5906 Old Fredericksburg Road
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TBPE Firm #8601
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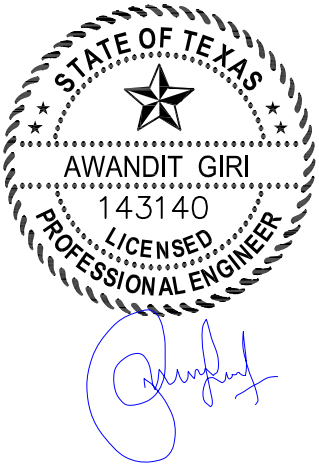
CONTRIBUTING ZONE PLAN
(UTILIZING OPTIMAL ENHANCED MEASURES)
For
Twisted Oaks

17800 Hamilton Pool Road
Austin, TX 78738

Prepared For:	Twisted Oaks Partners, LLC
For Review By:	Texas Commission on Environmental Quality
Prepared By:	Awandit Giri, P.E. Project Manager TDI Engineering, LLC
Date:	March11, 2024
TDI Project #:	5405-005



03/11/2024

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Contributing Zone Plan Checklist

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- **Contributing Zone Plan Application (TCEQ-10257)**

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  -OR-

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

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- **Copy of Notice of Intent (NOI)**
- **Agent Authorization Form (TCEQ-0599), if application submitted by agent**
- **Application Fee Form (TCEQ-0574)**
- **Check Payable to the "Texas Commission on Environmental Quality"**
- **Core Data Form (TCEQ-10400)**

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: Twisted Oaks					2. Regulated Entity No.:			
3. Customer Name: Twisted Oaks Partners LLC					4. Customer No.:			
5. Project Type: (Please circle/check one)	New		Modification		Extension		Exception	
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST / AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		Non-residential		8. Site (acres):		5.001	
9. Application Fee:	$5000.0		10. Permanent BMP(s):		Sedimentation/Filtration WQ Pond			
11. SCS (Linear Ft.):	N/A		12. AST/UST (No. Tanks):		N/A			
13. County:	Travis		14. Watershed:		Barton 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	__Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	_1_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. Awandit Giri
Print Name of Customer/Authorized Agent 03/11/2024
Signature of Customer/Authorized Agent Date

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

Contributing Zone Plan Application (TCEQ Form 10257) Tab 1

ATTACHMENT A	Road Map
ATTACHMENT B	USGS/Edwards Recharge Zone Map
ATTACHMENT C	Project Description
ATTACHMENT D	Factors Affecting Surface Water Quality
ATTACHMENT E	Volume and Character of Stormwater
ATTACHMENT F	Suitability Letter from Authorized Agent
ATTACHMENT G	Alternative Secondary Containment Methods
ATTACHMENT H	AST Containment Structure Drawings
ATTACHMENT I	20% or Less IC Waiver
ATTACHMENT J	BMP's for Upgradient Stormwater
ATTACHMENT K	BMP's for On-Site Stormwater
ATTACHMENT L	BMP's for Surface Streams
ATTACHMENT M	Construction Plans
ATTACHMENT N	Inspection, Maintenance, repair & Retrofit Plan
ATTACHMENT O	Pilot-Scale Field Testing Plan
ATTACHMENT P	Measures for Minimizing Surface Stream Contamination

Contributing Zone Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), 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.

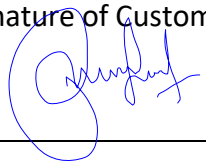
Signature

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 **Contributing Zone Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Awandit GIri, PE

Date: 03/11/2024

Signature of Customer/Agent:



Regulated Entity Name: Twisted Oaks

Project Information

1. County: Travis
2. Stream Basin: Barton Creek Watershed
3. Groundwater Conservation District (if applicable): SOUTHWESTERN TRAVIS COUNTY GCD - 11/5/2019
4. Customer (Applicant):

   Contact Person: Mark Wise
   Entity: Twisted Oak Partners, LLC
   Mailing Address: 17800 Hamilton Pool Road
   City, State: TX Zip: 78738
   Telephone: 512-913-96347 Fax: _____

Email Address: mark@austinwaterdesigns.com

5. Agent/Representative (If any):

Contact Person: Awandit Giri, PE
Entity: TDI Engineering, LLC
Mailing Address: 5906 Old Fredericksburg Rd, Suite 300
City, State: Austin, TX Zip: 78749
Telephone: 512-301-3389 Fax: _____
Email Address: agiri@tdi-llc.net

6. Project Location:

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

7. ☒ The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

17800 Hamilton Pool Road, Austin, TX, 78738

8. ☒ **Attachment A - Road Map**. A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

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

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).

10. ☒ **Attachment C - Project Narrative**. A detailed narrative description of the proposed project is attached. 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

11. 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/Not cleared)
☐ Other: _____

12. The type of project is:

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

13. Total project area (size of site): 5.001 Acres

    Total disturbed area: 4.3 Acres

14. Estimated projected population: 106

15. The amount and type of impervious cover expected after construction is complete is shown below:

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	***Sq. Ft.***	***Sq. Ft./Acre***	***Acres***
Structures/Rooftops	25282	÷ 43,560 =	0.580
Parking	45840	÷ 43,560 =	1.052
Other paved surfaces	7507	÷ 43,560 =	0.172
Total Impervious Cover	78629	÷ 43,560 =	1.805

Total Impervious Cover 1.805 **÷ Total Acreage** 5.001 **X 100 =** 36.09**% Impervious Cover**

16. ☒ **Attachment D - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

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

For Road Projects Only

Complete questions 18 - 23 if this application is exclusively for a road project.

☒ N/A

18. 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.

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

20. Right of Way (R.O.W.):

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

21. Pavement Area:

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.

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

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

23. ☐ 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

24. ☒ **Attachment E - 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 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

25. ☐ Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

☒ N/A

26. Wastewater will be disposed of by:

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

☒ **Attachment F - 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):

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

☐ Existing.
☐ Proposed.

☒ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

Complete questions 27 - 33 if this project includes the installation of AST(s) with volume(s) greater than or equal to 500 gallons.

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

28. ☐ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

☐ **Attachment G - Alternative Secondary Containment Methods**. Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are attached.

29. Inside dimensions and capacity of containment structure(s):

Table 3 - Secondary Containment

Length (L)(Ft.)	*Width(W)(Ft.)*	*Height (H)(Ft.)*	*L x W x H = (Ft3)*	*Gallons*

Total: _____ Gallons

30. Piping:

☐ All piping, hoses, and dispensers will be located inside the containment structure.
☐ Some of the piping to dispensers or equipment will extend outside the containment structure.
☐ The piping will be aboveground
☐ The piping will be underground

31. ☐ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: _____.

32. ☐ **Attachment H - AST Containment Structure Drawings**. A scaled drawing of the containment structure is attached that shows the following:

☐ Interior dimensions (length, width, depth and wall and floor thickness).
☐ Internal drainage to a point convenient for the collection of any spillage.
☐ Tanks clearly labeled
☐ Piping clearly labeled
☐ Dispenser clearly labeled

33. ☐ Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

☐ In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

☐ In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

Site Plan Requirements

Items 34 - 46 must be included on the Site Plan.

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

    Site Plan Scale: 1" = 30'.

35. 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 MAP #48453C0395J, dated 01/22/2020.

36. ☒ 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, etc. are shown on the site plan.

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

37. ☒ A drainage plan showing all paths of drainage from the site to surface streams.

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

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

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

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

42. ☐ Surface waters (including wetlands).

    ☒ N/A

43. ☐ Locations where stormwater discharges to surface water.

    ☒ There will be no discharges to surface water.

44. ☐ Temporary aboveground storage tank facilities.

☒ Temporary aboveground storage tank facilities will not be located on this site.

45. ☐ Permanent aboveground storage tank facilities.

☒ Permanent aboveground storage tank facilities will not be located on this site.

46. ☒ Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

Practices and measures that will be used during and after construction is completed.

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

☐ N/A

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

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

☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____.

☐ N/A

49. ☒ 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

50. 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.

51. 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 I - 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.

52. ☐ **Attachment J - 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.

53. ☒ **Attachment K - 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.

54. ☐ **Attachment L - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

☒ N/A

55. ☒ **Attachment M - Construction Plans**. Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and

dated. Construction plans for the proposed permanent BMPs and measures are attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

☐ N/A

56. ☒ **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan**. A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

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

    ☐ N/A

57. ☐ **Attachment O - 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

58. ☐ **Attachment P - 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 result in water quality degradation.

    ☒ N/A

Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.

59. ☒ 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.

60. ☒ 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.

Administrative Information

61. ☒ 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.

62. ☒ Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.

63. ☐ The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.

☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.

ATTACHMENT A **Road Map**

The 5.001-acre site of the Madrone Ranch Subdivision, known as Lot 1 and as shown in plat Doc. #199900251 of the Travis County Plat Records, Texas, is located at 17800 Hamilton Pool Rd, Austin, Texas, 78738.

Approx. site location

ATTACHMENT B **USGS Quadrangle Map**

Please refer next page for full size map.

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

The National Map US Topo

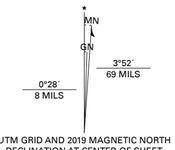
SHINGLE HILLS QUADRANGLE
TEXAS
7.5-MINUTE SERIES

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP,	September 2016 - November 2016
Roads	U.S. Census Bureau,	2015
Names	GNIS,	1979 - 2015
Hydrography	National Hydrography Dataset,	2002 - 2018
Contours	National Elevation Dataset,	2002 - 2010
Boundaries	Multiple sources; see metadata file	2016 - 2017
Wetlands	FWS National Wetlands Inventory	1983



UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

1 Spicewood
2 Pace Bend
3 Mansfield Dam
4 Hammetts Crossing
5 Bee Cave
6 Henly
7 Dripping Springs
8 Signal Hill

ROAD CLASSIFICATION

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

SHINGLE HILLS, TX
2019

NSN 7643016398257
NGA REF NO. USGSX24K41096

ATTACHMENT C **Project Narrative**

The 5.001-acre site of the Madrone Ranch Subdivision, known as Lot 1 and as shown in plat Doc. #199900251 of the Travis County Plat Records, Texas, is located at 17800 Hamilton Pool Rd, Austin, Texas, 78738. The property is located in the Headwaters Barton Creek Watershed which is within the Edwards Aquifer Contributing Zone. This site is not in a flood hazard area, as seen from the FEMA FIRM 48453C0395J, dated January 22, 2020. This site is located within Zone "X" determined to be outside the 0.2% annual event. There is no current zoning of the property as it lies in western Travis County, which is the only jurisdictional entity for the property. The site is bounded by Madrone Ranch to the north, Madrone Ranch Trail to the east, Lucky Lake Ranch to the west, and Right of Way of Hamilton Pool Road to the south. The property is currently vacant land. The property is mostly covered with grass. The property slopes to the south-east at roughly 3% to 6% slope. The soil on the property is comprised of Brackett-Rock outcrop complex (BID), which is type "D" hydrological soil that is well drained.

This project calls for erecting eleven office buildings. The total area covered by the buildings will be about 25,282sf. Additionally, associated drive isles, parking stalls, a partial sedimentation/filtration pond and landscaped areas will also be constructed. The proposed plan will bring the 5.001-acre property up to a total of 36.09% impervious cover (78,629sf) which is well below the maximum allowed 80% by code. The drainage for the proposed project will not alter the existing pattern and the site will be graded to route runoff to the proposed onsite water quality pond before routing to the detention pond. There will be no phasing of the Twisted Oaks Office site plan.

DRAINAGE

Currently, runoff from the property drains towards south-east. Most of the runoff makes it to the detention pond.

HEC-HMS software, which uses the SCS methodology, along with the City of Cedar Park Atlas 14 Depth of Precipitation values, were used to perform the drainage calculations. Drainage Calculations in the construction set, summarizes the hydrology for both the existing and proposed conditions. In the existing conditions a curve number of 84 was used for the property denoting the fair condition urban space vegetative coverage over type "D" soils. For the primary drainage basin E1 and E2 the time of concentration was calculated to be 13.38 and 13.19 minutes respectively. Please refer below for the existing condition flow rates:

DRAINAGE SUMMARY CALCULATIONS - SCS METHODOLOGY							
Twisted Oaks							
Existing Drainage Area (from HEC-HMS)							
Area #	Area (Ac.)	(RCN)	Tc (Min)	Q100	Q25	Q10	Q2
O1	0.97	84	8.82	9.5	7.0	5.4	3.1
O2	0.90	84	8.53	8.8	6.5	5.0	2.8
O3	0.23	84	5.00	2.8	2.1	1.6	0.9
E1	3.72	84	13.38	34.4	25.1	19.4	10.7
E2	1.28	84	13.19	11.9	8.7	6.7	3.7
J1	**Downstream Junction of O2 and O3**			59.7	43.7	33.8	18.7

With the proposed development, runoff collected on site will be routed through a 12" and 18" pipe that will empty into two partial sedimentation-filtration water quality pond. Once the water quality capture volume is achieved additional runoff will spill over the water quality pond weir and then be collected in the existing detention pond. For the proposed conditions a curve numbers of 91.3 was used for the proposed basin P1 and curve number of 90.6 was used for proposed basin P2. Please refer to construction plan set for the calculation. The time of concentration calculated for the proposed basin was the minimum 5.00 minutes. Please refer below for the post development condition flow rates:

DRAINAGE SUMMARY CALCULATIONS - SCS METHODOLOGY							
Twisted Oaks							
Developed Drainage Areas (from HEC-HMS)							
Area #	Area (Ac.)	(RCN)	Tc (Min)	Q100	Q25	Q10	Q2
P1	2.51	91.3	5.00	32.1	24.2	19.4	12.0
P2	0.95	90.6	5.00	12.1	9.1	7.3	4.5
D1	DETENTION POND FOR BASIN P1 & P2			25.8	18.9	13.5	WQ
FR1	1.55	84.4	6.72	17.0	12.5	9.6	5.4
O1	0.97	84.0	8.82	9.5	7.0	5.4	3.1
O2	0.90	84.0	8.53	8.8	6.5	5.0	2.8
O3	0.23	84.0	5.00	2.8	2.1	1.6	0.9
J1	Downstream Junction of FR1, D1, O2 & O3			59.7	43.7	32.5	WQ

WATER QUALITY:

Two partial sedimentation/filtration ponds are being constructed to meet the water quality requirements of this site utilizing Optimal Enhanced Method. The design meets the TCEQ requirements. The total required water quality volume for the sed/fil pond 1 is 9,458 cf and the proposed sedimentation/filtration pond will provide 9,935 cf of storage. The total required water quality volume for the sed/fil pond 2 is 2,918 cf and the proposed sedimentation/filtration pond will provide 2,921 cf of storage. For full calculations of the water quality elements please see Pond Calculations in the construction plan.

ATTACHMENT D **Factors Affecting Water Quality**

There are several factors affecting the water quality on this site:

I) The construction stage; which is temporary, and

II) The end use stage; which is permanent.

The construction activities include driving, handling of construction equipment, site clearing, rough grading, construction of asphalt and concrete pavement, utilities, building structures, water quality and detention ponds, storm sewers and landscaping of the site. These activities are expected to generate debris, occasional oil and fuel discharge from vehicles, and soil disturbance. Temporary measures such as a stabilized construction entrances, silt fence, rock berms, and tree protection and fencing of the areas to remain natural will reduce any temporary effects on water quality during construction.

Permanent factors affecting water quality include the increased storm-water runoff caused by the impervious cover of the site, oil and gas from daily traffic of automobiles, fertilizers in the grassed areas and debris associated with the end use of the site. The water quality pond designed to service the site will clean storm water runoff as it leaves the property as a way to mitigate these factors.

Materials that may be stored and delivered in and out of this development include all those materials that would be found inside a commercial property such as cleaning products, minimal oil and gas storage and pesticides. These materials will be stored inside the buildings and will be contained within the drainage area. The entire drainage basin will drain to the full sedimentation/filtration pond at the south end of the development.

ATTACHMENT E **Volume and Character of Storm-water**

Currently, runoff from the property surface drains off the site to the southeast.

The developer plans to construct a total of 25,282 sq. ft. of office condo building, associated drive aisles and parking spaces. The total impervious cover of the 5.001-acre site will be 36.09%, or 78,629sq. ft.

Stormwater run-off for existing and proposed conditions were calculated using HEC-HMS, which uses SCS Methodology. A summary of the existing and proposed outflows is given below for the 2-yr, 5-yr, 10-yr, 25-yr, and 100-yr storm events for the on-site drainage basins for the overall development and includes the curve number calculations for both the existing and proposed conditions.

EXISTING CONDITIONS									Soil Curve Number		
DRAINAGE BASIN			Pervious			Impervious			Concrete	Fair Grass 50% to 75%	Weighted CN
	Area (SF)	(AC)	(SF)	(AC)	%	(SF)	(AC)	%			
O1	42,439	0.97	42,439	0.97	100.00%	-	0.000	0.00%	98	84	84.0
O2	39,309	0.90	39,309	0.90	100.00%	-	0.000	0.00%	98	84	84.0
O3	9,954	0.23	9,954	0.23	100.00%	-	0.000	0.00%	98	84	84.0
E1	161,974	3.72	161,974	3.72	100.00%	-	0.000	0.00%	98	84	84.0
E2	55,886	1.28	55,886	1.28	100.00%	-	0.000	0.00%	98	84	84.0
Soil BiD Hydrologic Group "D" soil is identified in project vicinity. Fair Grass Cover 50% to >75% was used in determining the RCN.											

DEVELOPED CONDITIONS									CN		
DRAINAGE BASIN			Pervious			Impervious			Concrete	Fair Grass 50% to 75%	Weighted CN
	Area (SF)	(AC)	(SF)	(AC)	%	(SF)	(AC)	%			
P1	109,294	2.51	52,292	1.20	47.85%	57,002	1.31	52.15%	98	84	91.3
P2	41,224	0.95	21,653	0.50	52.53%	19,571	0.45	47.47%	98	84	90.6
FR1	67,342	1.55	65,286	1.50	96.95%	2,056	0.05	3.05%	98	84	84.4
O1	42439	0.97	42,439	0.97	100.00%	0	0.00	0.00%	98	84	84.0
O2	39309	0.90	39,309	0.90	100.00%	0	0.00	0.00%	98	84	84.0
O3	9954	0.23	9,954	0.23	100.00%	0	0.00	0.00%	98	84	84.0
Soil BiD Hydrologic Group "D" soil is identified in project vicinity. Fair Grass Cover 50% >75% was used in determining the RCN.											

DRAINAGE SUMMARY CALCULATIONS - SCS METHODOLOGY							
Twisted Oaks							
Existing Drainage Area (from HEC-HMS)							
Area #	Area (Ac.)	(RCN)	Tc (Min)	Q100	Q25	Q10	Q2
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O3	0.23	84	5.00	2.8	2.1	1.6	0.9
E1	3.72	84	13.38	34.4	25.1	19.4	10.7
E2	1.28	84	13.19	11.9	8.7	6.7	3.7
J1	Downstream Junction of O2 and O3			59.7	43.7	33.8	18.7
Ref: City of Austin DCM 2.5.2							

DRAINAGE SUMMARY CALCULATIONS - SCS METHODOLOGY							
Twisted Oaks							
Developed Drainage Areas (from HEC-HMS)							
Area #	Area (Ac.)	(RCN)	Tc (Min)	Q100	Q25	Q10	Q2
P1	2.51	91.3	5.00	32.1	24.2	19.4	12.0
P2	0.95	90.6	5.00	12.1	9.1	7.3	4.5
D1	DETENTION POND FOR BASIN P1 & P2			25.8	18.9	13.5	WQ
FR1	1.55	84.4	6.72	17.0	12.5	9.6	5.4
O1	0.97	84.0	8.82	9.5	7.0	5.4	3.1
O2	0.90	84.0	8.53	8.8	6.5	5.0	2.8
O3	0.23	84.0	5.00	2.8	2.1	1.6	0.9
J1	Downstream Junction of FR1, D1, O2 & O3			59.7	43.7	32.4	WQ
Ref: City of Austin DCM 2.5.2 - Post-Atlas 14 Implementation							

Storm water run-off is expected to contain the normal loading of pollutants for storm water, including Total Suspended Solids. While much of the pollutants should be removed via natural vegetation uptake, the majority of the pollutant removal will come via two Partial Sedimentation-Filtration Pond for basin P1 & P2.

ATTACHMENT F Suitability Letter from Authorized Agent (if OSSF is proposed)

Suitability letter has been provided with this submittal.

TRANSPORTATION AND NATURAL RESOURCES

CYNTHIA C. MCDONALD, COUNTY EXECUTIVE

Travis County Administration Building
700 Lavaca Street-5th Floor
P.O. Box 1748
Austin, Texas 78767
Phone: (512) 854-9383
Fax: (512) 854-4697

August 18, 2022

Awandit Giri,
TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, Texas 78749
Agiri@tdi-llc.net

Re: OSSF Suitability Letter
17800 Hamilton Pool Road, Austin, Texas 78738
Lots 1, Block A, Madrone Ranch

To concerned parties:

The above referenced property was found suitable for the use of on-site sewage facilities (OSSF's) in accordance with 30 TAC Chapter 285 and Travis County Code Chapter 448. This letter does not account for any site specific proposed use or design.

Please do not hesitate to call me at (512) 854-6434 if you should have any questions.

Sincerely,
Digitally signed by: Brandon Couch
DN: CN = Brandon Couch email = brandon.couch@traviscountytx.gov C =
US O = Travis Co TNR OU = On-Site Wastewater
Date: 2022.08.18 13:08:51 -05'00'
Brandon Couch, R.S., D.R. #OS29465
On-Site Wastewater Program
Development Services Division

ATTACHMENT G Alternative Secondary Containment Methods (if AST with an alternative method of secondary containment is proposed)

There will be no above ground storage tanks associated with this project.

ATTACHMENT H AST Containment Structure Drawings (if AST is proposed)

There will be no above ground storage tanks associated with this project.

ATTACHMENT I **20% or Less Impervious Cover Waiver**

This site will not be limited to 20% Impervious Cover. A waiver is not requested from permanent water quality controls.

ATTACHMENT J **BMPs for Up-gradient Storm-water**

There is no up-stream storm water flow that runs across the property to the detention pond. Runoff from the upstream is routed via a berm/ditch in the site and is discharged TxDOT Right of Way.

ATTACHMENT K **BMPs for On-site Storm-water**

There will be two permanent partial sedimentation filtration ponds constructed for Basin P1 and Basin P2 for this development.

Water Quality Calculations for the pond can be found on the Water Quality Calculations Sheet, in the Construction Plans.

Disturbed areas of the site not covered by pavement, sidewalk or buildings, will be hydro-mulched or sodded at the end of construction. Landscaped areas will be maintained, and hand watered to establish healthy vegetative cover.

ATTACHMENT L **BMPs for Surface Streams**

There are no surface streams on or near the property. On-site stormwater will not enter any downstream surface tributaries until it has been treated by the partial sedimentation-filtration ponds. The water quality pond is designed to TCEQ Standards to prevent pollutants from exiting the site and entering any surface streams, sensitive features, or the aquifer.

There are no critical environmental features on this site.

ATTACHMENT M **Construction Plans**

Included with this submittal is a full set of construction plans. Within the construction set are calculations for the proposed water quality pond.

ATTACHMENT N **Inspection, Maintenance, Repair, and Retrofit Plan**

There will be two permanent partial sedimentation filtration ponds constructed with this development. The water quality control is designed to those specifications. Runoff from the property after being treated by the water quality pond is released to a tributary of Barton Creek.

1. Inspection Plan for Permanent BMPs

The Partial Sand Filter Pond for Basin P1 and P2 is the Permanent BMPs for this project.

They shall be constructed and finished with equipment capable of excavating and forming or shaping the pond and splitter structures to the approximate plan dimensions.

Inspection of the rough-cut excavation should include:

a) Date, time, temperature, weather condition, personnel make inspections, equipment used for excavation,
b) Documentation noting the approximate quantity of excavation to determine the volume of excavation,
c) Verification that the excavation volume meets or exceeds the plan volume, and
d) Notation regarding the conditions of the area and surrounding area following excavation.

Inspection of the final grading, and shaping excavation should include:

e) Date, time, temperature, weather condition, personnel make inspections, equipment used for fine grading,
f) Documentation noting the approximate overall quantity of excavation to determine the overall volume of excavation,
g) Verification that the overall excavation volume meets or exceeds the plan volume, and
h) Notation regarding the conditions of the area and surrounding area following final excavation.

Inspection of the splitter structures should include:

i) Date, time, temperature, weather condition, personnel make inspections, equipment or means used for forming or shaping the structure,
j) Documentation noting the approximate overall quantity of material used to form or shape the structures (if appropriate),

k) Verification that the overall final structure meets the dimensioning of the plan structure, and
l) Notation regarding the conditions of the area and surrounding area following final structure control construction.

2. Maintenance and Routine Maintenance for All Structural (Storm-water Capture) Systems

Water quality ponds of all types have similar routine maintenance requirements, although most ponds have some unique maintenance needs, as detailed in this section. The following general maintenance requirements apply to all pond BMPs:

a. BMP facilities must be inspected at least twice a year (once during or immediately following a wet weather event) to evaluate facility operation and proper documentation must be made including but not limited to: date, time, personnel performing inspection, weather condition, condition of facility observed, and recommendation, if any, for corrective actions.
b. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired (re-shaped, filled, compacted and re-vegetated) or re-vegetated as soon as possible.
c. Grass areas in and around ponds must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing of grass is performed, a mulching mower must be used, or grass clippings must be caught, collected, and removed.
d. No inorganic or organic fertilizers may be used on grass to enhance growth.
e. Debris and litter accumulated in the facility must be removed during each inspection or more frequently as needed.
f. Excessive sediment must be removed and properly disposed of as discussed below in the next item.
g. With each inspection, any damage to the structural elements of the systems (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired as soon as possible.

3. Maintenance and Routine Maintenance for Water Quality Ponds

a. Accumulated paper, trash and debris should be removed every six months or as necessary.
b. Silt from the sedimentation basins should be removed when the accumulation exceeds six inches. If sediment traps are used, the sediment traps and sediment should be cleaned and removed after four inches of sediment accumulation.
c. The ponds have wall mounted ladders attached to the sedimentation chambers and the filtration chambers. Therefore, the ponds are accessible for the required maintenance.

d. Vegetation within the basins should not be allowed to exceed eighteen (18) inches in height at any time.
e. The basins shall be inspected annually by a qualified inspector and repairs should be made if necessary as soon as possible.
f. Corrective maintenance of the sedimentation basins is required any time the basins do not drain the equivalent of the water quality volume within 72 hours. No standing water is allowed after 60 days if no addition rainfall has occurred.
g. Maintenance of the filter media is necessary when the drawdown time exceeds 48 hours. When this occurs, the upper layer of sand should be removed and replaced with new material meeting the original specifications. Any discolored sand should also be removed and replaced. In filters that have been regularly maintained, this should be limited to the top 2 to 3 inches.
h. Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.
i. Owner to provide a maintenance log for the services under agreement.

4. Repair and Retrofit of Permanent BMPs

If following routine inspection and maintenance, it is determined that repair or a pond retrofit is necessary, the engineer of record, or an engineer with similar abilities, should be notified or consulted.

A repair plan or retrofit plan may be necessary, and if determined necessary, should be developed on a case by case basis and permitted, if necessary. Same or similar materials to those used in the original pond should be used, if practical, for any repair or retrofit.

5. Party responsible for maintaining the BMP (s)

Frederick P. Howland is responsible for the inspection, maintenance, and repairs of the BMPs listed in this report and on the approved construction plan set.

Mark Wise
Twisted Oak Partners, LLC
512-913-9637

Signature

ATTACHMENT O **Pilot-Scale Field Testing Plan, if BMPs not based on Edward's-Aquifer Rules: Technical Guidance**

This project utilized the TCEQ Technical Guidance Manual to design permanent BMPs and measures for this site.

ATTACHMENT P Measures for Minimizing Surface Stream Contamination

No additional measures for minimizing surface stream contamination are designed other that those discussed in previous attachments of this report.

Temporary Stormwater Section (TCEQ Form 0602) Tab 2

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

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

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

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

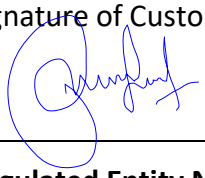
Signature

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

Print Name of Customer/Agent: Awandit Giri, PE

Date: 03/11/2024

Signature of Customer/Agent:



Regulated Entity Name: Twisted Oak Partners, LLC

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: Barton Creek Watershed

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    ☐ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

ATTACHMENT A **Spill Response Actions**

The most likely instances of a spill of hydrocarbons or hazardous substances are:

1. Refueling construction equipment.
2. Performing operator-level maintenance, including adding petroleum, oils, or lubricants.
3. Unscheduled or emergency repairs, such as hydraulic fluid leaks.

Every effort will be taken to be cautious and prevent spills. In the event of a fuel or hazardous substance spill as defined by the Reportable Quantities Table on the TCEQ's website for Spill Response. The Table is included here. The contractor is required to clean up the spill and notify the TCEQ as required.

During business hours report spills to the TCEQ's Austin Regional Office at (512) 339-2929,

After business hours report spills to the Environmental Response Hotline at 1-800-832-8224, or to the TCEQ Spill Reporting Hotline at (512) 463-7727, which is also answered 24 hours a day.

ATTACHMENT B **Potential Sources of Contamination**

Potential sources of contamination can be found on the site in the form of fuels for the trucks and equipment and dispenser systems for fuels as well as asphalt pavement for the completion of the pavement. Also disrupted sediment is a potential contamination downstream of the site. The owner will take full responsibility for the immediate clean-up of any asphalt, emulsion, coatings or concrete, and any damage to silt fence surrounding the property. Stand-by personnel and equipment will be readily available during the curing time in case a spill or break occurs.

ATTACHMENT C **Sequence of Major Activities**

1. Coordinate all start-up work with owner (entire site for infrastructure work, 5.001-acres).

2. Install temporary erosion and sedimentation controls. Silt and sediment shall be removed after any significant rainfall or when the depth of silt/sediment is 1'-0" at any rock berm or silt fence.

3. Contact the Engineer to arrange a pre-construction meeting at least two days in advance of starting construction.

4. Begin site clearing (5.001–Ac.).

5. Rough grade water quality pond for storm water runoff.

6. Construction areas shall be stripped of all vegetation, loose topsoil, cobbles, and boulders. (Note that site stripping could frequently loosen limestone rocks and boulders, which should be excavated and removed from the construction area.)

7. Install utilities improvements.

8. Install all pavement, above ground structures and finish water quality and detention pond.

9. Hydro-mulch or sod all disturbed areas and clean up the site.

10. Finalize all site improvements.

11. Final cleaning of erosion and sedimentation controls.

12. Receive the approval for completion of site work from Engineer and City Inspector.

13. Dispose of all construction debris and trash. Hydro-mulch any disturbed areas following site cleanup. Complete permanent erosion control and site restoration.

14. Project Engineer shall schedule final inspection of site with owner, and submit completion letter to the TCEQ. Remove any temporary erosion/sedimentation controls and tree protection. Restore any areas disturbed during removal of erosion/sedimentation controls.

ATTACHMENT D Temporary Best Management Practices and Measures

1. The contractor shall install erosion/sedimentation controls and tree/natural area protective fencing prior to any site preparation work.

2. The placement of erosion/sedimentation controls shall be in accordance with the approved Erosion and Sedimentation Control Plan.

3. The placement of tree/natural area protective fencing shall be in accordance with the approved Erosion and Sedimentation Control Plan.

4. Specifically, the following temporary BMPs will be used during the construction of this project:
   A. Silt Fence: Silt fence will be installed al around the downhill side of the limits of construction to prevent sediment from leaving the property via sheet storm water flow.
   B. Inlet Protection: Inlet protection will be installed around all existing and proposed inlets to prevent sediment from washing into the stormwater infrastructure.
   C. Stabilized Construction Entrance: The stabilized construction entrance will be installed at the entrance of the property to prevent vehicles from removing sediment from the property.
   D. Concrete Washout Pit: The concrete washout pit will be provided for washing tools and equipment of concrete and other debris.
   ~~E. Rock Berm: A rock berm will be installed downstream of the drainage path from the proposed water quality pond and storm water release. The rock berm is intended to dissipate energy of storm water before leaving the property and to trap sediment.~~

5. A pre-construction conference shall be held on-site with the contractor, design Engineer and any other governing Agency or Inspectors after installation of erosion/sedimentation controls and tree/natural area protection measures and prior to beginning any site preparation work. The contractor shall notify the Engineer, at least two days prior to the meeting date.

6. 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 as appropriate. Major revisions must be approved by TCEQ. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Engineer during the course of construction to correct control inadequacies.

7. The contractor is required to inspect the controls and fences at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The person 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 inches.

8. Prior to the final acceptance by the Engineer, 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 re-vegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.

9. 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 On-Site Superintendent to immediately contact the Engineer for further investigation.

10. Permanent Erosion Control: All disturbed areas shall be restored as noted below.
    a. A minimum of four inches of topsoil shall be placed in all drainage channels (except rock) and between the curb and right-of-way line.

11. All trees and natural areas shown on plan to be preserved shall be protected during construction with temporary fencing.

12. 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.

13. Protective fences shall be erected according to the Details and Standards shown in the plans.

14. 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.

15. Protective fences shall surround the trees or group of trees, and will be located at the outermost limit of branches (drip line), or, 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 Arborist;
    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.

16. 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 behind 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 minimize 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. Where there are severe space constraints due to tract size, or other special requirements, contact an Arborist to discuss alternatives.

17. 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 feet (or to the limits of lower branching) in addition to the reduced fencing provided.

18. Trees approved for removal shall be removed in a manner, which does not impact trees to be preserved.

19. 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.

20. Any trenching required for the installation of landscape irrigation shall be placed, as far from existing tree trunks as possible.

21. 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.

22. Pruning to provide clearance for structures, vehicular traffic and equipment shall take place before damage occurs (ripping of branches, etc.).

23. All finished pruning shall be done according to recognized, approved standards of the industry.

24. Deviation from the above notes may be considered rule violations if there is substantial no-compliance or if a tree sustains damage as a result.

ATTACHMENT E **Request to Temporarily Seal A Feature, If Sealing**

NO FEATURES are within the project limits. NO TEMPORARY SEAL request is made.

ATTACHMENT F **Structural Practices**

During construction of the Site Development Construction Improvements, runoff from the entire site will be captured downstream at the rough-graded location of where the finished water quality pond is to be located. Once erosion controls have been installed and the pre-construction meeting has occurred the first movement of earth will be the rough and final grading of the pond to its full volume. Should a storm occur during construction all of the runoff will be captured and the sediment removed through settlement and possibly the silt fencing.

The Pond can be found on construction plan Set.

ATTACHMENT G **Drainage Area Map**

The Drainage Area Maps are shown on the construction plan set.

ATTACHMENT H Temporary Sediment Pond(s) Plans and Calculations

This site is to receive water quality treatment through the use of two partial sedimentation/filtration ponds. During construction water quality will be achieved not only through the use of silt fencing but also the temporary water quality pond. The outlet weir structure of the water quality pond will be built first after the hole has been dug so as to provide the release of excess storm water to the back of the property. All the pertinent design calculations are shown on the Pond Calculations Sheet.

ATTACHMENT I **Inspection and Maintenance for BMPs**

Inspections

Each contractor will designate a qualified person (or persons) to perform the following inspections:

1. Disturbed areas and areas used for storage of materials that are exposed to precipitation will be inspected for evidence of, or the potential for pollutants entering the drainage system.
2. Erosion and sediment control measures identified in the plan will be observed to ensure that they are operating correctly.
3. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
4. Location where vehicles enter or exit the site will be inspected for evidence of off-site sediment tracking.
5. Permanent seeding and planting will be inspected for bare spots, washouts and unhealthy growth.

The inspection shall be conducted by the responsible person at least once week and after any rainfall.

The information required within an inspection and maintenance report is as follows.

1. Summary of the scope of the inspection.
2. Name(s) and qualifications of personnel making the inspection.
3. The dates of the inspections.
4. Major observations relating to the implementation of the storm-water pollution prevention plan.
5. Changes required correcting damages or deficiencies in the control measures.

In addition to the required routine inspections, the following record of information will also be maintained:

1. The dates when major grading activities occur.
2. The dates when construction activities temporarily or permanently cease on a portion of the site.
3. The dates when stabilization measures are initiated.

Inspection and maintenance reports as well as all records required by this storm-water pollution prevention plan shall become part of the storm-water pollution plan.

Maintenance

Based on the results of the inspection, any changes required to correct damages or deficiencies in the control measures shall be made within seven (7) calendar days after the

inspection. If existing stabilization/erosion controls need modification or additional stabilization/erosion controls are necessary, implementation shall be achieved prior to the next anticipated storm event. If, however, the execution of this requirement becomes impractical, then the implementation will occur as soon as possible, with the incident duly noted with an explanation of the impracticality, in the inspection report.

See the below Maintenance Guidelines for each BMP listed below:

Silt Fence Inspection and Maintenance Guidelines:

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

Construction Entrance Inspection and Maintenance Guidelines:

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

~~**Rock Berm Inspection and Maintenance Guidelines:**~~

~~(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.~~
~~(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.~~
~~(3) Repair any loose wire sheathing.~~
~~(4) The berm should be reshaped as needed during inspection.~~
~~(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.~~
~~(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.~~

Inlet Protection Inspection and Maintenance Guidelines:

(1) Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
(2) Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
(3) Check placement of device to prevent gaps between device and curb.
(4) Inspect filter fabric and patch or replace if torn or missing.
(5) Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

Mark Wed 3/31/22

Applicant's Signature Date

ATTACHMENT J Schedule of Interim and Permanent Soil Stabilization Practices

The purpose of soil stabilization is to prevent soil from leaving the site. The soil on the portion of the site that is left in the natural condition will be stabilized by the native vegetation. The soil on the developed portion of the project will be stabilized by grass, pavement, or buildings.

Interim soil stabilization practices consist of temporary seeding. Within 14 days after the construction activity ceases on any particular area, all disturbed ground where there will not be construction for longer than 21 days must be seeded with fast-germinating temporary seed and protected with mulch.

Permanent soil stabilization practices for pervious areas of the site consist of permanent seeding. All areas at final grade must be seeded within 14 days after completion of the major construction activity. Except for small level spots, seeded areas should be protected with mulch. Final site stabilization is achieved when grass cover provides permanent stabilization for at least 70 percent of the disturbed soil surface, exclusive of areas that have been paved.

Copy of Notice of Intent (NOI) **Tab 3**

TCEQ Office Use Only
Permit No:
CN:
RN:

Notice of Intent (NOI) for an Authorization for Stormwater Discharges Associated with Construction Activity under TPDES General Permit TXR150000

IMPORTANT INFORMATION

Please read and use the General Information and Instructions prior to filling out each question in the NOI form.

Use the NOI Checklist to ensure all required information is completed correctly. **Incomplete applications delay approval or result in automatic denial.**

Once processed your permit authorization can be viewed by entering the following link into your internet browser: http://www2.tceq.texas.gov/wq_dpa/index.cfm or you can contact TCEQ Stormwater Processing Center at 512-239-3700.

ePERMITS

Effective September 1, 2018, this paper form must be submitted to TCEQ with a completed electronic reporting waiver form (TCEQ-20754).

To submit an NOI electronically, enter the following web address into your internet browser and follow the instructions: https://www3.tceq.texas.gov/steers/index.cfm

APPLICATION FEE AND PAYMENT

The application fee for submitting a paper NOI is $325. The application fee for electronic submittal of a NOI through the TCEQ ePermits system (STEERS) is $225.

Payment of the application fee can be submitted by mail or through the TCEQ ePay system. The payment and the NOI must be mailed to separate addresses. To access the TCEQ ePay system enter the following web address into your internet browser: http://www.tceq.texas.gov/epay.

Provide your payment information for verification of payment:

- If payment was mailed to TCEQ, provide the following:
  - Check/Money Order Number: Click here to enter text
  - Name printed on Check: Click here to enter text
- If payment was made via ePay, provide the following:
  - Voucher Number: Click here to enter text
  - A copy of the payment voucher is attached to this paper NOI form.

RENEWAL (This portion of the NOI is not applicable after June 3, 2018)

Is this NOI for a renewal of an existing authorization? ☐ Yes ☐ No

If Yes, provide the authorization number here: TXR15 Click here to enter text

NOTE: If an authorization number is not provided, a new number will be assigned.

SECTION 1. OPERATOR (APPLICANT)

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? CN Click here to enter text

(Refer to Section 1.a) of the Instructions)

b) What is the Legal Name of the entity (applicant) applying for this permit? (The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

Click here to enter text

c) What is the contact information for the Operator (Responsible Authority)?

Prefix (Mr. Ms. Miss): Click here to enter text

First and Last Name: Click here to enter text Suffix: Click here to enter text

Title: Click here to enter text Credentials: Click here to enter text

Phone Number: Click here to enter text Fax Number: Click here to enter text

E-mail: Click here to enter text

Mailing Address: Click here to enter text

City, State, and Zip Code: Click here to enter text

Mailing Information if outside USA:

Territory: Click here to enter text

Country Code: Click here to enter text Postal Code: Click here to enter text

d) Indicate the type of customer:

☐ Individual
☐ Limited Partnership
☐ General Partnership
☐ Trust
☐ Sole Proprietorship (D.B.A.)
☐ Corporation
☐ Estate
☐ Federal Government
☐ County Government
☐ State Government
☐ City Government
☐ Other Government
☐ Other: Click here to enter text

e) Is the applicant an independent operator? ☐ Yes ☐ No

(If a governmental entity, a subsidiary, or part of a larger corporation, check No.)

f) Number of Employees. Select the range applicable to your company.

☐ 0-20 ☐ 251-500

☐ 21-100 ☐ 501 or higher

☐ 101-250

g) Customer Business Tax and Filing Numbers: (**Required** for Corporations and Limited Partnerships. **Not Required** for Individuals, Government, or Sole Proprietors.)

State Franchise Tax ID Number: Click here to enter text.

Federal Tax ID: Click here to enter text.

Texas Secretary of State Charter (filing) Number: Click here to enter text.

DUNS Number (if known): Click here to enter text.

SECTION 2. APPLICATION CONTACT

Is the application contact the same as the applicant identified above?

☐ Yes, go to Section 3

☐ No, complete this section

Prefix (Mr. Ms. Miss): Click here to enter text.

First and Last Name: Click here to enter text. Suffix: Click here to enter text.

Title: Click here to enter text. Credential: Click here to enter text.

Organization Name: Click here to enter text.

Phone Number: Click here to enter text. Fax Number: Click here to enter text.

E-mail: Click here to enter text.

Mailing Address: Click here to enter text.

Internal Routing (Mail Code, Etc.): Click here to enter text.

City, State, and Zip Code: Click here to enter text.

Mailing information if outside USA:

Territory: Click here to enter text.

Country Code: Click here to enter text. Postal Code: Click here to enter text.

SECTION 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) If this is an existing permitted site, what is the Regulated Entity Number (RN) issued to this site? RN Click here to enter text.

(Refer to Section 3.a) of the Instructions)

b) Name of project or site (the name known by the community where it's located): Click here to enter text

c) In your own words, briefly describe the type of construction occurring at the regulated site (residential, industrial, commercial, or other): Click here to enter text

d) County or Counties (if located in more than one): Click here to enter text

e) Latitude: Click here to enter text Longitude: Click here to enter text

f) Site Address/Location

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete *Section A*.

If the site does not have a physical address, provide a location description in *Section B*. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section A:

Street Number and Name: Click here to enter text

City, State, and Zip Code: Click here to enter text

Section B:

Location Description: Click here to enter text

City (or city nearest to) where the site is located: Click here to enter text

Zip Code where the site is located: Click here to enter text

SECTION 4. GENERAL CHARACTERISTICS

a) Is the project or site located on Indian Country Lands?

☐ Yes, do not submit this form. You must obtain authorization through EPA Region 6.

☐ No

b) Is your construction activity associated with a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources?

☐ Yes. Note: The construction stormwater runoff may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization through EPA Region 6.

☐ No

c) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site? Click here to enter text

d) What is the Secondary SIC Code(s), if applicable? Click here to enter text

e) What is the total number of acres to be disturbed? Click here to enter text

f) Is the project part of a larger common plan of development or sale?

☐ Yes

☐ No. The total number of acres disturbed, provided in e) above, must be 5 or more. If the total number of acres disturbed is less than 5, do not submit this form. See the requirements in the general permit for small construction sites.

g) What is the estimated start date of the project? Click here to enter text

h) What is the estimated end date of the project? Click here to enter text

i) Will concrete truck washout be performed at the site? ☐ Yes ☐ No

j) What is the name of the first water body(ies) to receive the stormwater runoff or potential runoff from the site? Click here to enter text

k) What is the segment number(s) of the classified water body(ies) that the discharge will eventually reach? Click here to enter text

l) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?

☐ Yes ☐ No

If Yes, provide the name of the MS4 operator: Click here to enter text

Note: The general permit requires you to send a copy of this NOI form to the MS4 operator.

m) Is the discharge or potential discharge from the site within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?

☐ Yes, complete the certification below.

☐ No, go to Section 5

I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented. ☐ Yes

SECTION 5. NOI CERTIFICATION

a) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000). ☐ Yes

b) I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas. ☐ Yes

c) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed. ☐ Yes

d) I certify that a Stormwater Pollution Prevention Plan has been developed, will be implemented prior to construction and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the Construction General Permit (TXR150000). ☐ Yes

Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3, provided all obligations are confirmed by at least one operator.

SECTION 6. APPLICANT CERTIFICATION SIGNATURE

Operator Signatory Name: Click here to enter text.

Operator Signatory Title: Click here to enter text.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): _____Date: _____

NOTICE OF INTENT CHECKLIST (TXR150000)

Did you complete everything? Use this checklist to be sure!

Are you ready to mail your form to TCEQ? Go to the General Information Section of the Instructions for mailing addresses.

Confirm each item (or applicable item) in this form is complete. This checklist is for use by the applicant to ensure a complete application is being submitted. **Missing information may result in denial of coverage under the general permit.** (See NOI process description in the General Information and Instructions.)

APPLICATION FEE

If paying by check:

☐ Check was mailed **separately** to the TCEQs Cashier's Office. (See Instructions for Cashier's address and Application address.)

☐ Check number and name on check is provided in this application.

If using ePay:

☐ The voucher number is provided in this application and a copy of the voucher is attached.

RENEWAL

☐ If this application is for renewal of an existing authorization, the authorization number is provided.

OPERATOR INFORMATION

☐ Customer Number (CN) issued by TCEQ Central Registry

☐ Legal name as filed to do business in Texas. (Call TX SOS 512-463-5555 to verify.)

☐ Name and title of responsible authority signing the application.

☐ Phone number and e-mail address

☐ Mailing address is complete & verifiable with USPS. www.usps.com

☐ Type of operator (entity type). Is applicant an independent operator?

☐ Number of employees.

☐ For corporations or limited partnerships – Tax ID and SOS filing numbers.

☐ Application contact and address is complete & verifiable with USPS. http://www.usps.com

REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

☐ Regulated Entity Number (RN) (if site is already regulated by TCEQ)

☐ Site/project name and construction activity description

☐ County

☐ Latitude and longitude http://www.tceq.texas.gov/gis/sqmaview.html

☐ Site Address/Location. Do not use a rural route or post office box.

GENERAL CHARACTERISTICS

☐ Indian Country Lands –the facility is not on Indian Country Lands.

☐ Construction activity related to facility associated to oil, gas, or geothermal resources

☐ Primary SIC Code that best describes the construction activity being conducted at the site. www.osha.gov/oshstats/sicser.html

☐ Estimated starting and ending dates of the project.

☐ Confirmation of concrete truck washout.

☐ Acres disturbed is provided and qualifies for coverage through a NOI.

☐ Common plan of development or sale.

☐ Receiving water body or water bodies.

☐ Segment number or numbers.

☐ MS4 operator.

☐ Edwards Aquifer rule.

CERTIFICATION

☐ Certification statements have been checked indicating Yes.

☐ Signature meets 30 Texas Administrative Code (TAC) §305.44 and is original.

Instructions for Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity under TPDES General Permit (TXR150000)

GENERAL INFORMATION

Where to Send the Notice of Intent (NOI):

By Regular Mail:
TCEQ
Stormwater Processing Center (MC228)
P.O. Box 13087
Austin, Texas 78711-3087

By Overnight or Express Mail:
TCEQ
Stormwater Processing Center (MC228)
12100 Park 35 Circle
Austin, TX

Application Fee:

The application fee of $325 is required to be paid at the time the NOI is submitted. Failure to submit payment at the time the application is filed will cause delays in acknowledgment or denial of coverage under the general permit. Payment of the fee may be made by check or money order, payable to TCEQ, or through EPAY (electronic payment through the web).

Mailed Payments:

Use the attached General Permit Payment Submittal Form. The application fee is submitted to a different address than the NOI. Read the General Permit Payment Submittal Form for further instructions, including the address to send the payment.

ePAY Electronic Payment: http://www.tceq.texas.gov/epay

When making the payment you must select Water Quality, and then select the fee category "General Permit Construction Storm Water Discharge NOI Application". You must include a copy of the payment voucher with your NOI. Your NOI will not be considered complete without the payment voucher.

TCEQ Contact List:

Application – status and form questions:	512-239-3700, swpermit@tceq.texas.gov
Technical questions:	512-239-4671, swgp@tceq.texas.gov
Environmental Law Division:	512-239-0600
Records Management - obtain copies of forms:	512-239-0900
Reports from databases (as available):	512-239-DATA (3282)
Cashier's office:	512-239-0357 or 512-239-0187

Notice of Intent Process:

When your NOI is received by the program, the form will be processed as follows:

- **Administrative Review**: Each item on the form will be reviewed for a complete response. In addition, the operator's legal name must be verified with Texas Secretary of State as valid and active (if applicable). The address(es) on the form must be verified with the US Postal service as receiving regular mail delivery. Do not give an overnight/express mailing address.

- **Notice of Deficiency:** If an item is incomplete or not verifiable as indicated above, a notice of deficiency (NOD) will be mailed to the operator. The operator will have 30 days to respond to the NOD. The response will be reviewed for completeness.
- **Acknowledgment of Coverage:** An Acknowledgment Certificate will be mailed to the operator. This certificate acknowledges coverage under the general permit.

  or

  Denial of Coverage: If the operator fails to respond to the NOD or the response is inadequate, coverage under the general permit may be denied. If coverage is denied, the operator will be notified.

General Permit (Your Permit)

For NOIs submitted **electronically** through ePermits, provisional coverage under the general permit begins immediately following confirmation of receipt of the NOI form by the TCEQ.

For **paper** NOIs, provisional coverage under the general permit begins **7 days after a completed NOI is postmarked for delivery** to the TCEQ.

You should have a copy of your general permit when submitting your application. You may view and print your permit for which you are seeking coverage, on the TCEQ web site http://www.tceq.texas.gov. Search using keyword TXR150000.

Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated project or site changes, the present permittee must submit a Notice of Termination and the new operator must submit a Notice of Intent. The NOT and NOI must be submitted no later than 10 days prior to the change in Operator status.

TCEQ Central Registry Core Data Form

The Core Data Form has been incorporated into this form. Do not send a Core Data Form to TCEQ. After final acknowledgment of coverage under the general permit, the program will assign a Customer Number and Regulated Entity Number, if one has not already been assigned to this customer or site.

For existing customers and sites, you can find the Customer Number and Regulated Entity Number by entering the following web address into your internet browser: http://www15.tceq.texas.gov/crpub/ or you can contact the TCEQ Stormwater Processing Center at 512-239-3700 for assistance. On the website, you can search by your permit number, the Regulated Entity (RN) number, or the Customer Number (CN). If you do not know these numbers, you can select “Advanced Search” to search by permittee name, site address, etc.

The Customer (Permittee) is responsible for providing consistent information to the TCEQ, and for updating all CN and RN data for all authorizations as changes occur. For this permit, a Notice of Change form must be submitted to the program area.

INSTRUCTIONS FOR FILLING OUT THE NOI FORM

Renewal of General Permit. Dischargers holding active authorizations under the expired General Permit are required to submit a NOI to continue coverage. The existing permit number is required. If the permit number is not provided or has been terminated, expired, or denied, a new permit number will be issued.

Section 1. OPERATOR (APPLICANT)

a) Customer Number (CN)

TCEQ's Central Registry will assign each customer a number that begins with CN, followed by nine digits. **This is not a permit number, registration number, or license number**.

If the applicant is an existing TCEQ customer, the Customer Number is available at the following website: http://www15.tceq.texas.gov/crpub/. If the applicant is not an existing TCEQ customer, leave the space for CN blank.

b) Legal Name of Applicant

Provide the current legal name of the applicant. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, as filed in the county. You may contact the SOS at 512-463-5555, for more information related to filing in Texas. If filed in the county, provide a copy of the legal documents showing the legal name.

c) Contact Information for the Applicant (Responsible Authority)

Provide information for the person signing the application in the Certification section. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. The mailing address must be recognized by the US Postal Service. You may verify the address on the following website: https://tools.usps.com/go/ZipLookupAction!input.action.

The phone number should provide contact to the applicant.

The fax number and e-mail address are optional and should correspond to the applicant.

d) Type of Customer (Entity Type)

Check only one box that identifies the type of entity. Use the descriptions below to identify the appropriate entity type. Note that the selected entity type also indicates the name that must be provided as an applicant for an authorization.

Individual

An individual is a customer who has not established a business, but conducts an activity that needs to be regulated by the TCEQ.

Partnership

A customer that is established as a partnership as defined by the Texas Secretary of State Office (TX SOS). If the customer is a 'General Partnership' or 'Joint Venture' filed in the county (not filed with TX SOS), the legal name of each partner forming the 'General Partnership' or 'Joint Venture' must be provided. Each 'legal entity' must apply as a co-applicant.

Trust or Estate

A trust and an estate are fiduciary relationships governing the trustee/executor with respect to the trust/estate property.

Sole Proprietorship (DBA)

A sole proprietorship is a customer that is owned by only one person and has not been incorporated. This business may:

1. be under the person's name
2. have its own name (doing business as or DBA)
3. have any number of employees.

If the customer is a Sole Proprietorship or DBA, the 'legal name' of the individual business 'owner' must be provided. The DBA name is not recognized as the 'legal name' of the entity. The DBA name may be used for the site name (regulated entity).

Corporation

A customer that meets all of these conditions:

1. is a legally incorporated entity under the laws of any state or country
2. is recognized as a corporation by the Texas Secretary of State
3. has proper operating authority to operate in Texas

The corporation's 'legal name' as filed with the Texas Secretary of State must be provided as applicant. An 'assumed' name of a corporation is not recognized as the 'legal name' of the entity.

Government

Federal, state, county, or city government (as appropriate)

The customer is either an agency of one of these levels of government or the governmental body itself. The government agency's 'legal name' must be provided as the applicant. A department name or other description of the organization is not recognized as the 'legal name'.

Other

This may include a utility district, water district, tribal government, college district, council of governments, or river authority. Provide the specific type of government.

e) Independent Entity

Check No if this customer is a subsidiary, part of a larger company, or is a governmental entity. Otherwise, check Yes.

f) Number of Employees

Check one box to show the number of employees for this customer's entire company, at all locations. This is not necessarily the number of employees at the site named in the application.

g) Customer Business Tax and Filing Numbers

These are required for Corporations and Limited Partnerships. These are not required for Individuals, Government, and Sole Proprietors.

State Franchise Tax ID Number

Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter the Tax ID number.

Federal Tax ID

All businesses, except for some small sole proprietors, individuals, or general partnerships should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Sole proprietors, individuals, or general partnerships do not need to provide a federal tax ID.

TX SOS Charter (filing) Number

Corporations and Limited Partnerships required to register with the Texas Secretary of State are issued a charter or filing number. You may obtain further information by calling SOS at 512-463-5555.

DUNS Number

Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

Section 2. APPLICATION CONTACT

Provide the name and contact information for the person that TCEQ can contact for additional information regarding this application.

Section 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) Regulated Entity Number (RN)

The RN is issued by TCEQ's Central Registry to sites where an activity is regulated by TCEQ. This is not a permit number, registration number, or license number. Search TCEQ's Central Registry to see if the site has an assigned RN at http://www15.tceq.texas.gov/crpub/. If this regulated entity has not been assigned an RN, leave this space blank.

If the site of your business is part of a larger business site, an RN may already be assigned for the larger site. Use the RN assigned for the larger site.

If the site is found, provide the assigned RN and provide the information for the site to be authorized through this application. The site information for this authorization may vary from the larger site information.

An example is a chemical plant where a unit is owned or operated by a separate corporation that is accessible by the same physical address of your unit or facility. Other examples include industrial parks identified by one common address but different corporations have control of defined areas within the site. In both cases, an RN would be assigned for the physical address location and the permitted sites would be identified separately under the same RN.

b) Name of the Project or Site

Provide the name of the site or project as known by the public in the area where the site is located. The name you provide on this application will be used in the TCEQ Central Registry as the Regulated Entity name.

c) Description of Activity Regulated

In your own words, briefly describe the primary business that you are doing that requires this authorization. Do not repeat the SIC Code description.

d) County

Provide the name of the county where the site or project is located. If the site or project is located in more than one county, provide the county names as secondary.

e) Latitude and Longitude

Enter the latitude and longitude of the site in degrees, minutes, and seconds or decimal form. For help obtaining the latitude and longitude, go to: http://www.tceq.texas.gov/gis/sqmaview.html.

f) Site Address/Location

If a site has an address that includes a street number and street name, enter the complete address for the site in *Section A*. If the physical address is not recognized as a USPS delivery address, you may need to validate the address with your local police (911 service) or through an online map site used to locate a site. Please confirm this to be a complete and valid address. Do not use a rural route or post office box for a site location.

If a site does not have an address that includes a street number and street name, provide a complete written location description in *Section B.* For example: "The site is located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1."

Provide the city (or nearest city) and zip code of the site location.

Section 4. GENERAL CHARACTERISTICS

a) Indian Country Lands

If your site is located on Indian Country Lands, the TCEQ does not have authority to process your application. You must obtain authorization through EPA Region 6, Dallas. Do not submit this form to TCEQ.

b) Construction activity associated with facility associated with exploration, development, or production of oil, gas, or geothermal resources

If your activity is associated with oil and gas exploration, development, or production, you may be under jurisdiction of the Railroad Commission of Texas (RRC) and may need to obtain authorization from EPA Region 6.

Construction activities associated with a facility related to oil, gas or geothermal resources may include the construction of a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a

carbon dioxide geologic storage facility; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel.

Where required by federal law, discharges of stormwater associated with construction activities under the RRC's jurisdiction must be authorized by the EPA and the RRC, as applicable. Activities under RRC jurisdiction include construction of a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources, such as a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a carbon dioxide geologic storage facility under the jurisdiction of the RRC; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel. The RRC also has jurisdiction over stormwater from land disturbance associated with a site survey that is conducted prior to construction of a facility that would be regulated by the RRC. Under 33 U.S.C. §1342(l)(2) and §1362(24), EPA cannot require a permit for discharges of stormwater from field activities or operations associated with {oil and gas} exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities unless the discharge is contaminated by contact with any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the facility. Under §3.8 of this title (relating to Water Protection), the RRC prohibits operators from causing or allowing pollution of surface or subsurface water. Operators are encouraged to implement and maintain best management practices (BMPs) to minimize discharges of pollutants, including sediment, in stormwater during construction activities to help ensure protection of surface water quality during storm events.

For more information about the jurisdictions of the RRC and the TCEQ, read the Memorandum of Understanding (MOU) between the RRC and TCEQ at 16 Texas Administrative Code, Part 1, Chapter 3, Rule 3.30, by entering the following link into an internet browser: http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=30 or contact the TCEQ Stormwater Team at 512-239-4671 for additional information.

c) Primary Standard Industrial Classification (SIC) Code

Provide the SIC Code that best describes the construction activity being conducted at this site.

Common SIC Codes related to construction activities include:

- 1521 - Construction of Single Family Homes
- 1522 - Construction of Residential Buildings Other than Single Family Homes
- 1541 - Construction of Industrial Buildings and Warehouses

- 1542 - Construction of Non-residential Buildings, other than Industrial Buildings and Warehouses
- 1611 - Highway and Street Construction, except Highway Construction
- 1622 - Bridge, Tunnel, and Elevated Highway Construction
- 1623 - Water, Sewer, Pipeline and Communications, and Power Line Construction

For help with SIC Codes, enter the following link into your internet browser: http://www.osha.gov/pls/imis/sicsearch.html or you can contact the TCEQ Small Business and Local Government Assistance Section at 800-447-2827 for assistance.

d) Secondary SIC Code

Secondary SIC Code(s) may be provided. Leave this blank if not applicable. For help with SIC Codes, enter the following link into your internet browser: http://www.osha.gov/pls/imis/sicsearch.html or you can contact the TCEQ Small Business and Environmental Assistance Section at 800-447-2827 for assistance.

e) Total Number of Acres Disturbed

Provide the approximate number of acres that the construction site will disturb. Construction activities that disturb less than one acre, unless they are part of a larger common plan that disturbs more than one acre, do not require permit coverage. Construction activities that disturb between one and five acres, unless they are part of a common plan that disturbs more than five acres, do not require submission of an NOI. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

If you have any questions about this item, please contact the stormwater technical staff by phone at 512-239-4671 or by email at swgp@tceq.texas.gov.

f) Common Plan of Development

Construction activities that disturb less than five acres do not require submission of an NOI unless they are part of a common plan of development or for sale where the area disturbed is five or more acres. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

For more information on what a common plan of development is, refer to the definition of "Common Plan of Development" in the Definitions section of the general permit or enter the following link into your internet browser: www.tceq.texas.gov/permitting/stormwater/common_plan_of_development_steps.html

For further information, go to the TCEQ stormwater construction webpage enter the following link into your internet browser: www.tceq.texas.gov/goto/construction and search for "Additional Guidance and Quick Links". If you have any further questions about the Common Plan of Development you can contact the TCEQ Stormwater Team at 512-239-4671 or the TCEQ Small Business and Environmental Assistance at 800-447-2827.

g) Estimated Start Date of the Project

This is the date that any construction activity or construction support activity is initiated at the site. If renewing the permit provide the original start date of when construction activity for this project began.

h) Estimated End Date of the Project

This is the date that any construction activity or construction support activity will end and final stabilization will be achieved at the site.

i) Will concrete truck washout be performed at the site?

Indicate if you expect that operators of concrete trucks will washout concrete trucks at the construction site.

j) Identify the water body(s) receiving stormwater runoff

The stormwater may be discharged directly to a receiving stream or through a MS4 from your site. It eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. You must provide the name of the water body that receives the discharge from the site (a local stream or lake).

If your site has more than one outfall you need to include the name of the first water body for each outfall, if they are different.

k) Identify the segment number(s) of the classified water body(s)

Identify the classified segment number(s) receiving a discharge directly or indirectly. Enter the following link into your internet browser to find the segment number of the classified water body where stormwater will flow from the site: www.tceq.texas.gov/waterquality/monitoring/viewer.html or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

You may also find the segment number in TCEQ publication GI-316 by entering the following link into your internet browser: www.tceq.texas.gov/publications/gi/gi-316 or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

If the discharge is into an unclassified receiving water and then crosses state lines prior to entering a classified segment, select the appropriate watershed:

- 0100 (Canadian River Basin)
- 0200 (Red River Basin)
- 0300 (Sulfur River Basin)
- 0400 (Cypress Creek Basin)
- 0500 (Sabine River Basin)

Call the Water Quality Assessments section at 512-239-4671 for further assistance.

l) Discharge into MS4 – Identify the MS4 Operator

The discharge may initially be into a municipal separate storm sewer system (MS4). If the stormwater discharge is into an MS4, provide the name of the entity that operates the MS4 where the stormwater discharges. An MS4 operator is often a city, town, county, or utility district, but possibly can be another form of government. Please note that the Construction General Permit requires the Operator to supply the MS4 with a

copy of the NOI submitted to TCEQ. For assistance, you may call the technical staff at 512-239-4671.

m) Discharges to the Edwards Aquifer Recharge Zone and Certification

The general permit requires the approved Contributing Zone Plan or Water Pollution Abatement Plan to be included or referenced as a part of the Stormwater Pollution Prevention Plan.

See maps on the TCEQ website to determine if the site is located within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer by entering the following link into an internet browser: www.tceq.texas.gov/field/eapp/viewer.html or by contacting the TCEQ Water Quality Division at 512-239-4671 for assistance.

If the discharge or potential discharge is within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, a site-specific authorization approved by the Executive Director under the Edwards Aquifer Protection Program (30 TAC Chapter 213) is required before construction can begin.

For questions regarding the Edwards Aquifer Protection Program, contact the appropriate TCEQ Regional Office. For projects in Hays, Travis and Williamson Counties: Austin Regional Office, 12100 Park 35 Circle, Austin, TX 78753, 512-339-2929. For Projects in Bexar, Comal, Kinney, Medina and Uvalde Counties: TCEQ San Antonio Regional Office, 14250 Judson Rd., San Antonio, TX 78233-4480, 210-490-3096.

Section 5. NOI CERTIFICATION

Note: Failure to indicate Yes to all of the certification items may result in denial of coverage under the general permit.

a) Certification of Understanding the Terms and Conditions of Construction General Permit (TXR150000)

Provisional coverage under the Construction General Permit (TXR150000) begins 7 days after the completed paper NOI is postmarked for delivery to the TCEQ. Electronic applications submitted through ePermits have immediate provisional coverage. You must obtain a copy and read the Construction General Permit before submitting your application. You may view and print the Construction General Permit for which you are seeking coverage at the TCEQ web site by entering the following link into an internet browser: www.tceq.texas.gov/goto/construction or you may contact the TCEQ Stormwater processing Center at 512-239-3700 for assistance.

b) Certification of Legal Name

The full legal name of the applicant as authorized to do business in Texas is required. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, that is filed in the county where doing business. You may contact the SOS at 512-463 5555, for more information related to filing in Texas.

c) Understanding of Notice of Termination

A permittee shall terminate coverage under the Construction General Permit through the submittal of a NOT when the operator of the facility changes, final stabilization has

been reached, the discharge becomes authorized under an individual permit, or the construction activity never began at this site.

d) Certification of Stormwater Pollution Prevention Plan

The SWP3 identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter stormwater, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. You must develop this plan in accordance with the TCEQ general permit requirements. This plan must be developed and implemented before you complete this NOI. The SWP3 must be available for a TCEQ investigator to review on request.

Section 6. APPLICANT CERTIFICATION SIGNATURE

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code (TAC) §305.44.

If you are a corporation:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(1) (see below). According to this code provision, any corporate representative may sign an NOI or similar form so long as the authority to sign such a document has been delegated to that person in accordance with corporate procedures. By signing the NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

If you are a municipality or other government entity:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(3) (see below). According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statute(s) under which your government entity was formed. An NOI or similar document that is signed by a government official who is not a ranking elected official or principal executive officer does not conform to §305.44(a)(3). The signatory requirement may not be delegated to a government representative other than those identified in the regulation. By signing the NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the TCEQ's Environmental Law Division at 512-239-0600.

30 Texas Administrative Code

§305.44. Signatories to Applications

(a) All applications shall be signed as follows.

(1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the

corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

(2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

Texas Commission on Environmental Quality
General Permit Payment Submittal Form

Use this form to submit your Application Fee only if you are mailing your payment.

Instructions:

- Complete items 1 through 5 below:
- Staple your check in the space provided at the bottom of this document.
- *Do not mail this form with your NOI form.*
- *Do not mail this form to the same address as your NOI.*

Mail this form and your check to either of the following:

By Regular U.S. Mail
Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

By Overnight or Express Mail
Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753

Fee Code: GPA General Permit: TXR150000

1. Check or Money Order No: Click here to enter text
2. Amount of Check/Money Order: Click here to enter text
3. Date of Check or Money Order: Click here to enter text
4. Name on Check or Money Order: Click here to enter text
5. NOI Information:

   If the check is for more than one NOI, list each Project or Site (RE) Name and Physical Address exactly as provided on the NOI. **Do not submit a copy of the NOI with this form, as it could cause duplicate permit application entries!**

   If there is not enough space on the form to list all of the projects or sites the authorization will cover, then attach a list of the additional sites.

   Project/Site (RE) Name: Click here to enter text

   Project/Site (RE) Physical Address: Click here to enter text

Staple the check or money order to this form in this space.

Agent Authorization (TCEQ Form 0599) **Tab 4**

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

I Mark Wise,
Print Name

Owner,
Title - Owner/President/Other

of Twisted Oak Partners, LLC,
Corporation/Partnership/Entity Name

have authorized Awandit Giri, PE
Print Name of Agent/Engineer

of TDI Engineering LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Mark Wise
Applicant's Signature

3/31/22
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Mark Wise 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 31 day of March, 22.

Kristin Alise Endendyk
NOTARY PUBLIC

Kristin Alise Endendyk
Typed or Printed Name of Notary

KRISTIN ALISE ENDENDYK NOTARY PUBLIC STATE OF TEXAS ID 133525185 EXP. 01-10-2026

MY COMMISSION EXPIRES: 1-10-26

Application Fee (TCEQ Form 0574) **Tab 5**

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Twisted Oaks
Regulated Entity Location: 17800 Hamilton Pool Road, Austin, TX, 78738
Name of Customer: Twisted Oak Partners,LLC
Contact Person: Mark Wise Phone: 512-784-3308
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☒ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	5.001 Acres	$ 5000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 03/11/2024

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	***Fee***
Exception Request	$500

Extension of Time Requests

Project	***Fee***
Extension of Time Request	$150

Core Data (TCEQ Form 10400) **Tab 6**

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

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

SECTION II: Customer Information

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

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

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

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

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

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0802217716	32057285622	32-5728562	0964494408

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other		☐ Sole Proprietorship	☐ Other:

12. Number of Employees	13. Independently Owned and Operated?
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ Yes ☐ No

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

☐ Owner ☐ Operator ☒ Owner & Operator

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

15. Mailing Address:	17800 Hamilton Pool Road						
	City	Austin	State	TX	ZIP	78738	ZIP + 4

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 913-9637		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Twisted Oaks

23. Street Address of the Regulated Entity: *(No PO Boxes)*	17800 Hamilton Pool Road							
	City	Austin	State	TX	ZIP	78738	ZIP + 4	
24. County	Travis							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:								

26. Nearest City	State	Nearest ZIP Code

27. Latitude (N) In Decimal:	30.2901522	28. Longitude (W) In Decimal:	-98.048175

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)
6512		531390	

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

34. Mailing Address:	17800 Hamilton Pool Road							
	City	Austin	State	TX	ZIP	78738	ZIP + 4	
35. E-Mail Address:	mark@austinwaterdesigns.com							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(512) 913-9637		( ) -

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

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

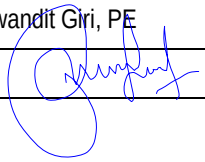
SECTION IV: Preparer Information

40. Name:	Awandit Giri, PE	41. Title:	Project Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(512) 301-3389		( ) -	agiri@tdi-llc.net

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:	TDI Engineering, LLC	Job Title:	Project Engineer
Name *(In Print)*:	Awandit Giri, PE	Phone:	(512) 301- 3389
Signature:		Date:	03/11/2024

County Project No:
22-39516
WTCPUA Project No:
71-22-009

DEVELOPMENT PLANS FOR:

TWISTED OAKS OFFICE COMPLEX

17800 HAMILTON POOL RD.
AUSTIN, TX 78738
LOT 1, BLOCK A OF MADRONE RANCH SUBDIVISION

OWNERS:	TWISTED OAK PARTNERS, LLC 17800 HAMILTON POOL RD AUSTIN, TX 78738 (512)913-9637
CONTACT:	LUCI TEMPLE & MARK WISE
CIVIL ENGINEER:	TDI ENGINEERING, LLC TBPE FIRM #8601 5906 OLD FREDERICKSBURG RD. STE #300 AUSTIN, TX 78749 (512)301-3389
CONTACT:	F.P. (TRES) HOWLAND III, P.E.
SURVEYOR:	B&G SURVEYING, LLC FIRM #100363-00 1404 WEST NORTH LOOP BLVD. AUSTIN, TX 78758 (512)458-1009
CONTACT:	VICTOR M. GARZA, RPLS

UTILITY AND GOVERNING AGENCIES CONTACT LIST

UTILITY OR GOVERNING AGENCY	NAME AND ADDRESS	CONTACT	TELEPHONE
ELECTRIC	PEDERNALES ELECTRIC COOPERATIVE	N/A	512-394-9136
GAS	N/A	N/A	N/A
TELEPHONE	ATT GUADALUPE ST. AUSTIN, TEXAS	PAUL WHITE	512-870-3539
WATER	WEST TRAVIS COUNT PUBLIC UTILITY AGENCY	N/A	512-263-0100
WASTEWATER	OSSF	N/A	N/A
BUILDING OFFICIAL	N/A	N/A	N/A
TEXAS EXCAVATION SYSTEM	DIG TESS 11880 GREENVILLE AV. DALLAS, TEXAS 75243	INFO@DIGTESS.ORG	800-DIG-TESS

TRAVIS COUNTY REVISION BLOCK
ALL REVISIONS AND CORRECTIONS SHOULD BE REVIEWED AND APPROVED BY TRAVIS COUNTY

NO.	REVISION DESCRIPTION	REVIEWED BY	DATE

WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY (WTCPUA) NOTES:

1. WEST TRAVIS COUNTY PUBLIC AGENCY IS THE RETAIL WATER PROVIDER FOR THIS SUBDIVISION IMPROVEMENT PROJECT.
2. (10) 3/4" METERS FOR DOMESTIC PURPOSES ONLY. THERE ARE NO METERS ASSOCIATED WITH LANDSCAPE IRRIGATION IN THIS SET.
3. WTCPUA DOES NOT GUARANTEE FIRE FLOW.
4. A WTCPUA REPRESENTATIVE MUST BE PRESENT AT TIME OF CONNECTION TO THE EXISTING SYSTEM.
5. ALL WATER AND WASTEWATER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN WATER AND WASTEWATER CONSTRUCTION SPECIFICATIONS AND WITH MATERIALS FROM THE CURRENT APPROVED CITY OF AUSTIN STANDARD PRODUCTS LIST (SPL).

WATER QUANTITIES AND MATERIALS LIST TO BE MAINTAINED BY WTCPUA

Water Service	Quantity	Unit
8" DIP (CL350)	788	L.F.
6" DI (Class 350)	20	L.F.
2" HDPE Service Line	341	L.F.
8"Gate Valve	6	EACH
6"Gate Valve	4	EACH
2"Gate Valve	8	EACH
8"Cap	1	EACH
2" Cap	1	EACH
2"Cap & Plug	2	EACH
8"x6" Cut-In-Tee	1	EACH
8"x8"Tee	1	EACH
8"x6"Tee	2	EACH
8"x2"Tee	2	EACH
2"x2"Tee	1	EACH
8"x4" Reducer	1	EACH
4"x2" Reducer	1	EACH
8" Mega Lug Joint Restraints	40	EACH
Fire Hydrant Assembly	2	EACH
3/4" Meter Box	9	EACH
Back Flow Preventer	9	EACH

MAP GRID PANEL: N-02

MAPSCO PAGE: 517H

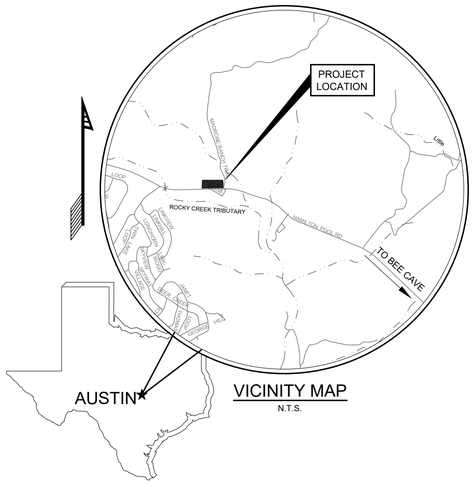
TRACT TAX ID #: 473729

WTCPUA GRID MAP: Panel N-02 (HWY 71 System)

WTCPUA PRESSURE PLANE: HGL-1420

PROJECT SCOPE:

THIS PROJECT CONSISTS OF CONSTRUCTION OF 10 OFFICE BUILDINGS AND ALL ASSOCIATE PARKING AND UTILITIES.



VICINITY MAP
N.T.S.

SHEET INDEX

PRE-CONSTRUCTION NOTES

1. PRIOR TO SCHEDULING THE PRE-CONSTRUCTION MEETING ENSURE THAT ALL REQUIRED NOTICES AND PERMITS ARE POSTED AND THE CERTIFIED INSPECTOR FOR YOUR SITE HAS UPLOADED A SWP3 INSPECTION REPORT TO YOUR ACCOUNT THAT CONFIRMS THAT THE FIRST PHASE OF TEMPORARY ESC HAVE BEEN INSTALLED PER PLANS AND SPECIFICATIONS.
2. FAILURE TO FOLLOW THE PRE-CONSTRUCTION MEETING REQUIREMENTS MAY RESULT IN WORK STOPPAGE AND ADDITIONAL PERMIT FEES.
3. SPECIAL PRE-CON NOTES:
   - 3.1. PROVIDE 48 HR. MINIMUM NOTICE TO SCHEDULE THE PRE-CON MEETING.
   - 3.2. PROVIDE A 1/2 SIZE SET OF PLANS FOR THE INSPECTOR AT THE PRE-CON.
   - 3.3. PROVIDE AN ANTICIPATED CONSTRUCTION SCHEDULE AT THE PRE-CON.
   - 3.4. BRING YOUR SWP3 FOR COMPLETENESS CHECK AT THE PRE-CON.
4. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE PLANS APPROVED BY TRAVIS COUNTY.
5. SCHEDULE YOUR PROJECTS PRE-CONSTRUCTION MEETING THROUGH THE MYPERMITNOW.ORG ACCOUNT AFTER THE INITIAL 3RD PARTY SWP3 INSPECTION REPORT HAS BEEN UPLOADED AND ALL PERMITS AND NOTICES HAVE BEEN POSTED, THEN FOLLOW UP WITH EMAILS TO THE ENVIRONMENTAL INSPECTOR AT ENV-INSPECTION@TRAVISCOUNTYTX.GOV

RELATED CASES:
- PLAT - DOC #199900251

ZONING:
- N/A. SITE IS OUTSITE OF THE CITY OF AUSTIN ETJ.

LEGAL DESCRIPTION:
- LOT 1 BLK A MADRONE RANCH SUBDIVISION, 5.001 AC.

EDWARDS AQUIFER ZONE:
- EDWARDS AQUIFER CONTRIBUTING ZONE

WATERSHED:
- BARTON CREEK

CURRENT USE:
- VACANT

PROPOSED USE:
- OFFICE

FLOOD PLAIN:
- ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 2% ANNUAL CHANCE FLOOD PLAIN, AS SHOWN ON THE FEMA FIRM MAP 48453C0395J, DATED JAN 22, 2020.

NOTES:
1. THESE ENGINEERING PLANS ARE COMPLETE AND THE TECHNICAL DATA CONTAINED WITHIN IS ACCURATE AND IN ACCORDANCE WITH TRAVIS COUNTY CODE TO THE BEST OF OUR KNOWLEDGE.
2. THIS SITE IS IN EDWARDS AQUIFER CONTRIBUTING ZONE.
3. ALL NECESSARY INSPECTIONS AND/OR UTILITY SERVICE CONNECTIONS SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES.
4. THE ENGINEER WHO PREPARED THESE PLANS IS RESPONSIBLE FOR THEIR ADEQUACY. IN APPROVING THESE PLANS, TRAVIS COUNTY MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
5. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE VERIFICATION OF ALL DATA, INFORMATION, AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL. WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY COUNTY DEPARTMENTS.
6. ALL DISTURBED AREAS OF THIS PROJECT SHALL BE RE-VEGETATED AND ALL PERMANENT EROSION AND SEDIMENTATION CONTROLS COMPLETED PRIOR TO THE ISSUANCE OF OCCUPANCY PERMITS.
7. ANY AREA WITHIN THE LIMITS OF CONSTRUCTION OF THE PROJECT WHICH IS NOT ADEQUATELY REVEGETATED SHALL BE BROUGHT INTO COMPLIANCE PRIOR TO THE RELEASE OF THE FINAL ACCEPTANCE.
8. A COMMERCIAL DRIVEWAY WAS APPROVED BY TXDOT FOR THIS SITE UNDER PERMIT NO. 015-17-35647-DP.
9. AN OSSF SYSTEM WAS APPROVED BY TRANSPORTATION & NATURAL RESOURCES UNDER PERMIT NO. 15-8905.
10. WTCPUA WATER SHALL NOT BE USED FOR LANDSCAPE IRRIGATION.
11. THE OWNER'S ENGINEER WILL MAKE PERIODIC SITE VISITS AND OBSERVATIONS DURING CONSTRUCTION TO INSURE ADEQUACY OF THE WORK DESIGN AND THE SAFETY OF STRUCTURES IN COMPLIANCE WITH THE ISSUANCE OF THE CONSTRUCTION SUMMARY REPORT AND ENGINEERING CONCURRENCE LETTER AS REQUIRED AS PART OF THE PROJECT CLOSE-OUT PROCESS.
12. ALL STRUCTURAL FIELD CHANGES REQUIRE A PLAN REVISION IN WRITING BEFORE COMMENCEMENT OF THE WORK.
13. THE APPLCANT/OWNER MUST COORDINATE WITH UTILITY COMPANIES PRIOR TO CONSTRUCTION.
14. CONTRACTOR SHALL COORDINATE CONTINUOUSLY AND AS NECESSARY WITH PROPERTY/BUSINESS OWNERS TO MAINTAIN CONTINUATION OF TRAFFIC ONTROL AND ACCESS.
15. NO EQUIPMENT, MATERIALS, AND/OR SPOILS SHALL BE STORED OVERNIGHT WITHIN THE FEMA 100-YR FLOODPLAIN, THE CREEK, AND THE CWQZ.
16. BE INFORMED THAT THE CONTRATOR MUST OBTAIN A SEPARATE PERMIT TO WORK WITHIN THE COUNTY ROW.
17. THE SITE IS APPROVED FOR 9 LUEs (DOMESTIC WATER) (AND Ø IRRIGATION LUEs IF APPROVED).
18. IF THE PRESSURE EXCEEDS 65 PSI, A PRESSURE REDUCING VALVE SHALL BE INSTALLED IN THE CUSTOMER SIDE OF THE PROPERTY.

REVIEWED BY:
TRAVIS COUNTY TRANSPORTATION AND NATURAL RESOURCES DATE
22-39516
TNR DEVELOPMENT PERMIT NUMBER
APPROVED BY:
TRAVIS COUNTY ESD NO. 6 DATE
APPROVED BY:
WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY DATE

TOTAL SITE AREA= 5.001 ACRES
TOTAL DISTURBED AREA WITHIN THE LIMITS OF CONSTRUCTION = 4.26 ACRES
TOTAL IMPERVIOUS COVER = 78,629 SF
TOTAL BUILDING IMPERVIOUS COVER= 25,282 SF

INITIAL SUBMITTAL
UPDATE 1
UPDATE 2
UPDATE 3

CIVIL & STRUCTURAL ENGINEERING
AUSTIN / HOUSTON
TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, TX 78749
512-301-3389 | www.tdi-llc.net
*THINK DESIGN Innovate, integrate, implement...
TDi ENGINEERING

5/21/2024
STATE OF TEXAS
F. P. HOWLAND III
90451
REGISTERED PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAKS OFFICE COMPLEX
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

COVER

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 1

1 OF 36

Drawing: I:\w2016\TDI-LLC\Projects\5405 - Mark Wise\5405-005 - Twisted Oaks Phase 2\Cnt\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: FHOWLAND
Last Modified: Mar. 20, 24 - 17:19
Plot Date/Time: Mar. 21, 24 - 15:58:19

County Project No:
22-39516
WTCPUA Project No:
71-22-009

EROSION/SEDIMENTATION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE RETAILS 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 INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE.
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 THE CITY. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE INSPECTOR DURING THE COURSE OF THE CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES (6) INCHES.
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 CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY INSPECTOR FOR FURTHER INVESTIGATION.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED.

PROJECT NOTES:

1. CONTACTOR SHALL MAINTAIN MINIMUM 24" CLEARANCE FROM ALL EXISTING UTILITIES.
2. FOR PUBLIC WATER & WASTEWATER LINE EMERGENCIES, CONTACT THE CITY OF LEANDER PUBLIC WORKS EMERGENCY 24-HOUR ON-CALL LINE AT 512-260-4780.
3. THE CONTRACTOR SHALL CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES THAT ARE TO BE EXTENDED, TIED TO, CROSSED, OR ALTERED; OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS.
4. CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT FOR EXISTING WATER, WASTEWATER & STREET LIGHT ELECTRICAL WIRING, AND TRAFFIC SIGNAL WIRING LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
5. LOCATE REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET.
6. REFRESH ALL LOCATES BEFORE 14 DAYS – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.
7. REPORT ALL DAMAGE TO CITY INFRASTRUCTURE IMMEDIATELY – IF YOU WITNESS OR EXPERIENCE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT BY PHONE. IF DAMAGE IS WITNESSED OR EXPERIENCED AFTER HOURS, CALL THE CITY OF LEANDER UTILITIES ON-CALL LINE AT THE NUMBER LISTED ABOVE.
8. A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT & CITY OF LEANDER REPRESENTATIVES PRIOR TO INSTALLATION OF EROSION/SEDIMENTATION CONTROLS & TREE PROTECTION MEASURES AS WELL AS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CITY OF LEANDER PLANNING DEPARTMENT AT 512-528-2750 AT LEAST THREE (3) DAYS PRIOR TO MEETING DATE.
9. CITY OF LEANDER NOISE ORDINANCE PROHIBITS CONSTRUCTION ACTIVITY BETWEEN THE HOURS OF 9 PM AND 7 AM. REQUESTS FOR EXCEPTIONS TO THE ORDINANCE MUST BE MADE TO LEANDER CITY COUNCIL.
10. CONTRACTOR SHALL BORE UNDER ALL DRIVEWAYS, STREET CROSSINGS AND OTHER PAVED AREAS. OPEN CUT CROSSING SHALL NOT BE ALLOWED.
11. CONTRACTOR SHALL REPLACE ALL DAMAGED PAVEMENT, CURB & GUTTER, SIDEWALK, CURB INLETS AND ALL OTHER INFRASTRUCTURE DAMAGED BY CONSTRUCTION PER CITY OF LEANDER STANDARDS & SPECIFICATIONS.
12. ALL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE BOTH DURING AND AFTER CONSTRUCTION.
13. ALL UNDERGROUND UTILITY LINES SHALL CROSS UNDERNEATH WATERLINES.
14. THE MINIMUM DEPTH OF COVER FOR UTILITY LINES INSTALLED UNDER CITY OF LEANDER ROADWAYS SHALL BE 36" BENEATH FINISHED GRADE.

EROSION CONTROL & RESTORATION:

1. THE CITY OF LEANDER ENVIRONMENT INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
2. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL. THE 6" MINIMUM SOIL DEPTH SHALL CONSISTS OF 75% SOIL BLENDED WITH 25% COMPOST.
3. ALL DISTURBED AREAS SHALL BE RE-VEGETATED USING ONLY APPROVED GRASSES FROM THE GROW GREEN GUIDE.

CONSTRUCTION SEQUENCING (TDI & CITY FORMAT)

1. COORDINATE ALL START-UP WORK WITH OWNER AND GOVERNING AGENCIES. TREES WILL BE FERTILIZED PRIOR TO ANY CONSTRUCTION ACTIVITY. ~~MATERIALS AND METHODS ARE TO BE APPROVED BY THE CITY ARBORIST (974-1876) PRIOR TO APPLICATION.~~ THE GENERAL CONTRACTOR SHALL SELECT A FERTILIZATION CONTRACTOR AND INSURE COORDINATION ~~WITH THE CITY ARBORIST~~. WITHIN 7 DAYS AFTER FERTILIZATION IS PERFORMED, ~~THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE WORK PERFORMED TO THE CITY ARBORIST, WATERSHED PROTECTION, P.O. BOX 1088, AUSTIN, TEXAS, 78767.~~ ALL CLASS 1 TREES WITHIN (OR ADJACENT TO) THE LIMITS OF CONSTRUCTION WHICH ARE INDICATED TO BE PRESERVED (ON THE PLANS) WILL BE FERTILIZED PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES AND AGAIN AFTER THE COMPLETION OF ALL CONSTRUCTION. AREAS TO BE FERTILIZED INCLUDE THE ENTIRE CRITICAL ROOT ZONE OF A TREE AS DEPICTED ON THE CITY APPROVED PLANS. TREES ARE TO BE FERTILIZED VIA SOIL INJECTION METHOD (MINIMUM 100PSI), USING DOGGETT X-L INJECTO 32-7-7 OR EQUIVALENT AT RECOMMENDED RATES. CONSTRUCTION THAT WILL BE COMPLETED IN LESS THAN 90 DAYS SHOULD USE MATERIAL AT ½ RECOMMENDED RATES. ~~ALTERNATIVE ORGANIC FERTILIZER MATERIALS ARE ACCEPTABLE WHEN APPROVED BY THE CITY ARBORIST.~~
2. 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 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION AND INITIATE TREE MITIGATION MEASURES.
3. INSTALL TREE PROTECTION PER APPROVED SITE, GRADING, AND EROSION CONTROL PLANS.
4. THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE 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.
5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE 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 COUNTY 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 COUNTY INSPECTOR.
8. INSTALL UTILITIES IMPROVEMENTS.
9. PREPARE PAVEMENT AREAS.
10. CONSTRUCT "ALL WEATHER DRIVING SURFACE" ACCORDING TO FIRE DEPARTMENT REQUIREMENTS.
11. COMPLETE GRADING, DRAINAGE, AND PAVING. INSTALLATION OF BASE MATERIAL AND/OR PAVING SHOULD OCCUR AS SOON AS IT IS FEASIBLE TO DO SO.
12. COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING. HYDROMULCH OR SEED ALL DISTURBED AREAS AND CLEAN UP SITE.
13. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE TO TRAVIS COUNTY INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE COUNTY INSPECTOR.
14. FINAL CLEANING OF EROSION AND SEDIMENTATION CONTROLS AND STORM DRAIN STRUCTURE. THIS SHALL OCCUR PRIOR TO FINAL PAYMENT.
15. RECEIVE COUNTY CLEARANCE FOR OCCUPANCY.
16. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE COUNTY INSPECTOR REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS.
17. DISPOSE OF ALL CONSTRUCTION DEBRIS AND TRASH. HYDROMULCH ANY DISTURBED AREAS FOLLOWING SITE CLEANUP.
18. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.
19. ALL STRUCTURAL FIELD CHANGES REQUIRE A PLAN REVISION APPROVAL IN WRITING BEFORE COMMENCEMENT OF THE WORK.

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 ITEMS 604S OR 609S.
3. 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.
4. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.
5. 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.
6. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, AND STANDARD SPECIFICATIONS 604S OR 609S.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	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	1500 TO 2000 LBS PER ACRE

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 ITEMS 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 QUANTITIES 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 16 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 APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS, 10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)
FIBER REINFORCED MATRIX (FRM)	65% ORGANIC DE-FIBRATED FIBERS, 25% REINFORCING FIBERS OR LESS, 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3000 TO 4500 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)

10. DEVELOPER INFORMATION:
    OWNER TWISTED OAK PARTNERS, LLC
    PHONE # (512)913-9637
    ADDRESS 17800 HAMILTON POOL ROAD, AUSTIN, TX 78738
    OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
    TDI ENGINEERING, LLC
    PHONE # (512)301-3389
    PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE: TWISTED OAK PARTNERS, LLC
    PHONE # _____
    PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE: TWISTED OAK PARTNERS, LLC
    PHONE # _____
11. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING TRAVIS COUNTY AND TNR AT LEAST 48 HOURS PRIOR WITH THE LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.

TRAVIS COUNTY EMERGENCY SERVICES DISTRICT NO. 6 SUBDIVISION WATER SYSTEM PLAN NOTES

1. AN ALL-WEATHER DRIVING SURFACE (FIRE APPARATUS ACCESS) MUST BE INSTALLED IN LOCATIONS SHOWN ON THE SITE PLAN, PRIOR TO ANY BUILDING CONSTRUCTION BEYOND THE FOUNDATION.
2. VERTICAL CLEARANCE REQUIRED FOR FIRE APPARATUS IS 13 FEET, SIX INCHES FOR FULL 25 FEET WIDTH OF ACCESS DRIVES AND ROUTES FOR INTERNAL CIRCULATION.
3. THE MAXIMUM ALLOWABLE DRIVEWAY, DRIVE AISLE OR FIRE LANE GRADE IS 15 PERCENT.
4. A CERTIFIED OR WITNESSED PRESSURE TEST IS REQUIRED FOR ALL WATER MODELS, REQUIRED FIRE HYDRANT FLOW TESTS OR SPRINKLER SYSTEM DESIGNS.
5. AN APPROVED WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.
6. FIRE HYDRANTS MUST BE INSTALLED WITH THE FOUR AND ONE-HALF INCH STEAMER OPENING AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE FOUR AND ONE-HALF INCH STEAMER OPENING MUST FACE THE STREET WITH A THREE TO SIX FOOT SETBACK (CLEARANCE) FROM THE CURB LINE OR SHOULDER OF THE STREET.
7. NO OBSTRUCTION WITHIN A THREE-FOOT RADIUS OF ANY FIRE HYDRANT, AND THE FOUR AND ONE-HALF INCH STEAMER OPENING MUST BE TOTALLY UNOBSTRUCTED FROM THE STREET.
8. FIRE HYDRANT LOCATIONS SHALL BE IDENTIFIED BY THE INSTALLATION OF BLUE REFLECTIVE MARKERS, PER FIRE DEPARTMENT SPECIFICATIONS.
9. FIRE HYDRANTS SHALL BE PAINTED SILVER. THE BONNET AND CAPS SHALL BE PAINTED THE DESIGNATED COLOR PER THE GALLONS PER MINUTE (GPM) AS FOLLOWS:

CLASS AA	LIGHT BLUE	1500 OR HIGHER GPM
CLASS A	GREEN	1000-1499 GPM
CLASS B	ORANGE	500-1499 GPM
CLASS C	RED	LESS THAN 500 GPM
CLASS D	BLACK	OUT OF SERVICE

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CONTRIBUTING ZONE 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 APPROVAL OF THE SEAL FOR 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 GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THE 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 SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. PRIOR TO THE ISSUANCE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ONSITE.

3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. 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.

5. 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.

6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.

9. IF PORTIONS OF THE SITE WILL HAVE A 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.

10. THE FOLLOWING RECORDS SHOULD 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.

11. THE HOLDER OF ANY APPROVED CZP 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 BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE 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.

GENERAL CONSTRUCTION NOTES (TDI)

1. ALL ON-SITE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE OWNER'S SITEWORK SPECIFICATIONS.
2. ALL CONSTRUCTION IN CITY RIGHT-OF-WAYS AND/OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. WHEN REQUIRED, CONTRACTOR SHALL REMOVE PAVEMENT AND CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION.
4. ALL PAVEMENT REMOVED SHALL BE DONE SUCH THAT THE REMAINING PAVEMENT IS LEFT WITH A CLEAN STRAIGHT EDGE.
5. WHEN REQUIRED, CONTRACTOR SHALL REMOVE EXISTING PAVEMENT STRIPING BY SAND BLASTING FROM EXISTING PAVEMENT IN ACCORDANCE WITH ITEM 677 AND 678 OF THE TEXAS STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION LAT

482.1003 [Exhibit 482.301B Travis County Standard Construction Notes for Site Development][60]

EXHIBIT 482.301B TRAVIS COUNTY STANDARD CONSTRUCTION NOTES FOR SITE DEVELOPMENT

Plan sheets for site developments must include the following construction notes:

1. Each driveway must be constructed in accordance with Travis County Code Section 482.302(g), and each drainage structure or system must be constructed in accordance with the City of Austin Drainage Criteria Manual, unless other design criteria are approved by Travis County.
2. Before beginning any construction, the owner must obtain a Travis County development permit and post the development permit, the TCEQ Site Notice, and any other required permits at the job site.
3. Construction may not take place within Travis County right-of-way until after the owner has submitted a traffic control plan to Travis County and obtained written approval of the traffic control plan from Travis County.
4. The contractor and primary operator shall follow the sequence of construction and the SWP3 in these approved plans. The contractor and primary operator shall request Travis County inspection at specific milestones in the sequence of the construction of the site development corresponding to the priority inspections specified in Construction Sequencing notes in these approved plans. Development outside the limits of construction specified in the approved permit and construction plans is prohibited.
5. Before beginning any construction, all Storm Water Pollution Prevention Plan (SWP3) requirements shall be met, and the first phase of the temporary erosion control (ESC) plan installed with a SWP3 Inspection Report uploaded to mypermitnow.org. All SWP3 and ESC Plan measures and primary operator SWP3 inspections must be performed by the primary operator in accordance with the approved plans and SWP3 and ESC Plan Notes throughout the construction process.
6. Before starting construction, the owner or contractor or their designated representatives shall submit a request via the mypermitnow.org customer portal for Travis County to request and schedule a mandatory Preconstruction Conference and ESC Inspection. If further assistance is needed, the TNR Planning and Engineering Division staff or TNR Storm Water Management Program staff can be contacted by telephone at 512-854-9383.
7. The contractor shall keep Travis County TNR assigned inspection staff current on the status of site development and utility construction. The contractor shall notify Travis County and request priority inspections through the mypermitnow.org customer portal for Travis County in accordance with the specific milestones in the Construction Sequencing notes in these approved plans.
8. Contour data source: _____
9. Fill material must be managed and disposed of in accordance with all requirements specified in the approved plans, SWP3, and the Travis County Code. The contractor shall stockpile fill and construction materials only in the areas designated on the approved plans and not within the 0.2 percent annual chance floodplain or the 1 percent annual chance floodplain, waterway setback, Critical Environmental Feature setback, or outside the limits of construction. Disposal of solid waste materials, as defined by State law (e.g., litter, tires, decomposable wastes, etc.) is prohibited in permanent fill sites.
10. Before disposing any excess fill material off-site, the contractor or primary operator must provide the County Inspector documentation that demonstrates that all required permits for the proposed disposal site location, including Travis County, TCEQ Notice, and other applicable development permits, have been obtained. The owner or primary operator must revise the SWP3 and ESC Plan if handling or placement of excess fill on the construction site is revised from the existing SWP3. If the fill disposal location is outside Travis County or does not require a development permit, the contractor or primary operator must provide the County Inspector the site address, contact information for the property owner of the fill
11. The design engineer is responsible for the adequacy of the construction plans. In reviewing the construction plans, Travis County will rely upon the adequacy of the work of the design engineer.
12. In the event of any conflicts between the content in the SWP3 Site Notebook and the content in the construction plans approved by Travis County, the construction plans shall take precedence.
13. A minimum of two survey benchmarks shall be set, including description, location, and elevation; the benchmarks should be tied to a Travis County control benchmark when possible.
14. Any existing pavement, curbs, sidewalks, or drainage structures within County right-of-way which are damaged, removed, or silted, will be repaired by the contractor at owner or contractor's expense before approval and acceptance of the construction by Travis County.
15. Call the Texas Excavation Safety System at 8-1-1 at least 2 business days before beginning excavation activities.
16. All storm sewer pipes shall be Class III RCP, unless otherwise noted.
17. Contractor is required to obtain a utility installation permit in accordance with Travis County Code Section 482.901(a)(3) before any construction of utilities within any Travis County right-of-way.
18. This project is located on Flood Insurance Rate Map 48453 CO _____ E.
19. Temporary stabilization must be performed in all disturbed areas that have ceased construction activities for 14 days or longer, in accordance with the standards described in the SWP3 and ESC Plan Sheet Notes.
20. Permanent site stabilization/re-vegetation must be performed immediately in all site areas which are at final plan grade and in all site areas specified in the approved plans for phased re-vegetation, in accordance with the standards described in the SWP3 and ESC Plan Sheet Notes.
21. All trees within the right-of-way and drainage easements shall be saved or removed in accordance with the approved construction plans. Travis County tree preservation standards in Travis County Code Section 482.973, including installation and maintenance of all specified tree protection measures, must be followed during construction.
22. An Engineer's Concurrence Letter in accordance with Travis County Code Section 482.953 must be submitted via the mypermitnow.org customer portal for Travis County when construction is substantially complete. The Engineer's Concurrence Letter must be submitted before the contractor or primary operator requests a final inspection by Travis County.
23. Site improvements must be constructed in conformance with the engineer's construction plans approved by Travis County. Non-conformance with the approved plans will delay final inspection approval by the County until plan conformance is achieved or any required plan revisions are approved.
24. Final Site Stabilization. All areas disturbed by the construction must be permanently revegetated and all temporary sediment controls and accumulated sedimentation must be removed before the County will issue a Certificate of Compliance for final site stabilization as part of final inspection and project completion. A Developers Contract, as described in the SWP3 and ESC Notes Sheet may be executed with Travis County for conditional acceptance of a project for which has ESC Fiscal Security posted and for which all items are complete

[Ord. # 2019-04-30 Item 30 Ch 482, 04/30/2019, Exhibit 482.301B was amended by the Travis County Commissioners Court on April 30, 2019.]

[60]Exhibits in 482.1003 amended 6/28/2016, Item 24. Paragraph 9 amended 4/30/2019, Item 30.

Effective on: 9/1/2019

CONTACT INFORMATION

FACILITIES OWNER: (NAME/ADDRESS/PHONE)
WEST TRAVIS COUNTY PUA
13215 BEE CAVE PARKWAY BUILDING 2, SUITE 110
BEE CAVE, TEXAS 78738
512/263-0100
JRIECHERS@WTCPUA.ORG
LAND OWNER: NAME/ADDRESS/PHONE
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS: NAME/PHONE MAINTENANCE: PERSON OR
FIRM RESPONSIBLE FOR EROSION/ SEDIMENTATION CONTROL
CONTRACTOR: NAME/ADDRESS/ PHONE MAINTENANCE:
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION. CONTRACTOR: NAME/ADDRESS/PHONE

482.1009 [Exhibit 482.950 Pre-Construction and Conference Agenda for SWP3 and ESC Plan]64

EXHIBIT 482.950

Pre-Construction Conference Planning and Agenda for SWP3 and ESC Plan

Before starting construction, the owner or their representative must submit a request, using the mypermitnow.org customer portal for Travis County, to participate in a pre-construction conference with the designated County Inspector. Prior to the pre-construction conference request, the owner or owner's representative shall ensure the first phase of the ESC controls are installed in conformance with the approved plans, the owner's qualified inspector has inspected the controls and verified compliance with the plans, and an SWP3 Inspection Report documenting this information has been sent to the County through the method specified by the designated County Inspector.

After arranging an agreed upon date with the County and providing the initial SWP3 Inspection Report, the owner or owner's designated representative shall provide notice of the SWP3 pre-construction conference and a copy of the approved plans, if requested, to the following persons or entities at least two business days before the conference:

1. Designated County Inspector(s)
2. Design engineer for the approved plans and SWP3, or their representative
3. Contractor(s)/Primary Operator(s)
4. Primary Operator's qualified inspector responsible for preparing the SWP3 Inspection Reports
5. Other stakeholders, as appropriate: municipalities, utilities, etc.

The SWP3 pre-construction conference may be a standalone meeting or a part of a larger pre-construction conference, but must include an on-site inspection approval of the first phase of the project's ESC Plan by the County Inspector before construction begins. The County Inspector will discuss the following applicable items in the approved plans and the SWP3 with the participants:

1. The SWP3 Site Notebook for the project, including review of completeness, signatures, consistency with the approved construction and ESC plans, and the requirements for maintaining the SWP3 Site Notebook during the construction process.
2. The sequence of construction and ESC Plan implementation; sediment basin construction scope prior to full site grading; non-structural erosion source controls; start dates and schedule of events.
3. Sediment controls; phasing of perimeter and interior sediment controls during construction; structural erosion source controls such as drainage diversion; ESC maintenance requirements.
4. Adequacy of the first ESC phase and future ESC phases to address specific site conditions, and adjustment and revision of the ESC Plan and SWP3 controls during construction.
5. Temporary and permanent stabilization and re-vegetation requirements, including schedule, critical site improvements and priority re-vegetation areas.
6. On and off-site temporary and permanent spoil and fill disposal areas, haul roads, staging areas, and stabilized construction entrances;
7. Permanent water quality controls construction and County inspections, and related grading and drainage construction.
8. Supervision of the SWP3 implementation by the primary operator's designated project manager, including roles, responsibilities, and coordination when more than one operator is responsible for implementation.
9. Inspection and preparation of the weekly SWP3 Inspection Reports by the primary operator's qualified inspector; report submittal by the primary operator, and SWP3 monitoring inspections conducted by the County Inspector.
10. Observation and documentation of existing site conditions adjacent to the limits of construction before construction, including waterways and potential outfall discharge routes, rights-of-way and easements, buffer zones, and critical environmental features.
11. Special site conditions and plan provisions, such as protection of waterways, critical environmental features, trees to be saved, and future homebuilding on subdivision lots.
12. Rain gage location or rainfall information source to be used during construction and reporting.
13. Final inspection and acceptance requirements, including the engineer's concurrence letter, completion of revegetation coverage before the Notice of Termination is submitted by the primary operator, stabilization of residential subdivision lots, removal of temporary sediment controls, the Certificate of Compliance and release of ESC fiscal surety.
14. Exchange of telephone numbers and contact information for the primary participants.

The design engineer shall prepare and distribute notes, key decisions, and follow up from the preconstruction conference to all participants within three business days after completion of the conference.

64Exhibit 482.950 in section 482.1009 added 6/28/2016, Item 24.

Effective on: 9/1/2019

WTCPUA WATER & WASTEWATER GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (O.S.H.A.).COPIES OF O.S.H.A. STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE.INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM O.S.H.A. AUSTIN AREAOFFICE - LA COSTA GREEN BLDG 1033, LA POSADA DR, SUITE 375, AUSTIN, TEXAS 78752-3832, 512-374-0271.
2. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND TO THE STATE LAW, (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436 G) AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES WHEN OPERATING IN THE VICINITY OF ELECTRICAL LINES. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY REQUIREMENTS, AND FOR COORDINATION OF ALL WORK WITH THE APPROPRIATE ELECTRIC UTILITY COMPANY.
3. THE CONTRACTOR SHALL CONTACT THE ONE-CALL BOARD OF TEXAS AT 811 OR 1-800-545-6005 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION. THE LOCATION AND TYPE OF UTILITIES AND UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. IN ADDITIONAL TO NORMAL PRECAUTIONS WHEN EXCAVATING, USE EXTRA CAUTION WHEN EXCAVATING WITHIN 25 FEET OF ANY UTILITIES SHOWN ON THE PLANS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION BETWEEN HIMSELF AND OTHER CONTRACTORS AND UTILITIES IN THE VICINITY OF THE PROJECT. THIS INCLUDES ALL WATER, WASTEWATER,GAS, ELECTRICAL, TELEPHONE, CABLE TELEVISION, AND STREET AND DRAINAGE WORK. ONCE THE CONTRACTOR BECOMES AWARE OF A POSSIBLE CONFLICT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER AND WTCPUA INSPECTOR WITHIN TWENTY-FOUR (24) HOURS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL SPOIL MATERIAL FROM THE CONSTRUCTION SITE. ALL SPOILS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED SPOIL SITE.THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SECURING A PERMIT FOR THE SITE. THE CONTRACTOR SHALL NOTIFY THE WTCPUA INSPECTOR AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO DISPOSAL OF THE MATERIAL. NO SPOILS ARE TO REMAIN OVERNIGHT IN THE FLOODPLAIN.
6. NO BLASTING OR BURNING WILL BE ALLOWED.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, AT HIS EXPENSE, ALL UTILITIES, PAVEMENT,CURB, FENCES OR ANY OTHER ITEMS DAMAGED DURING CONSTRUCTION REGARDLESS OF WHETHER THESE ITEMS ARE SHOWN ON THE CONSTRUCTION PLANS.
8. WHENEVER EXISTING UTILITIES, INDICATED OR NOT ON PLANS, PRESENT OBSTRUCTIONS TO GRADE AND/OR ALIGNMENT OF PROPOSED PIPE, CONTRACTOR IS TO IMMEDIATELY NOTIFY THE ENGINEER WHO WILL DETERMINE IF EXISTING IMPROVEMENTS ARE TO BE RELOCATED OR IF THE GRADE AND/OR ALIGNMENT OF PROPOSED PIPE IS TO BE CHANGED.
9. DUST PREVENTION SHALL BE PROVIDED BY THE CONTRACTOR AT HIS OWN EXPENSE. DUST CONTROL SHALL INCLUDE SPRINKLING OF WATER ON ALL DISTURBED AREAS, SPOIL PILES, AND HAUL MATERIALS ASSOCIATED WITH THE PROJECT OR OTHER METHODS APPROVED BY THE WTCPUA.
10. CLEANUP - UPON COMPLETION AND BEFORE MAKING APPLICATION FOR ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL CLEAN ALL STREETS AND ALL GROUND OCCUPIED BY HIM IN CONNECTION WITH THE WORK OF ALL RUBBISH, EXCESS MATERIALS, EXCESS EXCAVATED MATERIALS, TEMPORARY STRUCTURES AND EQUIPMENT. ALL PARTS OF THE WORK SHALL BE LEFT IN A NEAT AND PRESENTABLE CONDITION SATISFACTORY TO THE WTCPUA AND OTHER GOVERNMENTAL BODIES HAVING JURISDICTION PRIOR TO SUBMITTAL OF THE FINAL PAYMENT.
11. THE CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS TO MINIMIZE DISRUPTION OF DELIVERIES, PARKING, AND OTHER ACTIVITIES.
12. DEWATERING, IF NECESSARY, SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT CONSTITUTE A BASIS FOR ADDITIONAL PAYMENT.
13. THE MINIMUM DEPTH OF COVER FROM TOP OF PIPE TO FINISHED GRADE FOR ALL WATER LINES SHALL BE FOUR FEET. INSTALL LINES TO AVOID HIGH POINTS.
14. CONCRETE SHALL BE CLASS 'A' WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI, UNLESS OTHERWISE NOTED. '
15. REINFORCING STEEL SHALL BE ASTM A 615M, GRADE 60 UNLESS OTHERWISE NOTED.
16. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE WTCPUA MUST RELY ON THOSE ASSUMPTIONS AND CALCULATIONS OF THE ENGINEER. THESE PLANS BY THE WTCPUA DOES NOT RELEASE THE DESIGN ENGINEER OF THESE RESPONSIBILITIES.
17. CHANGES IN ALIGNMENT OF WATER LINES, BOTH HORIZONTAL AND VERTICAL, SHALL BE ACHIEVED BY DEFLECTION JOINTS OR BY USE OF FITTINGS. DEFLECTION OF PIPE JOINTS AT FITTINGS IS ONLY ALLOWED ON DUCTILE IRON PIPE. LONGITUDINAL BENDING OF PIPE IS NOT ALLOWED. DEFLECTION OF STRAIGHT PIPE SECTIONS SHALL NOT EXCEED 1 DEGREE AT EACH JOINT (EVEN IF JOINT RESTRAINT DEVICES ARE INSTALLED).
18. A PRESSURE REDUCING VALVE SHALL BE REQUIRED IF THE PRESSURE EXCEEDS 65 PSI ON THE CUSTOMER SIDE AT THE CONNECTION TO THE PUA'S WATER SYSTEM.

WEST TRAVIS COUNTY PUA WATER AND WASTEWATER UTILITY NOTES

1. West Travis County PUA is the water and / or wastewater service provider for this project. A pre-construction meeting with the WTCPUA shall be held prior to commencement of construction to schedule inspection of installation of water/wastewater facilities. Water facilities will be inspected up to, and including, the water meter and/or fire hydrants. The contact number for WTCPUA is (512) 263-0100.
2. The City of Austin standard specifications and standard details current at the time of construction shall govern materials and methods used to perform this work. City of Austin Specifications and Standard Details are available atthttps://library.municode.com/tx/austin/codes/
3. Contractor shall obtain all approvals and permits, including but not limited to street/driveway cut and utility cut permits from the appropriate governmental agency before beginning construction within the right-of-way of a public street or alley.
4. The WTCPUA shall be contacted at (512) 263-0100 at least 48 hours before connecting to their existing water and/or wastewater facilities.
5. The Contractor shall contact the Austin Area "One Call" System at 811 or 1-800-545-6005 for existing utility locations prior to any excavation. In advance of construction, the contractor shall verify the location of all utilities to be extended, tied to, or altered, or subject to damage/inconvenience by the construction operations.
6. No other utility service/appurtenances shall be placed near the property line, or other assigned location designated for water and wastewater utility service that would interfere with the water and/or wastewater services.
7. Where water lines and sewer line are installed with a separation distance closer than nine feet (i.e., water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §290.44(e) (Water Distribution). Any deviation these standards shall require a variance approved by TCEQ before submitting piping assignments to the WTCPUA.
8. The City of Austin Specification item 509S will be required as a minimum trench safety measure. Contract documents, which include a trench safety plan signed and sealed by a Texas Professional Engineer and a pay item for trench safety measures, in compliance with OSHA, State, County, and City requirements before beginning work on the project.
9. All material tests, including soil density tests and related soil analysis, shall be accomplished by an independent laboratory funded by the owner in accordance with City of Austin Standard Specification Item 1804S.4
10. Connections to existing WTCPUA water lines shall be made by cut-in tees in accordance with City of Austin Standard Specification Item 510.3(24). Isolation valves shall be installed on the ends of the cut-in tee, as necessary. A shut-out valve plan shall be provided showing the location of existing gate valves in the vicinity of the connection. The shut-out plan shall identify all affected property owners. Contractor shall perform all work and shall furnish all materials, including draining and cutting into existing piping and connecting a new pipeline or other extension into the existing pressure piping, forming an addition to the potable water transmission and distribution network and performing necessary shutoffs. Contractor shall schedule all such connections in advance and such schedule shall be approved by the WTCPUA before beginning the work. At least 48 hours notice shall be given to the WTCPUA prior to making the connection, and a representative from the WTCPUA shall be present when the connection is made. Pressure taps may be approved on a case by-case basis. "Size on Size" taps will NOT be permitted. When approved, any taps shall be made by use of and approved full circle, gasketed cast iron or ductile iron tapping sleeve. Concrete blocking shall be placed behind and under all tap sleeves prior to making the pressure tap and the use of precast blocks may be used to hold the tap in its correction position prior to blocking. The blocking behind and under the tap shall have a minimum of 24 hours curing time before the valve can be reopened for service from that tap. The contractor shall notify the WTCPUA inspector a minimum of seventy-two (72) hours in advance for the WTCPUA to notify the affected customers. The WTCPUA shall be present while all work is performed to make the connection.
11. Thrust restraint shall be by metal thrust restraints in accordance with City of Austin Standard Specification Item 510.3(22).
12. Fire hydrants shall be set in accordance with City of Standard Specification Item 51lS.3 E and shall be approved Fire Department or other appropriate party prior to installation. Fire hydrants on mains under construction shall be securely wrapped with a poly wrap bag and taped into place. The poly wrap will be removed when the mains are accepted and placed in service. Fire hydrants that are to be used as drain hydrants shall be painted silver w/ blue caps prior to acceptance. Where Storz adaptors are required (Hays County), fire hydrants shall be manufactured with integral Storz adaptors.
13. Water line testing and sterilization shall be performed in accordance with City of Austin Standard Specification Item 510.3(29) and/or TCEQ rules.
14. Test pressure for 2-hour test shall be at 175 psi at the lowest point in the line. Note: Prior to pressure testing, contractor shall verify that thrust blocking and/or thrust restraint back to and including the valve against which the pressure test shall be performed, has been installed to at least the specifications of this project. Failure to verify that thrust blocking and/or thrust restraint in the existing line meets or exceeds the specifications of this project may result in serious damage to the existing waterline.
15. Water lines shall be filled with water and all air expelled at least 24 hours before testing. All service laterals and drain valve leads, with the hydrant valves closed and nozzle caps open shall be included in the tests.
16. Contractor shall submit a Disinfection and Flushing Plan in accordance with AWWA standards to the WTCPUA for approval. Required flushing volumes, flushing schedule, and method of disposal of flush water shall be in accordance with the approved plan.
17. Gate valves shall be resilient seated gate valves conformingto AWWAC509, with a minimum rated working pressure of 250 psig.
18. Force main testing shall be performed in accordance with the City of Austin Standard Specification Item 510.3(27) and/or TCEQ rules.
19. Gravity sanitary sewer main testing shall be performed in accordance with the City of Austin Standard Specification Items 510.3(26) and/or TCEQ rules. In addition, all gravity sanitary sewer mains shall be televised prior to acceptance by WTCPUA. Digital files (via CD-ROM) clearly showing televised recording shall be submitted to the Engineer of Record following inspection.
20. Locator 'Finder' Wire - All non -metallic water lines shall have a finder wire located above the pipe. The wire shall be poly-insulated No. 10 solid copper and will terminate at each isolation valve such thatitis accessible from the valve box.
21. Locator 'Finder' Wire - All non-metallic wastewater lines shall have a finder wire located above the pipe. The wire shall be poly-insulated No. 10 solid copper and will terminate at readily accessible locations throughout the collection system.
22. All valve risers shall have a 1'-6" square concrete box poured around them at finished grade.
23. All manholes shall be lined with a corrosion resistant lining approved by the WTCPUA.
24. Bolted and gasketed covers shall be used for all manholes located in the 100-year floodplain. Where there are more than three gasketed manholes in a row, vents shall be provided on every third manhole.
25. The downstream end of any force main shall be terminated in a sanitary sewer manhole in a manner to minimize turbulence.
26. Contractor shall have necessary Erosion and Sedimentation Controls in place prior to commencing water/wastewater facility construction. 11
27. Record drawings, as stipulated by the WTCPUA, shall be submitted to the Engineer of Record for verification and furnished to the WTCPUA upon completion of the project.
28. The WTCPUA will own and operate all water lines and appurtenances up to and including the water meter. These improvements will be defined by a recorded easement or in public right-of-way.
29. Any portions of wastewater lines including services that are located outside of a recorded easement or public right-of-way will be owned and maintained by the property owner, or his/her assigns.
30. Where existing water and/or wastewater infrastructure is to be abandoned, the engineer shall submit an abandonment plan for approval by the WTCPUA.
31. Water services shall be installed using HDPE pipe. Copper is not allowed.
32. For any storm sewer line crossing a water or wastewater line closer than 18", the storm sewer pipe shall be laid such that no storm sewer joints will be over the water pipe crossing

SPOILS MANAGEMENT AND DISPOSAL NOTES

1. Temporary holding sites as necessary to stockpile excavated soils, embedment material,and/or piping and appurtenances may be located within the limits of construction as shownon the plans.
2. No permanent spoils disposal shall be allowed on-site, unless approved by the owner andgoverning authority.
3. All spoils materials shall be disposed of by the Contractor at an approved spoil disposal site.The Contractor shall be responsible for locating and securing a permit for the site; and shallnotify the Owner and/or Engineer at least forty-eight (48) hours prior to disposal of any spoilmaterial.

EROSION/SEDIMENTATION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE RETAILS 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 INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE.
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 THE CITY. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE INSPECTOR DURING THE COURSE OF THE CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES (6) INCHES.
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 CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY INSPECTOR FOR FURTHER INSTRUCTIONS.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED.

HOURS OF CONSTRUCTION

1. No work shall be done between the hours of 8:00 P.M. and 6:00 A.M; nor on Sundays or Legal Holidays without the written permission of the WTCPUA in each case, except such work as maybe necessary for the proper care, maintenance and protection of the work already done or in the case of an emergency.

LIMITS OF CONSTRUCTION

1. The limits of construction shall be bounded by the right of way line or permanent /temporary casement limits shown on the Plans. Limits of construction may be further restricted by placement of silt fence, tree protection fencing, or other appurtenances as shown on the Plans.
2. Limits of construction shall be clearly delineated by the Contractor by installing silt fence,orange tensar fencing (4 - foot roll tied to 6-foot posts set at 10-foot intervals) or other barriers as approved by the Engineer. All temporary barriers shall be removed at the end of the project.
3. Any areas outside the limits of construction disturbed by the Contractor shall immediately be restored to pre construction condition.

SANITARY FACILITIES

1. Provisions shall be made for necessary sanitary conveniences for the use of laborers on the work. The facilities must be properly secluded from public observation and shall be installed and maintained by the contractor.

PROTECTION OF BORE PITS

1. Install barrier fencing (Tensar orange fencing or chain link fencing) to surround the bore pits.Barrier fencing shall remain in place at all times while the bore pit is open. Contractor shall be responsible for security and safety at the bore pits.

HORIZONTAL CONTROLS

1. All linework shall be staked prior to construction with sealed cut sheets provided to the WTCPUA inspector prior to construction.

CONSTRUCTION SEQUENCING

1. 48 hours prior to beginning any work, call the One-Call Board of Texas at 811 or 1-800-545-6005for utility locations and obtain street cut permit for any work within city, county, and/or state right-of-way.
2. Install temporary erosion controls and tree/natural area protection fencing prior to pre-construction meeting and prior to any site clearing, grubbing, excavation, material stockpiling, or other construction operations.
3. Schedule and convene a pre construction meeting including but not limited to the Owner's representative, Engineer, WTCPUA representative, Fire Department, City, County, TxDOT representative, and TCEQ representative, as applicable.
4. Install traffic control measures.
5. Contractor shall locate all existing utilities prior to initiating construction.
6. Rough cut water quality ponds and direct runoff to ponds to act as a sediment trap.
7. Remove and stockpile topsoil in areas as required.
8. Rough cut roads/site, as necessary.
9. Install all underground utilities. Contractor shall be responsible for coordinating with the WTCPUA when switching service to the WTCPUA system. It shall be the contractor's responsibility to provide materials/facilities to ensure service is maintained during switchover.
10. Complete all underground installations, including installation of sleeves.
11. Complete subgrade.
12. Complete 1st course base.
13. Complete final course base.
14. Lay pavement and/or complete any pavement repair.
15. Complete water quality ponds.
16. Complete permanent erosion control and site restoration.
17. Remove and dispose of temporary erosion controls.
18. Complete any necessary final dress up of areas disturbed by construction operations.

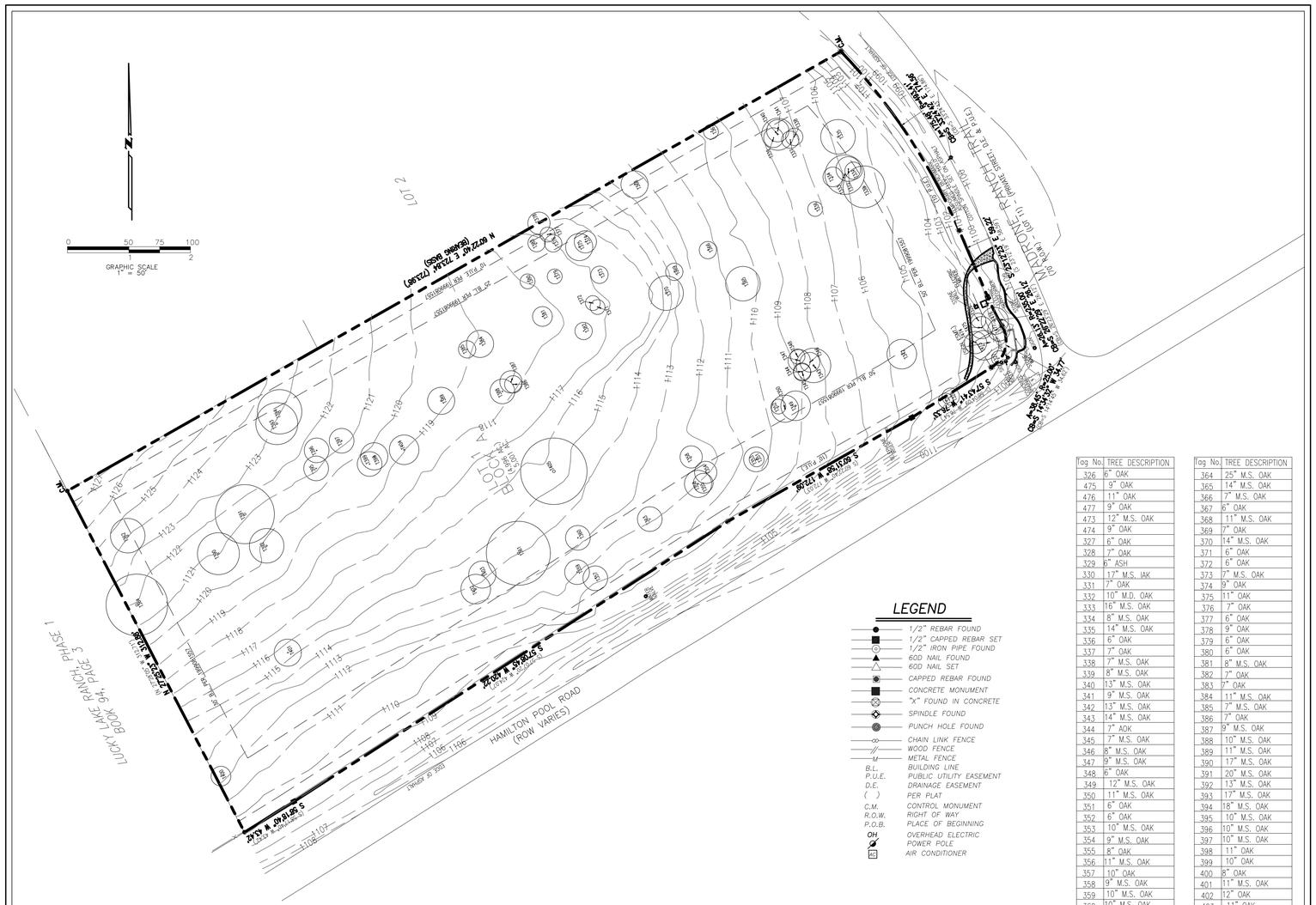
TRAFFIC CONTROL NOTES

1. Plans shall indicate responsible agent for traffic control (Engineer or Contractor).
2. Contractor shall maintain reasonable local vehicular traffic throughout construction operations.
3. Contractor shall provide signs, barricades, flaggers, and other measures as required to allow for vehicular and pedestrian traffic to proceed safely with minimum inconvenience.
4. Signs, barricades, flaggers, and related work shall be in accordance with the Texas Manual on Uniform Traffic Control Devices and with the requirements of the governing city/county.
5. For any activity within TxDOT right-of-way, project must ha', e a TxDOT permit. A copy of the TxDOT permit shall be provided to the WTCPUA prior to construction.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS."
2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL(NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSIONRATIO OF 26 OR LESS [§290.44(A)(2)].
4. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY [§290.44(A)(3)].
5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].
7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS0.25 PERCENT [§290.44(B)].
8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
9. THE WATERLINES SHALL NOT PLACE ANY PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT CASING OR ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].
11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
    11.1. THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE

County Project No:
22-39516
WTCPUA Project No:
71-22-009


N
0 50 75 100
GRAPHIC SCALE
1" = 50'
LOT 2
LOT 1
BLOCK A
(4.000 AC.)
0.001 AC.
HAMILTON POOL ROAD
(ROW VARIES)
LUCKY LAKE RANCH, PHASE 1
BOOK 94, PAGE 3
MADRONE RANCH TRAIL
(50' R.O.W.) - (LOT 11) - (PRIVATE STREET, D.E. & P.U.E.)
S 87°22'40" E 73.24' (73.24')
N 87°22'40" W 73.24' (73.24')
N 87°22'40" W 73.24'
S 87°22'40" E 73.24'
N 87°22'40" W 73.24'
S 87°22'40" E 73.24'
S 87°41'49" W 34.77'
S 87°41'49" W 34.77'
S 87°41'49" W 34.77

PHOTOGRAPHIC MYLAR $231.00 8-17-99 199900251

MADRONE RANCH SUBDIVISION

STATE OF TEXAS
COUNTY OF TRAVIS

KNOWN ALL MEN BY THESE PRESENTS THAT WE, THE UNDERSIGNED OWNERS, LEE F. SIGNOR AND WIFE, BETH ANN SIGNOR, AND JEROME N. GREGOIRE AND WIFE, MARY S. GREGOIRE, OWNERS OF THAT CERTAIN 188.559 ACRE TRACT, BEING 0.003 ACRES OUT OF THE S.H. ROBINSON SURVEY NO. 97, ABSTRACT SF 8730, 26.925 ACRES OUT OF THE C.O.D. GILLAN SURVEY, ABSTRACT I 438, 10.842 ACRES OUT OF THE JOHN SCHMAL SURVEY, ABSTRACT P 653, 146.362 ACRES OUT OF THE F.S. ROY SURVEY NO. 430, ABSTRACT S 323, 1.675 ACRES OUT OF THE SAMUEL WILDY SURVEY NO. 528, ABSTRACT I 561 AND 2.734 ACRES OUT OF THE ADAMS, BEATY AND MOULTON (C.W. PRESSLER) SURVEY NO. 32 ABSTRACT 55227, AS RECORDED IN VOLUME 13038, PAGE 987 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS, DO HEREBY SUBDIVIDE 188.541 ACRES OF LAND, SAME BEING SAID 188.559 ACRE TRACT IN ACCORDANCE WITH THIS PLAT, TO BE KNOWN AS "MADRONE RANCH" SUBDIVISION, AND DO HEREBY DEDICATE TO THE PUBLIC THE EASEMENTS AS SHOWN HEREON UNLESS OTHERWISE INDICATED AND DO HEREBY DEDICATE TO THE OWNERS OF THE LOTS IN THE SUBDIVISION THE PRIVATE STREETS SHOWN HEREON, SUBJECT TO ANY EASEMENTS AND OR RESTRICTIONS HERETOFORE GRANTED AND NOT RELEASED. THE MAINTENANCE AND PAYMENT OF REAL PROPERTY TAXES ON SUCH PRIVATE STREETS, MADRONE VISTA DRIVE, ROBINSON FAMILY ROAD AND MADRONE RANCH TRAIL ARE THE RESPONSIBILITY OF THE OWNERS OF THE SUBDIVISION OR ANY DULY CONSTITUTED HOMEOWNERS ASSOCIATION UNDER THAT CERTAIN INSTRUMENT OF RECORD AS **DOCUMENT NO. 1999081651** OF THE TRAVIS COUNTY DEED OF RECORDS. AN EXPRESS EASEMENT IS HEREBY GRANTED ACROSS SAID PRIVATE STREETS AND ANY COMMON AREAS FOR THE USE OF THE SURFACE FOR ALL GOVERNMENTAL FUNCTIONS, VEHICULAR AND NONVEHICULAR, INCLUDING FIRE AND POLICE PROTECTION, SOLID AND OTHER WASTE MATERIAL PICKUP, AND ANY OTHER PURPOSE THAT ALL GOVERNMENTAL ENTITIES, THEIR AGENTS OR EMPLOYEES, SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY DAMAGE OCCURRING TO THE SURFACE OF THE SAID PRIVATE STREETS AND ANY COMMON AREA AS A RESULT OF ANY SUCH USE BY GOVERNMENTAL VEHICLES.

WITNESS MY HAND, THIS THE 30 DAY OF October, A.D., 1998

Lee F. Signor
LEE F. SIGNOR, OWNER
18418 HAMILTON POOL ROAD
DRIPPING SPRINGS, TEXAS 78620-2828

Beth Ann Signor
BETH ANN SIGNOR, OWNER
18418 HAMILTON POOL ROAD
DRIPPING SPRINGS, TX 78620-2828

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED LEE F. SIGNOR AND BETH ANN SIGNOR KNOW TO ME TO BE THE PERSONS WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE 30th DAY OF October A.D., 1998

Keri L. Voss
NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

KERI L. VOSS
Notary Public, State of Texas
My Commission Expires
MARCH 25, 2000

WITNESS MY HAND, THIS THE 30 DAY OF October, A.D., 1998

Jerome N. Gregoire
JEROME N. GREGOIRE, OWNER
18200 HAMILTON POOL ROAD
AUSTIN, TX 78738

Mary S. Gregoire
MARY S. GREGOIRE, OWNER
18200 HAMILTON POOL ROAD
AUSTIN, TX 78738

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED JEROME N. GREGOIRE AND MARY S. GREGOIRE KNOW TO ME TO BE THE PERSONS WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE 28 DAY OF October A.D., 1998

Elizabeth G. Dunnett
NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

ELIZABETH G. DUNNETT
MY COMMISSION EXPIRES
January 16, 2002

STATE OF TEXAS
COUNTY OF TRAVIS

CIVIL ENGINEER'S STATEMENT:

NO PORTION OF THIS TRACT IS WITHIN THE FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL FLOOD INSURANCE ADMINISTRATION FIRM PANEL NO. 48453C0370 E, EFFECTIVE DATE JUNE 16, 1993 OF TRAVIS COUNTY, TEXAS. THE 100 YEAR FLOOD PLAIN IS CONTAINED WITHIN THE DRAINAGE EASEMENT AS SHOWN HEREON.

J. KEITH SCHAUER, P.E.
REGISTERED PROFESSIONAL ENGINEER NO. 81658
DOUCET & ASSOCIATES, INC.
4201 BEE CAVES ROAD, SUITE B-200
AUSTIN, TEXAS 78746

STATE OF TEXAS · J. KEITH SCHAUER · 81658 · REGISTERED PROFESSIONAL ENGINEER
10/22/98

SURVEYOR'S STATEMENT:

KNOW ALL MEN BY THESE PRESENTS, THAT I, THE UNDERSIGNED, A REGISTERED PROFESSIONAL SURVEYOR IN THE STATE OF TEXAS, HEREBY CERTIFY THAT THIS PLAT COMPLIES WITH THE SURVEY RELATED REQUIREMENTS OF CHAPTER 13 AUSTIN REQUIREMENTS, TRAVIS COUNTY SUBDIVISION SPECIFICATIONS AND FURTHER STATES THAT THIS PLAT IS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY SUPERVISION ON THE GROUND.

Michael T. Ritter 10/22/98
MICHAEL T. RITTER
REGISTERED PROFESSIONAL SURVEYOR NO. 3692
ACCUSURVE, INC.
4201 BEE CAVES ROAD, SUITE B-200
AUSTIN, TEXAS 78746

STATE OF TEXAS · MICHAEL T. RITTER · 3692 · REGISTERED PROFESSIONAL LAND SURVEYOR

STATE OF TEXAS
COUNTY OF TRAVIS

I, DANA DEBEAUVOIR, CLERK OF THE COUNTY COURT OF TRAVIS COUNTY, TEXAS DO HEREBY CERTIFY THAT ON THE 17 DAY OF AUGUST, 1999 A.D., THE COMMISSIONERS' COURT OF TRAVIS COUNTY, TEXAS PASSED AN ORDER AUTHORIZING THE FILING FOR RECORD OF THIS PLAT, AND THAT SAID ORDER WAS DULY ENTERED IN THE MINUTES OF SAID COURT IN BOOK PC 4 PAGE (S) 33
WITNESS MY HAND AND SEAL OF OFFICE OF THE COUNTY COURT OF SAID COUNTY, THE 17 DAY OF August 1999 A.D.

DANA DEBEAUVOIR, COUNTY CLERK
TRAVIS COUNTY, TEXAS

M. Nunez
DEPUTY
M. Nunez

STATE OF TEXAS
COUNTY OF TRAVIS

I, DANA DEBEAUVOIR, CLERK OF TRAVIS COUNTY, TEXAS DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE 17th DAY OF AUGUST, 1999 A.D., AT 1:30 O'CLOCK P.M., AND DULY RECORDED ON THE 17th DAY OF AUGUST 1999 A.D., AT 1:30 O'CLOCK P.M. IN THE [redacted] RECORDS OF SAID COUNTY AND STATE, IN DOCUMENT NUMBER 199900251 WITNESS MY HAND AND SEAL OF OFFICE OF THE COUNTY CLERK, THIS 17th DAY OF AUGUST 1999 A.D.

DANA DEBEAUVOIR, COUNTY CLERK,
TRAVIS COUNTY, TEXAS

M. Davila
DEPUTY
M. DAVILA

OFFICIAL PUBLIC

GENERAL NOTES:

1. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A MUNICIPAL WATER DISTRIBUTION SYSTEM OR AN APPROVED ONSITE WATER WELL.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO AN APPROVED PUBLIC SEWER SYSTEM OR APPROVED PRIVATE SEWAGE DISPOSAL SYSTEM.
3. NO OBJECTS, INCLUDING, BUT NOT LIMITED TO BUILDINGS, FENCES, OR LANDSCAPING SHALL BE ALLOWED IN A DRAINAGE EASEMENT, EXCEPT AS APPROVED BY TRAVIS COUNTY.
4. PROPERTY OWNER OR HIS/HER ASSIGNS SHALL PROVIDE FOR ACCESS TO THE DRAINAGE EASEMENT AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY TRAVIS COUNTY FOR INSPECTION OR MAINTENANCE OF SAID EASEMENT.
5. ALL DRAINAGE EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE OWNER OR HIS/HER ASSIGNS.
6. DEVELOPMENT WHICH EXCEEDS 20% IMPERVIOUS COVER WHEN CALCULATED AGAINST TOTAL PROPERTY SHALL CONTROL THE INCREASED STORMWATER.
7. LOT 25 AND 26, BLOCK A, AND LOTS 7 AND 9, BLOCK B ARE DESIGNATED "COMMON AREA" AND ARE OWNED AND MAINTAINED AS RIDING TRAILS/PARKLAND BY THE HOMEOWNER'S ASSOCIATION, SEE DOCUMENT NUMBER 1999081651 TRAVIS COUNTY PROPERTY RECORDS.
8. TRAVIS COUNTY DEVELOPMENT PERMIT REQUIRED PRIOR TO ANY SITE DEVELOPMENT.

EASEMENTS:

1. PRIVATE STREETS, DRAINAGE, PUBLIC UTILITY AND ACCESS EASEMENTS AS SHOWN.

COMMISIONERS' COURT RESOLUTION:

IN APPROVING THIS PLAT, THE COMMISSIONERS COURT OF TRAVIS COUNTY, TEXAS, ASSUMES NO OBLIGATION TO BUILD THE STREETS, ROADS, AND OTHER PUBLIC THOROUGHFARES SHOWN ON THIS PLAT OR ANY BRIDGES OR CULVERTS IN CONNECTION THEREWITH. THE BUILDING OF ALL STREETS, ROADS, OR OTHER PUBLIC THOROUGHFARES OR IN CONNECTION THEREWITH, IS THE RESPONSIBILITY OF THE OWNER(S) AND/OR DEVELOPER OF THE TRACT OF LAND COVERED BY THIS PLAT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS PRESCRIBED BY THE COMMISSIONERS COURT OF TRAVIS COUNTY, TEXAS.

THE OWNER(S) OF THE SUBDIVISION SHALL CONSTRUCT THE SUBDIVISION'S STREET AND DRAINAGE IMPROVEMENTS (THE "IMPROVEMENTS") TO THE COUNTY STANDARDS IN ORDER FOR THE COUNTY TO ACCEPT THE PUBLIC IMPROVEMENTS FOR MAINTENANCE OR TO RELEASE FISCAL SECURITY POSTED TO SECURE PRIVATE IMPROVEMENTS. TO SECURE THIS OBLIGATION THE OWNER(S) MUST POST FISCAL SECURITY WITH THE COUNTY IN THE AMOUNT OF THE ESTIMATED COST OF THE IMPROVEMENTS. THE OWNER(S)' OBLIGATION TO CONSTRUCT THE IMPROVEMENTS TO COUNTY STANDARDS AND TO POST THE FISCAL SECURITY TO SECURE SUCH CONSTRUCTION IS A CONTINUING OBLIGATION BINDING ON THE OWNER(S) AND THEIR SUCCESSORS AND ASSIGNS UNTIL THE PUBLIC IMPROVEMENTS HAVE BEEN ACCEPTED FOR MAINTENANCE BY THE COUNTY, OR THE PRIVATE IMPROVEMENTS HAVE BEEN CONSTRUCTED AND ARE PERFORMING TO COUNTY STANDARDS.

THE AUTHORIZATION OF THIS PLAT BY THE COMMISSIONERS COURT FOR FILING OR THE SUBSEQUENT ACCEPTANCE FOR MAINTENANCE BY TRAVIS COUNTY, TEXAS, OF ROADS AND STREETS IN THE SUBDIVISION DOES NOT OBLIGATE THE COUNTY TO INSTALL STREET NAME SIGNS OR ERECT TRAFFIC CONTROL SIGNS, SUCH AS SPEED LIMIT, STOP SIGNS, YIELD SIGNS, WHICH IS CONSIDERED TO BE A PART OF THE DEVELOPER'S RESPONSIBILITY.

PROPOSED ROADWAYS:

MADRONE RANCH TRAIL	4623 LINEAR FEET
MADRONE VISTA DRIVE	2222 LINEAR FEET
ROBINSON FAMILY ROAD	1241 LINEAR FEET

BENCHMARK:

RR SPIKE IN 16" ELM TREE, 48' LEFT OF HIGHWAY STATION 818+44, ELEVATION = 1115.89, PER LUCKY LAKE RANCH PHASE ONE TRAVIS COUNTY REAL PROPERTY RECORDS BOOK 94, PAGE 3.

CONCRETE MONUMENT FOUND IN THE NORTH RIGHT-OF-WAY LINE OF HAMILTON POOL ROAD, HIGHWAY STATION 834+34.50, ELEVATION = 1102.56. AS SURVEYED BY ACCUSURVE INC.

TRAVIS COUNTY HEALTH AND HUMAN SERVICES DEPARTMENT NOTES:

1. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A PUBLIC SEWER SYSTEM OR A PRIVATE ON-SITE SEWAGE DISPOSAL SYSTEM WHICH HAS BEEN APPROVED BY THE AUSTIN-TRAVIS COUNTY HEALTH AND HUMAN SERVICES DEPARTMENT.
2. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A POTABLE WATER SUPPLY FROM AN APPROVED PUBLIC WATER SYSTEM.
3. NO WATER WELL MAY BE INSTALLED WITHIN 150 FEET OF AN ON-SITE SEWAGE DISPOSAL SYSTEM NOR MAY AN ON-SITE WASTEWATER DISPOSAL SYSTEM BE INSTALLED WITHIN 150 FEET OF A WATER WELL.
4. NO CONSTRUCTION MAY BEGIN ON ANY LOT IN THIS SUBDIVISION UNTIL PLANS FOR THE PRIVATE ON-SITE SEWAGE DISPOSAL SYSTEM ARE SUBMITTED TO AND APPROVED BY THE AUSTIN-TRAVIS COUNTY HEALTH AND HUMAN SERVICES DEPT.
5. ALL DEVELOPMENT ON ALL LOTS IN THIS SUBDIVISION MUST BE IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE CHAPTER 48 OF THE TRAVIS COUNTY POLICY, PROCEDURE AND REGULATIONS MANUAL.
6. THE ON-SITE SEWAGE FACILITIES SERVING THE LOTS IN THIS SUBDIVISION MUST BE PROFESSIONALLY DESIGNED.
7. THESE RESTRICTIONS ARE ENFORCEABLE BY THE AUSTIN-TRAVIS COUNTY HEALTH AND HUMAN SERVICES DEPARTMENT AND/OR THE LOT OWNERS.

Erwin L. Coonce
ERWIN COONCE, R.S.

11-20-98
DATE

ETJ NOTE

NO PORTION OF THIS TRACT IS WITHIN THE CITY OF AUSTIN OR THE ETJ OF THE CITY OF AUSTIN.

for: Brian P. Schuller
ALICE GLASCO, DIRECTOR
DEVELOPMENT REVIEW AND INSPECTION

10/21/98
DATE

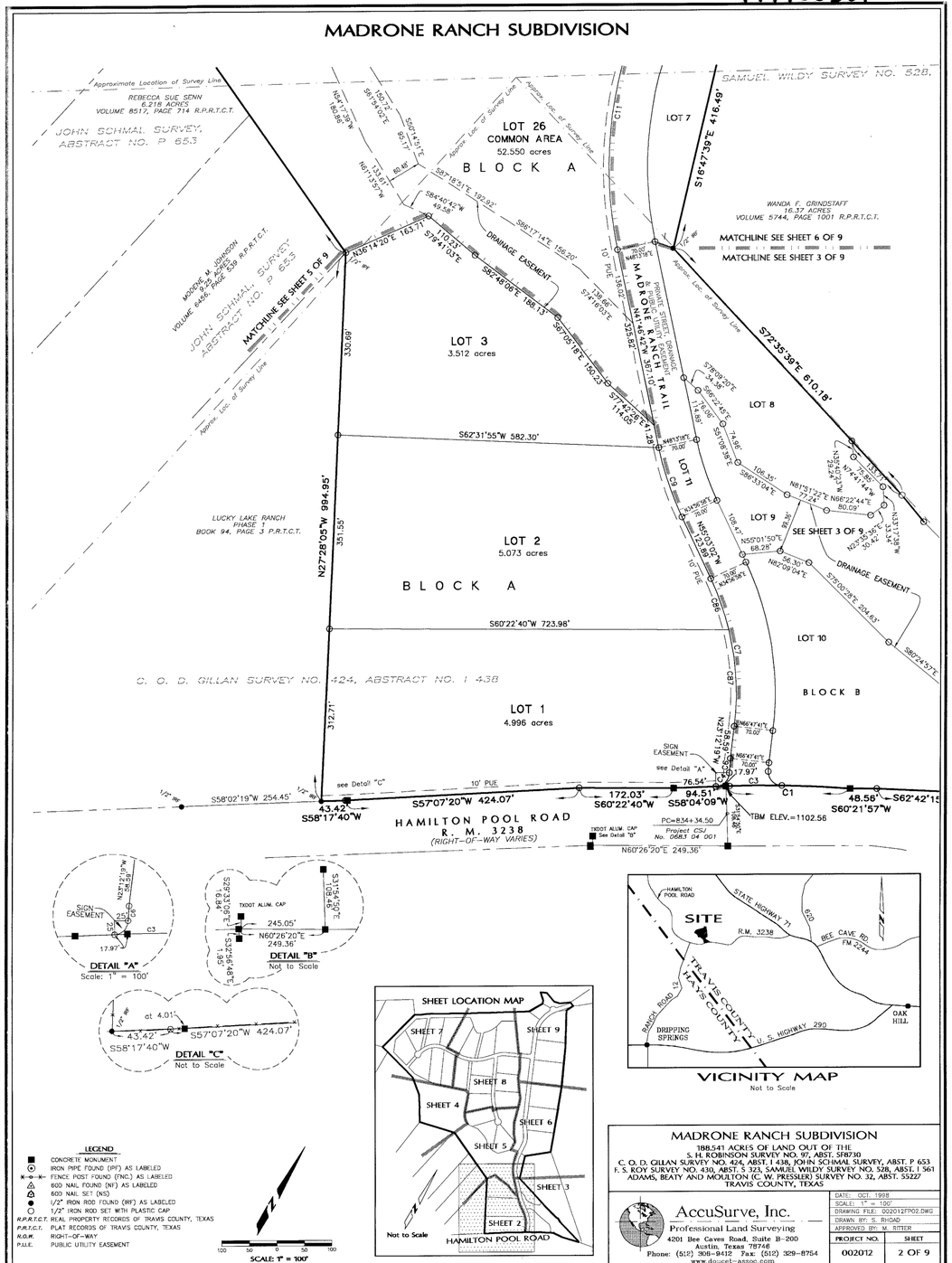
MADRONE RANCH SUBDIVISION
188.541 ACRES OF LAND OUT OF THE
S. H. ROBINSON SURVEY NO. 97, ABST. SF8730
C. O. D. GILLAN SURVEY NO. 424, ABST. I 438, JOHN SCHMAL SURVEY, ABST. P 653
F. S. ROY SURVEY NO. 430, ABST. S 323, SAMUEL WILDY SURVEY NO. 528, ABST. I 561
ADAMS, BEATY AND MOULTON (C. W. PRESSLER) SURVEY NO. 32, ABST. 55227
TRAVIS COUNTY, TEXAS

AccuSurve, Inc.
Professional Land Surveying
4201 Bee Caves Road, Suite B-200
Austin, Texas 78746
Phone: (512) 306-9412 Fax: (512) 329-8754
www.doucet-assoc.com

DATE: OCT. 1998
SCALE: 1" = 100'
DRAWING FILE: 002012FP01.DWG
DRAWN BY: S. RHOAD
APPROVED BY: M. RITTER
PROJECT NO. 002012
SHEET 1 OF 9

PHOTOGRAPHIC MYLAR 199900251

MADRONE RANCH SUBDIVISION



VICINITY MAP
Not to Scale

LEGEND

- ■ CONCRETE MONUMENT
- ⊙ IRON PIPE FOUND (IPF) AS LABELED
- FENCE POST FOUND (FNC.) AS LABELED
- △ 60D NAIL FOUND (NF) AS LABELED
- △ 60D NAIL SET (NS)
- ● 1/2" IRON ROD FOUND (IRF) AS LABELED
- ○ 1/2" IRON ROD SET WITH PLASTIC CAP

R.P.R.T.C.T. REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS
P.R.T.C.T. PLAT RECORDS OF TRAVIS COUNTY, TEXAS
R.O.W. RIGHT-OF-WAY
P.U.E. PUBLIC UTILITY EASEMENT

SCALE 1" = 100'

MADRONE RANCH SUBDIVISION
188.541 ACRES OF LAND OUT OF THE
S. H. ROBINSON SURVEY NO. 97, ABST. SF8730
C. O. D. GILLAN SURVEY NO. 424, ABST. I 438, JOHN SCHMAL SURVEY, ABST. P 653
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DATE: OCT. 1998
SCALE: 1" = 100'
DRAWING FILE: 002012FP02.DWG
DRAWN BY: S. RHOAD
APPROVED BY: M. RITTER
PROJECT NO. 002012
SHEET 2 OF 9

THESE DOCUMENTS ARE FOR REFERENCE ONLY AND ARE NOT TO SCALE

County Project No: 22-39516
WTCPUA Project No: 71-22-009

TDi ENGINEERING
CIVIL & STRUCTURAL ENGINEERING
AUSTIN / HOUSTON
TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, TX 78749
512-301-3388 | www.tdi-llc.net

*THINK DESIGN Innovate, integrate, implement...

FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

PLAT

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 5

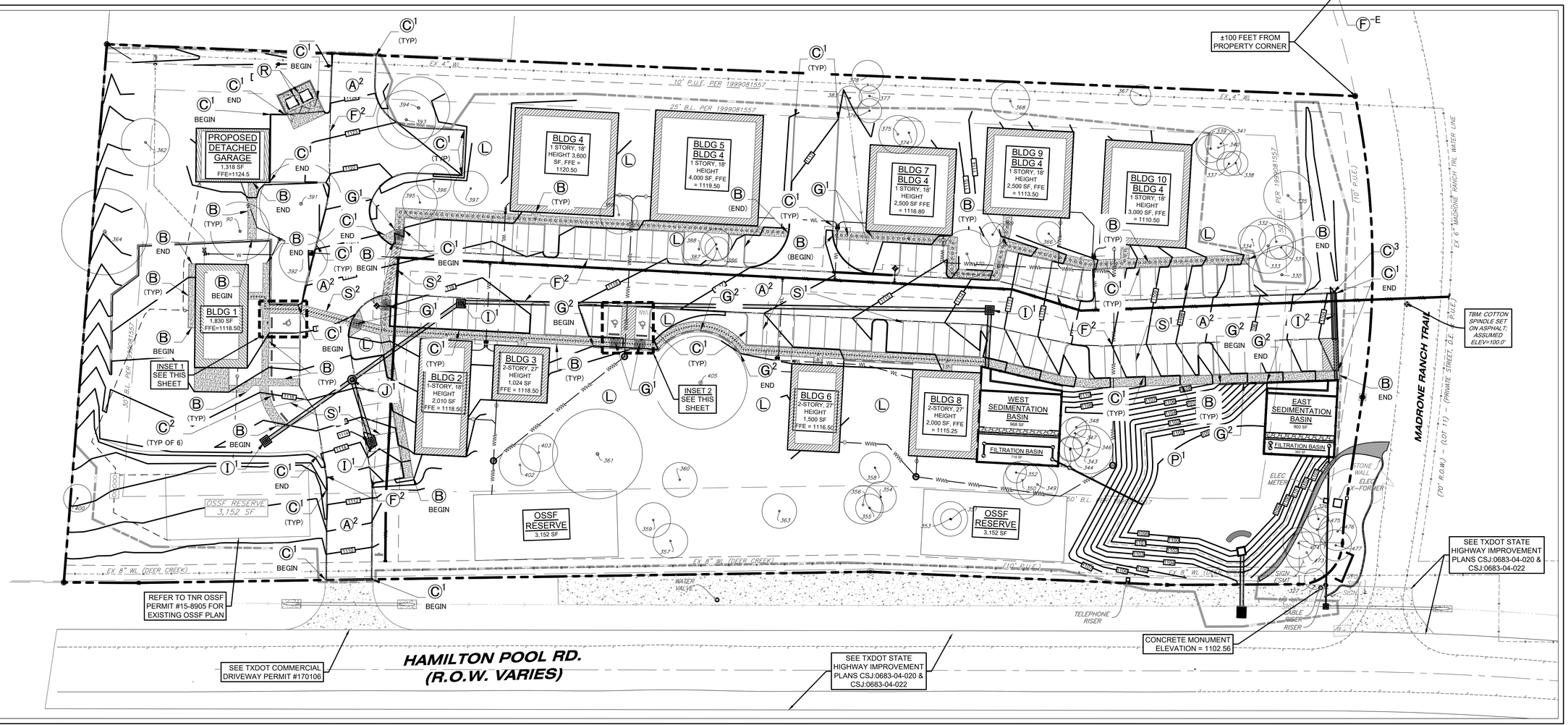
5 OF 36

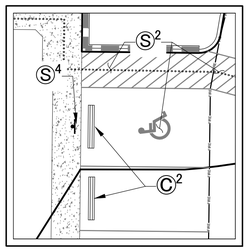
Drawing: N:\2015\5405-LLC\Projects\5405 - Mark Wise\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: Stephen Rhoad
Last Modified: Mar. 20, 24 - 17:19
Plot Date/Time: Mar. 21, 24 - 10:59:26

County Project No:
22-39516
WTCPUA Project No:
71-22-009

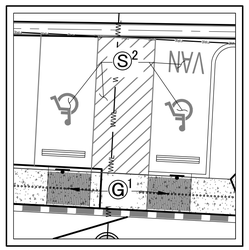
NORTH

0 30 45 60
2
GRAPHIC SCALE
1" = 30'





INSET 1
SCALE: 1"=10'



INSET 2
SCALE: 1"=10'

SITE NOTE LEGEND:

- (A)1 OMITTED
- (A)2 CONCRETE PAVEMENT - REF: GEOTECHNICAL REPORT
- (B) CONCRETE SIDEWALK - SEE DETAIL SHEET
- (C)1 STANDARD CURB & GUTTER - SEE DETAIL SHEET
- (C)2 PARKING LOT BUMPER CURB - SEE DETAIL SHEET
- (C)3 3' CURB CUT
- (D) OMITTED
- (E) OMITTED
- (F)1 FDC LOCATION
- (F)2 FIRE LANE STRIPING - SEE SHEET 14 - FIRE PROTECTION PLAN
- (F)3 FIRE HYDRANT - SEE DETAIL SHEET
- (F)-E EXISTING FIRE HYDRANT
- (G)1 ACCESSIBLE RAMP - SEE DETAIL SHEET
- (G)2 RETAINING WALL - REF: STRUCTURAL PLANS
- (H) OMITTED
- (I)1 3'x3' GRATE INLET - SEE DETAIL SHEET
- (I)2 TRENCH DRAIN - SEE DETAIL SHEET
- (J)1 STORM DRAIN MANHOLE - SEE DETAIL SHEET
- (J)2 STORM DRAIN OUTFALL - SEE SHEET 20 - POND 2 - WQ SECTIONS
- (K) OMITTED
- (L) LANDSCAPE AREA
- (M)(N)(O) OMITTED
- (P)1 DETENTION POND - SEE POND SHEET FOR DETAILS AND SECTIONS
- (Q) ADA PATH
- (R) DUMPSTER LOCATION (TRASH & RECYCLING)
- (S)1 4" WHITE PAVEMENT STRIPING
- (S)2 ADA STRIPING - SEE DETAIL SHEET
- (S)3 ACCESSIBLE PARKING SIGN (VAN) - SEE DETAIL SHEET
- (S)4 ACCESSIBLE PARKING SIGN - SEE DETAIL SHEET
- (T)(U)(V)(W)(X)(Y)(Z) OMITTED

NOTES:

1. ONSITE TOPO PROVIDED BY B&G SURVEYING.
2. OFF-SITE TOPO PROVIDED BY CAPCOG GIS DATA.
3. SEE SHEET 7 - SITE DIMENSIONAL PLAN FOR SITE DATA TABLE.
4. FLEXIBLE BASE WITH ASPHALT SURFACE - TRENCH REPAIR EXISTING PAVEMENT.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
S 45°56'24" W 526.54'		SUBJECT PROPERTY BOUNDARY
S XX°XX'XX" W 125.25'		ADJACENT PROPERTY LINES
		BUILDING SETBACK
UE		EASEMENT
UGU		UNDERGROUND ELECTRIC LINE
OHU		UNDERGROUND TELEPHONE
UE		OVERHEAD UTILITY
GAS		TELECOMMUNICATIONS LINE
		GAS LINE
		LIGHT POLE
		POWER POLE / DOWN GUY
		FIRE DEPARTMENT CONNECTION
	T	TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
W		WATER METER
		GRATE INLET

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CURB INLET (SIZE VARIES)
SS	SSL	STORM SEWER LINE (<18")
		STORM SEWER LINE (≥18")
W	WL	WATER LINE
WW	WWL	WASTEWATER LINE
		CURB & GUTTER
		EDGE OF PAVEMENT
		SIGN (AS NOTED)
		CONCRETE
		ACCESSIBLE ROUTE
FIRE		FIRE LANE
		TREE TO BE SAVED
LOC		LIMITS OF CONSTRUCTION

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TDi* ENGINEERING

5/21/2024
STATE OF TEXAS
F. P. HOWLAND III
90451
REGISTERED PROFESSIONAL ENGINEER

FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

SITE PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

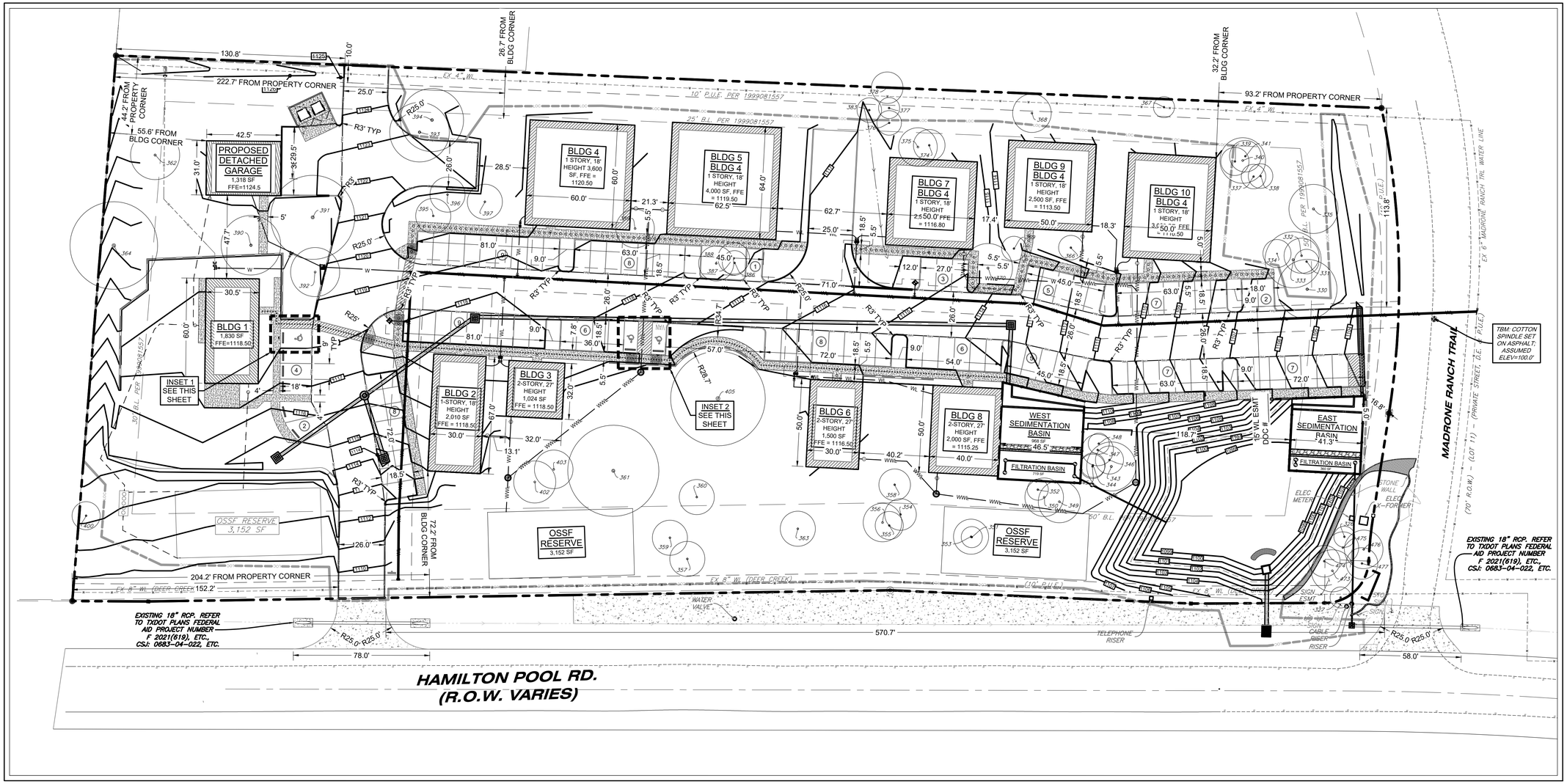
SHEET
6
6 OF 36

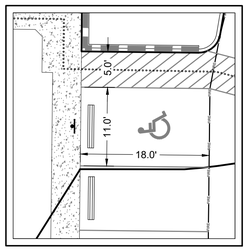
Drawing: \\ATX\TDI\TDI LLC\Projects\5405 - Mark Wise\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: MOORE, JOSEPH
Last Modified: Mar. 20, 24 - 17:19
Pot Date/Time: Mar. 21, 24 - 10:59:32

County Project No:
22-39516
WTCPUA Project No:
71-22-009

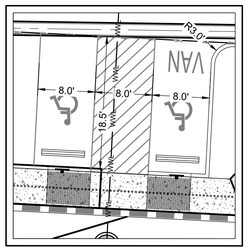
NORTH

0 30 45 60
1 2
GRAPHIC SCALE
1" = 30'





INSET 1
SCALE: 1"=10'



INSET 2
SCALE: 1"=10'

Existing Site Data Table			
Item	SF	AC	%
Total Site	217,860	5.001	100.00
Building Area	0	0.000	0.00
Sidewalk Area	0	0.000	0.00
Pavement/Drives	0	0.000	0.00
Gravel	0	0.000	0.00
Total IC	0	0.000	0.00
Landscape	217,860	5.001	100.00

Proposed Site Data Table			
Item	SF	AC	%
Total Site	217,860	5.001	100.00
Building Area	25,282	0.580	11.60
Sidewalk Area	7,507	0.172	3.45
Pavement/Drives	45,840	1.052	21.04
Gravel	0	0.000	0.00
Total IC	78,629	1.805	36.09
Landscape	139,232	3.196	63.91

NOTES:

1. NO PARKING REQUIREMENTS IN TRAVIS COUNTY.
2. FIELD VERIFY ALL TXDOT DRIVEWAY DIMENSIONS.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
S 45°56'24" W 526.54'		SUBJECT PROPERTY BOUNDARY
S XX°XX'XX" W 125.25'		ADJACENT PROPERTY LINES
		BUILDING SETBACK
UE		EASEMENT UNDERGROUND ELECTRIC LINE
UGU		UNDERGROUND TELEPHONE
OHU		OVERHEAD UTILITY
UE		TELECOMMUNICATIONS LINE
GAS		GAS LINE
		LIGHT POLE
		POWER POLE / DOWN GUY
		FIRE DEPARTMENT CONNECTION
	T	TRANSFORMER (SIZE VARIES)

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		FIRE HYDRANT
	×	WATER VALVE
W		WATER METER
		GRATE INLET
W	WL	STORM SEWER LINE
WW	WWL	WATER LINE
		WASTEWATER LINE
		CURB & GUTTER EDGE OF PAVEMENT
		SIGN (AS NOTED)
		CONCRETE
X		TREE TO BE SAVED
	#	PARKING COUNT

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TWISTED OAKS PARTNERS, LLC

SITE DIMENSIONAL PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 7

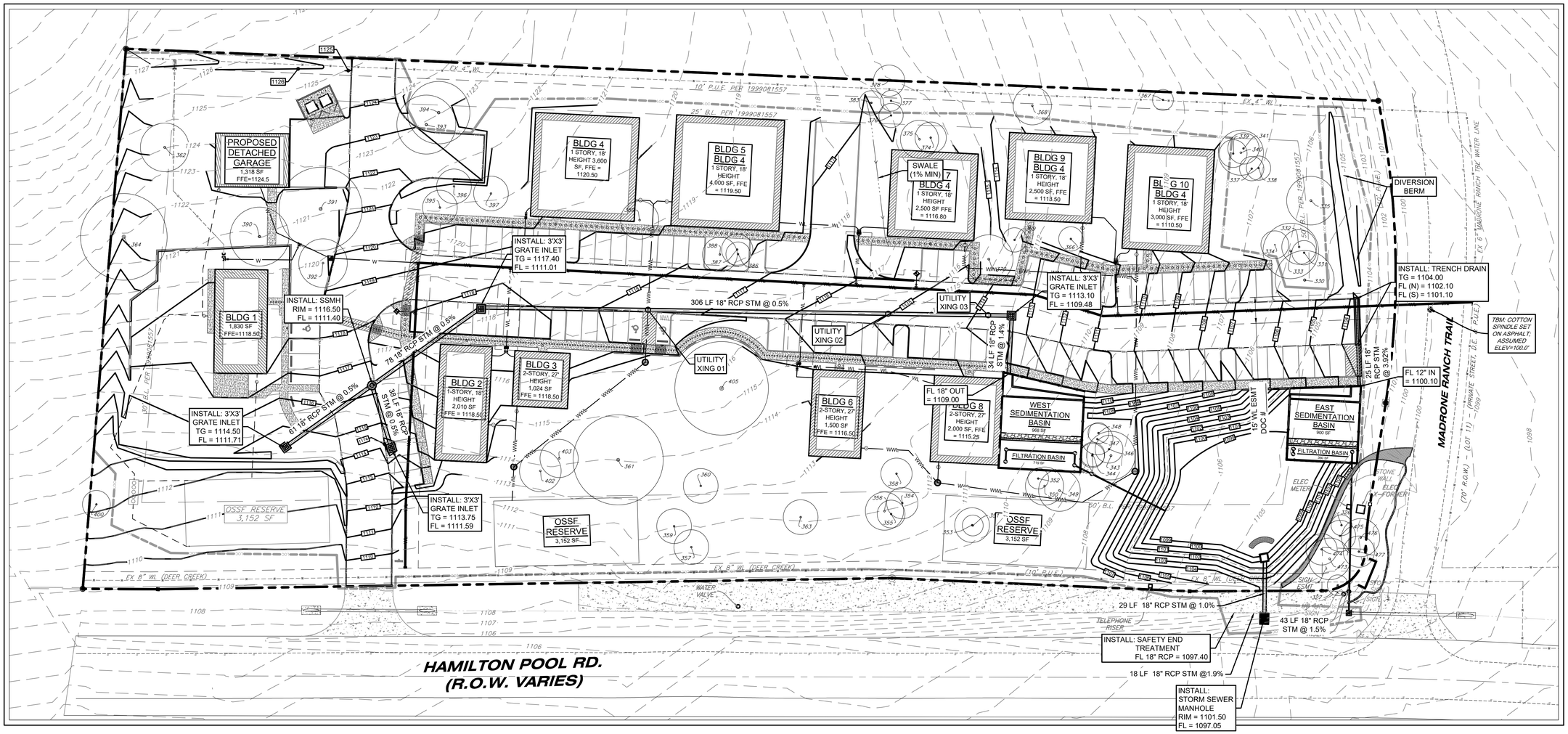
7 OF 36

Drawing: \\vDrive\TDI\LLC Projects\5405 - Mark West\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: MDiGiovanni
Last Modified: Mar 20, 24 - 17:19
Pot Date/Time: Mar 21, 24 - 10:59:37

County Project No:
22-39516
WTCPUA Project No:
71-22-009

NORTH

0 30 45 60
2
GRAPHIC SCALE
1" = 30'



LEGEND

EXISTING	PROPOSED	DESCRIPTION
S 45°56'24" W 526.54'		SUBJECT PROPERTY BOUNDARY
S XX°XX'XX" W 125.25'		ADJACENT PROPERTY LINES
		BUILDING SETBACK
		EASEMENT
UE		UNDERGROUND ELECTRIC LINE
UGU		UNDERGROUND TELEPHONE
OHU		OVERHEAD UTILITY
UE		TELECOMMUNICATIONS LINE
GAS		GAS LINE
		LIGHT POLE
		POWER POLE / DOWN GUY
		FIRE DEPARTMENT CONNECTION
	T	TRANSFORMER (SIZE VARIES)
		FIRE HYDRANT
		WATER VALVE
W		WATER METER

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		GRATE INLET
		AREA INLET
		STORM SEWER LINE
W	WL	WATER LINE
WW	WWL	WASTEWATER LINE
		CURB & GUTTER EDGE OF PAVEMENT
		SIGN (AS NOTED)
		CONCRETE
X		TREE TO BE SAVED
LOC		LIMITS OF CONSTRUCTION

NOTES:

1. GRAVITY UTILITY CROSSING ELEVATIONS ARE PROVIDED ON SHEET 8 - WATER DISTRIBUTION PLAN.

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TWISTED OAKS OFFICE COMPLEX

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TWISTED OAKS PARTNERS, LLC

STORM SEWER PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 10

10 OF 36

Drawing N...\H2O\TDTU LLC\Projects\5405 - Mark Weir\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
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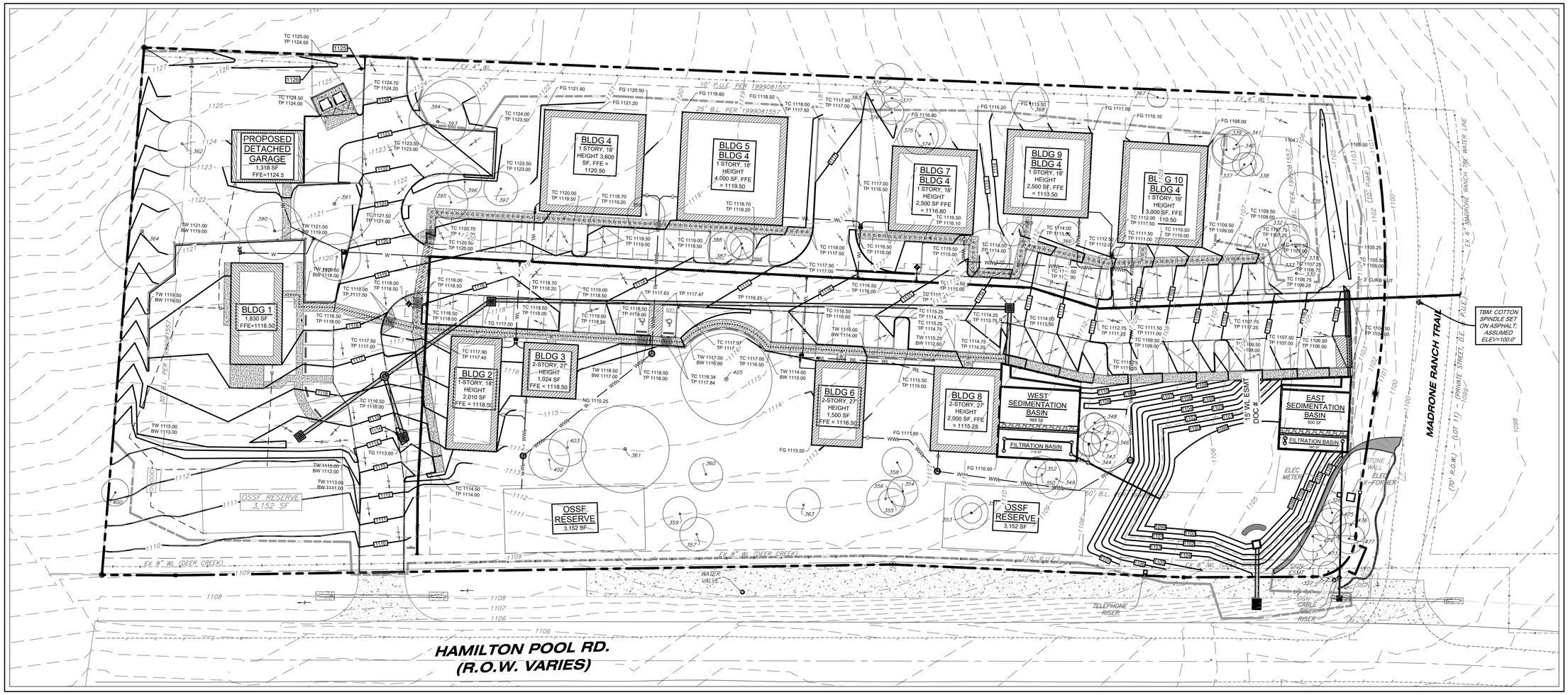
County Project No:
22-39516
WTCPUA Project No:
71-22-009

NORTH

0 30 45 60
GRAPHIC SCALE
1" = 30'



SPOT ELEVATION LEGEND

BW = BOTTOM OF WALL
TW = TOP OF WALL
FG = FINISHED GRADE
TG = TOP OF GRATE
TP = TOP OF PAVEMENT
TC = TOP OF CURB
FFE = FINISH FLOOR ELEVATION

GRADING NOTES:

1. STRIP AND REMOVE ALL SURFACE ORGANIC, TOPSOIL AND UNSUITABLE MATERIALS FROM ALL BUILDING AND PAVING AREAS. TREE STUMPS INCLUDING THE ROOT SYSTEM SHOULD BE REMOVED.
2. ALL EXCAVATED SOIL FROM FOUNDATION PAD PREPARATION AREA MAY BE USED IN PARKING LOT FOR FILL OR HAUL OFF SITE.
3. PROOF ROLL THE SUBGRADE TO DETECT ANY WET, SOFT, OR PUMPING AREAS, TREAT THESE AREAS WITH DRYING OR STABILIZING AGENTS AS NECESSARY OR REMOVE AND REPLACE THEM WITH A SUITABLE FILL MATERIAL. (CONSULT WITH ENGINEER PRIOR TO PERFORMING)
4. COMPACT THE SUBGRADE TO A MINIMUM OF NINETY FIVE (95) PERCENT OF ITS MAX. DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D 698). REFER TO GEOTECH REPORT FOR SITE PREPARATION RECOMMENDATIONS.
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
6. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
7. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.
8. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY FROM 4WARD PROFESSIONAL LAND SURVEYING INC. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
9. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
10. REFER TO GEOTECH REPORT BY ROCK ENGINEERING (RETL, INC.) DATED: 10/15/2020 FOR SITE PREPARATION AND RECOMMENDATIONS.
11. ESTABLISH POSITIVE SITE DRAINAGE.
12. REFER TO GEOTECH REPORT PROVIDED BY OWNER FOR PAVEMENT SECTIONS.
13. ALL SPOT GRADES SHOWN ARE FOR TOP (TP) OF PAVEMENT UNLESS OTHERWISE NOTED.
14. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. COMPLIANCE WITH ACCESSIBILITY STANDARDS SUCH AS THE 2010 STANDARDS FOR ACCESSIBLE DESIGN OR THE 2012 TEXAS ACCESSIBILITY STANDARDS WAS NOT VERIFIED. THE APPLICANT IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY STANDARDS.
15. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50.
16. ACCESSIBLE PARKING SPACES MUST BE LOCATED ON A SURFACE WITH A SLOPE NOT EXCEEDING 1:50.
17. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
18. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 INCHES. THE MAXIMUM HORIZONTAL PROJECTION IS 30 FEET FOR A RAMP WITH A SLOPE BETWEEN 1:12 AND 1:15, AND 40 FEET FOR A RAMP WITH A SLOPE BETWEEN 1:16 AND 1:20. [ANSI 405.2 - 405.6]

LEGEND

EXISTING	PROPOSED	DESCRIPTION
S 45°56'24" W 526.54'		SUBJECT PROPERTY BOUNDARY
S XX°XX'XX" W 125.25'		ADJACENT PROPERTY LINES
		BUILDING SETBACK
		EASEMENT
UE	ELEC	UNDERGROUND ELECTRIC LINE
UGU	TELE	UNDERGROUND TELEPHONE
OHU	OU	OVERHEAD UTILITY
UE	COMM	TELECOMMUNICATIONS LINE
GAS	GAS	GAS LINE
		GRATE INLET
		STORM SEWER LINE
W	WL	WATER LINE

LEGEND

EXISTING	PROPOSED	DESCRIPTION
WW	WWL	WASTEWATER LINE
WW	WW	WASTEWATER MANHOLE
S	S	STORMSEWER MANHOLE
CO	CO	WASTEWATER CLEANOUT
		CURB & GUTTER EDGE OF PAVEMENT
		SIGN (AS NOTED)
XXX	XXX	CONTOUR
X		TREE TO BE SAVED
		FLOW DIRECTION
	LOC	LIMITS OF CONSTRUCTION

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TWISTED OAKS PARTNERS, LLC

GRADING PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET
13
13 OF 36

Drawing: N:\DOT\Bell\TDI-LLC\Projects\5405 - Mark West\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: MWest
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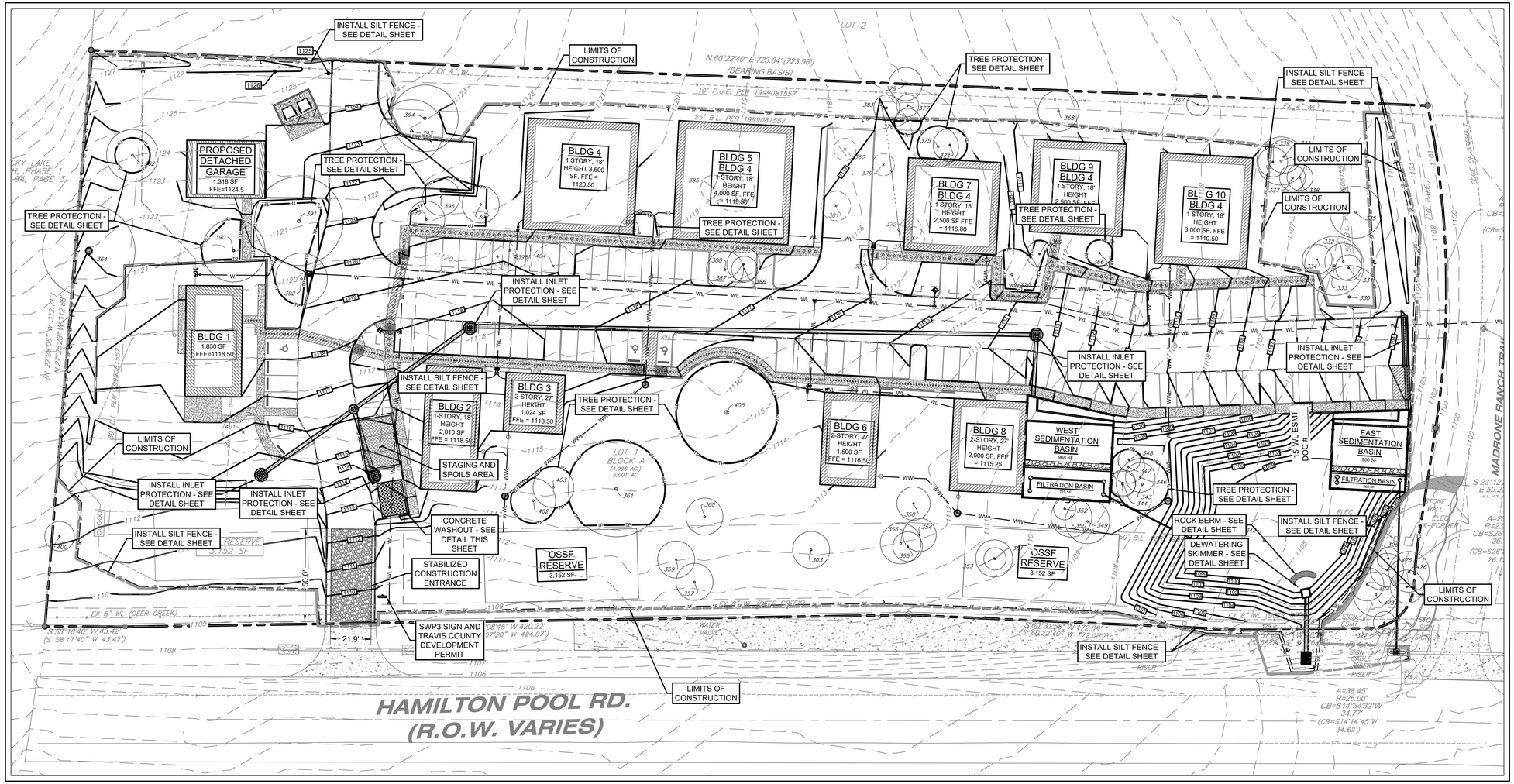
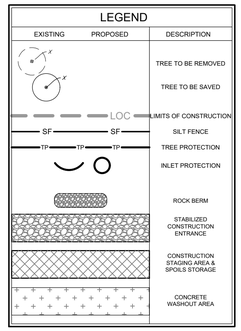
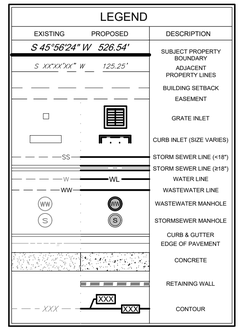
County Project No:
22-39516
WTCPUA Project No:
71-22-009







Tag No.	TREE DESCRIPTION
326	6" OAK
475	9" OAK
476	11" OAK
477	9" OAK
473	12" M.S. OAK
474	9" OAK
327	6" OAK
328	7" OAK
329	6" ASH
330	17" M.S. IAK
331	7" OAK
332	10" M.D. OAK
333	16" M.S. OAK
334	8" M.S. OAK
335	14" M.S. OAK
336	6" OAK
337	7" OAK
338	7" M.S. OAK
339	8" M.S. OAK
340	13" M.S. OAK
341	9" M.S. OAK

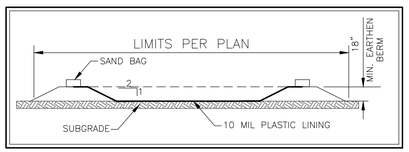
Tag No.	TREE DESCRIPTION
342	13" M.S. OAK
343	14" M.S. OAK
344	7" AOK
345	7" M.S. OAK
346	8" M.S. OAK
347	9" M.S. OAK
348	6" OAK
349	12" M.S. OAK
350	11" M.S. OAK
351	6" OAK
352	6" OAK
353	10" M.S. OAK
354	9" M.S. OAK
355	8" OAK
356	11" M.S. OAK
357	10" OAK
358	9" M.S. OAK
359	10" M.S. OAK
360	10" M.S. OAK
361	23" M.S. OAK
362	14" M.S. OAK
363	10" OAK

Tag No.	TREE DESCRIPTION
364	25" M.S. OAK
365	14" M.S. OAK
366	7" M.S. OAK
367	6" OAK
368	11" M.S. OAK
369	7" OAK
370	14" M.S. OAK
371	6" OAK
372	6" OAK
373	7" M.S. OAK
374	9" OAK
375	11" OAK
376	7" OAK
377	6" OAK
378	9" OAK
379	6" OAK
380	6" OAK
381	8" M.S. OAK
382	7" OAK
383	7" OAK
384	11" M.S. OAK
385	7" M.S. OAK

Tag No.	TREE DESCRIPTION
386	7" OAK
387	9" M.S. OAK
388	10" M.S. OAK
389	11" M.S. OAK
390	17" M.S. OAK
391	20" M.S. OAK
392	13" M.S. OAK
393	17" M.S. OAK
394	18" M.S. OAK
395	10" M.S. OAK
396	10" M.S. OAK
397	10" M.S. OAK
398	11" OAK
399	10" OAK
400	8" OAK
401	11" M.S. OAK
402	12" OAK
403	11" OAK
404	12" OAK
405	27" OAK

M.S.= MULTI-STEM

* M.S.=MULTI-STEM



CONCRETE WASH-OUT DETAIL
N.T.S.

NOTES:

1. THE TOTAL AREA OF DISTURBANCE CONTAINED WITHIN THE LIMITS OF CONSTRUCTION IS 4.33 ACRES
2. IF A CONCRETE WASHOUT IS TO BE UTILIZED DURING CONSTRUCTION ADD A NOTE ON THE PLAN SHEETS THAT STATES THAT THE LOCATION WILL BE DETERMINED ONCE CONSTRUCTION HAS BEGUN AND WILL BE PROPERLY NOTATED ON THE SITE MAP AT THAT TIME.
3. POSTINGS AND PERMITS MUST BE PLACED IN A HIGHLY VISIBLE LOCATION ONSITE.
4. ALL EROSION AND SEDIMENTATION CONTROLS (ESC) MUST BE INSTALLED PRIOR TO ANY DISTURBANCE ON SITE AND PLACED DOWN GRADIENT FROM ALL DISTURBANCES.
5. INSTALL SILT FENCE ACCORDINGLY FOR RUN-ON DIVERSION OR OFFSITE SEDIMENT CONTROL DEPENDING ON UP OR DOWN SLOPE, FACING POST SIDE ON THE DOWN GRADIENT SIDE.
6. ALL ESC USED ONSITE MUST BE REGULARLY MONITORED AND MAINTAINED AS NEEDED.
7. EXCESS MATERIALS THAT WILL BE TRANSPORTED TO AN OFFSITE LOCATION MUST HAVE THAT LOCATION CLEARED BY COUNTY INSPECTOR.
8. LOOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ONSITE.
9. INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED.
10. ALL DIRT, MUD, ROCKS, DEBRIS, ETC. THAT IS SPILLED, TRACKED OR OTHERWISE DEPOSITED ON ANY EXISTING PAVED STREETS SHALL BE CLEANED UP IMMEDIATELY AND AT A MINIMUM ONCE DAILY.
11. ENVIRONMENT INSPECTOR HAS THE AUTHORITY TO ADD AND /OR MODIFY EROSION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS 25-8-183.
12. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5 (D), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
13. SEE TREE LIST ON THIS SHEET.
14. REFER TO DETAILS FOR EROSION CONTROL MEASURE DETAILS.
15. UPON INSTALLATION OF DRAINAGE STRUCTURES, INLET PROTECTION MUST BE INSTALLED.
16. SEE GENERAL NOTES SHEET FOR STANDARD NOTES.
17. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY.
18. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH TARP OR REVEGETATION MATTING. ECM 1.4.1.2 (C) (2)
19. SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH ECM 1.4.2 (G).
20. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6" CONCRETE CURB ARE REQUIRED. IF A STANDARD 6" CURB AND GUTTER ARE NOT PROVIDED FOE ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7, "PROTECTION OF LANDSCAPE AREAS."
21. CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
22. "SPECIAL CONSTRUCTION TECHINIQUES (ECM 3.5.4.(D)) PRIOR TO EXCAVATION WITHIN TREE DRIPLINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO MAINTAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
23. IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH A MINIMUM OF 12 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION. IN AREAS WITH HIGH SOIL PLASTICITY GEOTEXTILE FABRIC, PER STANDARD SPECIFICATION 620S, SHOULD BE PLACED UNDER THE MULCH TO PREVENT EXCESSIVE MIXING OF THE SOIL AND MULCH. ADDITIONALLY, MATERIAL SUCH AS PLYWOOD AND METAL SHEETS, COULD BE REQUIRED BY THE CITY ARBORIST TO MINIMIZE ROOT IMPACTS FROM HEAVY EQUIPMENT. ONCE THE PROJECT IS COMPLETED, ALL MATERIALS SHOULD BE REMOVED, AND THE MULCH SHOULD BE REDUCED TO A DEPTH OF 3 INCHES.
24. PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
25. WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION
ON THE LEAVES.
26. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL."
27. NO CONSTRUCTION ACTIVITIES OR GRADING ARE PERMITTED WITHIN TREE PROTECTION FENCE.
28. SILT FENCE MUST NOT CROSS TREE PROTECTION FENCE, SILT FENCE MUST GO AROUND TREE PROTECTION FENCE.
29. LOSE TRASH AND DEBRIS MUST BE DISPOSED OF PROPERLY ONSITE
30. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS ONTO THE PUBLIC ROADWAY ON AN ONGOING/REGULAR BASIS.
31. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY UPON INLET INSTILLATION.
32. INITIATE TEMPORARY STABILIZATION WHEN CONSTRUCTION CEASES IN A DISTURBED AREA FOR 14 DAYS.
33. INITIATE PERMANENT STABILIZATION IMMEDIATELY ONCE WORK HAS CEASED AND FINAL GRADE HAS BEEN ACHIEVED
34. ALL DISTURBED/BARE AREAS WILL REQUIRE PERMANENT STABILIZATION BEFORE FINAL ACCEPTANCE CAN BE ACHIEVED.AVOID DISTURBING AREAS OF THE PROJECT THAT ARE NOT NECESSARY FOR CONSTRUCTION.
35. COUNTY INSPECTOR MAR REQUEST ADDITIONAL CONTROLS BE INSTALLED ONSITE AS NEEDED.
36. TEMPORARY ESC'S SHALL REMAIN IN PLACE IN ALL DISTURBED AREAS UNTIL ADEQUATE STABILIZATION HAS BEEN CHIVIED.
37. CONTRACTOR MUST REMOVE SEDIMENT FROM ALL STORM SEWER INLET BOXES, LINES, PIPES AND CULVERTS BEFORE CONDITIONAL/FINAL ACCEPTANCE CAN OBTAINED.
38. TRAVIS COUNTY REQUEST CERTIFICATE SWP3 INSPECTORS TO CONDUCT SWP3 INSPECTION AND REPORTING ON ALL PROJECTS WITH ONE ACRE OF DISTURBANCE AND LARGER.
39. PERMITTEE SHALL INSPECT ALL INLET PROTECTION DEVICES AS PART OF THE WEEKLY SWP3 REPORT, UPON RECEIVING A FORECAST CALLING FOR A RAIN EVENT FOR AN EXTENDED PERIOD, MODIFICATION OF INLET PROTECTION SHOULD BE MADE TO PREVENT FLOODING OR PONDING OF WATER IF TRAFFIC OR PROPERTY CONCERNS ARISE.
40. THE FINAL STABILIZATION/REVEGETATION EFFORTS SHALL BE IN ACCORDANCE WITH THE APPROVED RESTORATION PLAN DETAILS AND SPECIFICATION.
41. ALL 3:1 SLOPES OR STEEPER REQUIRE SOIL RETENTION BLANKET.
42. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE WATERING/IRRIGATION TO ARCHIVE THE PERMANENT STABILIZATION REQUIREMENTS IN ALL DISTURBED/REVEGETATIVE AREAS BEFORE FINAL ACCEPTANCE FRO THIS PROJECT CAN BE OBTAINED.
43. ALL COMMON AREA INCLUDING PWQC STRUCTURES MUST BE PERMANENTLY STABILIZED PER; JURISDICTIONAL TECHNICAL SPECIFICATIONS BEFORE A CONDITIONAL ACCEPTANCE CAN BE ISSUED.
44. ANY DISTURBANCE AREA(S) NOT INDICATED TO BEE RESTORE ON THE RESTORATION PLAN REQUIRES THE SAME EFFORTS AS THOSE INDICATED.
45. ALL DISTURB AREAS MUST MEET THE REQUIREMENT FOR PERMANENT STABILIZATION.
46. THE NOTICE OF TERMINATION (NOT) FOR THIS PROJECT SHALL NOT BE SUBMITTED UNTIL THE TRAVIS COUNTY ENVIRONMENTAL INSPECTOR APPROVES CLEARANCE.
47. ANY MULCH THAT IS CREATED BE RETAINED AND STOCKPILE ON SITE TO BE USED A TEMPORARY/TRANSITIONAL STABILZATION MEASURES AS NEEDED/REQUIRED.

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FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

EROSION & SEDIMENTATION CONTROL PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET
16
16 OF 36

Drawing: I:\eDOT\Bell\TDI-LLC\Projects\5405 - Mark Wheller\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
Layout: 16-EROSION & SEDIMENTATION CONTROL PLAN
Last Modified: Mar. 20, 24 - 17:19
Print Date/Time: Mar. 21, 24 - 11:00:04

EXISTING DRAINAGE CALCULATIONS

Time of Concentration - Existing Conditions

DRAINAGE AREA	SHEET FLOW: Manning's n-Value	L (ft)	P_2 - Zone 1 (In/Hr.)	S (ft/ft)	Tt1 (Min) $0.42(nL)^{0.8}/(P_2^{0.5} \times s^{0.4})$	SHALLOW CONCENTRATED FLOW: L (ft)	S (ft/ft)	V - (TR-55 Fig. 3-1) S vs. V (ft/s)	Tt2 (Min) L/(V*60)	Tc Total (Min)
O1	0.24	100	4.14	0.080	7.21	348	0.043	3.6	1.61	8.82
O2	0.24	22	4.14	0.13	1.77	690	0.014	1.7	6.76	8.53
O3	0.24	13	4.14	0.08	1.41	288	0.054	3.7	1.30	2.71
E1	0.24	100	4.14	0.028	10.97	405	0.035	2.8	2.41	13.38
E2	0.24	100	4.14	0.028	10.97	427	0.044	3.2	2.22	13.19

Note: Dense grass cover is used for determinng manning's n-value. Ref: City of Austin DCM 2.5.2

EXISTING CONDITIONS									Soil Curve Number		
DRAINAGE BASIN	Pervious					Impervious			Concrete	Fair Grass	Weighted
	Area (SF)	(AC)	(SF)	(AC)	%	(SF)	(AC)	%		50% to 75%	CN
O1	42,439	0.97	42,439	0.97	100.00%	-	0.000	0.00%	98	84	84.0
O2	39,309	0.90	39,309	0.90	100.00%	-	0.000	0.00%	98	84	84.0
O3	9,954	0.23	9,954	0.23	100.00%	-	0.000	0.00%	98	84	84.0
E1	161,974	3.72	161,974	3.72	100.00%	-	0.000	0.00%	98	84	84.0
E2	55,886	1.28	55,886	1.28	100.00%	-	0.000	0.00%	98	84	84.0

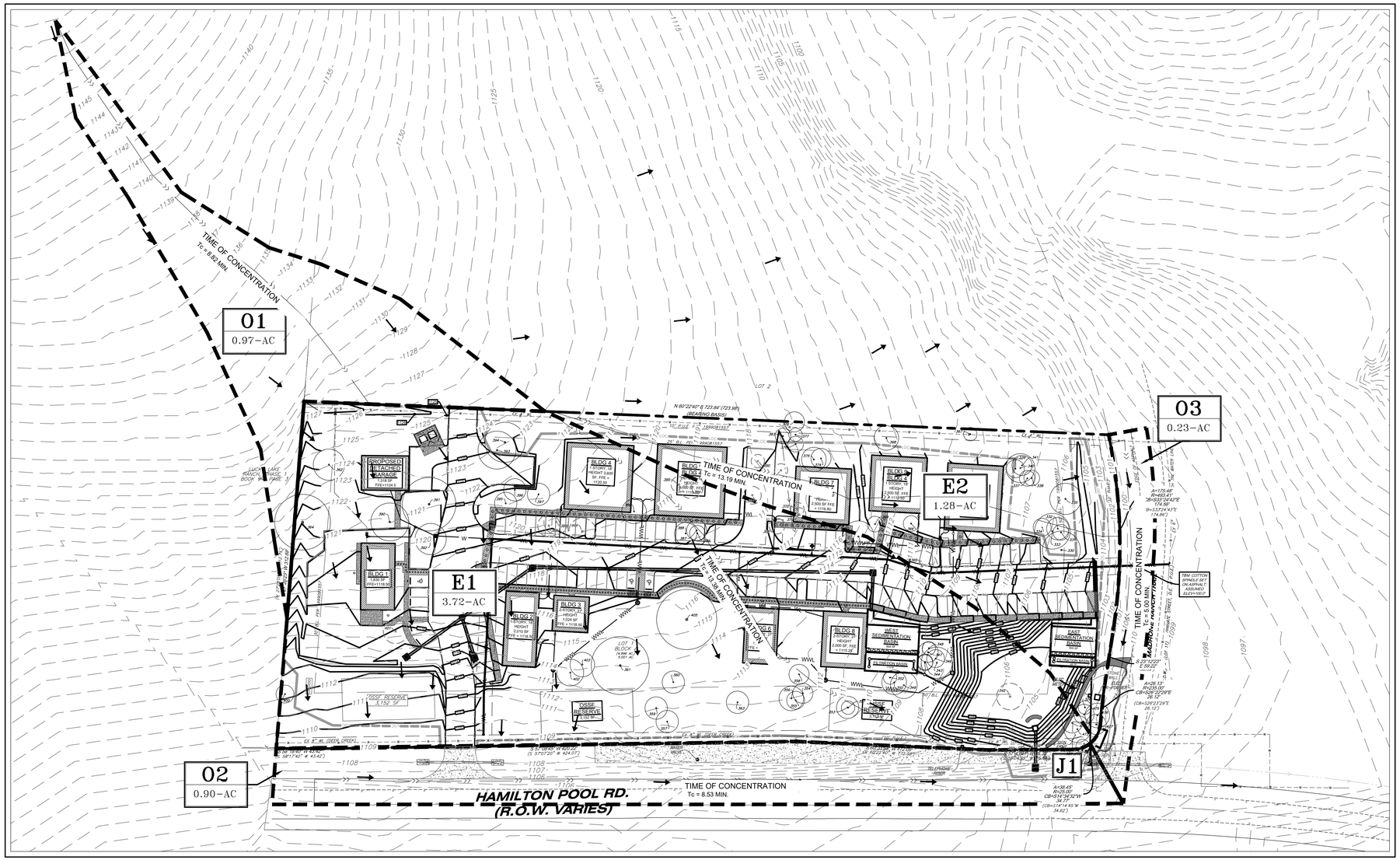
Soil BiD Hydrologic Group "D" soil is identified in project vicinity. Fair Grass Cover 50% to >75% was used in determining the RCN.

DRAINAGE SUMMARY CALCULATIONS - SCS METHODOLOGY

Twisted Oaks

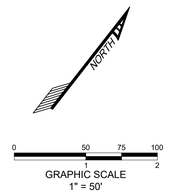
Existing Drainage Area (from HEC-HMS)

Area #	Area (Ac.)	(RCN)	Tc (Min)	Q100	Q25	Q10	Q2
O1	0.97	84	8.82	9.5	7.0	5.4	3.1
O2	0.90	84	8.53	8.8	6.5	5.0	2.8
O3	0.23	84	5.00	2.8	2.1	1.6	0.9
E1	3.72	84	13.38	34.4	25.1	19.4	10.7
E2	1.28	84	13.19	11.9	8.7	6.7	3.7
J1	**Downstream Junction of O2 and O3**			59.7	43.7	33.8	18.7
Ref: City of Austin DCM 2.5.2							



DRAINAGE LEGEND

- DRAINAGE AREA BOUNDARY
- 01 / 1.20-AC — OFFSITE DRAINAGE AREA BOUNDARY
- E1 / 5.00-AC — EXISTING DRAINAGE AREA BOUNDARY
- J1 — POINT OF ANALYSIS - REF: HEC-HMS MODEL
- DRAINAGE FLOW ARROW
- TRAVEL PATH OF TIME OF CONCENTRATION



County Project No:
22-39516
WTCPUA Project No:
71-22-009

LEGAL DESCRIPTION:

LOT 1 BLK A MADRONE RANCH SUBDIVISION (5.001 AC.)

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TWISTED OAKS PARTNERS, LLC

EXISTING DRAINAGE MAP

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 17

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Drawing N:\405\Tdi\TDI-LLC\Projects\5405 - Mark Wise\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
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PROPOSED DRAINAGE CALCULATIONS

DRAINAGE AREA	SHEET FLOW					SHALLOW CONCENTRATED FLOW				CHANNEL FLOW: V=(1.49/n)*R^(2/3)*S^(1/2)						Tc Total
	Manning's	L (ft)	P_2 - Zone 1	S	Tt1 (Min)	L (ft)	S (ft/ft)	V - (TR-55 Fig. 3-1)	Tt2 (Min)	L (ft)	Manning's	Area	Wetted	Slope	Tt3 (Min)	
P1	0.01	100	4.14	0.050	0.68	151	0.043	4.2	0.60	481	0.013	1.77	4.71	0.01	1.34	2.63
P2	0.01	100	4.14	0.055	0.66	320.00	0.03	3.6	1.48	0	-	-	-	-	0.00	2.14
O1	0.240	100	4.14	0.080	7.21	348.00	0.043	3.6	1.61	-	-	-	-	-	0.00	8.82
O2	0.240	22	4.14	0.130	1.77	690.00	0.014	1.7	6.76							8.53
O3	0.240	13	4.14	0.080	1.41	288.00	0.054	3.7	1.30							2.71
FR1	0.150	100	4.14	0.055	5.75	437.00	0.25	7.5	0.97	-	-	-	-	-	0.00	6.72

Note: A combination of good grass cover and/or conrete pavement is used for determinng manning's n-value. Ref: City of Austin DCM 2.5.2

DEVELOPED CONDITIONS								CN		
DRAINAGE BASIN		Pervious			Impervious			Concrete	Fair Grass 50% to 75%	Weighted
	Area (SF)	(AC)	(SF)	(AC)	%	(SF)	(AC)	%			CN
P1	109,294	2.51	52,292	1.20	47.85%	57,002	1.31	52.15%	98	84	91.3
P2	41,224	0.95	21,653	0.50	52.53%	19,571	0.45	47.47%	98	84	90.6
FR1	67,342	1.55	65,286	1.50	96.95%	2,056	0.05	3.05%	98	84	84.4
O1	42439	0.97	42,439	0.97	100.00%	0	0.00	0.00%	98	84	84.0
O2	39309	0.90	39,309	0.90	100.00%	0	0.00	0.00%	98	84	84.0
O3	9954	0.23	9,954	0.23	100.00%	0	0.00	0.00%	98	84	84.0

Soil BID Hydrologic Group "D" soil is identified in project vicinity. Fair Grass Cover 50% >75% was used in determining the RCN.

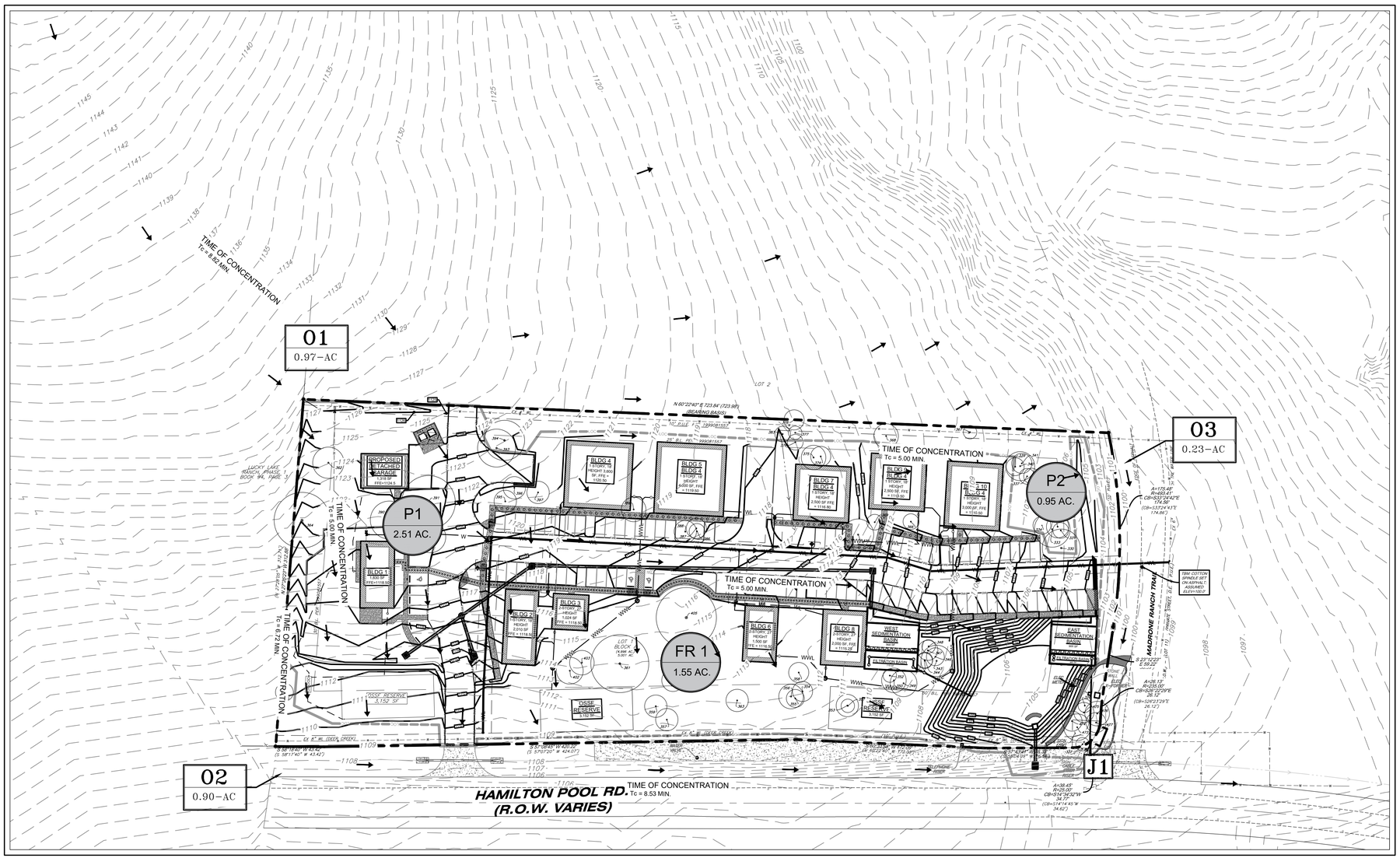
TWISTED OAKS - FLOW ELEVATION TABLE

Elevation	Area (sf)	(Acres)	Volume (C.F)	Total Vol. (C.F)	Opening 1 (C=0.6, A=2.0sf, g=32.2ft/s2) 4.0'x0.5' at 1098.25 (center elevation=1098.5)			Opening 2 (C=0.6, A=1.35sf, g=32.2ft/s2) 2.7'x0.5' at 1100.25 (center elevatiion=1100.5)			Opening 3 (C=0.6, A=0.7sf, g=32.2ft/s2) 1.4'x0.5' at 1100.75 (center elevation=1101.0)			Total
					A (sq.ft)	H (ft)	Q=CA (2gH)1/2	A (sq. ft)	H (ft)	Q=CA (2gH)1/2	A (sq. ft)	H (ft)	Q=CA (2gH)1/2	
1098.25	0	0.0000	0	0	2.25	0	0	1.2	0	0	1.2	0	0	0.00
1099	4563	0.1048	1711.1	1711.1	2.25	0.75	9.38	1.2	0	0	1.2	0	0	9.38
1100	5685	0.1305	5124.0	6835.1	2.25	1.75	14.33	1.2	0	0	1.2	0	0	14.33
1101	6798	0.1561	6241.5	13076.6	2.25	2.75	17.97	1.2	0.7	4.83	1.2	0.7	4.83	22.80
1102	7482	0.1718	7140.0	20216.6	2.25	3.75	20.98	1.2	1.70	7.53	1.2	1.70	7.53	28.51
1102.5	7864	0.1805	3069.2	23285.8	2.25	4.15	22.07	1.2	2.10	8.37	1.2	2.10	8.37	30.44

SUMMARY STORM DATA FOR TWISTED OAKS

Storm Event	Existing Q JI	Uncontrolled Q W/Out Ponds	Proposed Released Q After Pond	Stage Storage Elevation Pond	Storage Volume (C.F.) Pond
2 year	18.7	28.7	WQ	WQ	WQ
10 year	33.8	48.3	32.4	1100.5	8,083
25 year	43.7	61.4	43.7	1100.9	10,813
100 year	59.7	82.3	59.7	1101.5	15,933

County Project No:
22-39516
WTCPUA Project No:
71-22-009



DRAINAGE LEGEND

- DRAINAGE AREA BOUNDARY
- 01 / 1.20–AC — OFFSITE DRAINAGE AREA BOUNDARY
- P1 / 0.00 AC. — PROPOSED DRAINAGE AREA BOUNDARY
- FR1 / 0.00 AC. — FREE RELEASE DRAINAGE AREA BOUNDARY
- J1 — POINT OF ANALYSIS - REF: HEC-HMS MODEL
- DRAINAGE FLOW ARROW
- TRAVEL PATH OF TIME OF CONCENTRATION

NOTES:

1. DRAINAGE FOR THIS DEVELOPMENT HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.

LEGAL DESCRIPTION:

LOT 1 BLK A MADRONE RANCH SUBDIVISION (5.001 AC.)

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TWISTED OAKS PARTERNS, LLC

PROPOSED DRAINAGE PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET 18

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Drawing: ...\405\TDI\TDI LLC\Projects\5405 - Mark Wood\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
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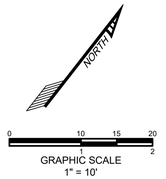
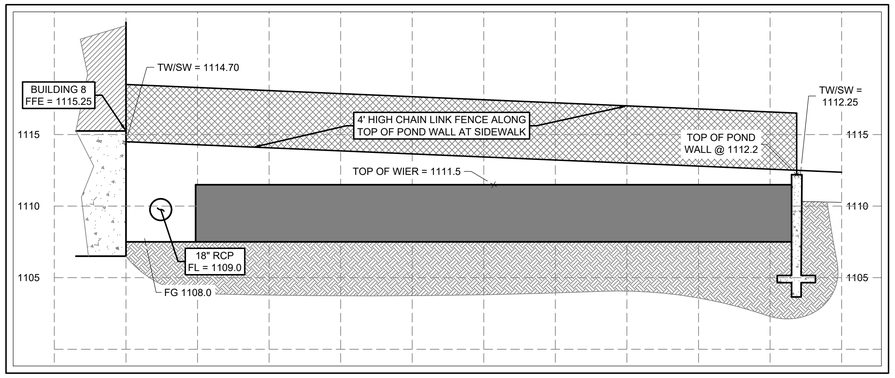
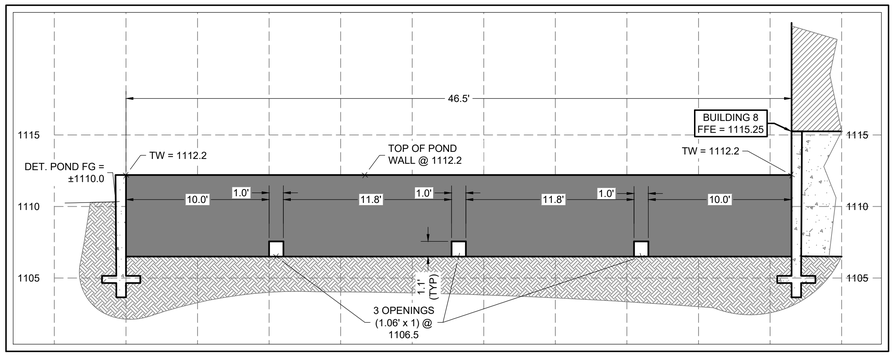
Plot Date/Time: Mar. 21, 24 - 11:00:19

County Project No:
22-39516
WTCPUA Project No:
71-22-009

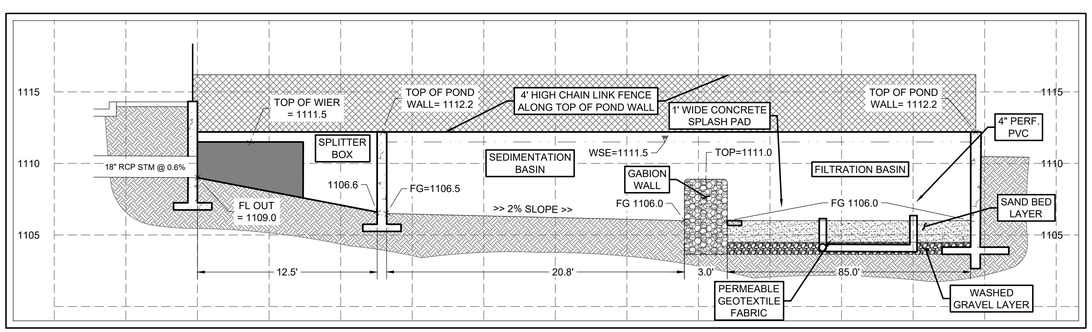




SECTION G-G / WQ POND 1
SCALE: 1" = 5'

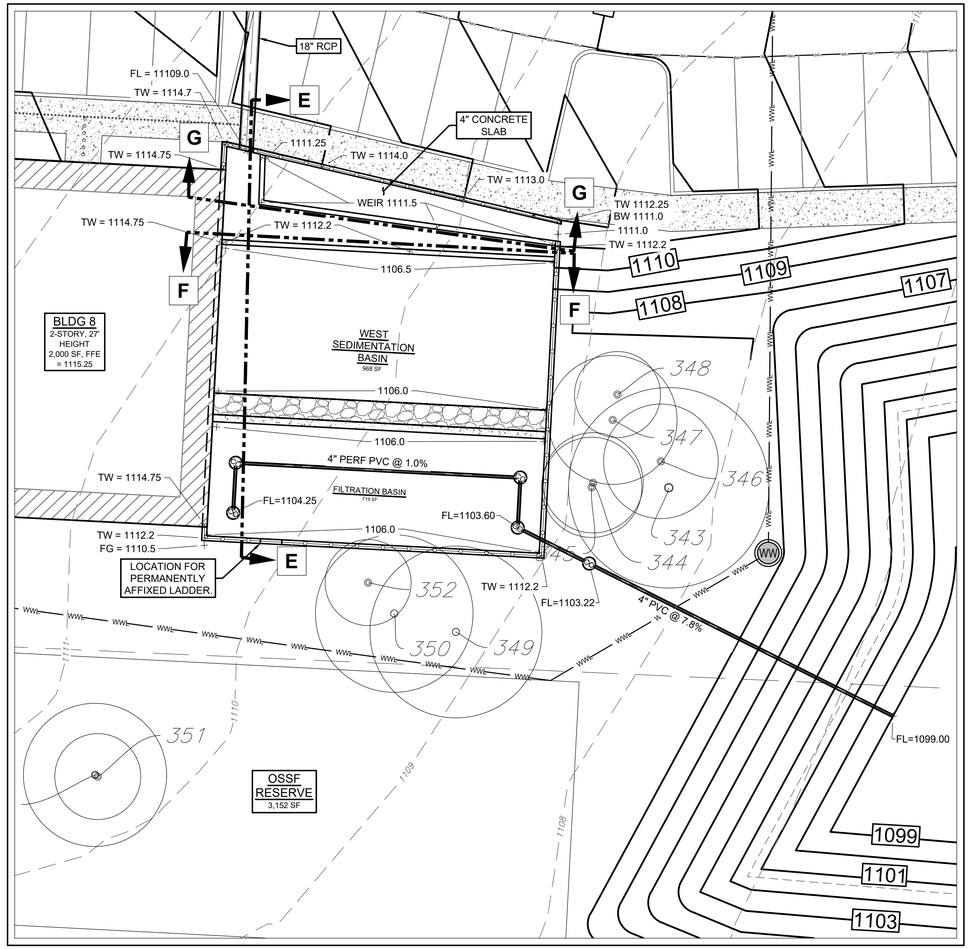


SECTION F-F / SPLITTER BOX - WQ POND 1
SCALE: 1" = 5'



SECTION E-E / WQ POND 1
SCALE: 1" = 5'

SPLITTER BOX CALCULATIONS
Q=32.1
Co= C X Cv
=0.62x0.98=0.61
H=1112.2-1108.0
=4.2
$Q=CoA\sqrt{2gh}$
$32.1=0.61 \times A\sqrt{2X32.2X4.2}$
$A=3.2\ FT^2$



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POND 1 - WQ SECTIONS

PROJECT # 5405-005

ISSUE DATE 3/21/24

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19 OF 36

Drawing: I:\w2019\tdi-LLC\Projects\5405 - Mark West\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
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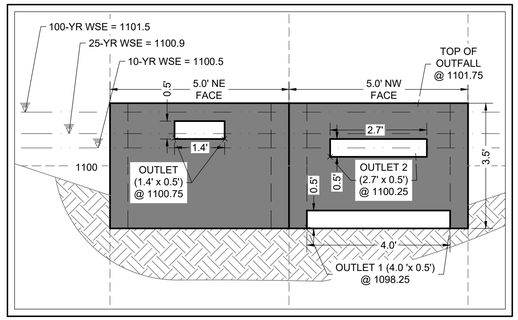
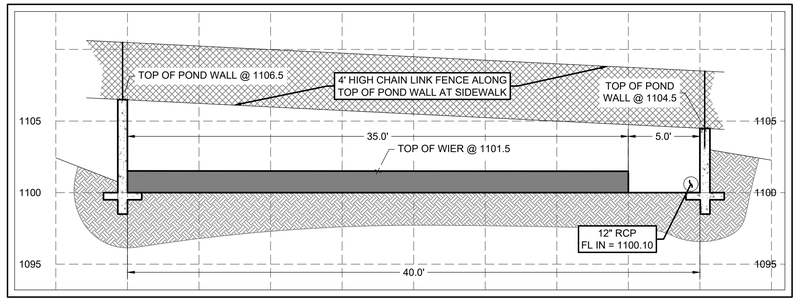


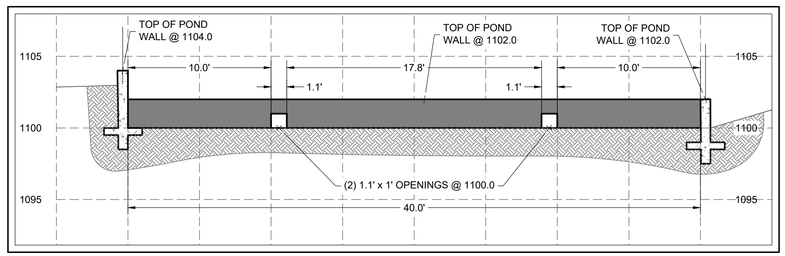
SECTION H-H / OUTFALL STRUCTURE

SCALE: 1" = 2'



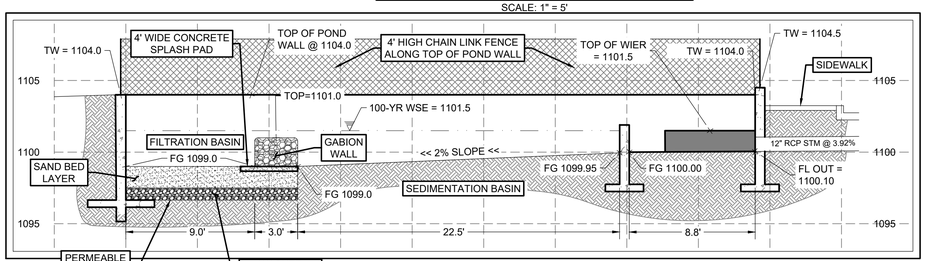
SECTION D-D / WQ POND 2

SCALE: 1" = 5'



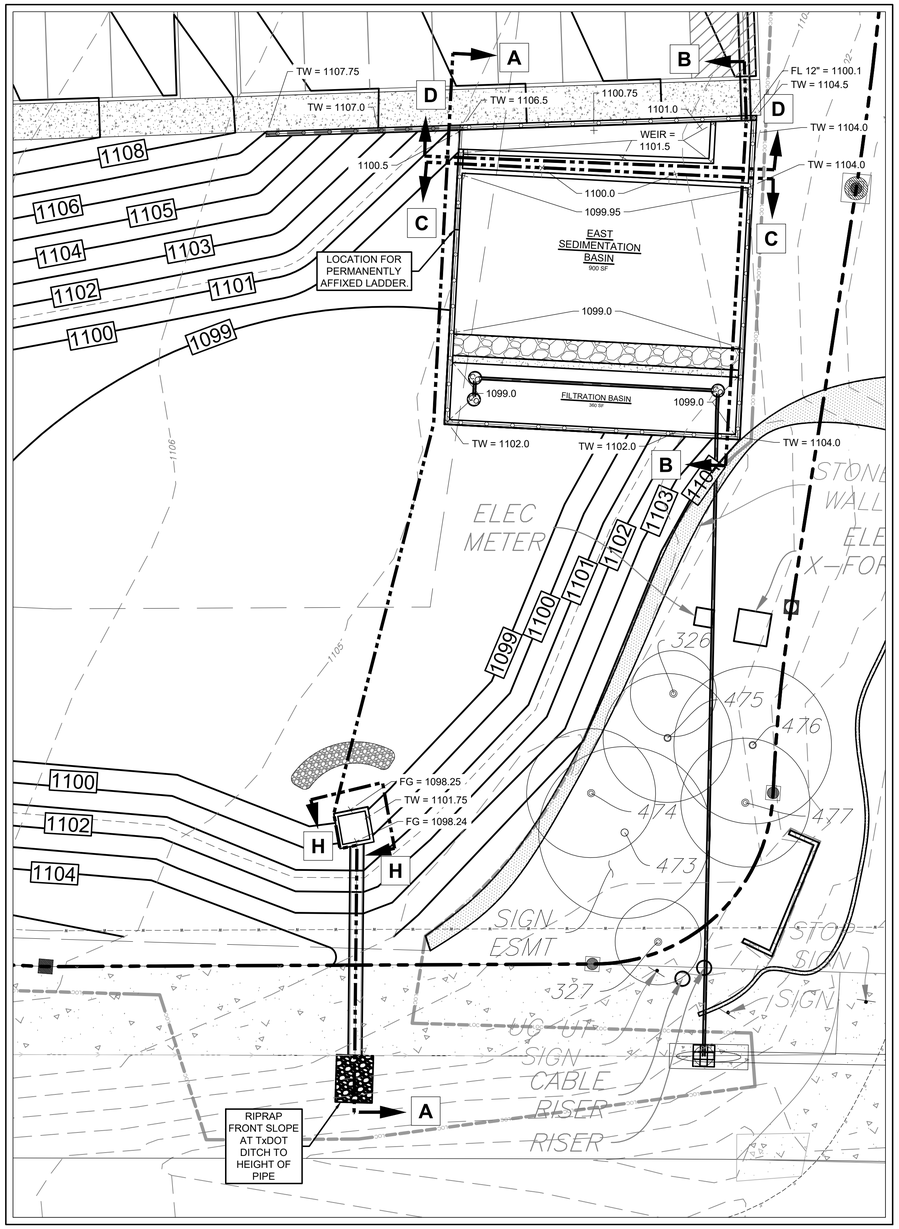
SECTION C-C / SPLITTER BOX - WQ POND 2

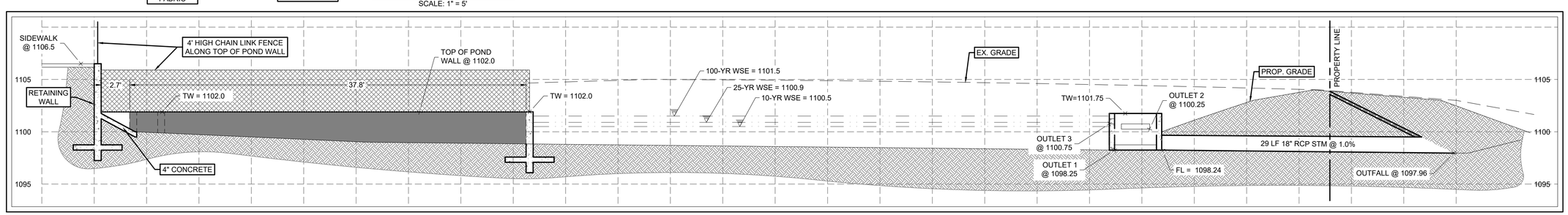
SCALE: 1" = 5'



SECTION B-B / WQ POND 2

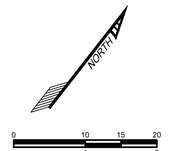
SCALE: 1" = 5'





SECTION A-A / WQ POND 2

SCALE: 1" = 5'



GRAPHIC SCALE
1" = 10'

EMERGENCY SPILLWAY CALCULATIONS
$Q = C \times L \times (M)^{\frac{3}{2}}$
Q= 24.4 CFS
C=3
H=1
$24.4=3 \times L \times (1)^{\frac{3}{2}}$
L=8.1 FT

SPLITTER BOX CALCULATIONS
Q=12.1 CFS
Co= C X Cv
=0.62x0.98=0.61 (SHARP EDGE)
H=1102.9-1101.7
=1.2'
$Q=CoAX \sqrt{2gh}$
$12.1=0.61X AX \sqrt{2X32.2X1.2}$
$A=2.2\ FT^2$

County Project No:
22-39516
WTCPUA Project No:
71-22-009

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TWISTED OAKS PARTERNS, LLC

POND 2 - WQ SECTIONS

PROJECT # 5405-005

ISSUE DATE 3/21/24

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20 OF 36

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Last Modified: Mar. 20, 24 - 17:19
Plot Date/Time: Mar. 21, 24 - 11:00:21

County Project No:
22-39516
WTCPUA Project No:
71-22-009

DETENTION POND MAINTENANCE:

1. DETENTION POND SHALL BE MOWED BEFORE GRASS HEIGHT EXCEEDS 18".
2. OUTLET SHALL BE INSPECTED AFTER EVERY RAINFALL EXCEEDING 1" IN A 24 HOUR PERIOD.
3. ANY DEBRIS OR SEDIMENT BLOCKING THE OUTLET SHALL BE REMOVED.
4. WATER QUALITY AND DETENTION CONTROLS REQUIRED FOR COMMERCIAL DEVELOPMENT SHALL BE MAINTAINED BY THE PROPERTY OWNER.

SEDIMENTATION BASIN MAINTENANCE:

1. SILT SHOULD BE REMOVED WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SEDIMENT BASINS WITHOUT SEDIMENT TRAPS. IN BASINS WITH SEDIMENT TRAPS, REMOVAL OF SILT SHALL OCCUR WHEN THE ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE BASINS, AND THE SEDIMENT TRAPS SHALL BE CLEANED WHEN FULL.
2. ACCUMULATED PAPER, TRASH AND DEBRIS SHOULD BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY.
3. VEGETATION WITHIN THE BASIN SHOULD NOT BE ALLOWED TO EXCEED EIGHTEEN (18) INCHES IN HEIGHT AT ANY TIME, EXCEPT FOR THOSE PROVIDED IN THE DESIGN.
4. THE BASIN SHOULD BE INSPECTED ANNUALLY AND REPAIRS SHOULD BE MADE IF NECESSARY.
5. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME A SEDIMENTATION BASIN DOES NOT DRAIN THE EQUIVALENT OF THE WATER QUALITY VOLUME WITHIN SIXTY (60) HOURS (I.E. NO STANDING WATER IS ALLOWED).

FILTRATION BASIN MAINTENANCE:

1. ACCUMULATED PAPER, TRASH AND DEBRIS SHOULD BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY.
2. VEGETATION WITHIN THE BASIN SHOULD NOT BE ALLOWED TO EXCEED EIGHTEEN (18) INCHES IN HEIGHT AT ANY TIME.
3. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME DRAW-DOWN DOES NOT OCCUR WITHIN THIRTY-SIX (36) HOURS AFTER THE SEDIMENTATION BASIN HAS EMPTIED.
4. THE BASIN SHOULD BE INSPECTED ANNUALLY AND REPAIRS SHOULD BE MADE IF NECESSARY.

GEOTEXTILE FABRIC

RG-348 TABLE 3-7 GEOTEXTILE FABRIC SPECIFICATIONS FOR PERMEABLE LINERS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
MATERIAL			NON-WOVEN GEOTEXTILE
UNIT WEIGHT		OZ. / SQ.YD.	8 (MIN)
FILTRATION RATE		IN. / SEC.	0.08 (MIN)
PUNCTURE STRENGTH		LB.	125 (MIN)
MULLEN BURST STRENGTH		PSI	400 (MIN)
TENSILE STRENGTH	ASTM D-1682	LB.	200 (MIN)
EQUIVALENT OPENING SIZE	U.S. STD. SIEVE	NO.	80 (MIN)

TABLE 1-9
DRAINAGE MATTING SPECIFICATIONS

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

SAND BED AND GEOTEXTILE FABRIC (PER COA DETAIL 661-1-(A))

FIRST (TOP) LAYER - AT LEAST 18 INCH DEPTH OF 0.02-0.04 INCH DIAMETER SAND, WHICH CORRESPONDS WITH WASHED CONCRETE SAND (ASTM C-33, FINE AGGREGATE - SMALLER SAND SIZE IS NOT ACCEPTABLE), FINE SAND,

SECOND LAYER- GRAVEL, 1/2-1 INCH, AT LEAST 1 INCH DEPTH TO 2 INCH DEPTH SURROUNDING UNDERDRAIN PIPING

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

NOTES:

CONTACT ***POSTINSPECTION@TRAVISCOUNTYTX.GOV*** TO SCHEDULE THE FOLLOWING MILESTONE INSPECTION(S) FOR THE WATER QUALITY STRUCTURES WITH AT LEAST 48-HOUR NOTICE, IF APPLICABLE.

- PRE-POUR OF ALL CONCRETE WITHIN THE FOOTPRINT OG THE WQ CONTROL OR POND.
- PLACEMENT OF ALL ROCK-FILLED GABIONS/MATTRESSES AND LEVEL SPREADERS.
- INSPECTION OF SAND/BIO-FILTRATION MEDIA AND/OR ROCK PRIOR TO INSTALLING.
- UNDERDRAIN PIPING PRIOR TO COVERING WITH SAND/BIO-FILTRATION MEDIA OR ROCK IN FILTRATION TRENCH –IF COVERED, REMOVAL OF MATERIAL WILL BE REQUIRED.
- COMPLETION OF CONSTRUCTION OF WATER QUALITY STRUCTURE(S).

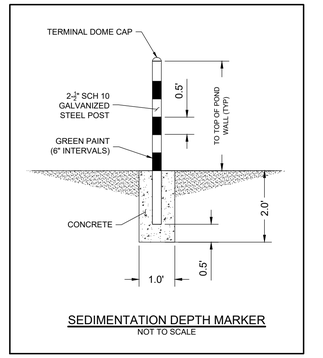
NOTES:

1. ALL POND BOTTOM, SIDE SLOPES AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS.
2. CONTRACTOR SHALL PRE-SOAK FILTRATION BASIN BY APPLYING 5 TO 10 GALLONS OF WATER PER SQUARE FOOT OF FILTRATION BED. WITHIN ONE HOUR, THE TOP SURFACE OF THE FILTER BED MUST BE HORIZONTAL - I.E., NO GRADE CHANGE IS ALLOWABLE.

GABION WALL NOTES - REFERENCE COA STD. SPEC. 594S

594.1 DESCRIPTION
THIS ITEM SHALL CONSIST OF THE EXCAVATION, FURNISHING AND PLACING OF FILTER FABRIC, GABIONS OR WIRE CONTAINERS OF THE TYPE INDICATED TO THE LINES AND GRADES SPECIFIED AND PLACING STONES IN THE WIRE CONTAINERS.

594S MATERIALS
(1) STONE STONE FILL MATERIAL SHALL CONSIST OF HARD, DURABLE, CLEAN STONE OF THE SIZE INDICATED, 5 TO 8 INCHES IN SIZE OR AS APPROVED BY THE ENGINEER AND RESISTANT TO THE ACTION OF AIR AND WATER AND SUITABLE IN ALL RESPECTS FOR THE PURPOSE INTENDED.
(2) WIRE CONTAINERS GABIONS SHALL BE TWISTED WOVEN MESH OR WELDED MESH. WIRE SHALL BE 12 GAUGE. GABIONS SHALL BE CONSTRUCTED ACCORDING TO COA SPECIFICATIONS 594S. WIRE MESH SHALL CONSIST OF PLASTIC COATED (PVC) GALVANIZED WIRE 0.120 INCH IN DIAMETER MINIMUM AND SHALL EQUAL OR EXCEED FEDERAL SPECIFICATION QQ-W-461g. CLASS 3 UNLESS OTHERWISE INDICATED. OPENINGS OF THE MESH SHALL NOT EXCEED APPROXIMATELY 4 INCHES IN THE LONGEST DIMENSION. THE WIRE MESH IS TO BE FABRICATED IN SUCH A MANNER AS TO BE NONRAVELING. TIE AND CONNECTING WIRE SHALL BE OF THE SAME TYPE AND SIZE AS THE BASKETS AND SHALL BE SUPPLIED IN SUFFICIENT QUANTITY FOR SECURELY FASTENING ALL EDGES OF THE GABION AND DIAFRAMS.
(3) FILTER FABRIC (IN EMBEDMENT) FILTER FABRIC SHALL BE NONBIODEGRADABLE, ULTRAVIOLET STABILIZED, INERT TO MOST SOIL CHEMICALS, UNAFFECTED BY MOISTURE, WHICH ALLOWS WATER TO PASS THROUGH WHILE RETAINING SOIL PARTICLES AND SHALL CONFORM TO ITEM NO. 620, "FILTER FABRIC".
(4) REINFORCEMENT DOWELS SHALL BE #5 BARS AND CONFORM TO ITEM NO. 406, "REINFORCING STEEL"



SEDIMENTATION DEPTH MARKER
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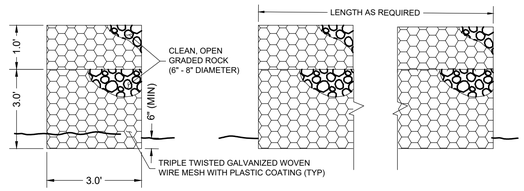
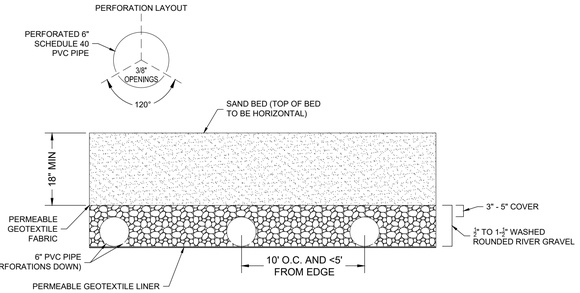
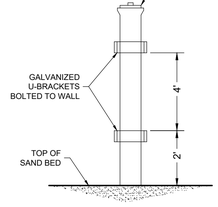
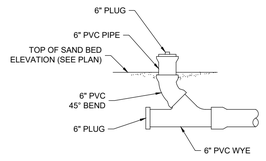




SAND BED PROFILE (WITH GRAVEL FILTER)
NOT TO SCALE



ACCESSIBLE CLEANOUT DETAIL
NOT TO SCALE



FILTRATION POND DRAIN PIPE CLEANOUT
NOT TO SCALE

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5/21/2024
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REGISTERED PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

WATER QUALITY DETAILS

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET
21
21 OF 36

Drawing: I:\w2k7\tdi\TDI-LLC\Projects\5405 - Mark Wiard\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: Mark Wiard
Last Modified: Mar. 20, 24 - 17:19
Plot Date/Time: Mar. 21, 24 - 11:00:21

County Project No:
22-39516
WTCPUA Project No:
71-22-009

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Twisted Oaks (Pond 1)
Date Prepared: 8/2/2023

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

1. The Required Load Reduction for the total project: Calculations from RG-348A Pages 21

Page 21 Equation 4.3: $L_M = 27.7(A \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal (pounds)
A = Impervious Area (acres)
P = Average annual precipitation (inches)

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

County =	Travis	
Total project area included in plan * =	5.00	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.91	acres
Total post-development impervious cover fraction * =	0.38	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	1697	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	3.63	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.36	acres
Post-development impervious fraction within drainage basin/outfall area =	0.37	
$L_{M\ THIS\ BASIN}$ =	1206	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter
Removal efficiency = 89 percent

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

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

RG-348a Page 22 Equation 4.5: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	3.63	acres
A_I =	1.36	acres
A_P =	2.27	acres
L_R =	1375	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 1206 lbs.

F = 0.88

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth =	1.64	inches
Post Development Runoff Coefficient =	0.29	
On-site Water Quality Volume =	6370	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1274	
Total Capture Volume (required water quality volume(s) x 1.20) =	7644	cubic feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	7644	cubic feet
Minimum filter basin area =	637	square feet
Maximum sedimentation basin area =	2548	square feet For minimum water depth of 2 feet
Minimum sedimentation basin area =	159	square feet For maximum water depth of 8 feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Twisted Oaks (Pond 2)
Date Prepared: 8/2/2022

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

1. The Required Load Reduction for the total project: Calculations from RG-348A Page 21

Page 21 Equation 4.3: $L_M = 27.7(A \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal (pounds)
A_N = Impervious Area (acres)
P = Average annual precipitation (inches)

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

County =	Travis	
Total project area included in plan * =	5.00	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.81	acres
Total post-development impervious cover fraction * =	0.36	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	1604	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	1.37	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.45	acres
Post-development impervious fraction within drainage basin/outfall area =	0.33	
$L_{M\ THIS\ BASIN}$ =	399	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter
Removal efficiency = 89 percent

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

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

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

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

A_C =	1.37	acres
A_I =	0.45	acres
A_P =	0.92	acres
L_R =	458	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 403 lbs.

F = 0.88

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth =	1.64	inches
Post Development Runoff Coefficient =	0.27	
On-site Water Quality Volume =	2222	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	444	
Total Capture Volume (required water quality volume(s) x 1.20) =	2666	cubic feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	7644	cubic feet
Minimum filter basin area =	637	square feet
Maximum sedimentation basin area =	2548	square feet For minimum water depth of 2 feet
Minimum sedimentation basin area =	159	square feet For maximum water depth of 8 feet

TWISTED OAKS
PARTIAL SEDIMENTATION/FILTRATION POND CALCULATIONS (POND 1)
FOR SITE DEVELOPMENT PERMIT

DRAINAGE AREA DATA:

Drainage Area to Control (DA-Sub-Basin P1)	3.63	ac
Drainage Area Impervious Cover (Sub-Basin P1)	37	%
Capture Depth (CD) = 0.5+(IC-20)/100)		in

WATER QUALITY CONTROL CALCULATIONS:	**Required**	**Provided**
The Water Quality Control is to be **PARTIAL SEDIMENTATION FILTRATION**		
25-year Peak Flow Rate to Control (Q25)	24.2	cfs
100-year Peak Flow Rate to Control (Q100)	32.1	cfs
Water Quality Volume (From TCEQ TSS RG-348A)	7644	cf
Sedimentation Pond Area (Max From TCEQ TSS RG-348A)	2548	sf
Sedimentation Pond Area (Min From TCEQ TSS RG-348A)	159	sf
Sedimentation Pond Volume		cf
Filtration Pond Area (Min From TCEQ TSS RG-348A)	637	sf
Filtration Pond Volume		cf
Water Quality Elevation ft msl	1,111.00	ft msl
Elevation of Splitter/Overflow Weir	min WQ elev	ft msl
Height of Gabion Wall	WQ elev - 0.5	ft msl
Length of Splitter Weir		
Required Head to Pass Q100 (H=(Q100/(3xL))^2/3)	max 1.0	ft
Pond Freeboard Provided to Pass Q100	min 0.25	ft

	7994	cf
	1117	sf
	1117	sf
	5105	cf
	642	sf
	2889	cf
	1111.00	ft msl
	1111.00	ft msl
	1110.50	ft msl
	47.5	ft
	0.37	ft
	0.33	ft

Splitter Box Chamber

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1110.00	201.0	0	0
1111.00	201.0	201	201
1111.50	201.0	101	302

Sedimentation Chamber

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1107.00	0	0	0
1107.40	1117	223	223
1108.00	1117	670	894
1109.00	1117	1117	2011
1110.00	1117	1117	3128
1111.50	1117	1676	4803

Filtration Pond

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1107.00	642	0	0
1108.00	642	642	642
1109.00	642	642	1284
1110.00	642	642	1926
1111.00	642	642	2568
1111.5	642	321	2889

Twisted Oaks
PARTIAL SEDIMENTATION/FILTRATION POND CALCULATIONS (POND 2)
FOR SITE DEVELOPMENT PERMIT

DRAINAGE AREA DATA:

Drainage Area to Control (DA-Sub-Basin P2)	1.37	ac
Drainage Area Impervious Cover (Sub-Basin P2)	32.8	%
Capture Depth (CD) = 0.5+(IC-20)/100)		in

WATER QUALITY CONTROL CALCULATIONS:	**Required**	**Provided**
The Water Quality Control is to be **PARTIAL SEDIMENTATION FILTRATION**		
25-year Peak Flow Rate to Control (Q25)	9.1	cfs
100-year Peak Flow Rate to Control (Q100)	12.1	cfs
Water Quality Volume (From TCEQ TSS RG-348A)	2666	cf
Sedimentation Pond Area (Max From TCEQ TSS RG-348A)	889	sf
Sedimentation Pond Area (Min From TCEQ TSS RG-348A)	56	sf
Sedimentation Pond Volume		cf
Filtration Pond Area (Min From TCEQ TSS RG-348A)	222	sf
Filtration Pond Volume		cf
Water Quality Elevation ft msl	1,101.40	ft msl
Elevation of Splitter/Overflow Weir	min WQ elev	ft msl
Height of Gabion Wall	WQ elev - 0.5	ft msl
Length of Splitter Weir		
Required Head to Pass Q100 (H=(Q100/(3xL))^2/3)	max 1.0	ft
Pond Freeboard Provided to Pass Q100	min 0.25	ft

	2674	cf
	899	sf
	899	sf
	1810	cf
	360	sf
	864	cf
	1101.40	ft msl
	1101.40	ft msl
	1100.90	ft msl
	40	ft
	0.22	ft
	0.28	ft

Splitter Box Chamber

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1101.75	122.0	0	0
1102.00	122.0	31	31
1102.40	122.0	49	79

Sedimentation Chamber

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1099.00	0	0	0
1099.95	899	427	427
1100.00	899	45	472
1101.00	899	899	1371
1101.40	899	360	1731

Filtration Pond

Elev	Area (sf)	Incr. Vol. (cf)	Storage (cf)
1099.00	360	0	0
1100.00	360	360	360
1101.00	360	360	720
1101.40	360	144	864

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TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

WATER QUALITY & DETENTION CALCULATIONS

PROJECT # 5405-005

ISSUE DATE 3/21/24

SHEET
22
22 OF 36

Drawing: I:\w2016a\TDI-LLC\Projects\5405 - Mark Wise\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
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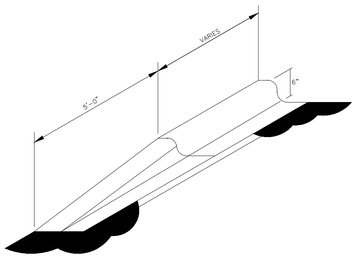
Plot Date/Time: Mar. 21, 24 - 11:00:21



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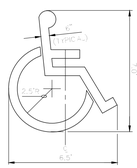

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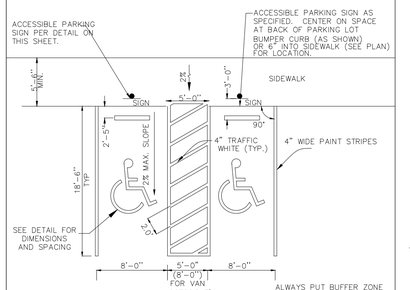

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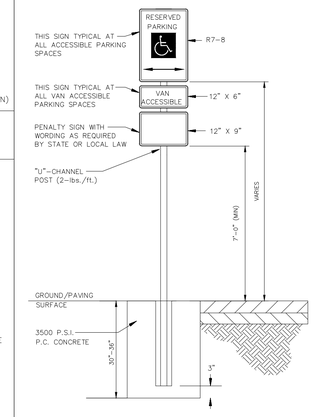
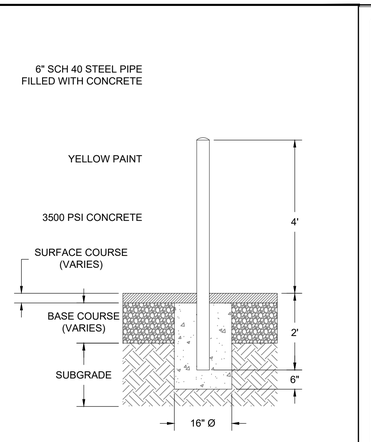
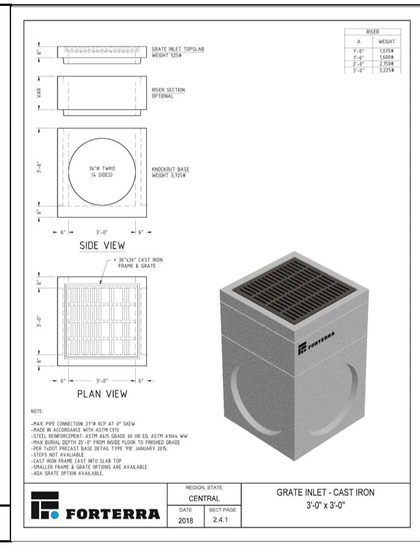
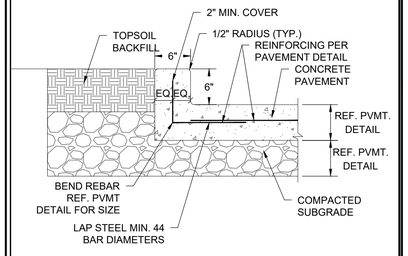


ACCESSIBLE PARKING SIGN
N.T.S.



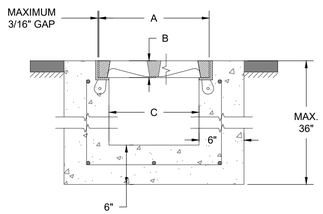
BOLLARD DETAIL
N.T.S.





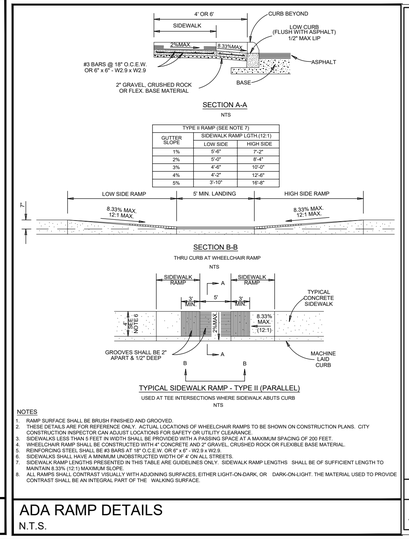
NOTES:
1. CONTRACTOR SHALL PLACE & COMPACT BASE COURSE PRIOR TO CONSTRUCTION OF INTEGRAL CURB.
2. CONTRACTOR SHALL INSTALL INTEGRAL CURB CONCURRENTLY WITH PLACEMENT OF PAVEMENT.
3. CONTRACTOR SHALL BACKFILL BEHIND CURB WITH APPROVED FILL MATERIAL.

INTEGRAL CURB
N.T.S.



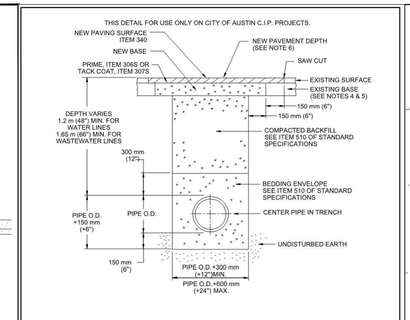
A - GRATE WIDTH (REF. PLAN)
B - GRATE THICKNESS (REF. MANUFACTURER)
C - TRENCH WIDTH (REF. MANUFACTURER)

TRENCH GRATE DETAIL
N.T.S.



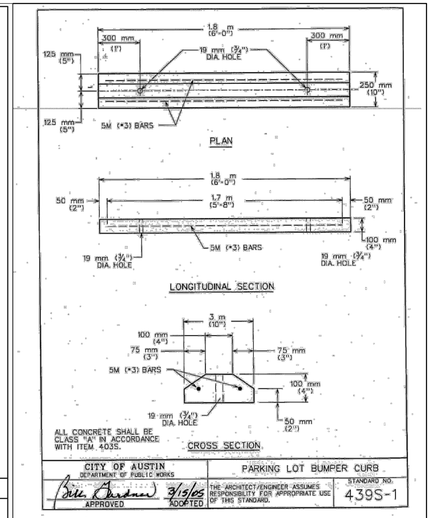
NOTES
1. RAMP SURFACE SHALL BE BRUSH FINISHED AND GROOVED.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR UTILITY OR UTILITY CLEARANCE.
3. SIDEWALK RAMP SHALL BE CONSTRUCTED WITH A LANDING PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
4. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CONCRETE AND 2" GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
5. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" - W2.9 x W2.9.
6. SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' ON ALL STREETS.
7. SIDEWALK RAMP LENGTHS PRESENTED IN THIS TABLE ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (12:1) MAXIMUM SLOPE.
8. ALL RAMPS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

ADA RAMP DETAILS
N.T.S.

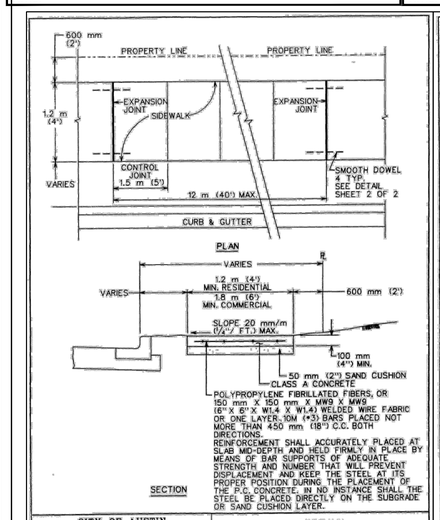


NOTES:
1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 300 mm (12") WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. ANY CONCRETE PAVING SHALL BE SAW CUT 150 mm (6") WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND OF EQUAL THICKNESS, OR MINIMUM BASE THICKNESS OF 250 mm (10"), WHICHEVER IS GREATER.
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 200 mm (8") OF BASE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 50 mm (2"), WHICHEVER IS GREATER.

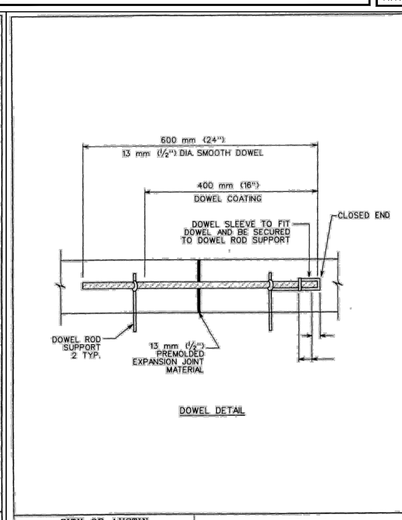
CITY OF AUSTIN WATER AND WASTEWATER UTILITY		TYPICAL TRENCH WITH PAVED SURFACE	
RECORD COPY SIGNED BY LEON BARBA	8/19/02 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 510S-3 1 OF 1



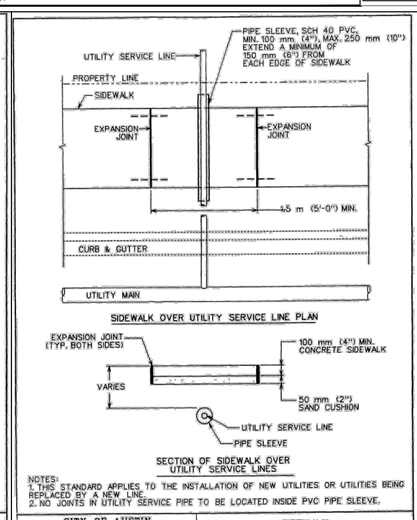
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		PARKING LOT BUMPER CURB	
Bill Bardeen 3/15/05 APPROVED ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 439S-1



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
Bill Bardeen 3/26/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3

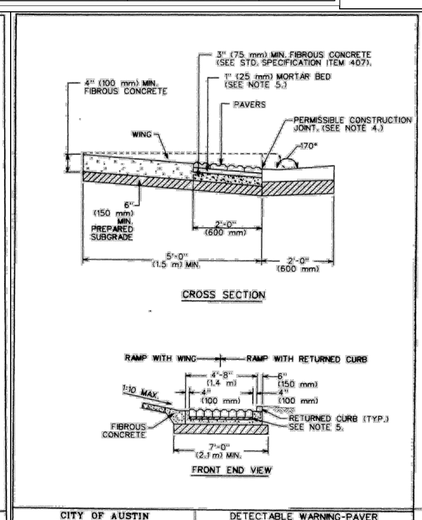


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
Bill Bardeen 3/26/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3



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	
Bill Bardeen 3/26/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		DETECTABLE WARNING-PAVER (CITY PROPERTY/EASEMENTS)	
Bill Bardeen 6/21/07 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A 1 OF 2

GENERAL NOTES:
1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION ON CITY PROPERTY AND EASEMENT AREAS ONLY.
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9" (23 mm), A NOMINAL HEIGHT OF 0.2" (5 mm) AND A NOMINAL CENTER TO CENTER SPACING OF 2.35" (60 mm) AND SHALL CONSTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (Re: ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVER PATTERN SHALL BE BASKET WEAVE UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
4. TYPICAL SIDEWALK WIDTHS AND CURB RADII ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO ¼" (6 mm) JOINT SIZE. GAPS LARGER THAN ¼" (6 mm) MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
6. MORTAR SHALL CONFORM TO STD SPECIFICATION ITEM SECTION 403S.3.5. MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.
7. CURB RAMPS WITH RETURNED CURB MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		DETECTABLE WARNING-PAVER (CITY PROPERTY/EASEMENTS)	
Bill Bardeen 6/21/07 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A 2 OF 2

County Project No:
22-39516
WTCPUA Project No:
71-22-009

TDi ENGINEERING
CIVIL & STRUCTURAL ENGINEERING
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5/21/2024
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REGISTERED PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

DETAILS (1)

ISSUE DATE 3/21/24

PROJECT # 5405-005

SHEET 23
23 OF 36

Drawing: "I:\e0\Tdi\TDI-LLC\Projects\5405 - Mark Wheeler\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg"
Last Modified: Mar. 20, 24 - 17:19
Last Modified By: Mark Wheeler
Plot Date/Time: Mar. 21, 24 - 11:00:25

TWISTED OAKS OFFICE COMPLEX- FIXTURE UNIT COUNTS AND FLOW

FIXTURE UNIT COUNTS: BLDG 2

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 3

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 4

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 5

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 6

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 7

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 8

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 9

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: BLDG 10

FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	1	0.5	0.25
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	1	2	1.5
LAVATORY	1.0	2.0	2	2	4
SINK	2.0	1.5	1	2	1.5
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	2	8	10
			TOTAL FUs	16.5	25.3

APPROX. PEAK DEMAND: 20 GPM
1" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 3/4" METER = 30 GPM

FIXTURE UNIT COUNTS: GARAGE

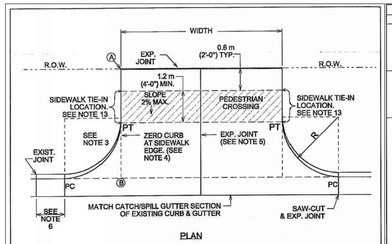
FIXTURE	FIXTURE UNITS WASTE	FIXTURE UNITS WATER	QUANTITY	TOTAL WASTE DFU	TOTAL WATER WSFU
DRINKING FOUNTIAN	0.5	0.3	0	0	0
HOSE BIB	0.0	5.0	1	0	5
DISHWASHER	2.0	1.5	0	0	0
LAVATORY	1.0	2.0	0	0	0
SINK	2.0	1.5	0	0	0
MOP SINK	2.0	3.0	1	2	3
WATER CLOSET	4.0	5.0	0	0	0
			TOTAL FUs	2	8.0

APPROX. PEAK DEMAND: 12 GPM
3/4" CW PIPE REQUIRED

NOTES:
1. CALCULATIONS BASED ON INTERNATIONAL PLUMBING CODE.
2. MAXIMUM OPERATING CAPACITY 5/8" METER = 20 GPM

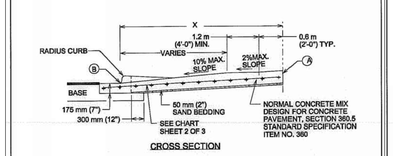
NOTES:

FIXTURE UNIT COUNTS PROVIDED BY MEP AS AN ESTIMATE FOR METER SIZING.
MAX METER GPMS IN NOTE 2 FOR EACH BUILDING IS ESTIMATED USING AWWU OPERATING CHARACTERISTICS CHART.



PLAN

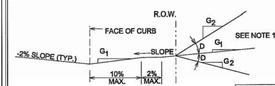
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT (A) ABOVE POINT (B) IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
2/24/16 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS

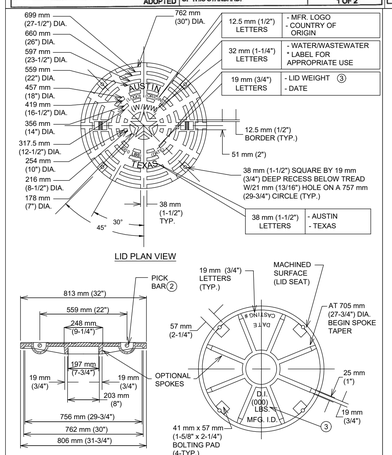


ALLOWABLE GRADES

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
<500	5%	15%

NOTES:
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAYOUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE AT 30 METERS (100 FEET), WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH, SEE NOTE 8.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
2/24/16 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

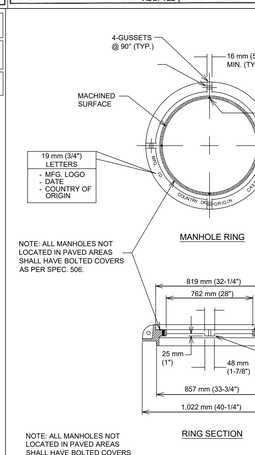


LID PLAN VIEW

LID SECTION VIEW

LID SECTION VIEW

CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 813 mm 32" COVER	
RECORD COPY SIGNED BY KATHI L FLOWERS 09/23/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-5W 1 OF 3

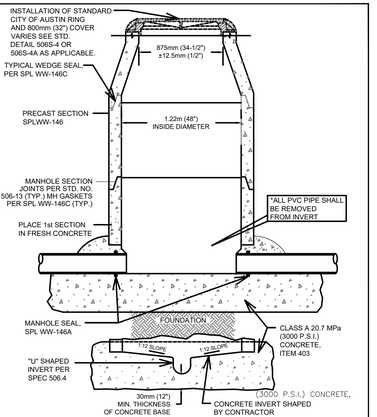


NOTE: ALL MANHOLES NOT LOCATED IN PAVED AREAS SHALL HAVE BOLTED COVERS AS PER SPEC. 506.

RING SECTION

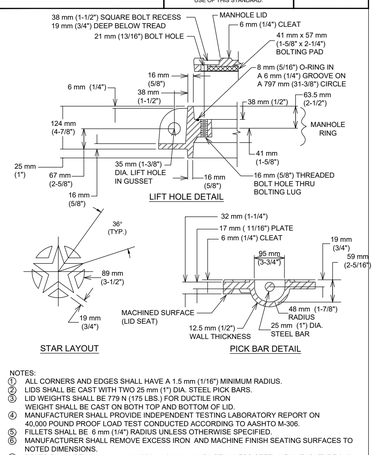
NOTE: ALL MANHOLES NOT LOCATED IN PAVED AREAS SHALL HAVE BOLTED COVERS AS PER SPEC. 506.

CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 813 mm 32" COVER	
RECORD COPY SIGNED BY KATHI L FLOWERS 09/23/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-5W 2 OF 3



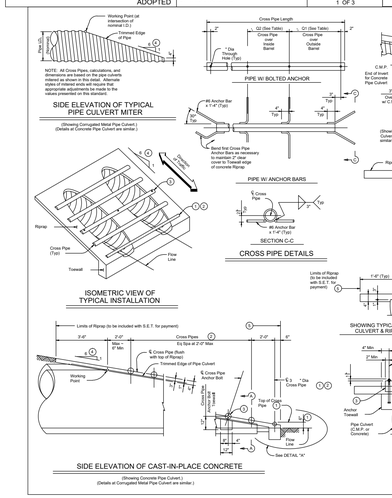
NOTES:
1. FOR EXISTING WW LINES ONLY.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED STD. SPEC 506.5B
3. FIRST RISER SECTION SHALL BE PLACED PLUMB & LEVEL PRIOR TO SETTING ANY ADDITIONAL SECTIONS.

CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE ON CAST IN PLACE BASE	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-9



NOTES:
① ALL CORNERS AND EDGES SHALL HAVE A 1.5 mm (1/16") MINIMUM RADIUS.
② LIDS SHALL BE CAST WITH TWO 25 mm (1") DIA. STEEL PICK BARS.
③ LID WEIGHTS SHALL BE 779 N (175 LBS.) FOR DUCTILE IRON WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF LID.
④ MANUFACTURER SHALL PROVIDE INDEPENDENT TESTING LABORATORY REPORT ON 40,000 POUND PROOF LOAD TEST CONDUCTED ACCORDING TO AASHTO M-306.
⑤ FILLETS SHALL BE 6 mm (1/4") RADIUS UNLESS OTHERWISE SPECIFIED.
⑥ MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
⑦ BOLTS SHALL BE 16 mm x 44 mm (5/8" x 1-3/4" x 11 N.C.) STAINLESS STEEL HEX HEAD (TYPE 316).

CITY OF AUSTIN AUSTIN WATER UTILITY	BOLTED MANHOLE RING AND 813 mm 32" COVER	
RECORD COPY SIGNED BY KATHI L FLOWERS 09/23/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 503S-5W 3 OF 3



CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, & RIPRAP QUANTITIES ⑦

Nominal Culvert I.D.	Conc Riprap (Typ) ⑥	Pipe Culvert Size = D	Single Barrel = Q1	Multi-Barrel = Q1, Q2	Conditions for use of Cross Pipes	Cross Pipe Size
12"	2.5	8"	N/A	2'-1" - 1'-9"	3 or more Pipe Culverts	3" Std (3.940" O.D.)
18"	3.7	11"	N/A	2'-3" - 2'-2"		
21"	4.3	11"	N/A	2'-10" - 2'-8"		
21"	3.9	11-4"	N/A	2'-2" - 3'-1"		
24"	3.9	11-7"	N/A	2'-9" - 3'-7"		
27"	1.0	11-8"	N/A	3'-10" - 3'-11"	3 or more Pipe Culverts	3" – Std (3.940" O.D.)
30"	1.1	11-10"	N/A	4'-2" - 4'-4"	2 or more Pipe Culverts	
33"	1.2	1-11"	4'-2"	4'-5" - 4'-8"	All Pipe Culverts	
36"	1.3	2'-1"	4'-5"	4'-9" - 5'-1"	All Pipe Culverts	4" Std (4.500" O.D.)
42"	1.5	2'-4"	4'-11"	5'-3" - 5'-10"		
48"	1.7	2'-7"	5'-3"	6'-1" - 6'-7"		
54"	2.0	2'-10"	5'-11"	6'-9" - 7'-6"	All Pipe Culverts	5" Std (5.563" O.D.)
60"	2.2	3'-1"	6'-3"	7'-5" - 8'-3"		
66"	2.4	3'-3"	6'-11"	7'-10" - 8'-9"		
72"	2.7	3'-4"	7'-3"	8'-3" - 9'-1"		

① The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.
② Size of Cross Pipes, except the first bottom pipe, shall be the same as the Pipe Culvert. The first bottom pipe shall be 3 Standard Pipe (4" O.D.).
③ The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to cut the Cross Pipe to provide a tight fit with the Cross Pipe so as to permit disassembly of the bolted connection to allow clearance access. At the Contractor's option, the first Cross Pipe may also be installed using the bolted connection details.
④ Match Cross Slope as shown elsewhere in the plans. Cross Slope of 0.1 or flatter is required for vehicle safety.
⑤ Riprap placed beyond the limits shown will be paid as Concrete Riprap (Type ___) (Class ___) (___ Inch).
⑥ Quantities shown are for one end of one reinforced concrete Pipe Culvert. For multiple pipe culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

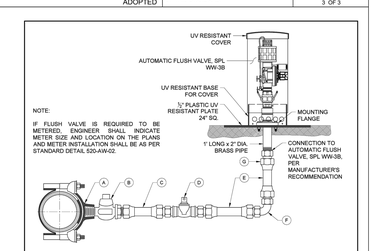
GENERAL NOTES:
Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F "Safety Treatment of Rigid Obstacles" by Ronald K. Faller, Texas Transportation Institute, March 1981.
Safety End Treatments shown herein are intended for use on roadways where design speeds and vehicles are likely to traverse the opening in approximately perpendicular to the Cross Pipes.
Cross Pipes shall conform to the requirements of Concrete Riprap conforming to the requirements of Item 432, "Riprap".
The cost of Concrete Riprap and tiewall is included in the Price Bid for each Safety End Treatment.
Cross Pipes shall conform to the requirements of ASTM C 76, Class III, Wall B, Grade B), ASTM A500 (Grade B), or AFS (AC).
Bolts and nuts shall conform to ASTM A307.
Where Cross Pipes require circumferential reinforcing, shall be galvanized after fabrication. Galvanizing damaged during fabrication shall be repaired by galvanizing in accordance with the specifications.

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT
FOR 12" DIA TO 72" DIA PIPE CULVERTS
TYPE II – PARALLEL DRAINAGE

SETP-PD

Date	8/30/16	Sh	1 OF 1	Dist	20	Co	507
Rev.	No. DD	Section 0		Section 1		Section 2	
		Sheet No.		Sheet No.		Sheet No.	



NOTE:
IF FLUSH VALVE IS REQUIRED TO BE METERED, ENGINEER SHALL INDICATE METER SIZE AND LOCATION ON THE PLANS AND METER INSTALLATION SHALL BE AS PER STANDARD DETAIL 520-AWA-02.

A. 2" SERVICE CLAMP
B. 2" CORPORATION STOP MALE THREAD INLET BY COMPRESSION OUTLET
C. 2" COPPER WATER SERVICE TUBING EXTENDED BEYOND PAVEMENT
D. BALL VALVE, SPL WW-27S (SIZE EQUAL TO "E")
E. 2" COPPER TUBING PER SPL WW-613 OR 2" HDPE PER SPL WW-65 FOR POTABLE AND PER SPL WW-65A FOR RECLAIMED
F. 2" BRASS 90° BEND, COMPRESSION x COMPRESSION OR HDPE WITH STIFFENERS PER SPL WW-65B AT ALL CONNECTIONS
G. 2" BRASS COUPLING, COMPRESSION x FIP

NOTES:
1. AUTOMATIC FLUSH VALVE MAY ALSO BE USED ON TAPPED PLUGS AND CAPS.
2. THE CONTRACTOR SHALL PROVIDE THE FLUSH VALVE ACCESS KEY TO AUSTIN WATER UPON FLUSH VALVE ACCEPTANCE.
3. VALVE "D" SHALL NOT BE LOCATED MORE THAN 36" BELOW FLUSH VALVE OR MORE THAN 24" HORIZONTALLY FROM FLUSH VALVE. VALVE "D" SHALL NOT BE LOCATED IN A SIDEWALK OR DRIVEWAY.
4. METER BOX (IF REQUIRED) AND FLUSH VALVE SHALL NOT BE LOCATED IN A SIDEWALK, DRIVEWAY, PEDESTRIAN WAY OR TRAFFIC WAY. TEMPORARY FLUSH VALVES SHALL BE LOCATED AS SHOWN ON APPROVED PLANS.
5. A DRAINAGE WAY, CONTAINED WITHIN THE R.O.W. OR AN EASEMENT, SHALL BE PROVIDED FROM FLUSH VALVE TO STORM SEWER SYSTEM OR PUBLIC DRAINAGE WAY.
6. DESIGN ENGINEER SHALL PROVIDE CALCULATIONS WITH PLANS AT THE TIME OF REVIEW INCLUDING FREQUENCY AND FLUSH RATE REQUIRED TO CIRCULATE WATER IN DEAD END MAIN EVERY 72 HOURS.

CITY OF AUSTIN AUSTIN WATER	AUTOMATIC FLUSH VALVE	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-05 1 OF 1

County Project No:
22-39516
WTCPUA Project No:
71-22-009

TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
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STATE OF TEXAS
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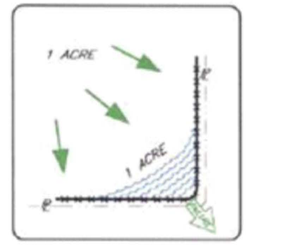
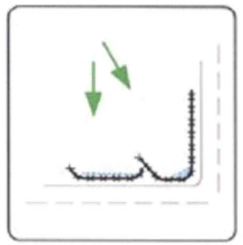
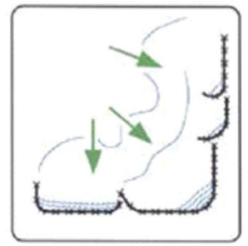
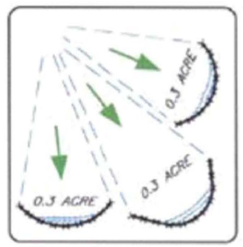


Incorrect – Do Not layout "perimeter control" silt fences along property lines. All sediment laden runoff will concentrate and overwhelm the system.



Correct – Install J-hooks



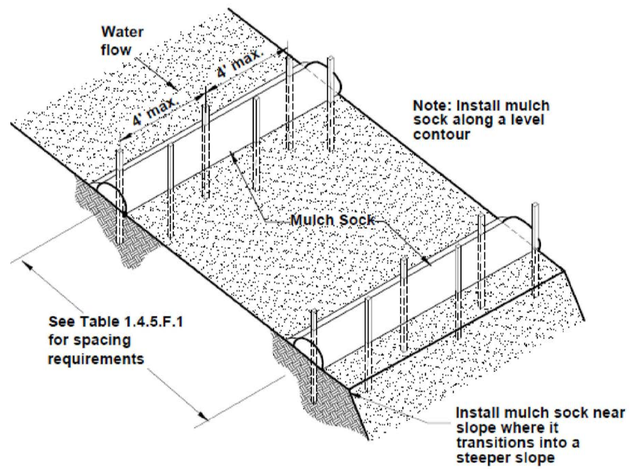


Discreet segments of silt fence, installed with J-hooks or "smiles" will be much more effective.

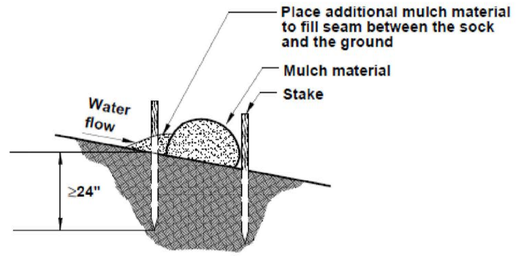
© 2001 JOHN McCULLAH

FILE: SF-PERIMETER CONTROL

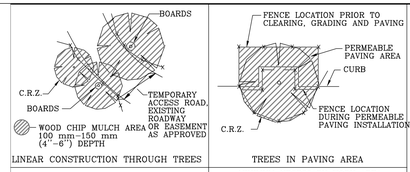
SILT FENCE PLACEMENT FOR PERIMETER CONTROL



TYPICAL MULCH SOCK INSTALLATION
N.T.S.

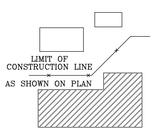


MULCH SOCK
N.T.S.

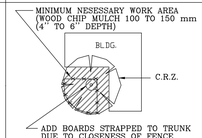


LINEAR CONSTRUCTION THROUGH TREES

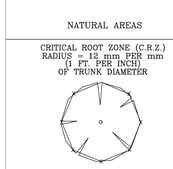
TREES IN PAVING AREA



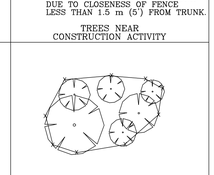
NATURAL AREAS



TREES NEAR CONSTRUCTION ACTIVITY

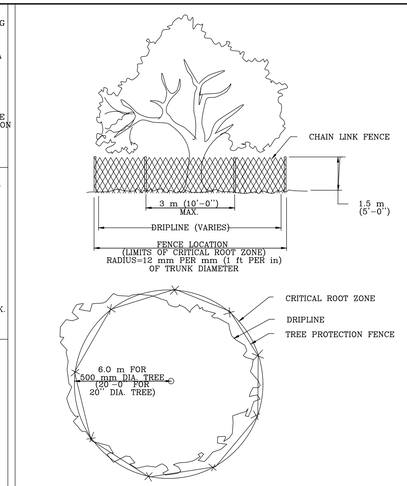


INDIVIDUAL TREE

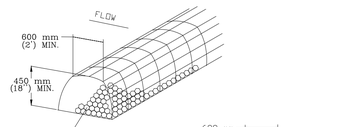


GROUP OF TREES

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE LOCATIONS	
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-1

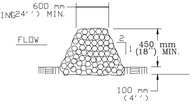


CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROPTECTION FENCE TYPE A – CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2



STANDARD SYMBOL FOR ROCK BERM (RB)

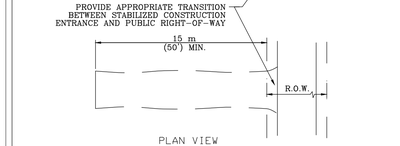
RB



CROSS SECTION

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.

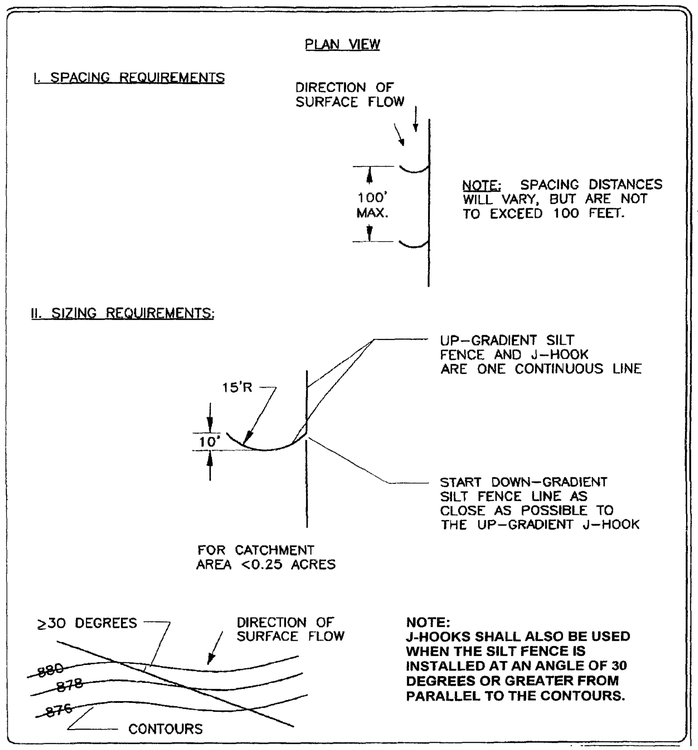
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
RECORD COPY SIGNED BY MORGAN BYARS 8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1

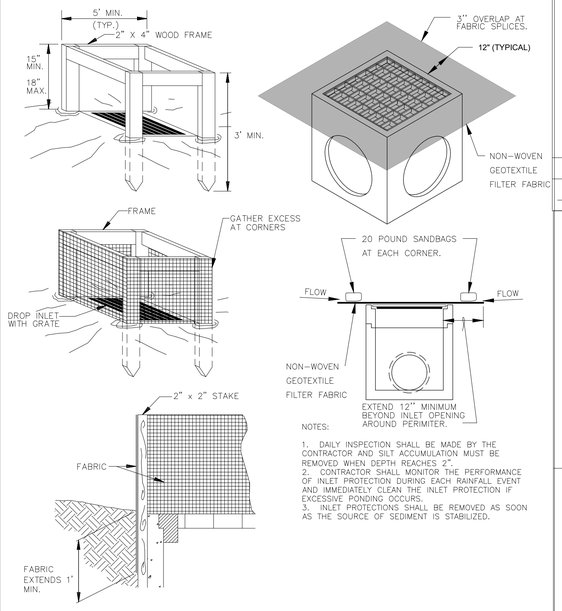


PLAN VIEW

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

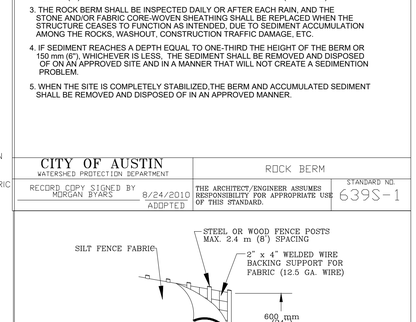




NOTES:
1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

SILT FENCE INLET PROTECTION
N.T.S.

AREA INLET PROTECTION DETAIL
N.T.S.



STANDARD SYMBOL FOR SILT FENCE (SF)

SF

TRENCH CROSS SECTION

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

County Project No:
22-39516
WTCPUA Project No:
71-22-009

CIVIL & STRUCTURAL ENGINEERING
AUSTIN / HOUSTON
TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, TX 78749
512–301–3389 | www.tdi-llc.net
*THINK DESIGN innovate, integrate, implement...
TDi ENGINEERING

5/21/2024
STATE OF TEXAS
F.P. HOWLAND III
90451
REGISTERED PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

DETAILS (3)

PROJECT # 5405-005

ISSUE DATE 3/21/2024

SHEET 25

25 OF 36

Drawing: N:\2015\5405\TDI-LLC\Projects\5405 - Mark Winn\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
Name: Jason Rodriguez
Last Modified: Mar. 20, 24 - 17:19
Plot Date/Time: Mar. 21, 24 - 11:00:36

County Project No:
22-39516
WTCPUA Project No:
71-22-009

McCRORY ENGINEERING, INC.

February 13, 2019

Travis County Building Permit Office
700 Lavaca Street
Austin, TX 78701

Re: Austin Water Design's
17800 Hamilton Pool Road, Austin, TX
Retaining Wall Evaluation

A barrier-wall was erected on the Austin Water Design's property, photo attached. The wall is constructed using 5'x2'x2' stone blocks weighting 5000 lbs each, stacked tightly, forming a heavy barrier. A mat was added to the inside surface of the wall, which allows transmission of water while retaining all solid materials.

The area behind the wall was filled with a rock base material and covered with gravel, providing a hard surface roadway, up to the level of the bottom of the top block.

The weight and fit of the blocks offer a barrier that will not move outward as pressure from the 4' depth of retained rock is exerted. After careful evaluation, it is the opinion of this professional engineer that the wall as constructed will serve the purpose as intended.

Should you have further questions or comments, please contact me directly at 713-557-4606 or emccrory@sbcglobal.net.

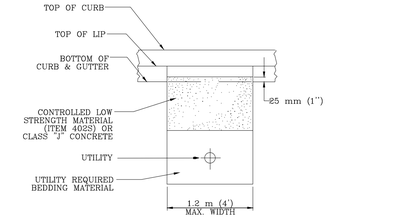
Submitted this 13th Day of February 2019

E.D. McCRORY JR. 36647 LICENSED PROFESSIONAL ENGINEER

E Don McCrory PE
Engineering Firm F-3961

C: Austin Water Design

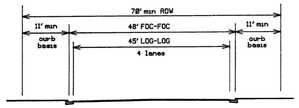
9513 Bayou Brook Street | Houston, Texas 77063-1056
Phone: 713-557-4606 | emccrory@sbcglobal.net



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	CONCRETE BACKFILL UNDER CURB & GUTTER	
RECORD COPY SIGNED BY LINO RIVERA	9/29/99	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
	ADOPTED	STANDARD NO. 430S-4

Typical ADT Range, less than 10000
Design Speed, 35 mph
General Length, less than 2 miles
Typical Spacing Between Intersections, 500'
Typical Spacing Between Commercial Collectors, 1/2 mile
Minimum Centerline Radius, See Page 1-8
Minimum Tangent Length Between Horizontal Curves, 100'
Minimum Curb Basis, 11'

TYPICAL CROSS-SECTION



Source: City of Austin Transportation and Public Services Department

Permit to Construct Access Driveway Facilities on Highway Right of Way

Form 1058 (Rev.05/13) Page 1 of 2

PERMIT NUMBER: 01F-17-356417-DP

REQUESTOR	LATITUDE, LONGITUDE	ROADWAY	
	30.390777, -98.048047	HWY NAME: RM	3238
		FOR TxDOT'S USE	
NAME: TWISTED OAK PARTNERS MARK WREAKO TEMPLE		CONTROL:	0853
MAILING ADDRESS: 9804 LAKE RIDGE DRIVE		SECTION:	04
CITY, STATE, ZIP: AUSTIN TX 78737			
PHONE NUMBER: 512 964-7100			

ALONG POSITIONING SYSTEM COORDINATES AT INTERSECTION OF DRIVEWAY CENTERLINE AND ABUTTING ROADWAY

The Texas Department of Transportation, hereinafter called the State, hereby authorizes TWISTED OAK PARTNERS, hereinafter called the Permittee, to ☒ construct / ☐ reconstruct a COMMERCIAL (residential, convenience store, retail mall, farm, etc.) access driveway on the highway right of way abutting highway number RM 3238 in TRAVIS County, located 17800 HAMILTON POOL RD (RM 3238) TRM 3164464'
(SEE ADDITIONAL SHEETS AS NEEDED)

Subject to the Access Driveway Policy described on page 2 and the following:

1. The undersigned hereby agrees to comply with the terms and conditions set forth in this permit for construction and maintenance of an access driveway on the state highway right of way.
2. Design of facilities shall be as follows and/or as shown on sketch on page 2 and is subject to conditions stated below:

6:1 SAFETY END TREATMENTS REQUIRED ON CULVERT PIPE

Austin Water Design

TRAFFIC CONTROL ACCORDING TO TXMUTCD MUST BE IN PLACE PRIOR TO WORKING IN THE TXDOT RIGHT OF WAY

All construction of materials shall be subject to inspection and approval by the State.

3. Maintenance of facilities constructed hereunder shall be the responsibility of the Permittee, and the State reserves the right to require any changes, maintenance or repairs as may be necessary to provide protection of life or property on or adjacent to the highway. Changes in design will be made only with approval of the State.
4. The Permittee shall hold harmless the State and its duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of this permit.
5. Except for regulatory and guide signs at county roads and city streets, the Permittee shall not erect any sign on or extending over any portion of the highway right of way, and vehicle service fixtures such as fuel pumps, vendor stands, or tanks and shall be located at least 12 feet from the right of way line to ensure that any vehicle services from these fixtures will be off the highway right of way.
6. The State reserves the right to require a new access driveway permit in the event of a material change in land use or change in driveway traffic volume or vehicle types.
7. This permit will become null and void if the above-referenced driveway facilities are not constructed within six (6) months from the issuance date of this permit.
8. The Permittee will contact the State's representative BRAD PHIPPS telephone (512) 288-4761 at least twenty-four (24) hours prior to beginning the work authorized by this permit.
9. The requesting Permittee will be provided instructions on the appeal process if this permit request is denied by the State.

1:6:17
Date of Issuance

Mitzyan McKethan
Name (printed) Non-Maintenance

The undersigned hereby agrees to comply with the terms and conditions set forth in this permit for construction and maintenance of an access driveway on the highway right of way.

Date: 1/9/2017

Signed
(Property owner or owner's representative)

Form 1058 (Rev. 05/13) Page 2 of 2

Access Driveway Policy

Title 43 Texas Administrative Code (Transportation), Chapter 11 (Design), Subchapter C (Access Connections To State Highways) and the "Access Management Manual" establish policy for the granting of access and the design, materials, and construction of driveways connecting to state highways. All driveway facilities must follow this policy.

TxDOT Driveway Permit Request Contact

For a local contact for your TxDOT Driveway Permit Request visit: http://www.txdot.gov/inside-txdot/district.html. You can click on the section of the map closest to your location to find the local TxDOT office. You can also click on the drop down box below the map to find the district for your county.

Sketch of Installation
(Use additional sheets as needed)

Commercial and Industrial Driveway Access Request Form

Date: July 15, 2016
District:
County: Travis
Highway: Hamilton Pool Road
Limits: speed limit 55mph

1. **Purpose of Request:** *Explain the need for access driveway*
To change a residential driveway to a commercial driveway. We requested a residential permit and a permit was granted from Tx Dot. The driveway was constructed at the location designated by TX Dot,they requested us to locate it opposite an already existing driveway.

2. **Proposed use of the property:** *Operations, facilities, frequency of access use, types and sizes of vehicles for each individual year of the next three year period*
Austin Water Design is planning on using this location to operate a pool design/build and landscape design company with approximately 7 employees. The location will be receiving deliveries of landscape materials, such as soil, mulch and rock using large vehicles. With the current width of the residential driveway is is difficult for these vehicles to enter the property without impacting traffic. Over the next 3 years it is anticipated to service an average of 3 dump trucks per week and about 10-15 standard vehicles (passenger sedan and p/u) per day entering and exiting the property.

3. **Background:** *Dated chronology of previous correspondence, meetings, or discussions about driveway access, identification of property owning or approved planning, if applicable*
There has not been any correspondence regarding this property, it is identified as a commercial property in sales contract and the neighborhood CCRs.

4. **Participant(s) in the request process:** *Including as applicable city, county, developers, consultants, legal counsel, etc.*
Twisted Oak Partners, LLP and Austin Water Designs (Mark Wise is a member of both entities).

5. **Highway layout showing the requested access site and upstream/downstream roadway system and other associated access:** *Attach vicinity map (surrounding area), project location map (adjacent highways/ramps and local streets), location of access breaks (in relationship to property boundaries)*
Please see attached

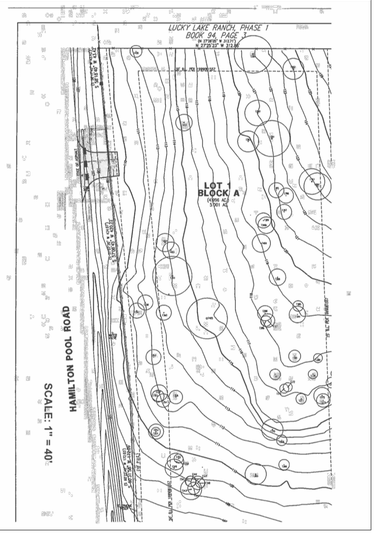
TxDOT 08/2013 Page 1-3

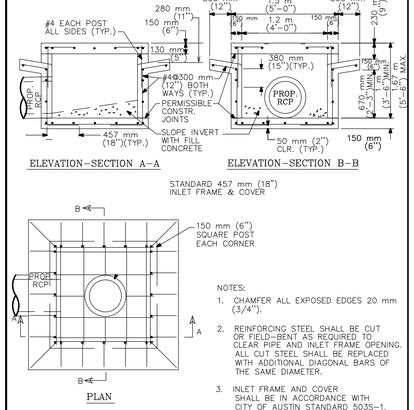
Commercial and Industrial Driveway Access Request Form

6. **Existing roadway characteristics:** *ADT, number/width of lanes/shoulders, posted speed, bridge structures, utility overhead and underground (location/relocation), geometrics at proposed access (light distance, grades, vertical/horizontal curves), pavement (structure, width, and material)*
Hamilton Pool Road is a 2 lane road with speed limit of 55 mph for the majority of the road. There have been recent additions of center turn lanes and widening of the shoulder on some stretches of the roadway. The proposed commercial/industrial driveway is approximately 5.7 miles from SH 71, of level roadway with some curves. It is constructed of asphalt and the area surrounding the proposed commercial/industrial driveway has sight distance of at least 3000 feet. Attached is a aerial view of the proposed location.

7. **Proposed driveway:** *Proposed radii/throat width and length, entry/exit width*
Please see attached

TxDOT 08/2013 Page 2-2





NOTES:
1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD-BENT AS REQUIRED TO CLEAR PIPE AND INLET FRAME OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	4-SIDED AREA INLET	
RECORD COPY SIGNED BY ARTHUR C. ROMERO 06/18/2010	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-9
ADOPTED		

1. ONE SEGMENT OF WATER MAIN PIPE SHALL BE CENTERED ON WASTEWATER MAIN.
2. WATER MAIN SHALL CROSS ABOVE THE WASTEWATER MAIN WITH A VERTICAL CLEARANCE OF 2' MINIMUM
3. IF THE WASTEWATER MAIN SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST 9' IN EACH DIRECTION (18' TOTAL) WITH AT LEAST 150 psi PRESSURE RATED PIPE.
4. NEW WASTEWATER MAINS SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE SEGMENT PLUS 12" BEYOND THE JOINT AT EACH END.

UTILITY CROSSING DETAIL
N.T.S.

290.44: WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (E) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:

a. WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.

b. ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.

c. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL, THE WATERLINE SHALL BE ENCASED AS DESCRIBED FOR WASTEWATER MAINS OR LATERALS IN CLAUSE (B) OF THIS SUBPARAGRAPH OR CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN, THE PROCEDURES IN §217.53(D) OF THIS TITLE (RELATING TO PIPE DESIGN) MUST BE FOLLOWED.

d. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (E) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

e. WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

UTILITY CROSSING NOTES - TCEQ 290.44

TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, TX 78749
512-301-3389 | www.tdi-llc.net

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TDi ENGINEERING

5/21/2024
STATE OF TEXAS
F. P. HOWLAND III
90451
REGISTERED PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

DETAILS (4)

ISSUE DATE 3/21/2024

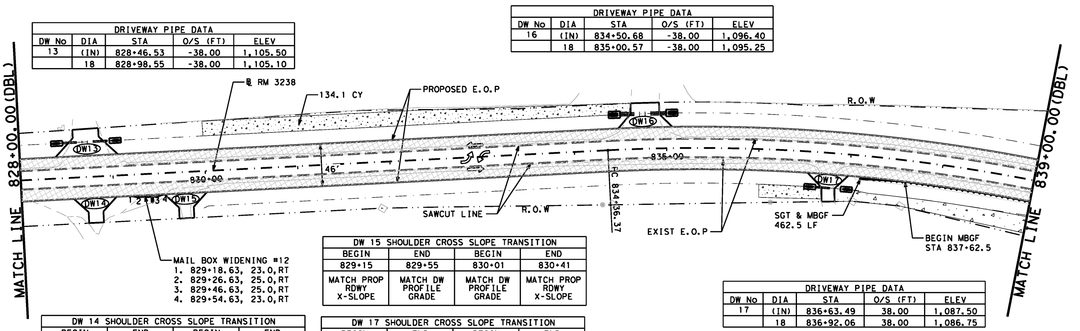
PROJECT # 5405-005

SHEET 26

26 OF 36

DRIVEWAY PIPE DATA				
DW No	DIA	STA	O/S (FT)	ELEV
13	(IN)	828+46.53	-38.00	1,105.50
	18	828+98.55	-38.00	1,105.10

DRIVEWAY PIPE DATA				
DW No	DIA	STA	O/S (FT)	ELEV
16	(IN)	834+50.68	-38.00	1,096.40
	18	835+00.57	-38.00	1,095.25



SAWCUT LINE LOCATIONS				
NO.	START STA.	O/S(FT)	END STA.	O/S(FT)
24	828+00.00	10.0 LT	839+00.00	10.0 LT
25	828+00.00	10.0 RT	839+00.00	10.0 RT

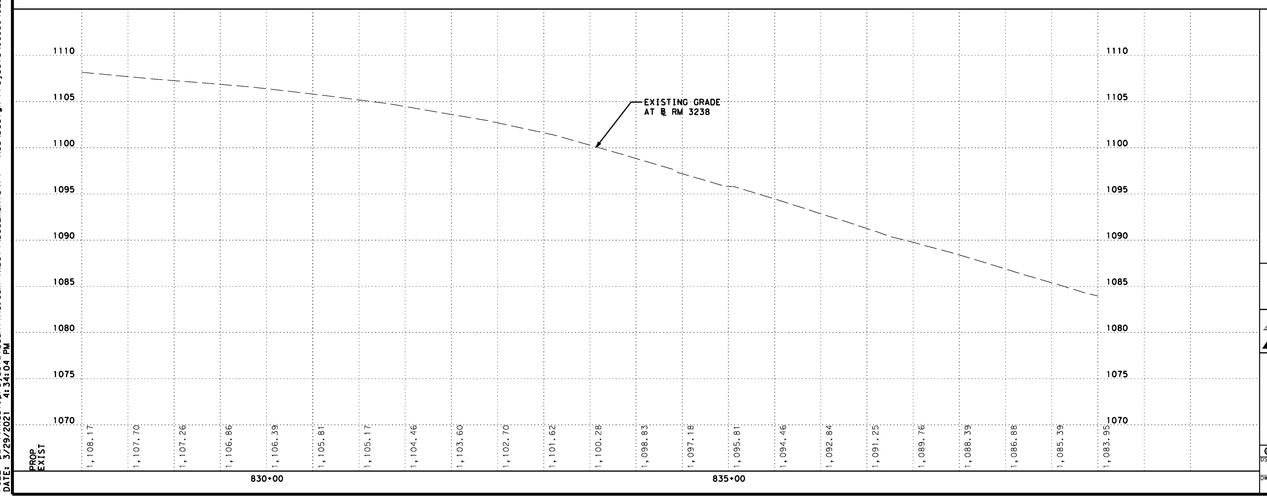
LEGEND
- FULL DEPTH WIDENING
- CONCRETE RIPRAP
- DRIVEWAY ID (DW#)
- PROPOSED MAILBOX
- DIRECTION OF TRAFFIC

DW 14 SHOULDER CROSS SLOPE TRANSITION			
BEGIN	END	BEGIN	END
828+17	828+57	829+03	829+43
MATCH PROP RDWY X-SLOPE	MATCH DW PROFILE GRADE	MATCH DW PROFILE GRADE	MATCH PROP RDWY X-SLOPE

DW 15 SHOULDER CROSS SLOPE TRANSITION			
BEGIN	END	BEGIN	END
829+15	829+55	830+01	830+41
MATCH PROP RDWY X-SLOPE	MATCH DW PROFILE GRADE	MATCH DW PROFILE GRADE	MATCH PROP RDWY X-SLOPE

DW 17 SHOULDER CROSS SLOPE TRANSITION			
BEGIN	END	BEGIN	END
836+14	836+54	836+99	837+39
MATCH PROP RDWY X-SLOPE	MATCH DW PROFILE GRADE	MATCH DW PROFILE GRADE	MATCH PROP RDWY X-SLOPE

DRIVEWAY PIPE DATA				
DW No	DIA	STA	O/S (FT)	ELEV
17	(IN)	836+63.49	38.00	1,087.50
	18	836+92.06	38.00	1,086.75



SCALES (IN FEET):
HORZ - 0 100
VERT - 0 10

Austin District
Central Design

Texas Department of Transportation

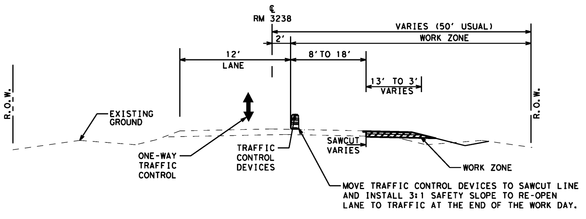
RM 3238
PLAN & PLOT

SHEET 06 OF 32

© 2021	CONT	SECT	JOB	HIGHWAY
DIST	CKT	0683	04	022, ETC.	RM 3238
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	90

DocuSigned by: Demissie M. Sema 3/29/2021

FILE: pw:\\txdot.projectwiseonline.com:TXDOT4\Documents\4 - AUS\Design Projects\06830402\4 - Design\Plan Set\3, Roadway\RM3238_PNP_06.dgn
DATE: 3/29/2021 4:34:04 PM

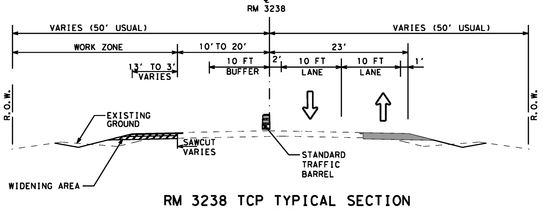


RM 3238 TCP TYPICAL SECTION
PHASE 1

STA 782+20 TO STA 869+73
STA 884+89 TO STA 919+70
STA 923+18 TO STA 930+50
STA 949+17 TO STA 1013+00
STA 1027+38 TO STA 1008+43

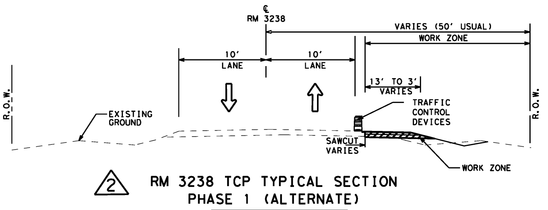
NOTE:
#1. CONTRACTOR MAY USE ONE-WAY TCP AS SHOWN IN PHASE 1 OR REDUCE ALL TRAVEL LANES TO 10' USING PHASE 1 (ALTERNATE) DETAILS BY SHIFTING CENTER LANE AND WHITE EDGE LINE FOR THE LANE ADJACENT TO WIDENING. CONTRACTOR MAY WORK DURING DAYTIME HOURS ADJACENT TO THE REDUCED TRAVEL LANES. PROVIDE A 3:1 SAFETY SLOPE AT FROM THE SAWCUT EDGE TO THE WIDENING AT THE END OF EACH WORKING DAY.
1. NO PLAN VIEW TCP PROVIDED, USE TCP(2-2b)-18 FOR ONE-LANE TWO-WAY TRAFFIC CONTROL SETUP.
2. WORK ZONES WILL BE LIMITED TO 1 MI IN ANY ONE DIRECTION.
3. WORK ZONES WILL BE SEPARATED BY 1 MI BUFFER BEFORE BEGINNING THE NEXT 1 MI WORKZONE.
4. MULTIPLE WORK ZONE PHASES MAY BE OPERATED CONCURRENTLY WITH APPROVAL BY AREA ENGINEER.
5. CONTRACTOR MAY USE VERTICAL PANELS, BARRELS OR GRABBER CONE.
6. CONTRACTOR SHALL RESTORE TWO-WAY TRAFFIC TO ORIGINAL LOCATION AT THE END OF THE WORK DAY.
7. ONE WAY TRAFFIC CONTROL MUST BE USED DURING NIGHT TIME OPERATIONS FROM 8 PM TO 5:30 AM.
8. FOR PROPOSED PAVEMENT STRUCTURES SEE TYPICAL SECTIONS SHEET.
9. LIGHT PLANTS WILL BE REQUIRED AT FLAGGER STATIONS TO ILLUMINATE THE FLAGGER AND ARE SUBSIDIARY.

LEGEND
- PROP WORK THIS PHASE
- PROP WORK PREVIOUS PHASE



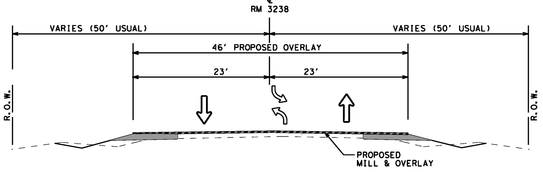
RM 3238 TCP TYPICAL SECTION
PHASE 2

STA 777+50 TO STA 869+55
STA 884+97 TO STA 938+50
STA 947+13 TO STA 1013+00
STA 1027+38 TO STA 1107+32



RM 3238 TCP TYPICAL SECTION
PHASE 1 (ALTERNATE)

STA 782+20 TO STA 869+73
STA 884+89 TO STA 919+70
STA 923+18 TO STA 930+50
STA 949+17 TO STA 1013+00
STA 1027+38 TO STA 1008+43



RM 3238 TCP TYPICAL SECTION
PHASE 3

STA 774+00 TO STA 1124+99

THE CULVERT TCP SHEETS ARE TO BE USED BETWEEN FRIDAY 8PM TO MONDAY AT 5AM. ALL LANES TO RE-OPEN MONDAY 5AM. IF SPACE EXIST, THE FLEX BASE DETOUR MAYBE USED FOR PORTION OF THE TRAVEL LANE TO SHIFT TRAFFIC AWAY FROM THE CONSTRUCTION. MAINTAIN THE DETOUR. CAPPING OF THE DETOUR WITH HOTMIX IS ALLOWED AT CONTRACTORS EXPENSE.

REVISED 05/28/2021

Austin District
Central Design

Texas Department of Transportation

RM 3238
TCP
TYPICAL SECTIONS

SHEET 1 OF 2

© 2021	CONT	SECT	JOB	HIGHWAY
DIST	CKT	0683	04	022, ETC.	RM 3238
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	47

DocuSigned by: Demissie M. Sema 5/27/2021

FILE: pw:\\txdot.projectwiseonline.com:TXDOT4\Documents\4 - AUS\Design Projects\06830402\4 - Design\Plan Set\2, TCP\3238_TCP_TYP.dgn
DATE: 5/27/2021 11:05:15 AM

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County Project No: 22-39516
WTCPUA Project No: 71-22-009

SHEET 29 OF 36

TXDOT - 1	
ISSUE DATE 3/21/2024	PROJECT # 5405-005

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

FIRM REG. # F-8801

F.P. HOWLAND III 99451 REGISTERED PROFESSIONAL ENGINEER STATE OF TEXAS 5/21/2024

TDi* ENGINEERING

TDI Engineering, LLC
5906 Old Fredericksburg Road, Suite 300
Austin, TX 78749
512-301-3389 | www.tdi-llc.net

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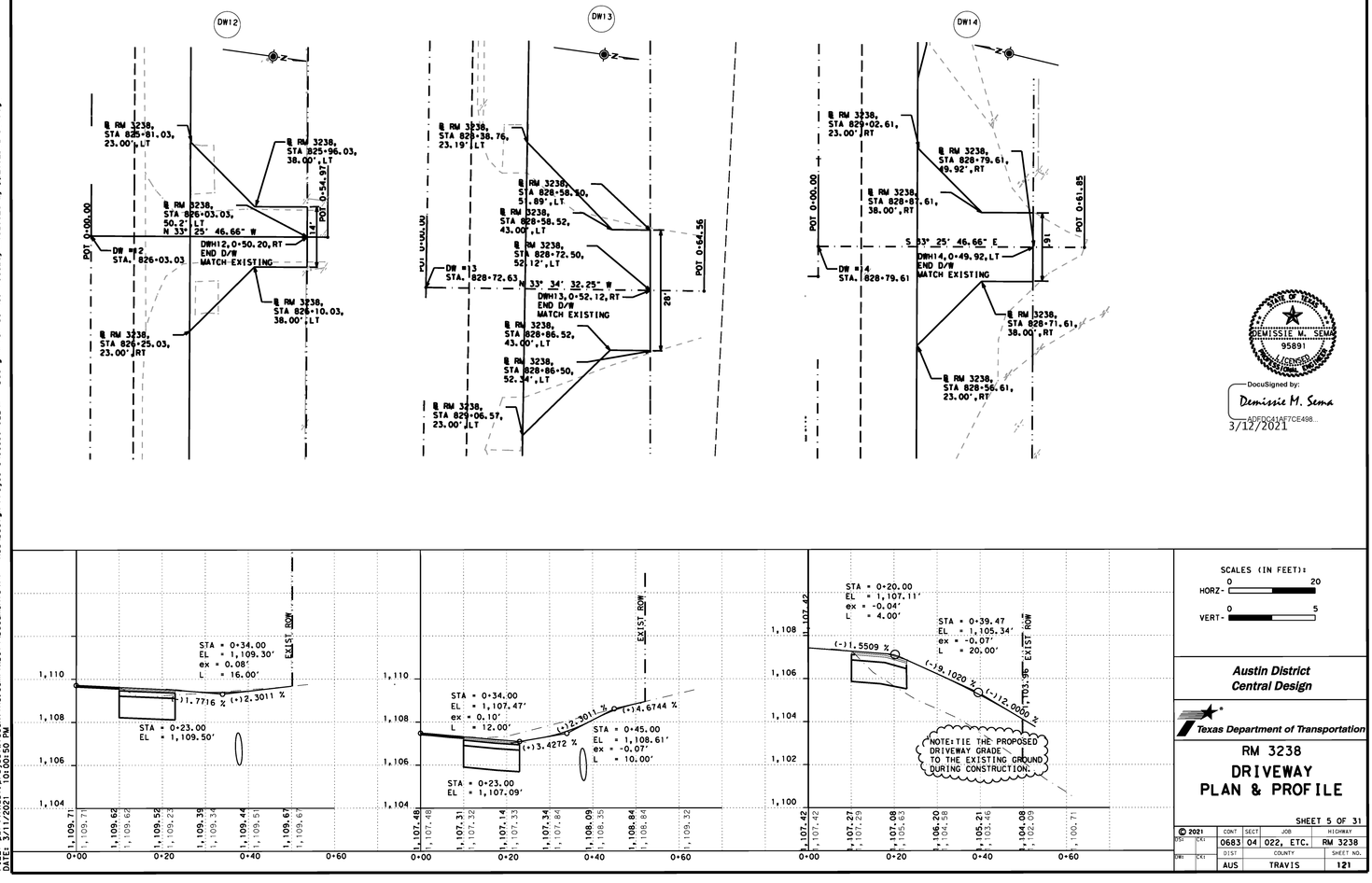

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Austin District
Central Design

Texas Department of Transportation

RM 3238
DRIVEWAY
PLAN & PROFILE

SHEET 5 OF 31

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DSN:	CK1:	0683	04	022, ETC. RM 3238
DW1:	CK1:	DIST	COUNTY	SHEET NO.
		AUS	TRAVIS	121

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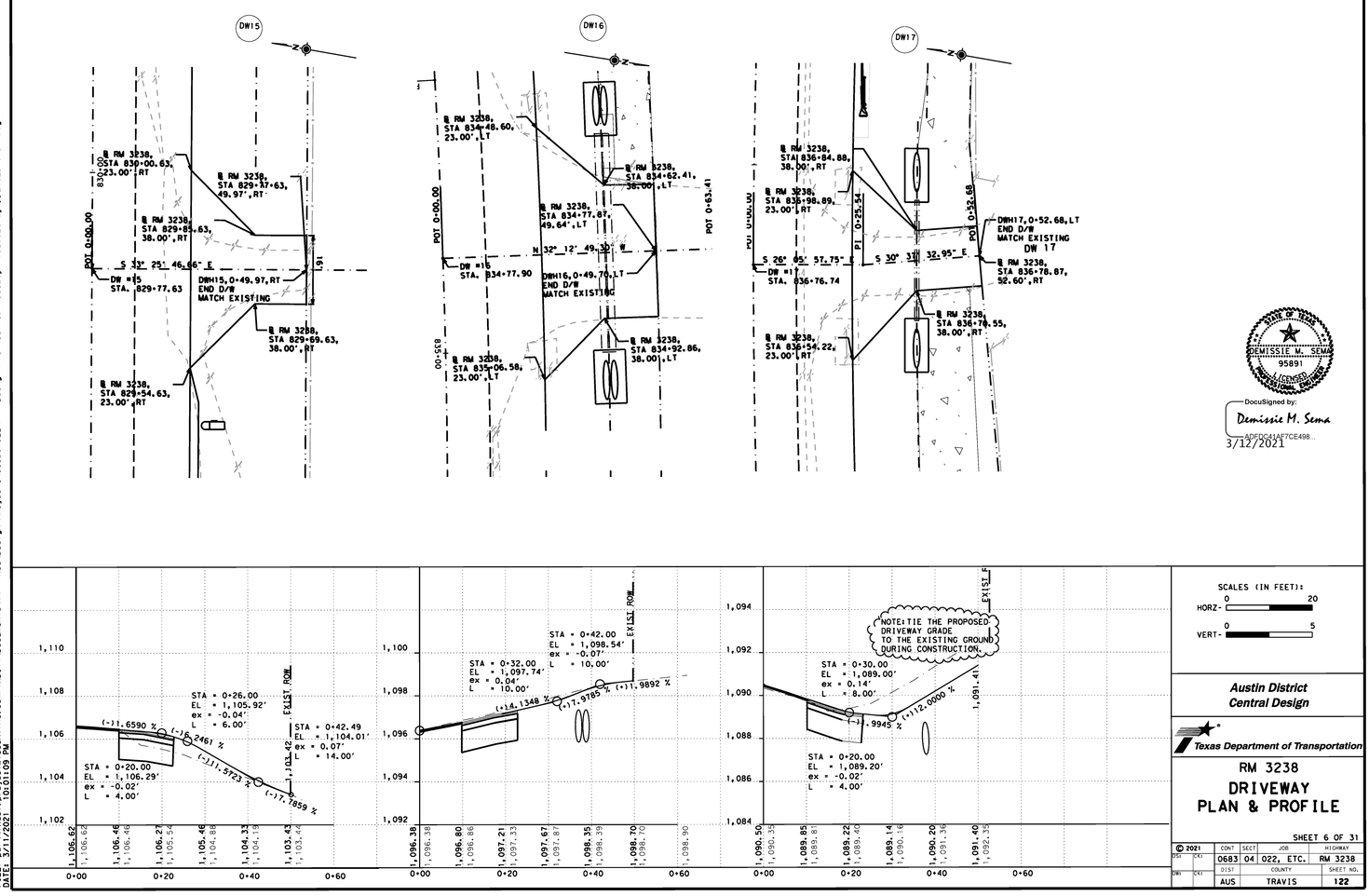

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Austin District
Central Design

Texas Department of Transportation

RM 3238
DRIVEWAY
PLAN & PROFILE

SHEET 6 OF 31

© 2021	CONT	SECT	JOB	H|CHWAY
DSN:	CK1:	0683	04	022, ETC. RM 3238
DW1:	CK1:	DIST	COUNTY	SHEET NO.
		AUS	TRAVIS	122

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County Project No: 22-39516
WTCPUA Project No: 71-22-009

SHEET 30
30 OF 36

TXDOT - 2

ISSUE DATE 3/21/2024

PROJECT # 5405-005

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

FIRM REG. # F-8801

TDi ENGINEERING

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5906 Old Fredericksburg Road, Suite 300
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County Project No:
22-39516
WTCPUA Project No:
71-22-009

NORTH

LEGEND

PARCEL

1. 17800 HAMILTON POOL ROAD//
   GEO ID: 0113970105
   OWNER: TWISTED OAK PARTNERS LLC
   ADDRESS: 9208 MADRONE RANCH TRAIL,
   AUSTIN, TX 78738-7636

2. 18018 HAMILTON POOL ROAD//
   GEO ID: 0110960212
   OWNER: VIDOVIC SONNY &
   ADDRESS: 18018 HAMILTON POOL ROAD,
   AUSTIN, TX 78738-7008

3. 17927 HAMILTON POOL ROAD//
   GEO ID: 0110960313
   OWNER: SMITH GLOVER INVESTMENTS LLC
   ADDRESS: 1511 W 34 STREET,
   HOUSTON, TX 77018-6213

4. HAMILTON POOL ROAD//
   GEO ID: 0110960320
   OWNER: LEFEVRE KAREN E
   ADDRESS: 1808B CRESTED BUTTE DRIVE,
   AUSTIN, TX 78746-7607

5. HAMILTON POOL ROAD//
   GEO ID: 0110960302
   OWNER: LCC PROPERTIES LLC
   ADDRESS: 5808 E COUNTY ROAD 110,
   MIDLAND, TX 79706-5585

6. 9215 MADRONE RANCH TRAIL//
   GEO ID: 0113970201
   OWNER: MADRONE RANCH PROPERTY
   OWNERS ASSOC
   ADDRESS: 700 MARKET STREET BLDG 3,
   CEDAR PARK, TX 78613

7. 9212 MADRONE RANCH TRAIL//
   GEO ID: 0113970104
   OWNER: COX TROY & SHELLY
   ADDRESS: 9212 MADRONE RANCH TRAIL,
   AUSTIN, TX 78738-7636

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5/21/2024
STATE OF TEXAS
F. P. HOWLAND III
90451
REGISTERED
PROFESSIONAL ENGINEER
FIRM REG. # F-8601

TWISTED OAK PARTNERS, LLC
17800 HAMILTON POOL RD.
AUSTIN, TX 78738

TWISTED OAKS PARTERNS, LLC

SHUT OUT PLAN

PROJECT # 5405-005

ISSUE DATE 3/21/2024

SHEET
31
31 OF 36

Drawing: ...\w2ft\Tdi-LLC Projects\5405 - Mark West\5405-005 - Twisted Oaks Phase 2\Civil\Drawings\Sheets\5405-005 - Sheet Set.dwg
User: mhoward
Last Modified: Mar. 20, 24 - 17:19
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GENERAL NOTES

GENERAL CONDITIONS AND COORDINATION

1. NOTES SHOWN ON GENERAL NOTES SHEET SHALL GOVERN THE MINIMUM STANDARDS FOR MATERIALS, WORKMANSHIP, AND GENERAL CONSTRUCTION PRACTICES UNLESS NOTED OTHERWISE IN SPECIFICATIONS OR ON DRAWINGS.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN AND DISTRIBUTE ALL CURRENT CONTRACT DOCUMENTS AND ADDENDA TO SUPPLIERS AND SUB-CONTRACTORS FOR THE USE OF SHOP DRAWING PRODUCTION AND FABRICATION PRIOR TO CONSTRUCTION.
3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COMPARE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DRAWINGS, AND REPORT ANY DISCREPANCIES AMONG OR WITHIN THE DRAWING SETS PRIOR TO FABRICATION OR CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS, FLOOR ELEVATIONS, DROPS, SLOPES, DRAINS, EMBEDDED ITEMS, ETC., PRIOR TO CONSTRUCTION.
5. THE DETAILS AND SECTIONS SHOWN ON STRUCTURAL DRAWINGS APPLY GENERALLY TO ALL AREAS OF SIMILAR OR LIKE CONDITIONS THROUGHOUT THE DRAWINGS.
6. STRUCTURAL DRAWINGS INDICATE TYPICAL AND INDIVIDUAL SPECIFIC CONDITIONS ONLY. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/SUB-CONTRACTOR TO PREPARE SHOP DRAWINGS DETAILING CONDITIONS IN ACCORDANCE WITH SPECIFIED STANDARDS AND SPECIFIC REQUIREMENTS OF THIS PROJECT AS INDICATED ON DRAWINGS.
7. THE USE OF THESE STRUCTURAL DRAWINGS BY ANY CONTRACTOR, SUB-CONTRACTOR, MATERIAL SUPPLIER, FABRICATOR, OR ERECTOR WITHOUT THE PREPARATION OF SHOP DRAWINGS REPRESENTS HIS ACCEPTANCE OF THESE DRAWINGS AS COMPLETE AND CORRECT. AS A RESULT, ANY EXPENSE ACQUIRED AS A RESULT OF ERRORS OCCURRING ON DRAWINGS IS THE RESPONSIBILITY OF THE INDIVIDUAL PARTY.
8. SHOP DRAWINGS MAY BE SUBMITTED TO ENGINEER FOR REVIEW FOR CORRECTNESS OF STRUCTURAL INTENT. CONTRACTOR, SUB-CONTRACTOR, MATERIAL SUPPLIER, FABRICATOR, OR ERECTOR SHOULD ANTICIPATE A MINIMUM 10 BUSINESS DAY REVIEW PERIOD BY ENGINEER.
9. THE DESIGN AND PROVISION FOR ALL TEMPORARY SUPPORTS OR FRAMING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. TEMPORARY SUPPORTS SHALL NOT OVERSTRESS OR CAUSE DAMAGE TO THE PERMANENT STRUCTURAL ELEMENTS.
10. THE DESIGN AND PROVISION FOR SUPPORTS OF ALL NON-STRUCTURAL FRAMING, INCLUDING MECHANICAL EQUIPMENT, PLUMBING, ETC IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. SUPPORTS SHALL BE DESIGNED FOR ALL APPLICABLE LOADS IN ACCORDANCE WITH THE GOVERNING BUILDING CODE INCLUDING SEISMIC LOADING. SUPPORTS SHALL NOT OVERSTRESS OR CAUSE DAMAGE TO STRUCTURAL ELEMENTS. REFERENCE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ALL NON-STRUCTURAL FRAMING REQUIRED.
11. THE STRUCTURAL DRAWINGS AND ITEMS SHOWN HEREIN REPRESENT THE FINISHED STRUCTURE AND DO NOT NECESSARILY REPRESENT THE MEANS OR METHODS OF CONSTRUCTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SUPERVISING THE WORK, AND THE MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCES OF CONSTRUCTION.
12. THE STRUCTURE SHOWN HEREIN IS STRUCTURALLY SOUND WHEN ALL HORIZONTAL AND LATERAL PERMANENT BRACING INDICATED ON DRAWINGS IS INSTALLED IN THEIR ENTIRETY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SUPPORT OF ALL ELEMENTS TO RESIST GRAVITY, EARTH, WIND, SEISMIC, AND CONSTRUCTION LOADS DURING CONSTRUCTION.
13. ALL ELEVATIONS SHOWN ARE FOR STRUCTURAL REFERENCE PURPOSES ONLY. REFER TO CIVIL FOR DATUM ELEVATIONS.

DESIGN CODES/STANDARDS

1. GOVERNING BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE.
2. DESIGN LOADS: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16.
3. CONCRETE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AMERICAN CONCRETE INSTITUTE, ACI 318-19.

LOADS AND DESIGN CRITERIA

1. DEAD LOADS
   - A. CONC RETAINING WALLS — 150 PCF
2. RETAINING WALL DESIGN CRITERIA
   - A. ACTIVE FLUID PRESSURE — 62.4 PSF/FT
   - B. ALLOWABLE BEARING — 2,500 PSF @ MIN 24" BELOW FIN GRADE
   - C. COHESION — 2,000 PSF
   - D. PASSIVE SOIL PRESSURE — 110 PSF/FT
3. THE TOPOGRAPHIC AND ELEVATION DATA SHOWN HEREON WAS OBTAINED FROM THE CIVIL ENGINEER AND IS NOT CERTIFIED AS CORRECT BY THIS ENGINEER. USERS OF THIS DATA DO SO AT THEIR OWN RISK.
6. FOUNDATION DESIGN CRITERIA
   - A. ALLOWABLE BEARING — 2,500 PSF @ 24" MIN BELOW FIN GRADE

SOIL AND SUBSURFACE CONDITIONS

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO THOROUGHLY READ, UNDERSTAND THE DESIGN CRITERIA AND FOLLOW THE RELATED BUILDING PAD PREPARATION REQUIREMENTS SET FORTH IN THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
2. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT, PROJECT # G322356, PREPARED BY ROCK ENGINEERING, DATED 02/06/2023.
3. BUILDING PAD PREPARATION SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS IN GEOTECHNICAL REPORT. REMOVE AND REPLACE 12" OF CLAY MATERIAL W/ WELL COMPACTED SELECT FILL IN ACCORDANCE W/ GEOTECHNICAL REPORT.
4. ANY FILL WORK WITHIN 10 FT OF BUILDING EXTENTS SHALL BE PROPERLY PLACED AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DEFINED IN ASTM D698 STANDARD PROCTOR TEST.
5. POSITIVE DRAINAGE SHALL BE PROVIDED AND MAINTAINED AWAY FROM THE BUILDING DURING CONSTRUCTION AND PERMANENTLY. STORED EXCAVATION MATERIAL AND/OR CONSTRUCTION MATERIALS SHALL NOT DISRUPT POSITIVE DRAINAGE AWAY FROM BUILDING.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY REQUIRED BACK FILLING OF WALLS, PIERS, FOOTINGS, ETC., SUCH THAT SYMMETRICAL LOADING OCCURS. IN THE EVENT THAT CONDITIONS PREVENT SUCH SYMMETRICAL LOADING, TEMPORARY SHORING SHALL BE PROVIDED AND MAINTAINED UNTIL PERMANENT HORIZONTAL AND VERTICAL BRACING ELEMENTS ARE PLACED AND PROPERLY SET.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN STABILITY OF EXCAVATIONS UNTIL PROPERLY BACK FILLED. EXCAVATIONS SHALL REMAIN FREE OF LOOSE DEBRIS/MATERIAL, AND WATER. EXCAVATIONS SHALL BE DE-WATERED AND ALL WET MATERIAL REMOVED/REPLACED PRIOR TO CONCRETE PLACEMENT.
8. HEAVY EQUIPMENT NECESSARY FOR SPREADING AND COMPACTING BACK FILL MATERIAL SHALL NOT BE OPERATED CLOSER THAN A DISTANCE EQUAL TO THE HEIGHT OF BACK FILL MATERIAL ABOVE THE WALL, PIER, FOOTING, ETC. HAND TAMPING SHALL BE USED TO COMPACT THE REMAINING AREA.
9. EXCAVATED MATERIAL MAY BE USED AS BACKFILL IF FOUND TO BE ACCEPTABLE TO THE GEOTECHNICAL ENGINEER. OTHERWISE, PROVIDE SELECT FILL IN ACCORDANCE WITH GEOTECHNICAL REPORT AS BACKFILL MATERIAL.

CAST IN PLACE CONCRETE

1. CONCRETE WORK SHALL CONFORM TO THE FOLLOWING:
   - A. ACI 318 - REINFORCED CONCRETE
   - B. ACI 318.1 - PLAIN CONCRETE
   - C. ACI 306R - COLD WEATHER CONCRETING
   - D. ACI 305R - HOT WEATHER CONCRETING
   - E. ACI 117 - STANDARD SPECIFICATION FOR TOLERANCES
2. CONCRETE USED FOR STRUCTURAL APPLICATIONS AS SHOWN ON DRAWINGS SHALL BE STANDARD WEIGHT, WITH 28-DAY COMPRESSIVE STRENGTH AS NOTED BELOW. COMPRESSIVE STRENGTH TESTING SHALL BE IN ACCORDANCE WITH ASTM C39 "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS."
3. CONCRETE SHALL HAVE A MAXIMUM SLUMP AS NOTED BELOW AND SLUMP SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C143 "SLUMP OF PORTLAND CEMENT CONCRETE."
4. AGGREGATES USED FOR NORMAL WEIGHT CONCRETE SHALL HAVE A NOMINAL MAXIMUM COARSE AGGREGATE SIZE AS NOTED BELOW AND SHALL CONFORM TO ASTM C33 "SPECIFICATIONS FOR CONCRETE AGGREGATE."
5. CONCRETE SHALL BE PROPORTIONED TO MEET THE REQUIREMENTS OF ACI 318 CHAPTER 19. CONCRETE SHALL BE DESIGNED FOR EXPOSURE CLASS F0, S0, W0 AND C0 UNO.
6. CONCRETE MIX DESIGNS SHALL BE IN ACCORDANCE WITH THE REQS BELOW:

LOCATION	AIR ENTRAIN	MIN F'c	SLUMP	MAX AGG SIZE	EXPOSURE CLASS	MAX W/CM
8" MIN WALLS	1 1/2%	3000 PSI	4" +/- 1"	1 1/2"	C1, F0	NA
FOOTINGS	1 1/2%	3000 PSI	4" +/- 1"	1 1/2"	C1, F0	NA

7. FLY ASH CONTENT SHALL BE MAX 25% OF CEMENT REPLACEMENT.
8. AIR ENTRAINMENT SHALL BE PROVIDED AS SHOWN IN THE CONCRETE MIX DESIGN REQUIREMENTS WITH A TOLERANCE OF ±1 1/2%. AIR ENTRAINMENT SHALL CONFORM TO ASTM C260 "AIR ENTRAINING ADMIXTURES FOR CONCRETE."
9. CONCRETE TESTING SHALL BE PROVIDED BY AN APPROVED AGENCY, AND IN ACCORDANCE WITH ASTM C31 "MAKING AND CURING CONCRETE TEST SPECIMENS IN THE FIELD."
10. CURING COMPOUNDS AND SURFACE HARDENERS SHALL BE APPROVED BY ENGINEER PRIOR TO USE. APPLICATION OF CURING COMPOUNDS AND SURFACE HARDENERS SHALL BE IN COMPLIANCE WITH MANUFACTURERS RECOMMENDATIONS.
11. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH SHALL BE PROTECTED BY WATERPROOFING AS DETAILED BY ARCHITECTURAL DRAWINGS.
12. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE FOUNDATION BLOCKOUTS AND EMBEDDED ITEMS NECESSARY FOR ARCHITECTURAL, MEP, CIVIL, ETC.
13. THE CONTRACTOR SHALL PROVIDE A SUBMITTAL OF EMBEDDED CONDUITS, PIPES, AND SLEEVES WHICH ARE BEYOND THE SCOPE DETAILED IN THE STRUCTURAL DRAWINGS.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PLACE AND FINISH CONCRETE SLABS WITH A MINIMUM FLATNESS OF FF = 35 AND A MINIMUM LEVELNESS OF FL = 25. ANY DEVIATION FROM THIS TOLERANCE THAT REQUIRES CUTTING OR ADDITIONAL FINISHING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
15. HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED UNLESS SPECIFICALLY SHOWN AND DETAILED ON STRUCTURAL PLANS. VERTICAL CONSTRUCTION JOINT LOCATIONS, OTHER THAN THOSE SHOWN ON PLAN, SHALL BE SUBMITTED TO ARCHITECT/ENGINEER FOR REVIEW. ADDITIONAL DETAILING AND REINFORCING MAY BE REQUIRED AND SPECIFIED BY THE ENGINEER FOR UNSCHEDULED CONSTRUCTION JOINTS, AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE REINFORCING

1. REINFORCING STEEL SHALL BE GRADE 60 DEFORMED STEEL BARS IN ACCORDANCE WITH ASTM A615.
2. REINFORCING STEEL DETAILING SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL. ALL HOOKS AND BENDS IN REINFORCING STEEL SHALL CONFORM TO ACI DETAILING STANDARDS, UNLESS NOTED OTHERWISE.
3. REINFORCING STEEL SUPPORT DEVICES SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
4. UNSCHEDULED BEAMS, SLABS, COLUMNS, AND WALLS, SHALL HAVE REINFORCING STEEL DETAILED IN ACCORDANCE WITH THE FOLLOWING:
   - A. MINIMUM LAP SPLICE FOR ALL REINFORCING BARS SHALL BE 48 TIMES THE BAR DIAMETER, UNLESS NOTED OTHERWISE.
   - B. LAP TOP REINFORCING BARS AT MID SPAN
   - C. LAP BOTTOM REINFORCING BARS AT SUPPORTS.
   - D. LAP VERTICAL BARS IN WALLS AND COLUMNS AT FLOOR LINES ONLY, UNLESS NOTED OTHERWISE.
   - E. PROVIDE CORNER BARS, OF SAME SIZE, FOR ALL HORIZONTAL BARS AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS.
5. PROVIDE MINIMUM (2) #4 x 8'-0" BARS AT 45° AT ALL REENTRANT CORNERS IN SLAB ON GRADE AND ELEVATED SLABS.
6. REINFORCING STEEL INTERRUPTED BY OPENINGS OR EMBEDDED ITEMS IN SLABS OR WALLS, SHALL BE COMPENSATED FOR BY REPLACING AN EQUAL AMOUNT OF REINFORCING BARS AT THE SIDES OF THE OPENING, PARALLEL TO UNINTERRUPTED STEEL. COMPENSATION STEEL SHALL EXTEND BEYOND THE EDGE OF OPENING OR EMBED A MINIMUM OF 48 TIMES THE BAR DIAMETER.
7. WELDING OF REINFORCING BARS IS NOT PERMITTED, AND HEAT SHALL NOT BE PERMITTED IN THE FABRICATION OR INSTALLATION OF REINFORCEMENT.
8. WELDED STEEL WIRE FABRIC USED FOR CONCRETE REINFORCING SHALL BE INSTALLED IN FLAT SHEETS, AND SHALL CONFORM TO ASTM A185.
9. MINIMUM CONCRETE COVERAGE FOR REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING:
   - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
   - B. CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 BAR OR LARGER 2"
     - #5 BAR OR SMALLER 1 1/2"
   - C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT W/ GROUND:
     - SLABS, WALLS, JOISTS 3/4"
     - BEAMS, COLUMNS 1 1/2"

SHEET INDEX

STRUCTURAL DRAWINGS

ABBREVIATIONS LIST	
ABBREVIATION	DEFINITION
AAC	AUTOCLAVE AERATED CONCRETE
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
APPROX	APPROXIMATE, APPROXIMATELY
ARCH	ARCHITECTURAL, ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BBE	BEAM BY ENGINEER OF RECORD
BM	BEAM
BOB	BOTTOM OF BEAM
BOD	BOTTOM OF DECK
BOF	BOTTOM OF FOOTING
BRG	BEARING
BTM	BOTTOM
BTWN	BETWEEN
CANT	CANTILEVER
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
C&C	COMPONENTS AND CLADDING
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CJ	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONV	CONVENTIONAL
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
DBL	DOUBLE
DEMO	DEMOLITION, DEMOLISH
DET, DTL	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION, ELEVATOR
EOR	ENGINEER OF RECORD
EQ	EQUAL
ES	EACH SIDE
EXIST	EXISTING
EXT	EXTERIOR
FND, FDN	FOUNDATION
FF	FINISHED FLOOR
FIN	FINISHED
FRP	FIBER REINFORCEMENT POLYMER
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GT	GIRDER TRUSS
GYP	GYPSUM BOARD
HCP	HOLLOW CORE PLANK
HD	HOLDOWN
HORZ, HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORM
INT	INTERIOR

ABBREVIATIONS LIST	
ABBREVIATION	DEFINITION
JB	JOIST BEARING
KSI	KIPS PER SQUARE INCH
LG	LIGHT GAUGE
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LVL	LEVEL, LAMINATED VENEER LUMBER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL & PLUMBING
MFR, MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MWFRS	MAIN WIND FORCE RESISTING SYSTEM
NA	NOT APPLICABLE
NP	NOT PERMITED
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
PAF	POWDER ACTUATED FASTENER
PCI	PRECAST CONCRETE INSTITUTE
PERP	PERPENDICULAR
PJ	PANEL JOINT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSION
PTI	POST-TENSIONING INSTITUTE
REF	REFERENCE
REINF	REINFORCING, REINFORCEMENT
REQD	REQUIRED
REQS	REQUIREMENTS
SCHED	SCHEDULE
SCL	STRUCTURAL COMPOSITE LUMBER
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SPA	SPACE
SPECS	SPECIFICATIONS
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEARWALL
TBM	TRUSS BY MANUFACTURER
T/B	TOP AND BOTTOM
TDI	TDI ENGINEERING, LLC
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOP	TOP OF PARAPET,TOP OF PANEL,TOP OF PIER
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPL	TRIPLE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WSP	WOOD STRUCTURAL PANEL (PLYWOOD OR OSB)
WT	WEIGHT

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TWISTED OAKS PARTNERS, LLC

STATE OF TEXAS
ELIZABETH E. LEDY
132471
LICENSED PROFESSIONAL ENGINEER
03/06/2024
FIRM REG. # F-8601

GENERAL NOTES (STRUCTURAL)

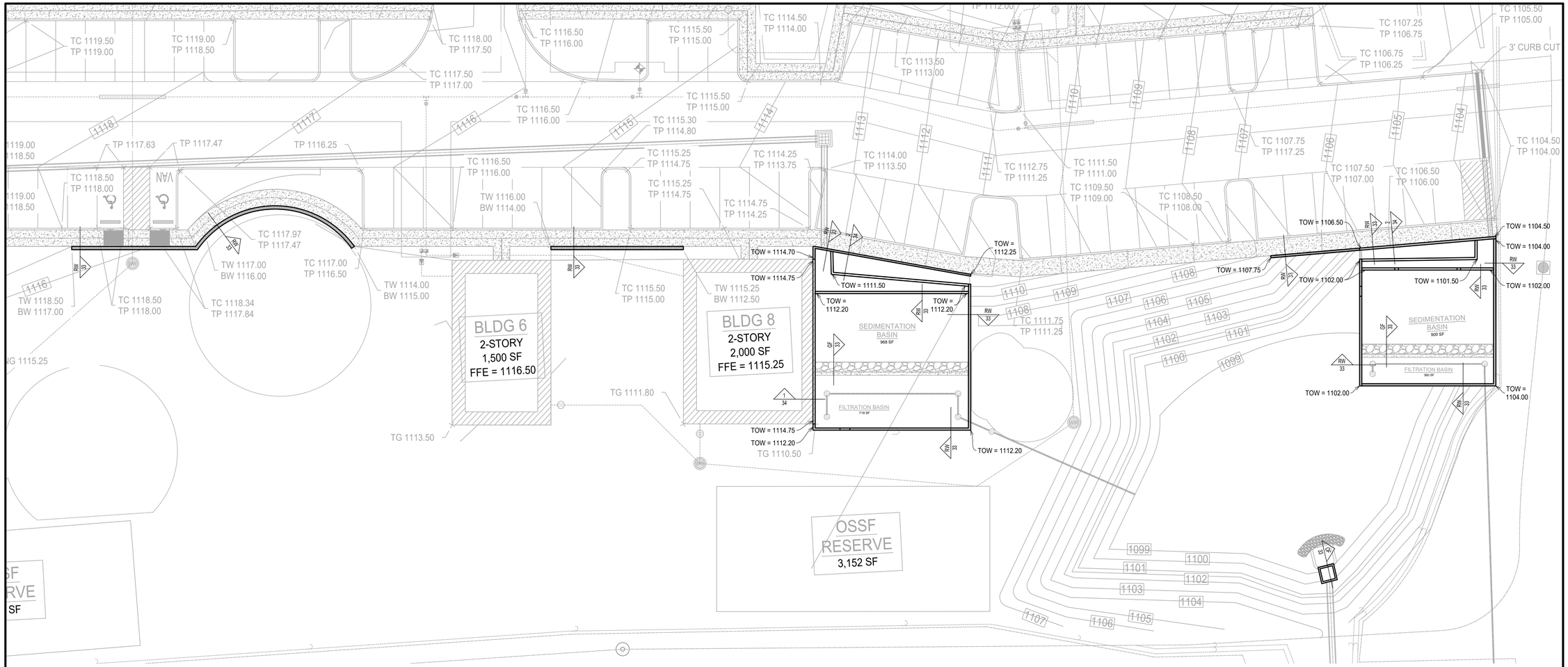
PROJECT # 5405-005

DATE 3/6/2024

PROJECT MGR: E. LEDY
DESIGNER: G.A. / E.L.
DRAWN BY: C. BROWN

SHEET 32

32 OF 36



RETAINING WALL PLAN

1/16" = 1'-0"

THE TOPOGRAPHIC AND ELEVATION DATA SHOWN HEREON WAS OBTAINED FROM CIVIL ENGINEER AND IS NOT CERTIFIED AS CORRECT BY THIS ENGINEER. USERS OF THIS DATA DO SO AT THEIR OWN RISK.

NOTES:
1. ALL TOW, TOF, TOC, ETC ARE FOR DESIGN PURPOSES ONLY. REF CIVIL & ARCH FOR REQUIRED ELEVATIONS.
2. CIVIL GRADING & DETENTION / WATER QUALITY INFORMATION ARE SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO MOST CURRENT CIVIL PLANS FOR FINAL GRADING. NOTIFY ENGINEER OF ANY DISCREPANCIES, SPECIFICALLY GRADING DIFFERENCES GREATER THAN 3".
3. WALLS / FOOTINGS ARE DESIGNED FOR WORST CASE LOADING OF POND, WITH OR WITHOUT WATER, AND PERIMETER BACKFILL / GRADES AS SHOWN ON CIVIL PLANS. REFER TO CIVIL FOR COORDINATION OF ALL PLAN DIMENSIONS.
4. PROVIDE 30" x 30" CORNER BARS AT EACH LAYER OF WALL & FOOTING REINFORCING, MATCHING SIZE & QUANTITY.
5. PROVIDE CONSTRUCTION JOINTS, PER DETAIL J SHEET 33.
6. STEP FOOTINGS ARE REQUIRED PER DETAIL S SHEET 33.
7. MATERIALS:
   A. SELECT FILL BACKFILL - PER GEOTECHNICAL REPORT
   B. FILTER FABRIC - MARAFI 140N OR APPROVED EQUIVALENT
   C. REF DRAINING GRAVEL - HARD, DURABLE, CLEAN, WASHED WELL-GRADED GRAVEL, OR CRUSHED STONE RANGING IN SIZE FROM 5/8" TO 1" FREE OF ORGANIC MATTER, CLAY BALLS, OR OTHER DELETERIOUS MATTER.
   D. PERFORATED PVC PIPE - SCHEDULE 40 PVC WITH (2) ROWS OF 1/2"Ø HOLES ON 5" CENTERS. ROWS SHALL BE PARALLEL TO AXIS OF PIPE, 120° APART. PIPE SHALL BE ORIENTED WITH PERFORATIONS ON TOP.
   E. REF P SHEET 33 AT WALL PENETRATIONS.
   F. REF C SHEET 33 FOR ADDITIONAL REINFORCEMENT AT FOOTING & WALL CORNERS.
   G. REF WE SHEET 33 FOR ADDITIONAL REINFORCEMENT AT WEIRS.
   H. REF DETAIL F SHEET 33 FOR FENCING AT TOP OF RETAINING WALL.

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AUSTIN / HOUSTON

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AUSTIN, TX 78738

TWISTED OAKS PARTNERS, LLC

STATE OF TEXAS
ELIZABETH E. LEDY
132471
REGISTERED / LICENSED PROFESSIONAL ENGINEER
10/06/2024

FIRM REG. # F-8601

RETAINING WALL PLAN

PROJECT # 5405-005

DATE 3/6/2024

PROJECT MGR: E. LEDY
DESIGNER: G.A. / E.L.
DRAWN BY: C. BROWN

SHEET
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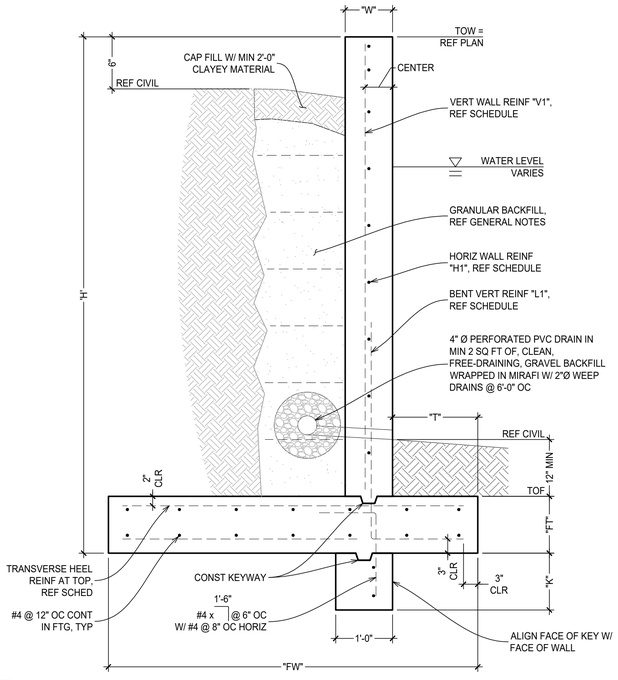
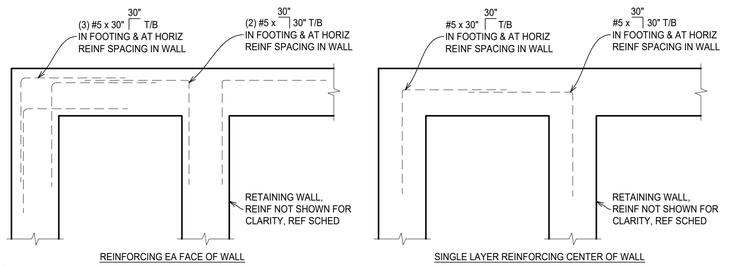
RETAINING WALL SCHEDULE									
WALL HEIGHT "H"	WALL WIDTH "W"	FOOTING THICKNESS "FT"	FOOTING WIDTH "FW"	TOE WIDTH "T"	KEY DEPTH "K"	BENT VERT REINF "L1"	VERT WALL REINF "V1"	HORIZ WALL REINF "H1"	TRANSVERSE HEEL REINF
4'-0"	8"	1'-0"	2'-6"	0'-11"	1'-0"	#5 @ 12"	#5 @ 12"	#4 @ 12"	#5 @ 12"
5'-6"	8"	1'-0"	4'-0"	1'-8"	1'-0"	#5 @ 12"	#5 @ 12"	#4 @ 12"	#5 @ 12"
8'-3"	8"	1'-0"	6'-0"	2'-9 1/2"	1'-0"	#5 @ 9"	#5 @ 9"	#4 @ 12"	#5 @ 9"

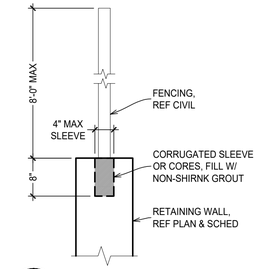
NOTES:
1. VERT WALL REINF SHALL EXTEND TO THE TOP OF FOOTING UNO.
2. KEY BELOW FOOTING MAY BE POURED MONOLITHIC WITH FOOTING.
3. REF DETAIL 'C' FOR CORNER BARS.



RW RETAINING WALL
NTS

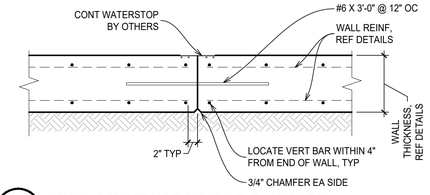


C RETAINING WALL CORNER / INTERSECTION REINF (PLAN VIEW)
NTS

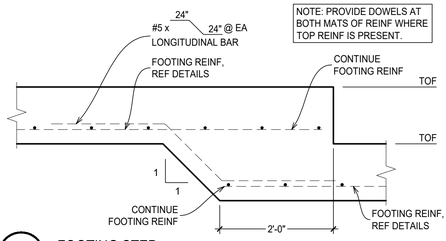


F TOP OF RETAINING WALL
NTS

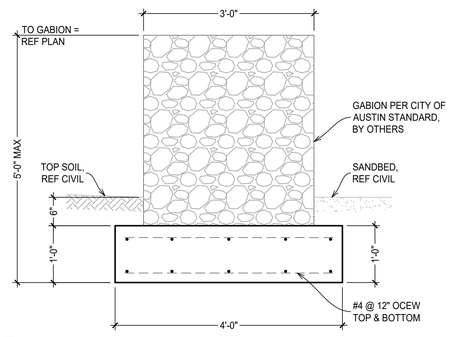
NOTES:
1. CONSTRUCTION JOINTS SHALL BE LOCATED AS REQUIRED AND MAX 80 FT OC.
2. JOINTS SHALL EXTEND FULL HEIGHT OF WALL.
3. JOINTS ARE NOT REQUIRED IN FOOTINGS.
4. NO JOINTS ARE ALLOWED IN WALLS BETWEEN: DETENTION/SEDIMENTATION, SPLITTER BOX WALLS, OR OUTLET WALLS.



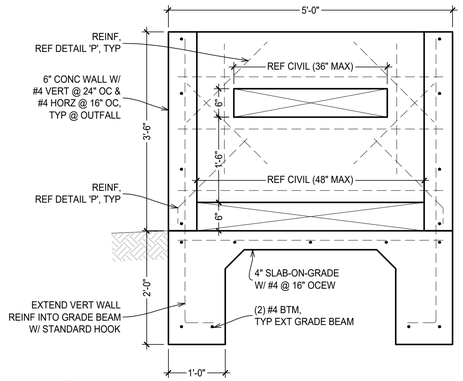
J WALL CONSTRUCTION JOINT (PLAN VIEW)
NTS



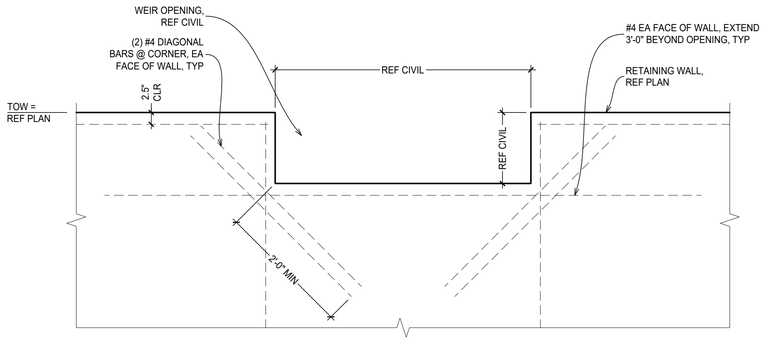
S FOOTING STEP
NTS



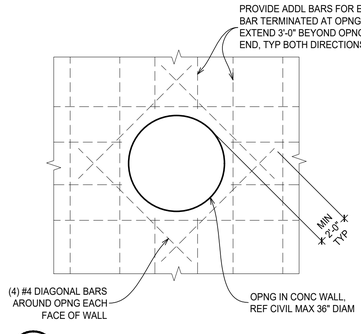
GF GABION FOOTING
NTS

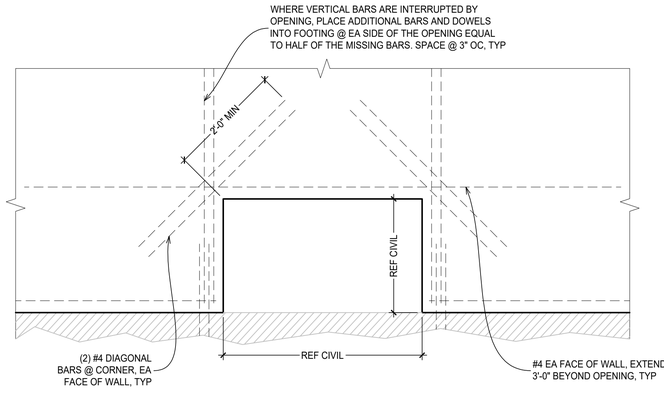


OF SECTION AT OUTFALL BOX
NTS



WE WEIR ELEVATION
NTS





P WALL PENETRATION
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STATE OF TEXAS
ELIZABETH E. LEDY
13271
PROFESSIONAL ENGINEER
03/06/2024
FIRM REG. # F-8601

RETAINING WALL DETAILS

PROJECT # 5405-005

DATE 3/6/2024

PROJECT MGR:	E. LEDY
DESIGNER:	G.A. / E.L.
DRAWN BY:	C. BROWN

SHEET
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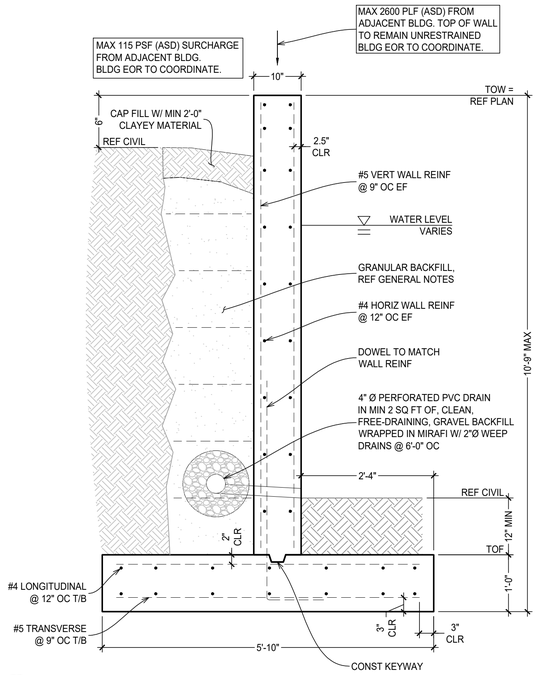
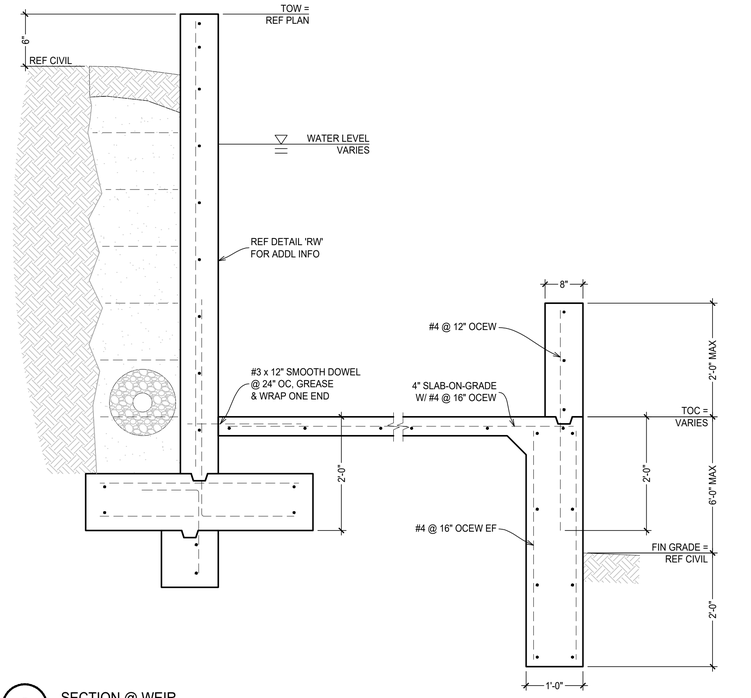


1 RETAINING WALL @ ADJACENT BUILDING
NTS



2 SECTION @ WEIR
NTS

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RETAINING WALL DETAILS

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SHEET
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35 OF 36

TRAVIS COUNTY RESTORATION / STABILIZATION NOTES

1. Initiate permanent stabilization immediately once work has ceased and final grade has been achieved in any given area.
2. The final stabilization/revegetation efforts shall be in accordance with the approved Restoration Plan details and specifications.
3. All 3:1 slopes or steeper require soil retention blanket (SRB).
4. The contractor is responsible for providing adequate watering/irrigation to achieve the permanent stabilization requirements in all disturbed/revegetated areas before final acceptance for this project can be obtained.
5. All common areas including PWQC structures must be permanently stabilized per; jurisdictional technical specifications before a conditional acceptance can be issued.
6. All disturbed/bare areas will require permanent stabilization before Final Acceptance can be achieved. Avoid disturbing areas of the project that are not necessary for construction.
7. Any disturbed area(s) not indicted to be restored on the restoration plan requires the same efforts as those indicated.
8. All disturbed areas must meet the requirement for permanent stabilization.
9. The Notice of Termination (NOT) for this project shall not be submitted until the Travis County Environmental Inspector approves clearance.

GENERAL LANDSCAPE NOTES

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NEEDED FOR CONSTRUCTION OF PROPOSED LANDSCAPE MATERIAL.
2. THE CONTRACTOR SHALL FINISH GRADE TOP SOIL TO A SMOOTH SURFACE AND REMOVE ALL CLODS PRIOR TO LAYING SOD OR HYDROMULCH.
3. TEMPORARY VEGETATIVE STABILIZATION:
   1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH COOL SEASON COVER CROPS (WHEAT AT 0.5 POUNDS PER 1000 SF, OATS AT 0.5 POUNDS PER 1000 SF, CEREAL RYE GRAIN AT 0.5 POUNDS PER 1000 SF) WITH A TOTAL RATE OF 1.5 POUNDS PER 1000 SF. 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 1 POUNDS PER 1000 SF.
      A. FERTILIZER SHALL BE WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.
      B. HYDROMULCH SHALL COMPLY WITH TABLE1, BELOW.
      C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1 1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
      D. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.
4. 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 (1/2) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH 2. BELOW.
   2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1000 SF WITH A PURITY OF 95% WITH 85% GERMINATION. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL.
      A. FERTILIZER SHALL BE A WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.
      B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.
      C. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT DAILY INTERVALS (MINIMUM) DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
      D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
      E. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.
5. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF 6 INCHES. THE IRRIGATION SHALL OCCUR AT 7 DAY INTERVALS DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER SHALL POSTPONE THE WATERING SCHEDULE ONE WEEK.
6. THE CONTRACTOR SHALL PROVIDE A ONE YEAR GUARANTEE ON ALL LANDSCAPE MATERIAL FROM THE DATE OF COMPLETION.
7. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE SCHEDULE TO INCLUDE FERTILIZATION, PRUNING, MOWING, MULCHING ETC. UPON COMPLETION OF WORK.
8. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS CREATED DURING CONSTRUCTION IE. BURLAP, CONTAINERS, ECT.

PLANT LIST

QUANTITY	SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE & CONDITION
TURF GRASSES				
See Plan		Bermudagrass	Cynadon dactylon	Hydromulch 2 lbs. per 1000 s.f.
MATERIALS				
See Plan		Curlex II - Double Excelsior		AEC-DENAT8 (8' x 112' NATURAL)

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	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	1500 TO 200 LBS PER ACRE

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS, 10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4000 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	3000 TO 4500 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)

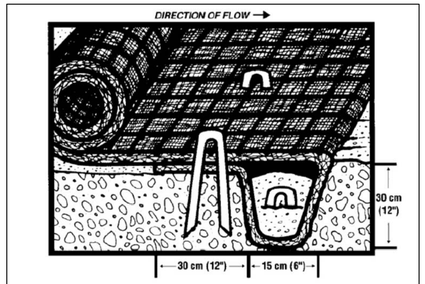


Figure 3-14 Initial Anchor Trench for Blankets and Mats

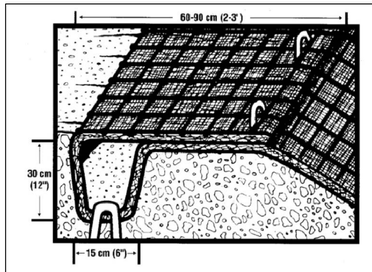
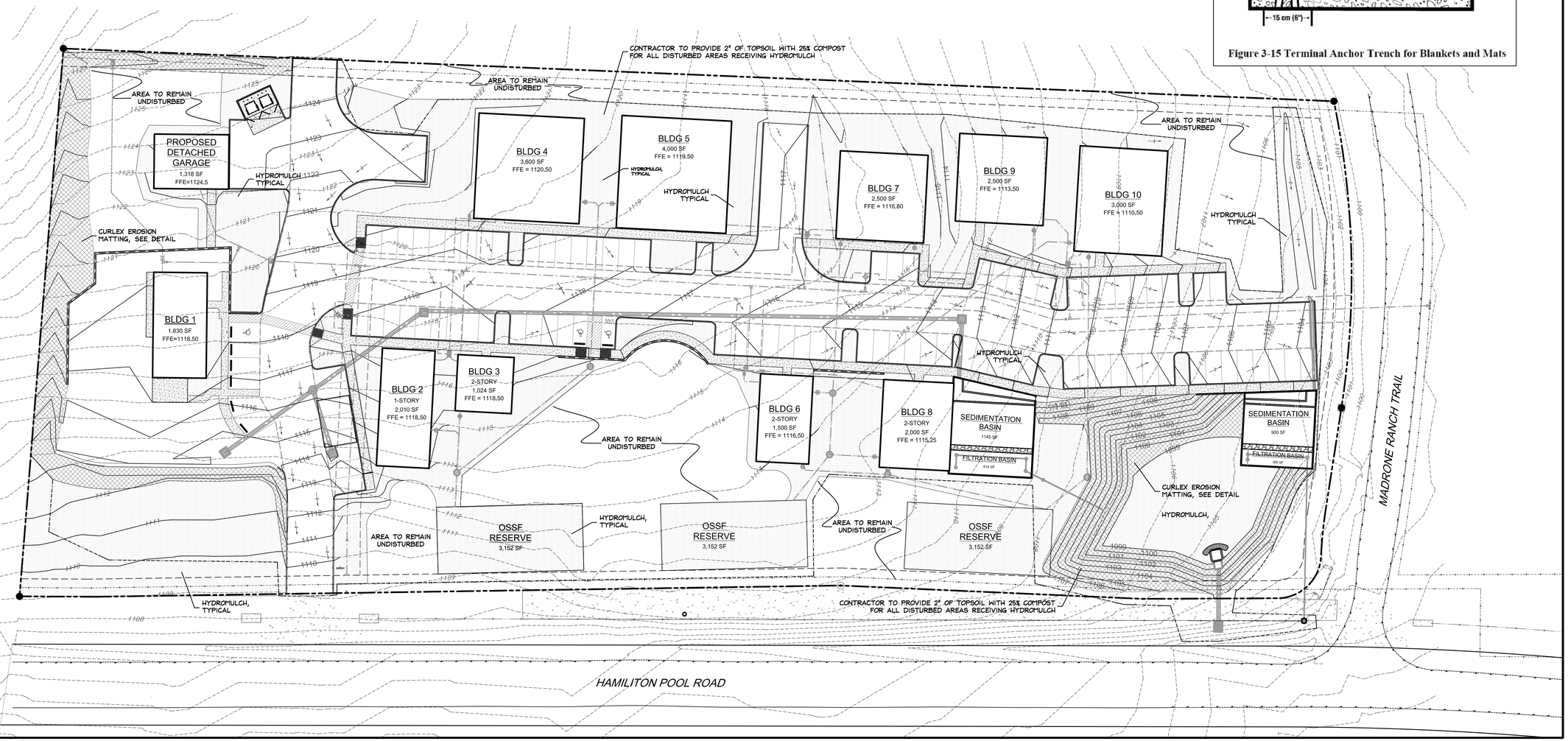


Figure 3-15 Terminal Anchor Trench for Blankets and Mats



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todd@melonçondesigngroup.com www.melonçondesigngroup.com

NO.	DATE	REVISIONS

TWISTED OAKS OFFICE COMPLEX
17800 Hamilton Pool Road
restoration, permanent stabilization plan

SCALE: 1"=30'

Drawn: JTM
Checked: JTM
Approved: JTM
Date: April 13, 2023
Project #: 383-2303

SHEET NO. 36
OF 36