No. F-3043

CITY OF AUSTIN, TEXAS

DICK NICHOLS PARK WATER QUALITY POND RETROFIT

ELECTRICAL GENERAL NOTES

PROJECT NO. 0590-279471
FILE NAME: E-0
SHEET NO. E-0
SHEET 19 OF 21

0 10' 20' 30' 60'
SCALE IN FEET
1" = 30'

KEYED NOTES

1. ROUTE (2) 1-1/2" CONDUITS FROM EXISTING PANEL P ALONG WALL TO LOCATION OF SHOWN IN BUILDING..
2. PENETRATE EXTERIOR WALL OF BUILDING AND ROUTE CONDUITS UNDERGROUND.
3. CONTINUE ROUTING CONDUITS FROM EXISTING BUILDING TO NEW PULLBOX FOR NEW PUMP STATION AND SERVICE RECEPTACLE CIRCUITS. REFER TO DETAIL 3/E-2. PROTECT EXISTING DUCT BANKS WHILE PERFORMING UNDERGROUND WORK.
4. CONTINUE CONDUIT ROUTE FROM PULLBOX TO NEW PUMP STATION LOCATION.

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER

10-06-23

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141
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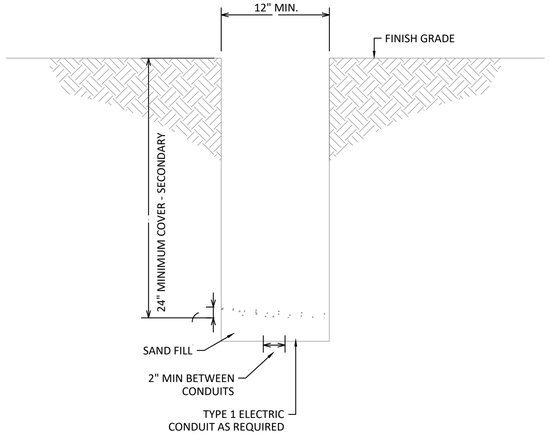
ELECTRICAL SITE PLAN

PROJECT NO. 0590-279471
FILE NAME: E-1
SHEET NO.
E-1
SHEET 20 OF 21



3 ELECTRIC CONDUIT TRENCH DETAIL
N.T.S.

PANELBOARD SCHEDULE EXISTING P

LOCATION: FX. BLDG ELEC. ROOM
C.B. RATING: 10 K.A.I.C.

WIRE SIZE	TYPE	VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE	TYPE	WIRE SIZE
		208Y/120V	3	4	SURFACE	200	MCB	NEMA 1		
		USE and/or AREA SERVED		C/B POLE	C/R LOAD ØA / ØB / ØC	C/R C/B POLE	USE and/or AREA SERVED			
		HEATER		20/1	1 1200	2 20/1	REAR LIGHTS AND OUTLETS			
					1200					
		SPARE		20/1	3 1200	4 20/1	FRONT LIGHTS & WALL PACKS			
		SPARE		20/1	5	6 20/1	SPARE			
		TENNIS LIGHTS		30/3	7 2800	8 30/2	VOLLEYBALL LIGHTS			
					2400					
					9 2800	10				
					2400					
					11 2800	12 30/2	BASKETBALL LIGHTS			
					2400					
		PAVILION LIGHTS		20/1	13 1200	14				
					2400					
		PAVILION OUTLETS		20/1	15 1440	16 30/1	SPARE			
		CONTROL CIRCUIT		20/1	17 1200	18 30/1	SPARE			
		SPARE		20/1	19 -	20 20/1	SPARE			
		PARKING LOT LIGHTS		30/2	21 2400	22 20/1	SPARE			
					23 2400	24 20/1	SECURITY FLOOD LIGHT			
					1200					
#4		PUMP STATION		30/3	25 2878	26 20/1	SPARE			
					27 2878	28 20/1	SPARE			
					29 2878	30				
#6		PUMP SERVICE RECEPTACLE		20/1	31 1000	32				
		SPACE			33 -	34	SPACE			
					35 -	36				
					37 -	38				
					39 -	40				
					41 -	42				

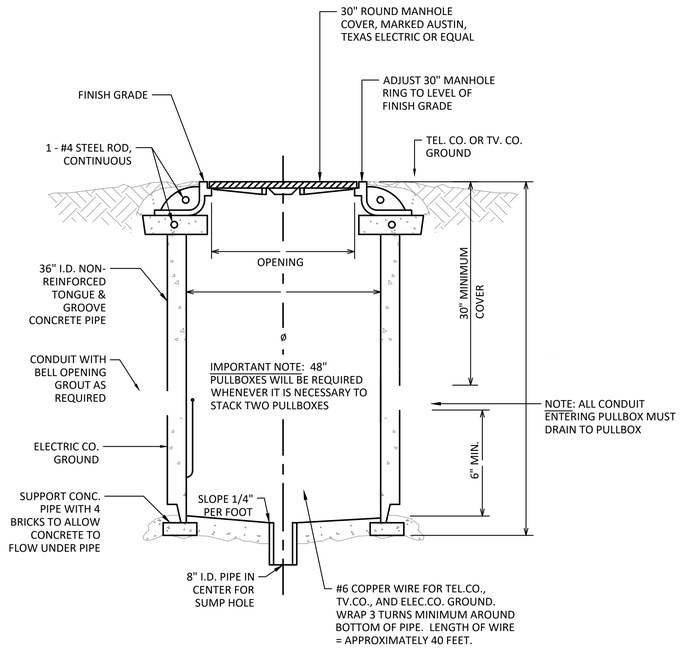
TOTAL LOAD PER PHASE	15078	13118	12878	15078 VA / 120 V = 126 A

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE — OPTIONS: NONE - REFER TO SPECIFICATIONS

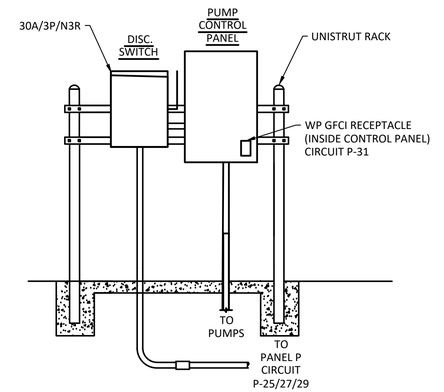
FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION (LOAD IN KVA)	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	LOAD MULTIPLIER	FEEDER LOAD	NOTES
LIGHTING	27.60	1.00	27.60	1.25	34.50	
RECEPTACLES	2.44	50%>10	2.44	1.00	2.44	
LARGEST MOTOR	8.63	1.00	8.63	1.25	10.79	
OTHER MOTOR(S)	0.00	1.00	0.00	1.00	0.00	
HEATING	1.20	1.00	1.20	1.25	1.50	
CONTINUOUS LOADS	0.00	1.00	0.00	1.25	0.00	
NONCONTINUOUS LOADS	1.20	1.00	1.20	1.00	1.20	
KITCHEN EQUIPMENT QTY = 0	0.00	1.00	0.00	1.00	0.00	
DIVERSIFIED LOAD	0.00	1.00	0.00	0.50	0.00	
TOTAL KVA	**41.07**	-	-	-	**50.43**	
TOTAL AMPS	**114 A**	-	-	-	**140 A**	

NOTE: METAL RING AND CONCRETE RING, PRE-CAST TO FIT GROOVE DIA. AND DEPTH WITH 1/2" CLEARANCE AROUND EDGE OF PULLBOX



2 36" TRAFFIC TYPE PULL BOX DETAIL
N.T.S.



1 EQUIPMENT RACK DETAIL
N.T.S.

SHARON S. BICKFORD 77390 LICENSED PROFESSIONAL ENGINEER
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ELECTRICAL SCHEDULES & DETAILS

PROJECT NO. 0590-279471
FILE NAME: E-2
SHEET NO. E-2
SHEET 21 OF 21