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: Greystar 290						**2. Regulated Entity No.:**			
3. Customer Name: Larson Mitchener						**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):**		35.57	
9. Application Fee:	$6,500		**10. Permanent BMP(s):**			2 Retention/Irrigation Water Quality ponds and 1 Irrigation Field			
11. SCS (Linear Ft.):	NA		**12. AST/UST (No. Tanks):**			NA			
13. County:	Travis		**14. Watershed:**			Williamson Creek			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	✓	__
Region (1 req.)	__	✓	__
County(ies)	__	✓	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	✓ Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	✓ Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	__	__	__	__
Region (1 req.)	__	__	__	__	__
County(ies)	__	__	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Marissa Wyrick

Print Name of Customer/Authorized Agent

Marissa Wyrick 11/27/2023

Signature of Customer/Authorized Agent Date

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

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: Marissa Wyrick

Date: 11/27/2023

Signature of Customer/Agent:

Regulated Entity Name: Greystar 290

Project Information

1. County: Travis
2. Stream Basin: Williamson Creek
3. Groundwater Conservation District (if applicable): Barton Springs
4. Customer (Applicant):

   Contact Person: Larson Mitchener
   Entity: Greystar Development Central, LLC
   Mailing Address: 2500 Bee Caves Rd Bldg III, Suite 500
   City, State: Austin, TX Zip: 78746
   Telephone: 704.560.1613 Fax:
   Email Address: Larson.michener@greystar.com

5. Agent/Representative (If any):

Contact Person: Marissa Wyrick
Entity: BGE, Inc.
Mailing Address: 1701 Directors Blvd Suite 1000
City, State: Austin, TX Zip: 78744
Telephone: (512) 828-3629 Fax: _____
Email Address: mwyrick@bgeinc.com

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 Austin, TX
☐ 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.

Northwest corner of the intersection of Scenic Brook Dr. and HWY 290, Travis County, Texas

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: 220
☐ Commercial
☐ Industrial
☐ Other: _____

13. Total project area (size of site): 35.57 Acres

Total disturbed area: 35.73 Acres

14. Estimated projected population: 671 Persons; 341 units, 1.9 beds per unit average, 95% occupied

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	248,247.59	÷ 43,560 =	5.7
Parking	115,597.75	÷ 43,560 =	2.7
Other paved surfaces	132,525.11	÷ 43,560 =	3.0
Total Impervious Cover	497,201.39	÷ 43,560 =	11.57

Total Impervious Cover 11.57 **÷ Total Acreage** 35.57 **X 100 =** 32.53**% 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 South Austin Regional (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" = 100 '.

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): 08/18/2014 FEMA flood insurance rate map #48453C0290J.

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

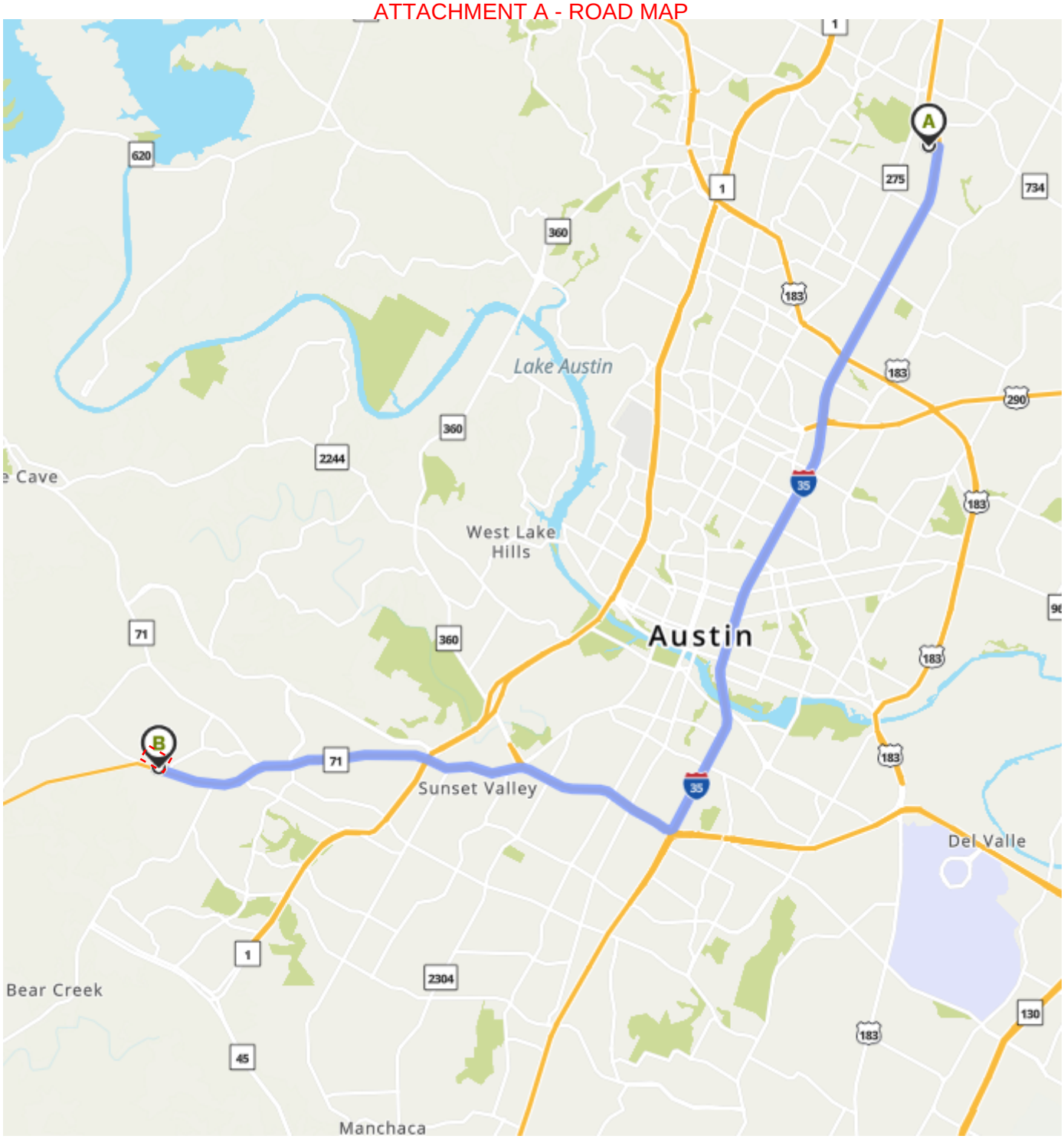
61. ☑ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.

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



ATTACHMENT A - ROAD MAP

Tceq
to 8480 US-290 W

26 min

23.4 miles

IRS reimbursement:

$13.67

Head northwest. Go for 125 ft.

Then 0.02 miles

Turn right. Go for 62 ft.

Then 0.01 miles

Turn right toward Park Thirty Five Cir. Go for 180 ft.

Then 0.03 miles

Turn left onto Park Thirty Five Cir. Go for 0.2 mi.

Then 0.16 miles

Turn right onto N I-35. Go for 0.7 mi.

Then 0.66 miles

RAMP

Take left ramp onto I-35 S (Purple Heart Trl). Go for 6.2 mi.

Then 6.23 miles

Keep left onto I-35 S (Purple Heart Trl) toward US-290 W/32nd St/Dean Keeton. Go for 5.9 mi.

Then 5.92 miles

ATTACHMENT A - ROAD MAP

Take exit 230 toward TX-71 W/Johnson City/Hospital onto US-290 W. Go for 7.1 mi.

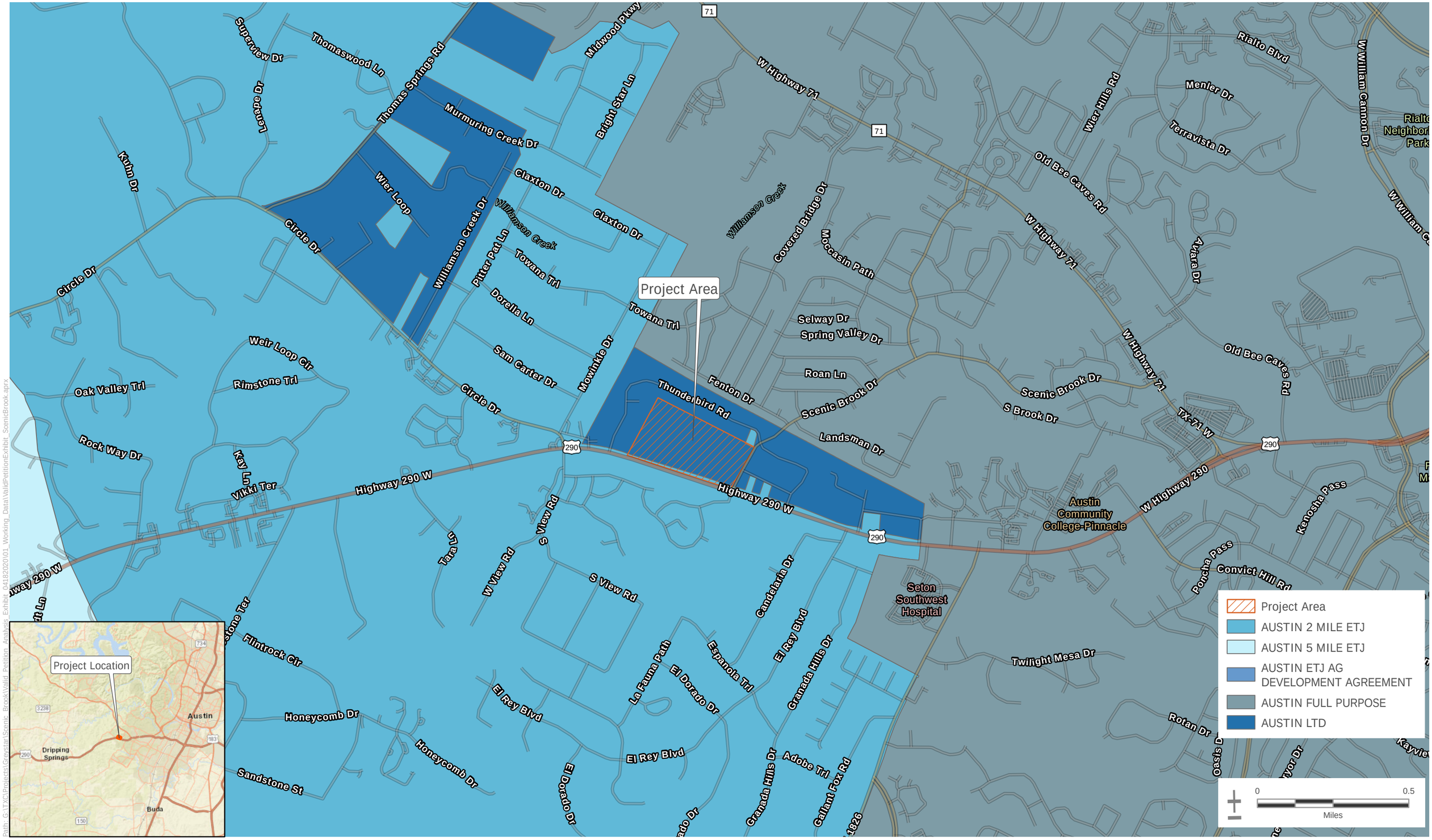
Then 7.07 miles

Take the exit onto US-290 (US-290 W). Go for 3.3 mi.

Then 3.25 miles

8480 US-290 W
Austin, TX 78736

ATTACHMENT A - ROAD MAP



Scenic Brook Vicinity Map

BGE, Inc.
Tel: 281-558-8700
www.bgeinc.com

Project No: 8975-00
December 2022
Scale: 1:18,000

Path: G:\TXO\Projects\Gewstar\Scenic_Brook\Valid Petition_Analysis_Exhibit_04182020\01_Working_Data\ValidPetitionExhibit_ScenicBrook.aprx

ATTACHMENT B - USGS QUADRANGLE MAP

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

The National Map US Topo

SIGNAL HILL 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, October 2016 - November 2016
Roads.....U.S. Census Bureau, 2015
Names.....GNIS, 1979 - 2018
Hydrography.....National Hydrography Dataset, 2002 - 2018
Contours.....National Elevation Dataset, 2002
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 1982

MN
GN
0°32′ 9 MILS
3°48′ 68 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NU PU
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 10 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

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Shingle Hills
2 Bee Cave
3 Austin West
4 Dripping Springs
5 Oak Hill
6 Driftwood
7 Mountain City
8 Buda

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

SIGNAL HILL, TX
2019

NSN 7643016398275
NGA REF NO. USGSX24K71605

Attachment C - Project Narrative

Greystar 290 is a 35.57-acre tract of land located at at 8350 W US 290 HWY, Austin, Texas, 78736. In its current state, the site is undeveloped (not cleared) and has an abandoned roadway approximately 21' wide and 1065' long, that extends along the southern property boundary. The 0.47-acres of abandoned roadway on the project site is the only existing impervious cover and will be demolished. The site does not have an existing TCEQ permit.

The proposed development will consist of single family and multifamily residences. The breakdown of units will be as follows, 133 single-family for rent and 208 multi-family units. The development will also include associated private drives, utilities, storm sewer, water quality, and detention improvements. Existing shrubbery will be cleared in the project area and approximately 11.57-acres (32.53%) of impervious cover will be added. During construction, temporary BMP's will be used to improve the quality of the storm water that drains from the site. Post-construction stormwater detention and water quality treatment will be provided by two retention/irrigation ponds and one irrigation field.

The site is located within the Williamson Creek watershed, which is in the Barton Springs Zone watershed class per City of Austin. The entire site plan area is located within the Edward's Aquifer Contributing Zone. According to the Federal Emergency management Agency (FEMA) flood insurance rate map #48453C0290J, dated August 18th, 2014, no portion of the site lies in the 100-year floodplain.

Water service will be provided by Austin Water by connecting to the existing 16" water main in Scenic Brook Drive (AW Project ID:495154). Wastewater services will be provided by Austin Water upon the completion of an offsite expansion of the existing 8" gravity wastewater main (GB #2106) located in South Brook Dr. The expansion will increase to a proposed 12-inch gravity wastewater main as per draft SER #5172.

Attachment D – Factors Affecting Surface Water Quality

The project site does not have any permanent surface water features. The two ponds will be retention/irrigation with pond A also housing a detention basin. The ponds will no have long-term standing water. The project site's use is residential, and no industrial discharge will take place. Surface water quality will be impacted by standard construction factors such as oil, grease, gasoline, and other vehicular fluids, as well as shifts in sediment that will occur during clearing, excavation, and fill operations.

During construction, if a disturbed area will remain undisturbed for more than 14 days, it will be stabilized by revegetation, mulch, tarp, or revegetation matting. The contractor will utilize dust control measures during site construction such as irrigation trucks and mulching. The contractor will clean up soils that migrate onto the roads a minimum of once daily.

The pre-construction conditions of the project site are primarily light underbrush with 0.47-acres of impervious cover from an abandoned roadway. The site is divided into two drainage areas (EX ON 1 and EX ON 2) in pre-construction conditions. EX ON 1 is 1.86-acres and consists of the northwestern corner of the site and EX ON 2 is the rest of the site. EX ON 1 has no impervious cover and a roughness coefficient of 0.41, resulting in calculated pre-construction on-site flows of 11.40 cfs for the 25-year storm scenario and 15.90 cfs for the 100-year scenario. EX2 is 33.71-acres, has 0.47-acres of impervious cover (1.39%), and a roughness coefficient of 0.41, resulting in calculated pre-construction on-site flows of 163.40 cfs for the 25-year storm scenario and 229.30 cfs for the 100-year scenario. The off-site section directly west of the project site forms off-site drainage areas (OFF1 and OFF2) which currently drain into the project site. OFF1 is the 0.97-acres west of the north-most 300' of the western property boundary and consists of mostly dense grasses with 0.13-acres of impervious cover (13.40%) and a roughness coefficient of 0.24. The calculated flows for OFF1 are 3.10 cfs for the 25-year scenario and 4.68 cfs for the 100-year scenario. OFF2 is the 3.52-acres directly south of OFF1, adjacent to the western property boundary, 0.3-acres of impervious (8.60%), and a roughness coefficient of 0.24. The calculated flows for OFF2 are 14.43 cfs for the 25-year scenario and 21.78 cfs for the 100-year scenario. All four existing drainage areas (EX 1, EX 2, OFF 1, and OFF 2) drain to the same Point of Analysis, located 290' West of the northeast property corner, and have combined pre-construction flows of 194.50cfs for the 25-year storm scenario and 272.70 cfs for the 100-year scenario.

During construction, temporary BMP's will be used to improve the quality of the storm water that drains from the site. Proposed temporary measures include silt fence, rock and soil berms, temporary construction entrances, tree protection, and site stabilization.

Post-construction, the project site will add a 4.80-acre irrigation field and 11.57-acres of impervious cover from asphalt roads, concrete sidewalks, and structures with a roughness coefficient of 0.24. There are 3 proposed on-site drainage areas, PR1, PR2, and PR3, that inflow to Pond A and Pond B, then to the irrigation field, respectively. A swale will be installed on the western property boundary of the site to convey offsite runoff around the irrigation field and to POA, as in existing conditions. Therefore, the outflow from OFF1 and OFF2 will drain to the POA with total calculated post-construction flows of 20.54 cfs for the 25-year scenario and 30.80 cfs for the 100-year scenario.

PR 1 consists of a majority of the project site 26.60-acres, including the irrigation field adjacent to the property boundary. PR 1 has 9.01 ac of proposed impervious cover, which is 33.89%, and a roughness coefficient of 0.015. Runoff in PR 1 will be captured and routed through stormwater inlets and pipes into Pond A. The calculated post-construction flows for PR1 are 128.49 cfs for the 25-year scenario and 190.29 cfs for the 100-year scenario. To capture and treat this area, Pond A consists of 82,121 CF of pond volume with a sand bed.

PR 2 consists of 3.26-acres along the eastern edge of the site, including the MF parking lot and a driveway with 6 single family houses. PR 2 had 2.56-acres of impervious cover (78.51%) and a roughness coefficient of 0.015. PR 2 will be captured and routed through stormwater inlets and pipes into Pond B. The calculated post-construction flows for PR 2 are 24.98 cfs for the 25-year scenario and 36.24 cfs for the 100-year scenario. To capture and treat that area, Pond B consists of 22,366 CF of pond volume with a sand bed.

The water quality volume from both ponds will be pumped/sprayed into the irrigation field but the detention volume will continue to flow to the POA. Therefore, the total outflow from the POA is calculated to be 188.10 cfs for the 25-year scenario and 269.20 cfs for the 100-year scenario. Compared to pre-construction conditions, flows to the POA decrease by 6.40 cfs for the 25-year scenario and 3.50 for the 100-year scenario.

As per the TCEQ TSS Removal Calculations spreadsheet, the site's impervious cover is expected to result in 9,661 lbs. of TSS to be removed. Pond A is required to remove 7,433 lbs. but has the design capacity to remove approximately 9,700 lbs. of TSS. Pond B is required to remove 2,228 lbs. but has the design capacity to remove approximately 2,700 lbs. of TSS, resulting in a BMP system that exceeds water quality requirements.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Greystar 290
Date Prepared: 1/24/2024

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

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

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

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

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

County =	Travis	
Total project area included in plan * =	35.57	acres
Predevelopment impervious area within the limits of the plan * =	0.47	acres
Total post-development impervious area within the limits of the plan * =	11.57	acres
Total post-development impervious cover fraction * =	0.33	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	9661	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

Pond 'A'

Total drainage basin/outfall area =	26.50	acres
Predevelopment impervious area within drainage basin/outfall area =	0.47	acres
Post-development impervious area within drainage basin/outfall area =	8.93	acres
Post-development impervious fraction within drainage basin/outfall area =	0.34	
$L_{M\ THIS\ BASIN}$ =	7364	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	26.50	acres
A_I =	8.93	acres
A_P =	17.57	acres
L_R =	10191	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 9700 lbs.

F = 0.95

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

Rainfall Depth =	**2.60**	inches	
Post Development Runoff Coefficient =	**0.28**		
On-site Water Quality Volume =	**69179**	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 =	**13836**		
Total Capture Volume (required water quality volume(s) x 1.20) =	**83015**	cubic feet	

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

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

Required Water Quality Volume for retention basin =	**83015**	cubic feet	

Irrigation Area Calculations:

Soil infiltration/permeability rate =	**0.2**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**166030**	square feet	
	3.81	acres	

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

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

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

9A. Full Sedimentation and Filtration System

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

9B. Partial Sedimentation and Filtration System

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

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

Required Water Quality Volume for Bioretention Basin =	**NA**	cubic feet

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

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

12. Constructed Wetlands Designed as Required in RG-348 Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands =	**NA**	cubic feet

13. AquaLogic™ Cartridge System Designed as Required in RG-348 Pages 3-74 to 3-78

**** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.**

Required Sedimentation chamber capacity =	**NA**	cubic feet
Filter canisters (FCs) to treat WQV =	**NA**	cartridges
Filter basin area (RIA_F) =	**NA**	square feet

14. Stormwater Management StormFilter® by CONTECH

Required Water Quality Volume for Contech StormFilter System =	**NA**	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Greystar 290
Date Prepared: 1/24/2024

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

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

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

where:

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

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

County =		Travis	
Total project area included in plan * =		35.57	acres
Predevelopment impervious area within the limits of the plan * =		0.47	acres
Total post-development impervious area within the limits of the plan * =		11.55	acres
Total post-development impervious cover fraction * =		0.32	
P =		32	inches
$L_{M\ TOTAL\ PROJECT}$ =		9644	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):

Pond 'B'

Drainage Basin/Outfall Area No. =	2	
Total drainage basin/outfall area =	3.69	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.64	acres
Post-development impervious fraction within drainage basin/outfall area =	0.72	
$L_{M\ THIS\ BASIN}$ =	2298	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

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

A_C =	3.69	acres
A_I =	2.64	acres
A_P =	1.05	acres
L_R =	2941	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **2700** lbs.

F = **0.92**

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

Rainfall Depth = **2.00** inches
Post Development Runoff Coefficient = **0.52**
On-site Water Quality Volume = **13971** 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 = **2794**
Total Capture Volume (required water quality volume(s) x 1.20) = **16765** cubic feet

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

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

Required Water Quality Volume for retention basin = **16765** cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = **0.2** in/hr **Enter determined permeability rate or assumed value of 0.1**
Irrigation area = **33530** square feet
0.77 acres

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

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = **NA** cubic feet

Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet **For minimum water depth of 2 feet**
Minimum sedimentation basin area = **NA** square feet **For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = **NA** cubic feet

Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet **For minimum water depth of 2 feet**
Minimum sedimentation basin area = **NA** square feet **For maximum water depth of 8 feet**

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

Required Water Quality Volume for Bioretention Basin = **NA** cubic feet

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

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

12. Constructed Wetlands Designed as Required in RG-348 Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands = **NA** cubic feet

13. AquaLogic™ Cartridge System Designed as Required in RG-348 Pages 3-74 to 3-78

**** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.**

Attachments F, G, H, and I are not applicable to this application and have been excluded from this submittal.

Attachment J - BMPs for Upgradient Stormwater

The area directly west of the project site is upgradient and in existing conditions does convey stormwater runoff onto the site. The offsite drainage areas are approximately 5.52-acres of mostly dense grass with 1.12-acres of impervious cover. Post-construction, the western property boundary of the project site will be graded with a bypass channel to convey off-site runoff northwards, and then east to POA, as it does in existing conditions. Offsite flows will not be treated by on-site BMP's.

Attachment K - BMPs for On-site Stormwater

Post-construction on-site stormwater will be conveyed northwards into two retention/irrigation ponds and then pumped to an irrigation field. The west and half of the north property boundary of the site contains a 4.80-acre irrigation field to capture and treat the outflow from both ponds. The western 26.60-acres of the project site with 33.87% impervious cover runoff is conveyed via a stormwater pipe system into Pond A. To capture and treat this area, Pond A consists of 82,121 CF of pond volume with a sand bed. The eastern 3.26-acres of the project site with 78.51% impervious cover runoff is conveyed via stormwater pipes into Pond B. To capture and treat that area, Pond B consists of 22,366 CF of pond volume with a sand bed. As per the TCEQ TSS Removal Calculations spreadsheet, the site's impervious cover is expected to result in 9,661 lbs of TSS to be removed. Pond A is required to remove 7,433 lbs but has the design capacity to remove approximately 9,700 lbs of TSS. Pond B is required to remove 2,228 lbs, but has the design capacity to remove approximately 2,700 lbs of TSS, resulting in a BMP system that exceeds water quality requirements.

Attachment L is not applicable to this application and has been excluded from this submittal.

Attachment M is included in this update as a separate document. Due to the site of the file the construction documents have been split into two parts.

CONSOLIDATED SITE PLAN
GREYSTAR 290 TRACT

8350 W US HWY 290 TX 78736

SUMMARY NOTES

OWNER: SCHMIDT INVESTMENTS LTD
5500 PRESTON RD STE 250
DALLAS TX 75605-2699

DEVELOPER: GREYSTAR
2500 BEE CAVE ROAD, BUILDING III, SUITE 500
AUSTIN, TX 78746
(512) 474-2664

ENGINEER: BGE, INC., TBPE F-1046
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TEXAS 78744
(512) 879-0400
CONTACT: MARISSA WYRICK, PE

ARCHITECT: LYLE SMARR, AIA, LEED AP BD+C
MARKET SQUARE ARCHITECTS, PLLC
PROJECT ARCHITECT / TECHNOLOGY MANAGER
P: (512) 330-0330
C: (440) 822-6090
WWW.MARKETSQUAREARCHITECTS.COM

JOSEPH STRAYER
SENIOR PROJECT MANAGER
KTGY
ARCHITECTURE | BRANDING | INTERIORS | PLANNING
(703) 245-1080 DIRECT
(703) 992-6116 MAIN
(614) 561-8599 CELL

BENCHMARK

TBM 101: IRON ROD WITH "STANTEC" SET ON NORTH EDGE OF DIRT HAUL ROAD +/-525' WEST OF SCENIC BROOK DRIVE +/-150' NORTH OF HWY 290 RIGHT OF WAY.
ELEV:1061.77' NAVD 88
(GEOID 12A)

WATERSHED STATUS

THIS PROJECT IS LOCATED IN THE WILLIAMSON CREEK WATERSHED, AND IS IN THE BARTON SPRINGS DRINKING WATER PROTECTION ZONE. THIS PROJECT IS ALSO LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE. THIS PROJECT SHALL BE DEVELOPED, CONSTRUCTED, AND MAINTAINED IN CONFORMANCE WITH THE APPLICABLE WATERSHED PROTECTION REGULATIONS.

THIS SITE IS LOCATED IN TRAVIS COUNTY AND THE CITY OF AUSTIN LIMITED PURPOSE PLANNING ZONE.

FLOODPLAIN INFORMATION

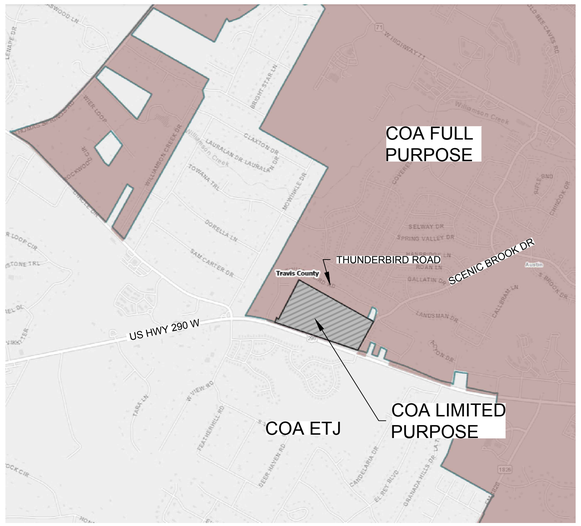
NO PORTION OF THIS SITE LIES WITHIN THE LIMITS OF THE 100 YEAR FLOODPLAIN. PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS NO. 48453C0612K.

LEGAL DESCRIPTION:

40.629 ACRES OF LAND OUT OF THE PETER MATSON SURVEY, BEING THAT CERTAIN 9.803 ACRE TRACT, TOGETHER WITH THAT CERTAIN 30.98 ACRE TRACT IN TRAVIS COUNTY, TEXAS, ACCORDING TO THE DEED RECORDED IN VOLUME 12946, PAGES 1836 & 1939, OF THE TRAVIS COUNTY DEED RECORDS ON JUNE 2, 1997.

VICINITY MAP

COA GRID: L13, L14
MAPSCO PG: 676P, 676T



N.T.S.

SUBMITTAL DATE: 12/19/2022

ADDITIONAL NOTES:

1. ALL RESPONSIBILITY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY, AND TRAVIS COUNTY MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A 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 THE CITY ENGINEERS.
3. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. APPROVAL BY OTHER GOVERNMENTAL ENTITIES MAY BE REQUIRED PRIOR TO THE START OF CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR DETERMINING WHAT ADDITIONAL APPROVALS MAY BE REQUIRED.
4. THIS SITE IS IN THE SOUTHWEST C, PRESSURE ZONE.
5. REFER TO SHEET 5 FOR WASTEWATER S.E.R. #5172.
6. THIS SITE IS NOT LOCATED OVER THE EDWARDS AQUIFER RECHARGE ZONE PER CITY OF AUSTIN GIS.
7. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE WATER DRINKING ACT. EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPE, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES, AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THIS REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
8. THE DISTURBED AREAS WITHIN THIS PROJECT SHALL BE REVEGETATED AND ALL PERMANENT EROSION / SEDIMENTATION CONTROLS COMPLETED PRIOR TO THE RELEASE OF FISCAL SURETY FOR THAT PHASE. TEMPORARY EROSION / SEDIMENTATION CONTROLS SHALL BE ADJUSTED AS NEEDED PRIOR TO THIS RELEASE TO ENSURE THAT SUBSEQUENT PHASE DISTURBED AREAS ARE ADEQUATELY COVERED. ANY AREA WITHIN THE LIMIT OF DISTURBANCE OF THE PROJECT WHICH IS NOT ADEQUATELY REVEGETATED SHALL BE BROUGHT INTO COMPLIANCE PRIOR TO THE RELEASE OF THE FINAL PHASE.
9. MAINTENANCE OF THE WATER QUALITY AND/OR DETENTION FACILITY, ARE THE RESPONSIBILITY OF THE OWNER AND NOT THE CITY OF AUSTIN.
10. IF AT ANY TIME DURING CONSTRUCTION OF THIS PROJECT AN UNDERGROUND STORAGE TANK (UST) IS FOUND, CONSTRUCTION IN THAT AREA MUST STOP UNTIL A CITY OF AUSTIN UST CONSTRUCTION PERMIT IS APPLIED FOR AND APPROVED. ANY UST REMOVAL WORK MUST BE CONDUCTED BY A UST CONTRACTOR THAT IS REGISTERED WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ). CONTACT ELIZABETH SIMMONS AT ELIZABETH.SIMMONS@AUSTINTEXAS.GOV IF YOU HAVE ANY QUESTIONS. [COA TITLE 6]
11. ROADSIDE REQUIREMENTS - TRAVIS COUNTY CHAPTER 482 REQUIRES COMPLIANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE CLEAR ZONE. TRAVIS COUNTY MAY PERMIT THE USE OF MUNICIPAL PROCEDURES WITHIN THE ETJ WHEN THEY MEET OR EXCEED AASHTO STANDARD GUIDANCE.
12. DRAINAGE FOR THIS DEVELOPMENT HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACT ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.
13. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A 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 CITY ENGINEERS.
14. FOR INTEGRATED PEST MANAGEMENT PLAN, SEE AGREEMENT FILED IN DOCUMENT NO. _____, OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS.
15. PARKLAND DEDICATION HAS BEEN PROVIDED FOR 355 UNITS BY THE RECORDATION OF A PARK EASEMENT, A CREDIT FOR AMENITIES TO BE CONSTRUCTED, AND FEES IN-LIEU. FISCAL SURETY WAS POSTED WITH THE CITY UNTIL SUCH TIME AS THE AMENITIES ARE CONSTRUCTED AND APPROVED BY THE PARKS AND RECREATION DEPARTMENT.
16. ALL TOWNHOMES CLUSTERED IN (3) UNITS OR MORE SHALL HAVE AN INDIVIDUAL NFPA 13D FIRE SPRINKLER SYSTEM INSTALLED IN EACH INDIVIDUAL TOWNHOME UNIT PER THE 2021 INTERNATIONAL RESIDENTIAL CODE, SECTION R313.
17. PER SUBCHAPTER E, 2.3.1(A), THIS PROJECT HAS A NET SITE AREA OF THREE ACRES OR MORE IN A NONRESIDENTIAL ZONING DISTRICT, AND MUST PROVIDE AT LEAST TWO (2) ADDITIONAL MEASURES TO IMPROVE CONNECTIVITY. THESE MEASURES ARE AS FOLLOWS PER SUBCHAPTER E, 2.3.1.(B)(2)(TABLE B) AND AS REFLECTED ON THE SITE PLAN:
    - 17.1 PROVIDE PEDESTRIAN AND BICYCLE CONNECTION TO ADJACENT RESIDENTIAL DEVELOPMENT. THIS CONNECTION IS REFLECTED AT THE NORTHEASTERN CORNER OF THE PROPERTY.
    - 17.2 LIMIT CURB CUTS TO GREATER THAN 330 FEET. CURB CUTS ONLY W HWY 290 ARE GREATER THAN 330'.
18. TO COMPLY WITH SUBCHAPTER E, 2.2.5.E, ALTERNATIVE EQUIVALENT COMPLIANCE WAS APPROVED TO ALLOW THE MEANDERING PEDESTRIAN PATHS THROUGHOUT THE OVERALL SITE, AS DEPICTED ON THE SITE PLAN, TO PROVIDE SUFFICIENT PEDESTRIAN CIRCULATION FOR THE PROPOSED DEVELOPMENT.
19. LANDSCAPE BUFFERING IS PROVIDED BETWEEN THE PARKING AREA AND THE SIDEWALK AND 100% OF THE BUILDING FRONTAGE FACING THE PRINCIPAL STREET IS BUILT TO THE CLEAR ZONE. THIS AEC PER CHAPTER 25-2, SUBCHAPTER E, ARTICLE 2.2.4(E), ALLOWS SURFACE PARKING WITHIN 100 FEET OF THE CORNER.
20. SPECIFICATIONS FOR ALL EQUIPMENT/COMPONENTRY OF THE WATER QUALITY CONTROL SYSTEMS SHALL BE SUBMITTED TO THE WPD OPERATING PERMIT (OP) INSPECTION STAFF AND ENGINEER OF RECORD PRIOR TO THE INSTALLATION OF PUMP STATIONS AND IRRIGATION SYSTEMS, AND PRIOR TO THE MID-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. THIS IS INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT SUCH AS PUMPS, PANELS, PIPING, DISTRIBUTION COMPONENTS AND ANY OTHER ANCILLARY EQUIPMENT. FINAL APPROVAL OF SUBMITTAL AND EQUIPMENT, AND TESTING OF ALL COMPONENTS OF WATER QUALITY SYSTEM, IS REQUIRED BY WPD OP INSPECTION STAFF PRIOR TO CO. FINAL DOCUMENTATION OF OPERATIONS/MAINTENANCE MANUAL AND AS-BUILTS SHALL BE SUBMITTED TO WPD OP INSPECTION STAFF AFTER BUILD-OUT AND MUST BE APPROVED BY STAFF PRIOR TO THE END OF THE ONE YEAR PERFORMANCE PERIOD.
21. DEVELOPMENT OF STRUCTURES THAT REQUIRE A BUILDING PERMIT WITHIN THIS SITE PLAN, OR REVISIONS THEREOF, ARE REQUIRED TO COMPLY WITH THE CITY OF AUSTIN STREET IMPACT FEE ORDINANCES, AS APPLICABLE, AND MUST BE PAID UPON COMPLETION OF THE BUILDING PERMIT PLAN REVIEW FOR EACH BUILDING.

TRAFFIC CONTROL NOTE:
THIS NOTE IS BEING PLACED ON THE PLAN SET IN PLACE OF A TEMPORARY TRAFFIC CONTROL STRATEGY WITH THE FULL UNDERSTANDING THAT, AT A MINIMUM OF 6 WEEKS PRIOR TO THE START OF CONSTRUCTION, A TEMPORARY TRAFFIC CONTROL PLAN MUST BE REVIEWED AND APPROVED BY THE JURISDICTION(S) HAVING AUTHORITY OVER THE ROADWAY(S). THE OWNER/REPRESENTATIVE FURTHER RECOGNIZES THAT A REVIEW FEE, AS PRESCRIBED BY THE MOST CURRENT VERSION OF THE CITY'S FEE ORDINANCE, SHALL BE PAID EACH TIME A PLAN OR PLAN REVISION IS SUBMITTED TO THE JURISDICTION(S) HAVING AUTHORITY OVER THE ROADWAYS(S) FOR REVIEW.
THE FOLLOWING MUST BE TAKEN INTO CONSIDERATION WHEN DEVELOPING FUTURE TRAFFIC CONTROL STRATEGIES:

- PEDESTRIAN AND BICYCLE TRAFFIC ACCESS MUST BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE AUTHORIZED BY RIGHT OF WAY MANAGEMENT.
- NO LONG-TERM LANE CLOSURES WILL BE AUTHORIZED, UNLESS RIGHT OF WAY MANAGEMENT DETERMINES THAT ADEQUATE ACCOMMODATIONS HAVE BEEN MADE TO MINIMIZE TRAFFIC IMPACT.
- PROJECT SHOULD BE PHASED SO THAT UTILITY INSTALLATION MINIMALLY IMPACTS EXISTING OR TEMPORARY PEDESTRIAN FACILITIES.

REVISIONS/CORRECTIONS

SHEET LIST	DESCRIPTION	DATE	REVISE (R) ADD (A) VOID (V) SHEET NO.'S	NET CHANGE IMPERVIOUS COVER	TOTAL IMPERVIOUS COVER	% OF IMPERVIOUS COVER FOR ENTIRE SITE	ACCEPTED BY	APPROVAL DATE	TRAVIS COUNTY APPROVAL

REVIEWED BY

TRAVIS COUNTY TRANSPORTATION AND NATURAL RESOURCES — DATE

TRAVIS COUNTY FIRE MARSHALL — DATE

TRAVIS COUNTY PERMIT NUMBER

APPROVED BY

AUSTIN WATER UTILITY
CITY OF AUSTIN — DATE

DIRECTOR, DEVELOPMENT SERVICES — DATE

DEVELOPMENT PERMIT NUMBER

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

BARTON SPRINGS ZONE

APPLICABLE WATERSHED ORDINANCE _____
OPERATING PERMIT
WHERE APPLICABLE UNDER 25-8-233 _____
WPDR SIGN-OFF AND DATE _____

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SUBMITTED BY

MARISSA A. WYRICK, P.E.
BGE, INC. TBPE NO. F-1046
1701 DIRECTORS BLVD.
SUITE 1000
AUSTIN, TEXAS 78744
(512) 879-0400 (MAIN)

STATE OF TEXAS — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER — 1-24-2024

Sheet List Table

FIRE FLOW INFORMATION – AUSTIN FIRE DEPT.	
FIRE DESIGN CODES	2021 INTERNATIONAL FIRE CODE (IFC) WITH CITY OF AUSTIN LOCAL AMENDMENTS TO THE IFC
FIRE FLOW DEMAND @ 20 PSI (GPM)	2,500 GPM
INTENDED USE	AMENITY CENTER
CONSTRUCTION CLASSIFICATION	AMENITY: TYPE V–B
BUILDING FIRE AREA (SQ.FT.)	8,555 SQ.FT.
AUTOMATIC FIRE SPRINKLER SYSTEM TYPE	AMENITY: N/A
REDUCED FIRE FLOW DEMAND @ 20 PSI FOR HAVING A SPRINKLER SYSTEM	N/A
FIRE HYDRANT FLOW TEST DATE & LOCATION	11/12/2022 – REFER TO SHEET 5 FOR LOCATION MAP
HIGH–RISE	NO
ALTERNATE METHOD OF COMPLIANCE (AMOC)	AMOC #; APPROVAL DATE:

ALL TOWNHOMES CLUSTERED IN (3) UNITS OR MORE SHALL HAVE AN INDIVIDUAL NFPA 13D FIRE SPRINKLER SYSTEM INSTALLED IN EACH INDIVIDUAL TOWNHOME UNIT PER THE 2021 INTERNATIONAL RESIDENTIAL CODE, SECTION R313.

SITE PLAN APPROVAL SHEET 1 OF 121
FILE NUMBER: SP-2022-0579C APPLICATION DATE: 12/19/2022
APPROVED BY COMMISSION ON _____
UNDER SECTION 112 (or 142) OF CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE(25-5-81, LDC) _____ CASE MANAGER JENNIFER BENNETT
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ _____ DDZ _____

Director, Development Services Review — RELEASED FOR GENERAL COMPLIANCE: _____ — LR-MU-NP / ZONING MF-5-NP / LO-MU-NP

Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____
Final Plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

BGE, Inc.
1701 Directors Blvd., Suite 1000
Austin, TX 78744
Tel: 512-879-0400 ● www.bgeinc.com
TBPE Registration No. F-1046

SHEET 1 OF 121

G:\TX\Projects\GreystarScenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-COVR.dwg Layout: COVER SHEET Plotted: 1/24/2024 1:47:05 PM

8350 W U S HWY 290 TX 78736

SP–2022–0579C

CITY OF AUSTIN
ECM APPENDIX P-1
EROSION 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 ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.

3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.

4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE DEVELOPMENT SERVICES DEPARTMENT, 512-974-2278, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.

5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ABORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE DEVELOPMENT SERVICES DEPARTMENT. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.

6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR THAT IS EITHER A LICENSED ENGINEER (OR PERSON DIRECTLY SUPERVISED BY THE LICENSED ENGINEER) OR CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC OR CPESC - IT), CERTIFIED EROSION, SEDIMENT AND STORMWATER - INSPECTOR (CESSWI OR CESSWI - IT) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC OR CISEC - IT) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY OR BI-WEEKLY INTERVALS AND AFTER ONE-HALF (½) INCH OR GREATER RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES OR ONE-THIRD (⅓) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.

7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.

8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION. IN ADDITION, IF THE PROJECT SITE IS LOCATED WITHIN THE EDWARDS AQUIFER, THE PROJECT MANAGER MUST NOTIFY THE TRAVIS COUNTY BALCONES CANYONLANDS CONSERVATION PRESERVE (BCCP) BY EMAIL AT BCCP@TRAVISCOUNTYTX.GOV. CONSTRUCTION ACTIVITIES WITHIN 50 FEET OF THE VOID MUST STOP.

9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:A.ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES.

- TOPSOIL SALVAGED FROM THE EXISTING SITE IS ENCOURAGED FOR USE, BUT IT SHOULD MEET THE STANDARDS SET FORTH IN 601S.
- AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE CRITERIA OF STANDARD SPECIFICATION 601S BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.

TEXTURAL CLASS	MINIMUM	MAXIMUM
CLAY	5%	50%
SILT	10%	50%
SAND	15%	67%

- SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL

CITY OF AUSTIN
ECM APPENDIX P-3
ADDITIONAL EROSION CONTROL NOTES FOR BARTON SPRINGS CONTRIBUTING ZONE

1. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.DESIGNATION OF AN ENVIRONMENTAL PROJECT MANAGER WHO IS ON SITE >90% OF THE TIME, WHO IS REQUIRED TO BE AT THE PRECONSTRUCTION AND MID-CONSTRUCTION MEETINGS, AND IS RESPONSIBLE FOR COMPLIANCE ON SITE OF THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS. THE ENVIRONMENTAL PROJECT MANAGER IS RESPONSIBLE FOR ENSURING COMPLIANCE OF THE CONTROLS DURING THE CONSTRUCTION PERIOD. SHOULD THE PROJECT MANAGER NEED TO BE ABSENT FROM THE SITE FOR AN EXTENDED PERIOD (IN EXCESS OF ONE WEEK), THE ENVIRONMENTAL INSPECTOR WITH THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT SHOULD BE INFORMED OF THE NAME OF A DESIGNATED REPLACEMENT.

2. THE MAXIMUM LENGTH OF TIME BETWEEN CLEARING AND FINAL REVEGETATION OF A PROJECT SHALL NOT EXCEED 18 MONTHS, UNLESS EXTENDED BY THE DIRECTOR OF THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT (THIS DOES NOT AFFECT THE EXPIRATION OF THE SITE PLAN OR BUILDING PERMIT. THIS REQUIREMENT APPLIES TO SITES THAT HAVE SUSPENDED WORK AND ARE EXPERIENCING EROSION CONTROL PROBLEMS DUE TO DISTURBED SOIL CONDITIONS.) DISTURBED AREAS MUST BE MAINTAINED TO PREVENT EROSION AND SEDIMENT LOADING OF ANY WATERWAYS OR DRAINAGE FACILITIES.

3. IT IS A VIOLATION OF THE CODE AND THIS DEVELOPMENT PERMIT TO ALLOW SEDIMENT FROM A CONSTRUCTION SITE TO ENTER A CLASSIFIED WATERWAY DUE TO A FAILURE TO MAINTAIN THE REQUIRED EROSION AND SEDIMENTATION CONTROLS OR TO FOLLOW THE APPROVED CONSTRUCTION SEQUENCE.

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 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.

3. 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.

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 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.

6. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

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 BERMUDA GRASS OR NATIVE SEED AND INSTALLED TOGETHER, UNDERSTANDING THAT GERMINATION OF WARM-SEASON SEED TYPICALLY REQUIRES SOIL TEMPERATURES OF 60 TO 70 DEGREES.

2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE WITH A PURITY OF 95% AND A MINIMUM PURE LIVE SEED (PLS) OF 0.83. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL. PERMANENT VEGETATIVE STABILIZATION CAN ALSO BE ACCOMPLISHED WITH A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.

2.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.

2.B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.

2.C. WATER THE SEEDED AREAS IMMEDIATELY AFTER INSTALLATION TO ACHIEVE GERMINATION AND A HEALTHY STAND OF PLANTS THAT CAN ULTIMATELY SURVIVE WITHOUT SUPPLEMENTAL WATER. APPLY THE WATER UNIFORMLY TO THE PLANTED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS OR SOIL. MAINTAIN THE SEEDBED IN A MOIST CONDITION FAVORABLE FOR PLANT GROWTH. ALL WATERING SHALL COMPLY WITH CITY CODE CHAPTER 6-4 (WATER CONSERVATION), AT RATES AND FREQUENCIES DETERMINED BY A LICENSED IRRIGATOR OR OTHER QUALIFIED PROFESSIONAL, AND AS ALLOWED BY THE AUSTIN WATER UTILITY AND CURRENT WATER RESTRICTIONS AND WATER CONSERVATION INITIATIVES.

2.D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95 PERCENT FOR THE NON-NATIVE MIX, AND 95 PERCENT COVERAGE FOR THE NATIVE MIX SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR STABILITY MUST BE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.

2.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
BONDER FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4500 LBS PER ACRE (SEE MANUFACTURER 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 MANUFACTURER RECOMMENDATIONS)

NOTES:

1. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)

2. THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING THE PRESENCE, TYPE, AND SIZE OF EXISTING UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND ARE FOR THE CONTRACTOR'S GUIDANCE ONLY. CONTRACTOR TO FIELD-VERIFY THE LOCATIONS AND TIE-IN ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.

3. ANY DAMAGE TO EXISTING PAVEMENT, DRAINAGE OR EXISTING STRUCTURES SHALL BE PREPARED TO PRE-CONSTRUCTION CONDITION AT THE CONTRACTOR'S EXPENSE.

4. ALL SPOIL MATERIAL AND DEBRIS SHALL BE DISPOSED PER LDC 25-8-343.

5. ALL PROPOSED SIDEWALK AND ACCESSIBLE PATHS TO BE CONSTRUCTED PER CITY OF AUSTIN AND TEXAS ACCESSIBILITY STANDARDS.

6. CONTRACTOR TO VERIFY GRADES ON ALL FORMWORK PRIOR TO POURING CONCRETE.

7. NEW SIDEWALK, ACCESS DRIVES, AND PAVEMENT TO MATCH EXISTING GRADES AND ELEVATIONS AT ALL TIE-IN LOCATIONS.

8. CONTRACTOR TO ENSURE POSITIVE DRAINAGE IN ALL GRASSY AREAS.

9. DEVELOPER INFORMATION

OWNER: SCHMIDT INVESTMENTS LTD. PHONE#:210-648-8921
ADDRESS: 5500 PRESTON RD STE 250, DALLAS, TEXAS 75205
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
BGE INC. PHONE#: 512-879-0400
PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE: _____ PHONE#: _____
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE: _____ PHONE#: _____

10. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE DEVELOPMENT SERVICES DEPARTMENT AT 512-974-2278 AT LEAST 48 HOURS PRIOR WITH THE LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.

11. ALL ACTIVITIES WITHIN THE C.E.F BUFFER MUST COMPLY WITH THE CITY OF AUSTIN CODE AND CRITERIA. THE NATURAL VEGETATIVE CONSTRUCTION IS PROHIBITED, AND WASTEWATER DISPOSAL OR IRRIGATION IS PROHIBITED.

- 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.
- ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]
- ACCESSIBLE PARKING SPACES MUST BE LOCATED ON A SURFACE WITH A SLOPE NOT EXCEEDING 1:50. [ANSI 502.5]
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
- THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN. [ANSI 405.2 - 405.6]

CITY OF AUSTIN
WATER QUALITY MANAGEMENT NOTES

1.6.3 - MAINTENANCE AND CONSTRUCTION REQUIREMENTS

A. MAINTENANCE RESPONSIBILITIES. PROPER MAINTENANCE IS AS IMPORTANT AS ENGINEERING DESIGN AND CONSTRUCTION IN ORDER TO ENSURE THAT WATER QUALITY CONTROLS, REFERRED TO HEREIN AS STORMWATER CONTROL MEASURES (SCMS), WILL FUNCTION EFFECTIVELY. SECTION 25-8-231 OF THE LAND DEVELOPMENT CODE REQUIRES MAINTENANCE BE PERFORMED ON SCMS WHEN NECESSARY AS DEFINED BY THIS SECTION. STORMWATER CONTROL MEASURES REQUIRED FOR COMMERCIAL AND MULTI-FAMILY DEVELOPMENT SHALL BE MAINTAINED BY THE PROPERTY OWNER. STORMWATER CONTROL MEASURES FOR SINGLE FAMILY OR DUPLEX RESIDENTIAL DEVELOPMENT SHALL BE MAINTAINED BY THE CITY OF AUSTIN ONCE THE FACILITIES HAVE BEEN ACCEPTED BY THE CITY, UNLESS OTHERWISE DETERMINED DURING THE REVIEW PROCESS. FOR THE CITY TO ACCEPT AN SCM, THE FACILITY MUST:

1. BE CONSTRUCTED PER THE APPROVED DEVELOPMENT PLAN;
2. 2.MEET ALL APPLICABLE REQUIREMENTS OF SECTION 1.6.3 AND THE DRAINAGE CRITERIA MANUAL, SECTION 1.2.4 E.;
3. COMPLETE A ONE-YEAR WARRANTY PERIOD, INCLUDING THE COMPLETION OF ALL MAINTENANCE AND REHABILITATION ACTIVITIES IDENTIFIED BY THE WATERSHED PROTECTION DEPARTMENT; AND
4. OBTAIN FINAL WARRANTY RELEASE APPROVAL FROM THE WATERSHED PROTECTION DEPARTMENT.THE CITY WILL ALSO MAINTAIN SCMS DESIGNED TO SERVICE PRIMARILY PUBLICLY OWNED ROADS AND FACILITIES. THESE SCMS MUST BE DESIGNED AND BUILT ACCORDING TO THE APPROPRIATE CITY STANDARDS.

B. MAINTENANCE REQUIREMENTS—DESIGN AND CONSTRUCTION.
THE DESIGN OF DRAINAGE FACILITIES (INCLUDING BUT NOT LIMITED TO HEADWALLS, OPEN CHANNELS, STORM SEWERS, AREA INLETS, AND DETENTION, RETENTION AND STORMWATER CONTROL MEASURES AND THEIR APPURTENANCES) SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 1.2.4.E OF THE DRAINAGE CRITERIA MANUAL. IN ADDITION, SCMS SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION REQUIREMENTS:

1. SEDIMENT REMOVED DURING CONSTRUCTION OF A DETENTION, RETENTION, OR WATER QUALITY FACILITIES MAY BE DISPOSED OF ON-SITE IF PROPERLY STABILIZED ACCORDING TO THE PRACTICES OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL CRITERIA FOUND IN SECTION 1.4.0 OF THIS MANUAL. AFTER THE CITY OF AUSTIN HAS ACCEPTED A STORMWATER FACILITY DISPOSAL OF SEDIMENT MUST BE AT AN APPROVED LANDFILL.
2. DURING CONSTRUCTION OF SCMS, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED.
3. IF RUNOFF IS TO ENTER THE SAND FILTRATION CHAMBER OF A WATER QUALITY CONTROL FACILITY PRIOR TO COMPLETION OF SITE CONSTRUCTION AND REVEGETATION, INSPECTION AND MAINTENANCE OF ALL TEMPORARY EROSION/SEDIMENTATION CONTROLS ARE REQUIRED, AS DESCRIBED IN THE ENVIRONMENTAL CRITERIA MANUAL SECTION 1.4.4, TO PREVENT HEAVY SEDIMENT LOADS CAUSED BY HOME CONSTRUCTION FROM CLOGGING THE FILTRATION MEDIA.
4. IN ALL CASES, TREES SHALL BE PRESERVED ACCORDING TO THE REQUIREMENTS OF SECTION 3 OF THE ENVIRONMENTAL CRITERIA MANUAL. THE ACCESS DRIVE AND STAGING AREA SHALL BE DESIGNED TO PRESERVE TREES 8" (INCHES) IN DIAMETER AND GREATER TO THE MAXIMUM EXTENT POSSIBLE. TREES 8" IN DIAMETER AND LARGER SHALL BE SURVEYED AND SHOWN FOR THE PROPOSED ACCESS EASEMENT AT THE TIME OF CONSTRUCTION PLAN PERMITTING.
5. FOR FILTRATION SYSTEMS THE DESIGN MEDIA DEPTH MUST BE VERIFIED, ACCOUNTING FOR CONSOLIDATION. IF INSUFFICIENT DEPTH IS PRESENT, ADDITIONAL MEDIA MUST BE ADDED AND PRE-SOAKED UNTIL THE DESIGN DEPTH IS ACHIEVED. PRE-SOAKING - APPLY 5—10 GALLONS OF WATER PER SQUARE FOOT OF MEDIA AREA WITHIN ONE HOUR.
6. RETAINING WALLS - RETAINING WALLS WITHIN SCMS REQUIRE WATER-TIGHTNESS. WATER-TIGHTNESS IN RETAINING WALLS IS ESSENTIAL TO THE FUNCTION OF THE STRUCTURE. WATERSTOPS SHALL BE PROVIDED DURING CONSTRUCTION OF EXPANSION JOINTS IN RETAINING WALLS PER STANDARD SPECIFICATION 414S, CONCRETE RETAINING WALLS.
7. GROUTED ROCK WALLS - GROUTED ROCK WALLS ARE ACCEPTABLE ONLY IF THE DESIGN INCLUDES AN IMPERMEABLE BARRIER SUCH AS AN APPROVED GEOMEMBRANE LINER OR REINFORCED CONCRETE RETAINING WALL. FREE STANDING DRY STACKED ROCK WALLS ARE NOT ACCEPTABLE IN ANY SCM.
8. AS-BUILT SURVEYS - AS-BUILT SURVEYS OF ALL FLOOD DETENTION BASINS AND WATER QUALITY SCMS SHALL BE SUBMITTED TO THE CITY UPON COMPLETION OF FINAL GRADE. SURVEYS SHALL BE CONDUCTED BY A LICENSED SURVEYOR OR THE ENGINEER OF RECORD AND INCLUDE REPRESENTATIVE SURVEY POINTS WITH ELEVATIONS TAKEN AT TOP OF WALL, BOTTOM OF WALL, CENTER OF BASIN, INLETS, OUTFALLS, OVERFLOW STRUCTURES, AND SIDE SLOPES. ADDITIONAL SURVEY POINTS MAY BE REQUESTED AT THE DISCRETION OF THE CITY INSPECTOR TO ENSURE BASIN INTEGRITY. WATER QUALITY BASINS WITH A DRAINAGE AREA OF LESS THAN TWO (2) ACRES AS WELL AS VEGETATED FILTER STRIPS DO NOT REQUIRE SUBMITTAL OF AS-BUILT SURVEYS UNLESS DEEMED NECESSARY BY THE CITY INSPECTOR.

C. MAJOR MAINTENANCE REQUIREMENTS.
1. THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED ON ALL SCMS, IN ADDITION TO THE REQUIREMENTS LISTED FOR THE INDIVIDUAL SCM TYPES, TO ENSURE PROPER FUNCTION:
   a) ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.
   b) STRUCTURAL INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. BASINS AND ALL APPURTENANCES SHALL BE INSPECTED ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED, AND REPAIRS SHALL BE MADE IF NECESSARY. WHEN MAINTENANCE OR REPAIRS ARE PERFORMED, THE SCM SHALL BE RESTORED TO THE ORIGINAL LINES AND GRADES.
   c) CORRECTIVE MAINTENANCE SHALL OCCUR:
      i. ANY TIME DRAWDOWN OF THE WATER QUALITY VOLUME DOES NOT OCCUR WITHIN NINETY-SIX (96) HOURS (I.E., NO STANDING WATER IS ALLOWED), UNLESS A GREATER MAXIMUM DRAWDOWN TIME IS SPECIFIED IN THE PLANS.
      ii. FOR DETENTION PONDS ONLY, ANY TIME DRAWDOWN DOES NOT OCCUR WITHIN TWENTY-FOUR (24) HOURS.
   d) THE INLET AND OUTLET OF SCMS SHALL BE MAINTAINED UNIMPEDED IN ORDER TO CONVEY FLOW AT ALL TIMES. OBSERVED BLOCKAGES TO THE INLET AND OUTLET, DUE TO VEGETATION, SEDIMENT, DEBRIS, OR ANY OTHER CAUSE, SHALL BE REMOVED.
   e) NO UNVEGETATED AREA SHALL EXCEED TEN (10) SQUARE FEET. THIS PERFORMANCE REQUIREMENT APPLIES TO THE ENTIRE POND INCLUDING THE POND BOTTOM, SIDE SLOPES, AND AREAS ADJACENT TO THE POND, AND IS INTENDED TO LIMIT EROSION.
   f) INTEGRATED PEST MANAGEMENT SHALL BE PERFORMED AND SHALL ADHERE TO SECTION 1.6.2.F, INTEGRATED PEST MANAGEMENT GUIDELINES.
   g) THE MINIMUM VEGETATION HEIGHT SHALL BE FOUR (4) INCHES IN THE SCM AND ALL APPURTENANCES, INCLUDING THE TOE OF THE BERM OR WALL OUTSIDE THE SCM, WHERE APPLICABLE.
   h) SEDIMENT BUILD-UP SHALL BE REMOVED:
      a. WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SPLITTER BOXES, WET WELLS AND BASINS.
      ii. WHEN SEDIMENT TRAPS ARE FULL.
      iii. WHEN SEDIMENT, OF ANY AMOUNT, CAUSES STANDING WATER CONDITIONS OR REDUCES BASIN STORAGE BY MORE THAN 10%.
   i) WHEN SEDIMENT IS REMOVED, THE FOLLOWING REQUIREMENTS APPLY:
      i. IRRIGATION SHALL BE PROVIDED, AS NEEDED, UNTIL VEGETATION IS ESTABLISHED (WELL ROOTED). SEE SECTION 1.6.3.D, IRRIGATION GUIDELINES.
      ii. THE DESIGN DEPTH OF THE FILTRATION MEDIA SHALL BE VERIFIED. SEE SECTION 1.6.3.B.5.III.TILLING OF THE FILTRATION MEDIUM IS NOT ALLOWED.
   j) FOR SUBSURFACE PONDS MAINTENANCE PLAN REQUIREMENTS, REFER TO ECM SECTION 1.6.2(E).

							APR
							DATE
							DESCRIPTION
							REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

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8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GENERAL NOTES (SHEET 1 OF 3)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.

2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.

3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR RADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.

4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OF MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DROP LINES.

5. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DROP LINE), FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:

   5.A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;

   5.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;

   5.C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;

   5.D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.

6. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:

   6.A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2-4 FEET BEYOND THE AREA DISTURBED;

   6.B. WHERE PERMEABLE PAVING IS TO BE INSTALLED WITH IN A TREES DRIPLINE, 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);

   6.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;

   6.D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST AT 974-1878 TO DISCUSS ALTERNATIVES.

SPECIAL NOTE: FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.

7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.

8. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.

9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL BACKFILL ROOT AREAS WITH GOOD QUALITY SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS,COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.

10. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.

11. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.

12. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.).

13. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE CITY ARBORIST).

14. DEVIATIONS FROM THE ABOVE NOTED MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.

15. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.

CITY OF AUSTIN
ECM APPENDIX P-4
STANDARD SEQUENCE OF CONSTRUCTION

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED SITE PLAN OR SUBDIVISION CONSTRUCTION PLAN AND IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION, INITIATE TREE MITIGATION MEASURES AND CONDUCT "PRE - CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE).

2. THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT THE DEVELOPMENT SERVICES DEPARTMENT, ENVIRONMENTAL INSPECTION, AT 512-974-2278, 72 HOURS PRIOR TO THE SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.

3. THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.

4. ROUGH GRADE THE POND(S) AT 100% PROPOSED CAPACITY AND INSTALL STORM SEWER SYSTEM. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A SUMP PIT OUTLET AND AN EMERGENCY SPILLWAY MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL AND/OR THE ENVIRONMENTAL CRITERIA MANUAL, AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL INSTALLATION OF THE PERMANENT WATER QUALITY POND(S).

5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE.

6. BEGIN SITE CLEARING/CONSTRUCTION (OR DEMOLITION) ACTIVITIES.

7. IN THE BARTON SPRINGS ZONE, THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR WILL SCHEDULE A MID-CONSTRUCTION CONFERENCE TO COORDINATE CHANGES IN THE CONSTRUCTION SCHEDULE AND EVALUATE EFFECTIVENESS OF THE EROSION CONTROL PLAN AFTER POSSIBLE CONSTRUCTION ALTERATIONS TO THE SITE. PARTICIPANTS SHALL INCLUDE THE CITY INSPECTOR, PROJECT ENGINEER, GENERAL CONTRACTOR AND ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR. THE ANTICIPATED COMPLETION DATE AND FINAL CONSTRUCTION SEQUENCE AND INSPECTION SCHEDULE WILL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR.

8. PERMANENT WATER QUALITY PONDS OR CONTROLS WILL BE CLEANED OUT AND FILTER MEDIA WILL BE INSTALLED PRIOR TO/CONCURRENTLY WITH REVEGETATION OF SITE.

9. COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING.

10. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE BEARING THE ENGINEER'S SEAL, SIGNATURE, AND DATE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.

11. UPON COMPLETION OF LANDSCAPE INSTALLATION OF A PROJECT SITE, THE LANDSCAPE ARCHITECT SHALL SUBMIT A LETTER OF CONCURRENCE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT THE REQUIRED LANDSCAPING IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.

12. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. CONDUCT ANY MAINTENANCE AND REHABILITATION OF THE WATER QUALITY PONDS OR CONTROLS.

MAINTENANCE AND REHABILITATION OF THE WATER QUALITY PONDS OR CONTROLS.

CITY OF AUSTIN
ECM 3.5.4(D.)
TREE MITIGATION-SPECIAL CONSTRUCTION TECHNIQUES

PRIOR TO EXCAVATION WITHIN TREE DRIP LINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.

- 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.

- PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.

- 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.

- 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.

CITY OF AUSTIN
ECM APPENDIX P-6
REMEDIAL TREE CARE NOTES

1. AS A COMPONENT OF AN EFFECTIVE REMEDIAL TREE CARE PROGRAM PER ENVIRONMENTAL CRITERIA MANUAL SECTION 3.5.4, PRESERVED TREES WITHIN THE LIMITS OF CONSTRUCTION MAY REQUIRE SOIL AERATION AND SUPPLEMENTAL NUTRIENTS. SOIL AND/OR FOLIAR ANALYSIS SHOULD BE USED TO DETERMINE THE NEED FOR SUPPLEMENTAL NUTRIENTS. THE CITY ARBORIST MAY REQUIRE THESE ANALYSES AS PART OF A COMPREHENSIVE TREE CARE PLAN. SOIL PH SHALL BE CONSIDERED WHEN DETERMINING THE FERTILIZATION COMPOSITION AS SOIL PH INFLUENCES THE TREE'S ABILITY TO UPTAKE NUTRIENTS FROM THE SOIL. IF ANALYSES INDICATE THE NEED FOR SUPPLEMENTAL NUTRIENTS, THEN HUMATE/NUTRIENT SOLUTIONS WITH MYCORRHIZAE COMPONENTS ARE HIGHLY RECOMMENDED. IN ADDITION, SOIL ANALYSIS MAY BE NEEDED TO DETERMINE IF ORGANIC MATERIAL OR BENEFICIAL MICROORGANISMS ARE NEEDED TO IMPROVE SOIL HEALTH. MATERIALS AND METHODS ARE TO BE APPROVED BY THE CITY ARBORIST (512-974-1876) PRIOR TO APPLICATION. THE OWNER OR GENERAL CONTRACTOR SHALL SELECT A FERTILIZATION CONTRACTOR AND IENSURE COORDINATION WITH THE CITY ARBORIST.

2. PRE-CONSTRUCTION TREATMENT SHOULD BE APPLIED IN THE APPROPRIATE SEASON, IDEALLY THE SEASON PRECEDING THE PROPOSED CONSTRUCTION. MINIMALLY, AREAS TO BE TREATED INCLUDE THE ENTIRE CRITICAL ROOT ZONE OF TREES AS DEPICTED ON THE CITY APPROVED PLANS. TREATMENT SHOULD INCLUDE, BUT NOT LIMITED TO, FERTILIZATION, SOIL TREATMENT, MULCHING, AND PROPER PRUNING.

3. POST-CONSTRUCTION TREATMENT SHOULD OCCUR DURING FINAL REVEGETATION OR AS DETERMINED BY A QUALIFIED ARBORIST AFTER CONSTRUCTION. CONSTRUCTION ACTIVITIES OFTEN RESULT IN A REDUCTION IN SOIL MACRO AND MICRO PORES AND AN INCREASE IN SOIL BULK DENSITY. TO AMELIORATE THE DEGRADED SOIL CONDITIONS, AERATION VIA WATER AND/OR AIR INJECTED INTO THE SOIL IS NEEDED OR BY OTHER METHODS AS APPROVED BY THE CITY ARBORIST. THE PROPOSED NUTRIENT MIX SPECIFICATIONS AND SOIL AND/OR FOLIAR ANALYSIS RESULTS NEED TO BE PROVIDED TO AND APPROVED BY THE CITY ARBORIST PRIOR TO APPLICATION (FAX # 512-974-3010). CONSTRUCTION WHICH WILL BE COMPLETED IN LESS THAN 90 DAYS MAY USE MATERIALS AT ½ RECOMMENDED RATES. ALTERNATIVE ORGANIC FERTILIZER MATERIALS ARE ACCEPTABLE WHEN APPROVED BY THE CITY ARBORIST. WITHIN 7 DAYS AFTER FERTILIZATION IS PERFORMED, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE WORK PERFORMED TO THE CITY ARBORIST, DEVELOPMENT SERVICES DEPARTMENT. P.O. BOX 1088, AUSTIN, TX 78767. THIS NOTE SHOULD BE REFERENCED AS ITEM #1 IN THE SEQUENCE OF CONSTRUCTION.

GENERAL CONSTRUCTION NOTES

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

2. CONTRACTOR SHALL CALL TEXAS 811 (811 OR 1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.

3. CONTRACTOR SHALL NOTIFY THE CITY OF AUSTIN - SITE & SUBDIVISION TO SUBMIT REQUIRED DOCUMENTATION, PAY CONSTRUCTION INSPECTION FEES, AND TO SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS MEETING MUST BE HELD PRIOR TO TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W. OR PUBLIC EASEMENTS. PLEASE VISIT HTTP://AUSTINTEXAS.GOV/PAGE/COMMERCIAL-SITE-AND-SUBDIVISION-INSPECTIONS FOR A LIST OF SUBMITTAL REQUIREMENTS, INFORMATION CONCERNING FEES, AND CONTACT INFORMATION.

4. FOR SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)

5. ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.

6. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS:
   6..A. RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT
   6..B. INSTALLATION FO AN ELECTRIC OR WATER METER (IN THE FIVE-MILE ETJ)

- ALL IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE RELEASED SITE PLAN. ANY ADDITIONAL IMPROVEMENTS WILL REQUIRE SITE PLAN AMENDMENT AND APPROVAL OF THE DEVELOPMENT SERVICES DEPARTMENT.
- APPROVAL OF THIS SITE PLAN DOES NOT INCLUDE BUILDING PERMIT OR FIRE CIDE APPROVAL.
- ALL SIGNS MUST COMPLY WITH REQUIREMENTS OF TEH LDC CHAPTER 25-10.
- ALL EXISTING STRUCTURES SHOWN TO BE REMOVED WILL REQUIRE A DEMOLITION PERMIT FROM THE CITY OF AUSTIN DEVELOPMENT SERVICES DEPARTMENT.
- THE OWBER SI RESPONSIBLE FOR ALL COSTS FOR RELOCATION OF OR DAMAGE TO UTILITIES.
- ROW EXCAVAION PERMITS ARE REQUIRED FOR CONSTRUCTION WITHIN CITY OF AUSTIN RIGHT-OF-WAY.

SITE PLAN RELEASE NOTES

- ADDITIONAL ELECTRIC EASEMENTS MAY BE REQUIRED AT A LATER DATE.
- WATER AND WASTEWATER SERVICE WILL BE PROVIDED BY THE CITY OF AUSTIN [OR IDENTIFY THE SERVICE PROVIDER IF OTHER THAN THE CITY OF AUSTIN].
- A DEVELOPMENT PERMIT MUST BE ISSUED PRIOR TO AN APPLICATION FOR BUILDING PERMIT FOR NON-CONSOLIDATED OR PLANNING COMMISSION APPROVED SITE PLANS.

UTILITY CONTACTS:

DEVELOPMENT SERVICES DEPARTMENT
505 BARTON SPRINGS ROAD, SUITE 400
AUSTIN, TEXAS 78704
(512) 974-6370

WATER AND WASTEWATER SERVICE:
CITY OF AUSTIN - WATER UTILITY DEPARTMENT
CONTACT:
625 EAST 10TH STREET, SUITE 700
AUSTIN, TEXAS 78701
(512)

ELECTRIC SERVICE:
AUSTIN ENERGY
CONTACT:
721 BARTON SPRINGS ROAD
AUSTIN, TEXAS 78704
(512)

TELEPHONE SERVICE:
AT&T
CONTACT: _____.
MANAGER - ENGINEERING DESIGN
809 COLORADO ST., 8TH FLOOR,
ROOM 810
AUSTIN, TEXAS 78701
(512)

TV CABLE SERVICE:
SPECTRUM - AUSTIN DIVISION
CONTACT:
12012 NORTH MOPAC EXPRESSWAY
AUSTIN, TEXAS 78758

FIRE DEPARTMENT:
TRAVIS COUNTY FIRE MARSHALL
5555 AIRPORT BLVD. STE. 400
AUSTIN, TX 78751

CITY OF AUSTIN GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT CITY OF AUSTIN STANDARD SPECIFICATIONS

2. DESIGN PROCEDURES ARE IN COMPLETE COMPLIANCE WITH THE CITY OF AUSTIN DRAINAGE CRITERIA MANUAL.

3. BENCHMARKS:

BENCHMARK #1 TBM 101

IRON ROD WITH "STANTEC SET ON NORTH EDGE OF DIRT HAUL ROAD +/– 525' WEST OF SCENIC BROOK DRIVE +/– 150' NORTH OF HWY 290 RIGHT OF WAY.
ELEVATION: 1061.77' NAVD 88 (GEOID 12A)

4. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY OF AUSTIN, CONSULTING ENGINEER, CONTRACTOR, COUNTY ENGINEER (IF APPROPRIATE), CITY OF AUSTIN AND OTHER AFFECTED PARTIES. NOTIFY DPWT, CONSTRUCTION INSPECTION DIVISION, 974-0170 X7161, AND WATER AND WASTE WATER DEPARTMENT, 477-5761, AT LEAST 48 HOURS PRIOR TO THE TIME OF THE CONFERENCE AND 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.

5. THE CONTRACTOR SHALL GIVE THE CITY OF AUSTIN A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION CALL CONSTRUCTION INSPECTION DIVISION, 974-0170 X/7161.

6. BARRICADES BUILT TO CITY OF AUSTIN STANDARD SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY. (STREETS, ETC. MAYBE LISTED IN ADDITION TO OR INSTEAD NOTE.)

7. IF BLASTING IS PLANNED BY THE CONTRACTOR. A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.

8. ANY EXISTING PAVEMENT, CURBS AND/OR SIDEWALKS DAMAGED OR REMOVE WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.

9. THE LOCATION OF ANY WATER AND/OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFY BY THE WATER AND WASTEWATER DEPARTMENT.

10. CONTRACTOR SHALL CALL THE ONE CALL CENTER (1-800-DIG-TESS) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR CITY R.O.W.

11. ALL STORM SEWER PIPES TO BE CLASS III RCP UNLESS NOTED OTHERWISE.

12. CAST BRONZE SURVEY MARKERS SHALL BE PLACED IN CONCRETE IN PERMANENT, ACCESSIBLE LOCATIONS AT THE TIME OF CONSTRUCTION. THE LOCATIONS OF THE MARKERS SHALL BE INDICATED ON THE CONSTRUCTION PLANS. A MINIMUM OF ONE MARKER SHALL BE PLACE FOR EACH 20 ACRES OF THE PROJECT. REFERENCE WILL BE PLACE ON THE MARKER BY DPWT AT THE TIME OF PRE-CONSTRUCTION CONFERENCE.

13. ALL COLLECTOR AND ARTERIAL STREETS SHALL HAVE AUTOMATIC SCREEN CONTROL ON ASPHALTIC CONCRETE PAVEMENT CONSTRUCTION. PLACED AS PER ITEM 340 OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS.

14. AT INTERSECTIONS WHICH HAVE VALLEY DRAINAGE THE CROWNS OF THE INTERSECTING STREET SHALL NOT BE CONSTRUCTED WITHIN 40 FEET OF THE VALLEY GUTTER.

15. AT THE INTERSECTION OF TWO 44' STREETS OR LARGER, THE CROWNS OF THE INTERSECTING STREET WILL CULMINATE IN A DISTANCE OF 40 FEET FROM INTERSECTING CURB LINES UNLESS OTHERWISE NOTED.

16. PRIOR TO FINAL ACCEPTANCE OF A STREET OUTSIDE THE CITY LIMITS, STREET NAME SIGNS CONFORMING TO COUNTY STANDARDS SHALL BE INSTALLED BY DEVELOPER.

17. A CURB LAY DOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.

18. WHEN USING LIME STABILIZATION OF SUBGRADE, IT SHALL BE PLACED IN SLURRY FORM.

19. INSIDE THE AUSTIN CITY LIMITS, SIDEWALKS SHALL BE COMPLETED PRIOR TO ACCEPTANCE OF ANY TYPE I OR TYPE II DRIVEWAY APPROACHES AND/OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY. WHEN OUTSIDE THE AUSTIN CITY LIMITS, LETTER OF CREDIT MAY BE POSTED OR OTHER SUITABLE FINANCIAL ARRANGEMENTS MAY BE MADE TO INSURE CONSTRUCTION OF THE SIDEWALKS. IN EITHER CASE, SIDEWALKS ADJACENT TO "COMMON AREAS", PARKWAYS, OR OTHER LOCATIONS ON WHICH NO BUILDING CONSTRUCTION WILL TAKE PLACE, MUST BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.

20. A LICENSE AGREEMENT FOR LANDSCAPING MAINTENANCE AND IRRIGATION IN STREET R.O.W. SHALL BE EXECUTED BY THE DEVELOPER IN PARTY WITH THE CITY OF AUSTIN TO ACCEPTANCE OF THE SUBDIVISION.

21. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD SUBSEQUENT TO INSTALLATION OF THE FINAL PHASE OF THE EROSION AND SEDIMENTATION CONTROLS TO DEMONSTRATE COMPLIANCE WITH THE EROSION AND SEDIMENTATION CONTROL MANUAL AND THE APPROVED PLANS. THE CONFERENCE SHALL BE HELD PRIOR TO ANY START OF SITE CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ARRANGE A MEETING DATE WITH GEORGE BOSTIC, HEAD OF INSPECTION OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AT 499-2278 AT LEAST THREE DAYS PRIOR TO THE MEETING TIME. THE DESIGN ENGINEER AND/OR THE PERMIT APPLICANT SHALL ALSO BE PRESENT AT THIS MEETING.

22. ALL POND BUTTOMS, SIDE SLOPES, AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.

23. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO INSTALLATION OF AN ELECTRIC OR WATER METER, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.

24. ALL SIDE SLOPES AND EARTHEN EMBANKMENTS FOR AREAS OF FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY.

25. CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION (DPWT) AT 974-7161 AT LEAST 24 HOURS PRIOR TO THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET R.O.W. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY R.O.W. MUST BE APPROVED PRIOR TO THE START OF CONSTRUCTION.

26. WHENEVER SOIL INVESTIGATION OR EXCAVATION SHOWS MORE THAN 2 FEET OF EXPANSIVE SUBGRADE, WITH P.I. GREATER THAN 25, ONE OF THE FOLLOWING MEASURES MUST BE ADOPTED:
1) REPLACE 1.5 FEET OF SUBGRADE WITH A MATERIAL WITH A P.I. LESS THAN 15
2) LIME STABILIZE 8 INCHES OF SUBGRADE.
3) INCREASE THE BASE THICKNESS BY 50%.

								APR
								DATE
								DESCRIPTION
								REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GENERAL NOTES (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

TRAVIS COUNTY 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. ALONG WITH THE CITY OF AUSTIN, 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 AN EMAIL TO THE TRAVIS COUNTY DEVELOPMENT SERVICES ENGINEERING INSPECTOR, JOHNNY ANGLIN, AT JOHNNY.ANGLIN@TRAVISCOUNTYTX.GOV.

TRAVIS COUNTY GENERAL CONSTRUCTION NOTES

482.1004 [EXHIBIT 482.301G SEQUENCE OF CONSTRUCTION AND PRIORITY INSPECTIONS - SITE DEVELOPMENT][63]

EXHIBIT 482.301E. SEQUENCE OF CONSTRUCTION AND PRIORITY INSPECTIONS- SITE DEVELOPMENT

THE OWNER AND PRIMARY OPERATOR MUST FOLLOW THIS BASIC SEQUENCE OF CONSTRUCTION FOR EACH SITE DEVELOPMENT, INCLUSIVE OF ALL NON-RESIDENTIAL SITE DEVELOPMENT PROJECTS. WITHIN THE FOLLOWING SEQUENCE OF CONSTRUCTION ARE LISTED PRIORITY INSPECTIONS THAT THE OWNER AND PRIMARY OPERATOR MUST REQUEST FROM A REPRESENTATIVE OF TRAVIS COUNTY'S STORM WATER MANAGEMENT PROGRAM INSPECTION TEAM. EACH PRIORITY INSPECTION MUST BE REQUESTED ON- LINE THROUGH THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY. THE PRIORITY INSPECTIONS IN THIS EXHIBIT ARE CONSISTENT WITH THE PRIORITY INSPECTIONS FOUND IN THE CUSTOMER PORTAL FOR THE PROJECT. FOR ASSURANCE PURPOSES, A SECOND REQUEST TO TRAVIS COUNTY IS STRONGLY ENCOURAGED BY ADDITIONALLY SENDING AN E-MAIL TO ENV- INSPECT@TRAVISCOUNTYTX.GOV.

THE SEQUENCE FOR ITEMS 1-4 AND ITEMS 9-12 MUST NOT BE ALTERED, BUT THE SEQUENCE FOR ITEMS 5-8 MAY BE MODIFIED WITH THE WRITTEN APPROVAL OF THE COUNTY.

1. ESC INSTALLATION. INSTALL ALL TEMPORARY EROSION AND SEDIMENT CONTROLS (ESC) AND TREE PROTECTION MEASURES IN ACCORDANCE WITH THE APPROVED ESC PLAN SHEETS AND THE SWP3.
   a. HAVE A QUALIFIED INSPECTOR (AS SPECIFIED IN SECTION 482.934(C)(3) OF THE TRAVIS COUNTY CODE) INSPECT THE TEMPORARY EROSION AND SEDIMENT CONTROLS AND PREPARE A CERTIFIED SWP3 INSPECTION REPORT REGARDING WHETHER THE TEMPORARY EROSION AND SEDIMENT CONTROLS WERE INSTALLED IN CONFORMANCE WITH THE APPROVED PLANS;
   b. UPLOAD THE QUALIFIED INSPECTOR'S CERTIFIED SWP3 INSPECTION REPORT TO THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY; AND
   c. REQUEST A MANDATORY PRE-CONSTRUCTION MEETING WITH TRAVIS COUNTY THROUGH THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY GIVING AT LEAST 3 BUSINESS DAYS NOTIFICATION.
2. PRE-CONSTRUCTION MEETING AND ESC INSPECTION. HOLD A MANDATORY PRE-CONSTRUCTION MEETING THAT ADDRESSES THE ITEMS IN EXHIBIT 482.950 AND THE ESC PRE-CONSTRUCTION INSPECTION BY THE COUNTY AND OBTAIN COUNTY'S APPROVAL TO START CONSTRUCTION. (PRIORITY INSPECTION)
3. INSPECT FOR COMPLIANCE WITH SWP3 AND ESC PLAN. MAINTAIN AND INSPECT THE SWP3 CONTROLS AND PREPARE AND UPLOAD A WEEKLY CERTIFIED SWP3 INSPECTION REPORT THAT INCLUDES THE CONTENTS LISTED IN EXHIBIT 482.951 TO THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY.
4. CONSTRUCT SEDIMENT BASIN(S). CONSTRUCT ANY STORM WATER POND(S) FIRST, WHENEVER APPLICABLE, TO BE FUNCTIONAL AS CONSTRUCTION SEDIMENT BASIN(S) BEFORE GRADING AND EXCAVATING THE ENTIRE SITE, AS FOLLOWS:
   a. CLEAR, GRUB, AND EXCAVATE ONLY THE SITE AREAS AND CUT AND FILL QUANTITIES NECESSARY TO CONSTRUCT THE POND(S) IN ACCORDANCE WITH THESE APPROVED PLANS AND THE MINIMUM STANDARDS DESCRIBED IN THE SWP3 AND ESC PLAN SHEET NOTES FOR THE TEMPORARY SEDIMENT BASIN EMBANKMENTS, WALLS, INFLOWS, OUTFALLS, DRAINAGE CONVEYANCE MEASURES, SEDIMENT CONTROLS, AND STABILIZATION.
   b. REQUEST COUNTY INSPECTION AND OBTAIN COUNTY'S WRITTEN APPROVAL OF THE TEMPORARY SEDIMENT BASIN(S) BEFORE PROCEEDING FURTHER IN THE SEQUENCE OF CONSTRUCTION. (PRIORITY INSPECTION)
5. CONSTRUCT SITE IMPROVEMENTS. BEGIN THE PRIMARY SITE CLEARING, EXCAVATION, AND CONSTRUCTION ACTIVITIES AND CONTINUE THE SWP3 AND ESC PLAN IMPLEMENTATION AND MAINTENANCE PER THE APPROVED PLANS.
6. CONSTRUCT DRIVEWAY APPROACH AND RIGHT-OF-WAY IMPROVEMENTS. INSTALL DRIVEWAY APPROACH AND DRAINAGE AND ROAD IMPROVEMENTS IN THE COUNTY RIGHT- OF-WAY PER APPROVED PLANS, WHEN APPLICABLE. REQUEST A COUNTY PRE-POUR INSPECTION OF THE DRIVEWAY THROUGH THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY GIVING AT LEAST 3 BUSINESS DAYS NOTIFICATION. (PRIORITY INSPECTION).
7. PERFORM TEMPORARY STABILIZATION IN ALL DISTURBED AREAS THAT HAVE CEASED CONSTRUCTION ACTIVITIES FOR 14 DAYS OR LONGER.
8. PERFORM PERMANENT SITE STABILIZATION/RE-VEGETATION IMMEDIATELY IN ALL SITE AREAS AT FINAL PLAN GRADE AND IN ALL SITE AREAS SPECIFIED FOR PHASED RE- VEGETATION.
9. COMPLETE PERMANENT WATER QUALITY CONTROLS. BEGIN COMPLETION OF PERMANENT WATER QUALITY CONTROL(S) AND INSTALL THE UNDERDRAIN PER APPROVED PLANS, WHEN APPLICABLE.
   a. REMOVE CONSTRUCTION SEDIMENT, RE-ESTABLISH THE BASIN SUBGRADE, AND INSTALL UNDERDRAIN PIPING.
   b. REQUEST COUNTY INSPECTION AND OBTAIN COUNTY'S WRITTEN APPROVAL OF THE UNDERDRAIN PIPING INSTALLATION AND ASSOCIATED CONSTRUCTION MATERIALS (AGGREGATE, FILTER MEDIA, ETC.) BEFORE COVERING THE UNDERDRAIN AND PROCEEDING WITH CONSTRUCTION OF THE CONTROL. (PRIORITY INSPECTION).
10. COMPLETE CONSTRUCTION SITE IMPROVEMENTS AND FINAL STABILIZATION PER THE APPROVED PLANS.
11. PROVIDE ENGINEER'S CONCURRENCE LETTER THROUGH THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY WHEN CONSTRUCTION IS SUBSTANTIALLY COMPLETE AND REQUEST A FINAL INSPECTION BY TRAVIS COUNTY. (PRIORITY INSPECTION)
12. OBTAIN A CERTIFICATE OF COMPLIANCE WHEN ALL FINAL INSPECTION PUNCH LIST ITEMS, INCLUDING FINAL SITE STABILIZATION AND REMOVAL OF TEMPORARY SEDIMENT CONTROLS. IF NECESSARY, PROVIDE A DEVELOPERS CONTRACT TO THE COUNTY TO REQUEST CONDITIONAL ACCEPTANCE FOR USE OR OCCUPANCY OF THE SITE WITH ALL ITEMS COMPLETED EXCEPT RE-VEGETATION GROWTH COVERAGE. REQUEST A RE-INSPECTION WHEN RE-VEGETATION COVERAGE IS COMPLETE. (PRIORITY INSPECTION)

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.

482.1009 [EXHIBIT 482.951SWP3 INSPECTION AREAS AND REPORT CONTENTS][65]

EXHIBIT 482.951 SWP3 INSPECTION AREAS AND REPORT CONTENTS

THE OWNER OR PRIMARY OPERATOR OF THE CONSTRUCTION SITE SHALL DESIGNATE A QUALIFIED INSPECTOR POSSESSING THE REQUIRED CERTIFICATION (AS SPECIFIED IN SECTION 482.934(C)(3)) TO PERFORM A WEEKLY SWP3 INSPECTION AND PREPARE A SIGNED SWP3 INSPECTION REPORT OF THE INSPECTION FINDINGS.

THE CONSTRUCTION SITE AREAS AND THE CONTROL MEASURES LISTED HEREIN ARE TO BE USED AS A MINIMUM AS THE UNIFORM CRITERIA BY THE OWNER'S QUALIFIED INSPECTOR, AS WELL AS THE COUNTY INSPECTOR, TO EVALUATE AND DETERMINE A PROJECT'S COMPLIANCE STATUS WITH THE APPROVED SWP3 AND ESC PLAN.

IN ADDITION, ON AN ONGOING BASIS AND FOLLOWING STORM EVENTS, THE PRIMARY OPERATOR'S RESPONSIBLE ON-SITE PERSONNEL SHALL ALSO INSPECT AND ADDRESS THESE ITEMS DURING CONSTRUCTION AS REQUIRED BY THE SWP3, ESC PLAN, AND TRAVIS COUNTY CODE, SECTION 482.951.

AREAS OF INSPECTION. AT THE VERY LEAST, THE FOLLOWING AREAS MUST BE INSPECTED:

1. DISTURBED AREAS AND THE APPROVED LIMITS OF CONSTRUCTION.
2. PERIMETER AND INTERIOR SEDIMENT CONTROLS.
3. AREAS UNDERGOING TEMPORARY STABILIZATION OR PERMANENT VEGETATION ESTABLISHMENT.
4. TEMPORARY AND PERMANENT FILL AND SPOIL STORAGE OR DISPOSAL AREAS.
5. STORAGE AREAS FOR MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO RAINFALL.
6. OUTFALL LOCATIONS AND THE AREAS IMMEDIATELY DOWNSTREAM.
7. STRUCTURAL CONTROLS, INCLUDING SEDIMENT PONDS, SEDIMENT TRAPS, AND DRAINAGE DIVERSIONS.
8. HAUL ROADS AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND ADJACENT ROADWAYS FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.
9. WATERWAY CROSSINGS AND AREAS ADJACENT TO WATERWAYS AND CRITICAL ENVIRONMENTAL FEATURES.
10. CONCRETE WASH OUT AREAS AND ALL AREAS REQUIRING CONTROL MEASURES FOR NON- STORM WATER DISCHARGES, INCLUDING DUST, SOLID WASTE, DE-WATERING, MATERIAL SPILLS, VEHICLE MAINTENANCE AND WASHING, AND WASH WATER DISCHARGES.
11. LOCATIONS OF ALL CONTROL MEASURES THAT REQUIRE MAINTENANCE, INCLUDING ANY CONTROL MEASURE IDENTIFIED IN THE PREVIOUS SWP3 INSPECTION REPORT WHICH REQUIRED MAINTENANCE OR REVISION BY THE OWNER OR PRIMARY OPERATOR.
12. LOCATIONS OF ANY DISCHARGE OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE AND ANY DISTURBANCE BEYOND THE APPROVED LIMITS OF CONSTRUCTION.
13. LOCATIONS OF CONTROL MEASURES THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION.
14. LOCATIONS WHERE AN ADDITIONAL ESC OR CONTROL MEASURE IS NEEDED.

THE SWP3 INSPECTION REPORT MUST INCLUDE:

A. FINDINGS AS TO WHETHER THE FOLLOWING STRUCTURAL AND NON-STRUCTURAL CONTROLS REQUIRED FOR THE SITE AREAS LISTED ABOVE ARE FUNCTIONING :IN COMPLIANCE WITH THE APPROVED SWP3 AND ESC PLAN:
   1. EROSION SOURCE CONTROLS, INCLUDING THE APPROVED SEQUENCE OF CONSTRUCTION AND GRADING PLAN LIMITS, DRAINAGE DIVERSION MEASURES, TEMPORARY AND PERMANENT FILL DISPOSAL AND STOCKPILE MANAGEMENT MEASURES.
   2. SEDIMENT CONTROLS, INCLUDING PERIMETER AND INTERIOR CONTROLS, SEDIMENT TRAPS AND BASINS, AND THE SEQUENCE OF CONSTRUCTION REQUIREMENTS FOR THE SEDIMENT CONTROLS.
   3. PERMANENT EROSION AND SOIL STABILIZATION CONTROLS, BASED ON THE SEQUENCE OF CONSTRUCTION AND CRITICAL SITE IMPROVEMENTS, AND THE CESSATION OF CONSTRUCTION ACTIVITIES, INCLUDING TEMPORARY STABILIZATION MEASURES FOR AREAS INACTIVE FOR LONGER THAN 14 DAYS, AND PERMANENT STABILIZATION MEASURES FOR AREAS AT FINAL GRADE.
   4. OTHER APPLICABLE CONTROLS AND POLLUTION PREVENTION MEASURES.

B. RAINFALL DOCUMENTATION:
   1. FOR PROJECTS THAT COMPRISE TEN ACRES OR MORE, THE DOCUMENTATION MUST INCLUDE RAINFALL DATES AND AMOUNTS IN ACCORDANCE WITH SECTION 482.934(E); AND
   2. FOR PROJECTS THAT COMPRISE LESS THAN TEN ACRES, THE DOCUMENTATION MUST INCLUDE ACCURATE RAINFALL DATA FROM A LOCATION CLOSEST TO THE SITE.

C. CORRECTIVE ACTIONS REQUIRED FOR ANY NON-COMPLIANT ITEMS AND THE SCHEDULE FOR BRINGING THESE ITEMS INTO COMPLIANCE.

THE SWP3 INSPECTION REPORT CONTENTS MUST CONTAIN THE INSPECTION FINDINGS FOR THE REQUIRED AREAS AND CONTROL MEASURES LISTED HEREIN AND CERTIFY WHETHER THE SITE IS IN COMPLIANCE WITH THE APPROVED SWP3 AND ESC PLAN.

EITHER AT THE TIME OF EACH SWP3 INSPECTION, OR NO LATER THAN THE DATE OF THE INSPECTION, THE OWNER'S QUALIFIED INSPECTOR SHALL PREPARE AND SIGN A SWP3 INSPECTION REPORT.

THE OWNER OR PRIMARY OPERATOR SHALL UPLOAD EACH REQUIRED SWP3 OR ESC PLAN INSPECTION REPORT TO THE MYPERMITNOW.ORG CUSTOMER PORTAL FOR TRAVIS COUNTY. AN ALTERNATE METHOD OF REPORT SUBMITTAL MAY BE USED IF APPROVED BY THE COUNTY INSPECTOR.

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

FIRE DEPARTMENT NOTES:

1. THE AUSTIN FIRE DEPARTMENT REQUIRES FINAL ASPHALT OR CONCRETE PAVEMENT ON REQUIRED ACCESS ROADS PRIOR TO THE START OF COMBUSTIBLE CONSTRUCTION. ANY OTHER METHOD OF PROVIDING "ALL-WEATHER DRIVING CAPABILITIES" SHALL BE REQUIRED TO BE DOCUMENTED AND APPROVED AS AN ALTERNATIVE METHOD OF CONSTRUCTION IN ACCORDANCE WITH APPLICABLE RULES FOR TEMPORARY ROADS OUTLINED IN THE CITY OF AUSTIN FIRE PROTECTION CRITERIA MANUAL.
2. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF THE FOUR (4) INCH OPENING (STEAMER) LOCATED AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF FIRE HYDRANTS SHALL FACE THE APPROVED FIRE ACCESS DRIVEWAY OR PUBLIC STREET AND SET BACK FROM THE CURB LINE(S) AN APPROVED DISTANCE, TYPICALLY THREE (3) TO SIX (6) FEET. THE AREA WITHIN THREE (3) FEET IN ALL DIRECTIONS FROM ANY FIRE HYDRANT SHALL BE FREE OF OBSTRUCTIONS, AND THE AREA BETWEEN THE STEAMER OPENING AND THE STREET OR DRIVEWAY GIVING EMERGENCY VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.
3. TIMING OF INSTALLATIONS: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS. EMERGENCY ACCESS ROADS OR DRIVES SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION. WHEN THE FIRE DEPARTMENT APPROVES AN ALTERNATE METHOD OF PROTECTION, THIS REQUIREMENT MAY BE MODIFIED AS DOCUMENTED IN THE APPROVAL OF THE ALTERNATE METHOD.
4. ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES, INCLUDING PERVIOUS/DECORATIVE PAVING, SHALL BE ENGINEERED AND INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. A LOAD CAPACITY SUFFICIENT TO MEET THE REQUIREMENTS FOR HS-20 LOADING (16KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.
5. FIRE LANES DESIGNATED ON SITE PLANS SHALL BE REGISTERED WITH THE CITY OF AUSTIN FIRE DEPARTMENT AND INSPECTED FOR FINAL APPROVAL.
6. THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLES ACCESS ROADS OR DRIVES IS 14 FEET FOR THE FULL WIDTH OF THE ROADWAY OR DRIVEWAY.

REV	DESCRIPTION	DATE	APR

8350 W US 290 HIGHWAY

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GENERAL NOTES (SHEET 3 OF 3)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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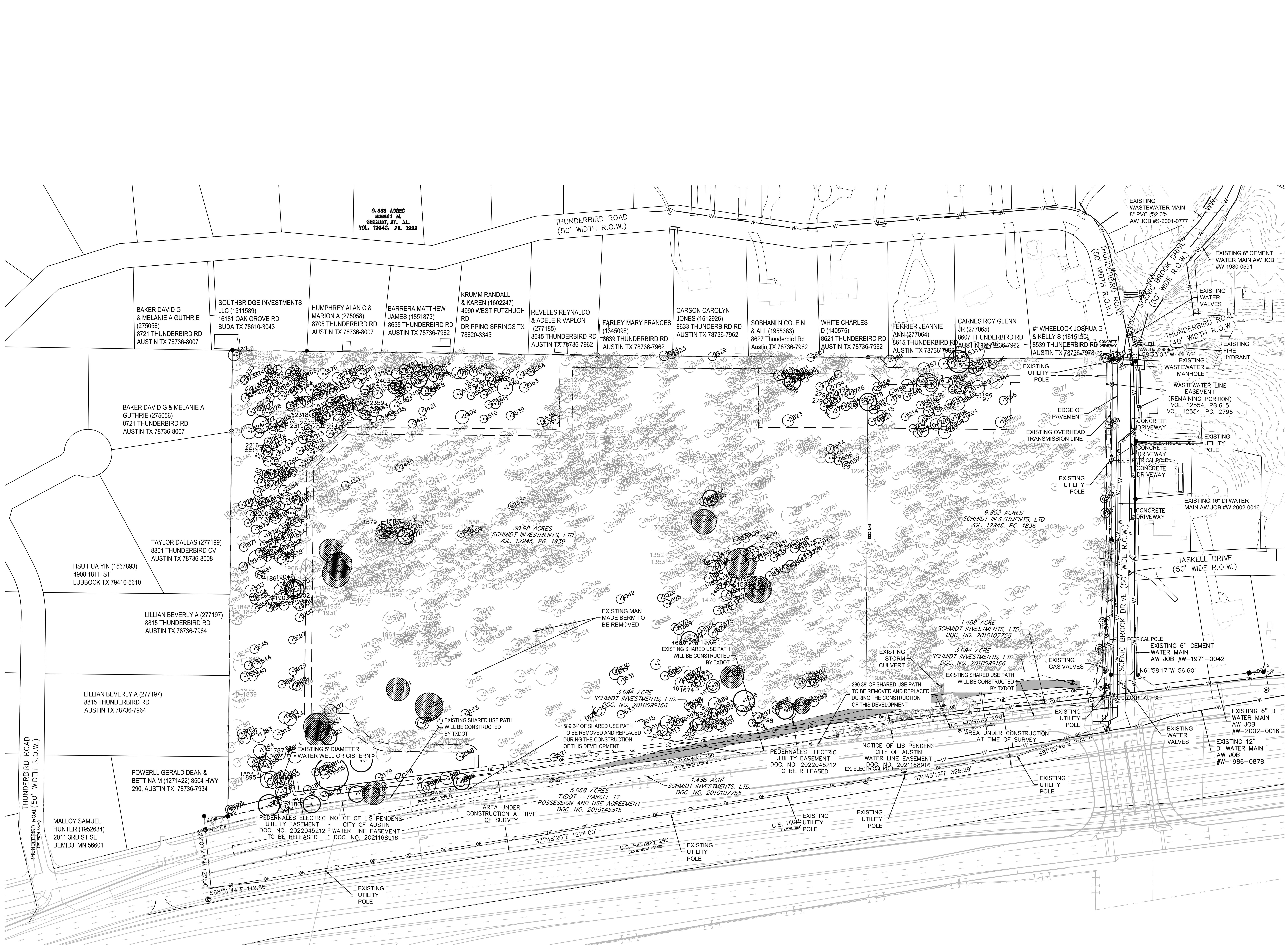


LEGEND

Symbol	Description
	PROPERTY BOUNDARY
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING UTILITY POLE
	TREE TO REMAIN
	PROTECTED TREE TO REMAIN
	HERITAGE TREE TO REMAIN
	TREE TO BE REMOVED
	ABANDONED ROAD TO BE DEMOLISHED
	1/2" IRON ROD FOUND
	1/2" IRON ROD WITH STANTEC CAP SET
	1/2" IRON PIPE FOUND (UNLESS OTHERWISE NOTED)
TXDOT II	TXDOT TYPE II MONUMENT FOUND
3/8"	3/8" IRON ROD FOUND
	CONCRETE MONUMENT FOUND
CAP	1/2" IRON ROD WITH "BURY" CAP SET
	BENCHMARK
	LIGHT POLE
	UTILITY POLE
	DOWN GUY
	FIRE HYDRANT
	WATER VALVE
	WATER METER
TR	TELEPHONE RISER
E	ELECTRIC BOX
	GAS METER
OE	OVERHEAD ELECTRIC LINE
WWMH	WASTEWATER MANHOLE
SSMH	STORM SEWER MANHOLE
TCB	TRAFFIC CONTROL BOX
TSP	TRAFFIC SIGNAL POST
FOM	UNDERGROUND FIBER OPTIC MARKER
GMKR	UNDERGROUND GAS LINE MARKER
UGTM	UNDERGROUND TELEPHONE MARKER
	SIGN

NOTE:
- A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
- ALL UTILITY SYMBOLS ARE NOT TO SCALE AND ARE ONLY SHOWN FOR ILLUSTRATION PURPOSES.
- TREE PROTECTION FENCING IS REQUIRED FOR ALL TREES WITHIN THE LIMITS OF DESTRUCTION ON SITE BEFORE DEMOLITION OCCURS. WHERE FENCING CANNOT BE PLACED TO PROTECT THE EXTENT OF THE CRZ WITH NATURAL GROUND COVER, PROVIDE AN 8" LAYER OF ORGANIC HARDWOOD MULCH OUTSIDE OF THE FENCING.
- STRAPPING 2X4 OR THICKER LUMBER (TO MATCH HEIGHT OF BUILDING) SECURELY AROUND TREE TRUNK, BUTTRESS ROOTS, AND ROOT FLARE, IS REQUIRED IF FENCING CANNOT GO AROUND THE ENTIRE HALF CRZ..
- IF PRUNING IS NECESSARY DURING DEMOLITION, IT SHOULD TAKE PLACE PRIOR TO THE START OF THE DEMOLITION PROCESS. IT MUST BE PERFORMED BY A QUALIFIED ARBORIST AND NO MORE THAN 25% IS PERMITTED.
- WHERE DEMOLISHING EXISTING STRUCTURES, REMOVING UTILITIES, AND/OR REMOVING FLATWORK WITHIN THE CRZS OF TREES 8" OR GREATER IN DIAMETER, USE ONLY HAND-TOOLS, AS SPECIFIED IN SPECIAL CONSTRUCTION TECHNIQUES ECM 3.5.4(D).
- TREE CARE PLAN MAY BE REQUIRED AT THE INSPECTOR'S DISCRETION IF IMPACTS ARE MADE TO REGULATED TREES (8" OR GREATER IN DIAMETER) ON SITE BEYOND WHAT IS REQUIRED PER ECM SECTION 3.5.2.

LOT JURISDICTION NOTE:

ALL LOTS SHOWN ARE LIMITED PURPOSE LOTS, WITH THE EXCEPTION OF LOTS DELINEATED AS #*, WHICH ARE 2 MILE CITY OF AUSTIN ETJ LOTS.

BEARING BASIS NOTE:

THE BASIS OF BEARING OF THE SURVEY SHOWN HEREON IS TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD83(2011), BY UTILIZING REAL-TIME KINEMATIC (RTK) CORRECTIONS PROVIDED BY RTK COOPERATIVE NETWORK, MANAGED BY ALLTERRA CENTRAL. GEOID G12AU

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

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

REV	DATE	APR	DESCRIPTION
			8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

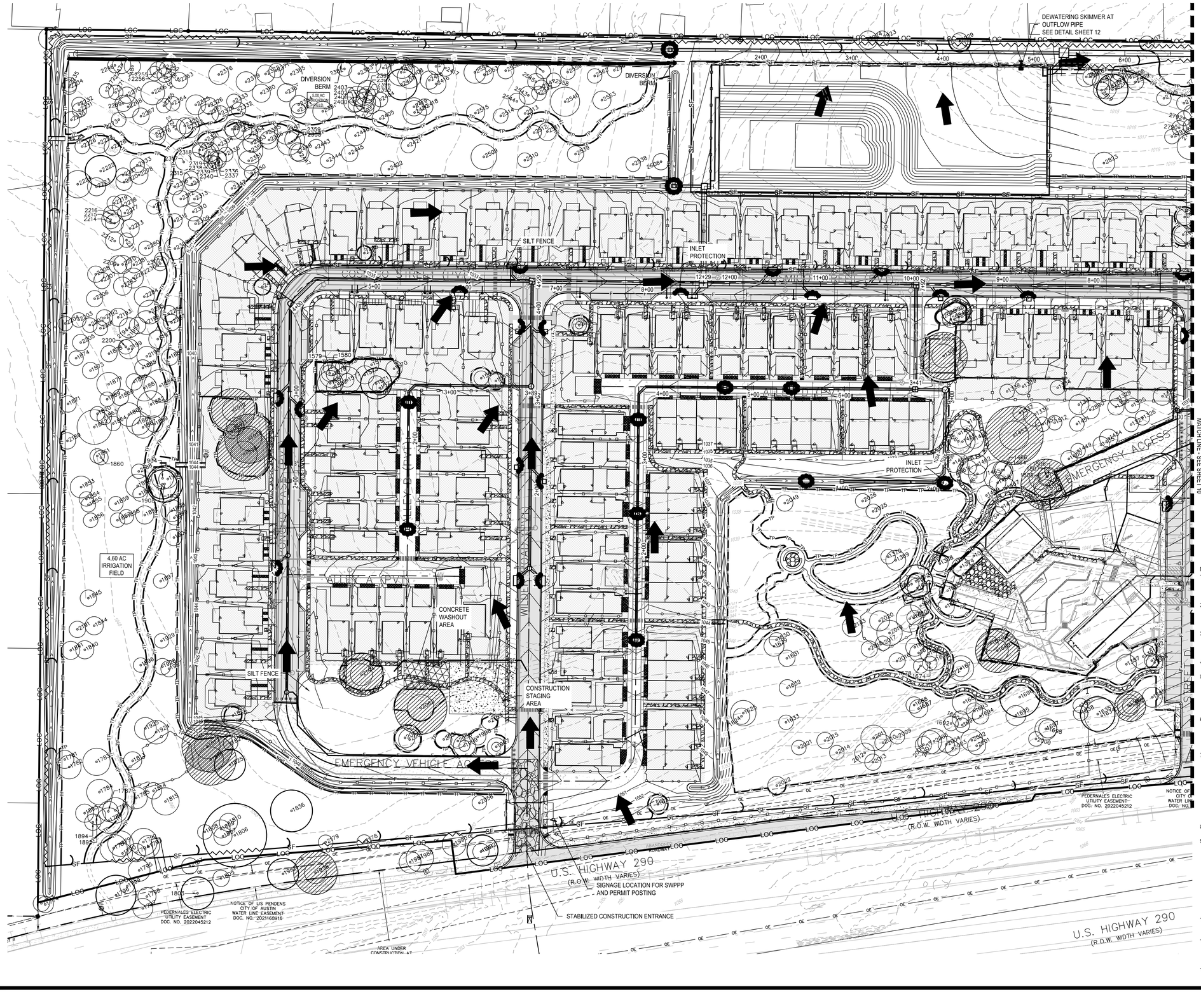
BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EXISTING CONDITIONS SURVEY & DEMOLITION PLAN

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C



0 25' 50' 100'

SCALE: 1" = 50'

LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY
- EXISTING TOPO MINOR
- EXISTING TOPO MAJOR
- PROPOSED GRADING MINOR
- PROPOSED GRADING MAJOR
- LOC — LIMITS OF CONSTRUCTION
- SF — SILT FENCE
- TP — TREE PROTECTION FENCE
- DIVERSION BERM
- MULCH SOCK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE SIDEWALK
- TREE TO REMAIN
- PROTECTED TREE TO REMAIN
- HERITAGE TREE TO REMAIN
- CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C02.50)
- CONCRETE WASHOUT AREA (SEE DETAIL SHEET C02.50)
- CONSTRUCTION STAGING AREA
- FLOW ARROW
- ROCK BERM
- INLET PROTECTION

NOTES:

1. IF DISTURBED AREA IS NOT TO BE WORKED FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP, OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5.I]
2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS [LDC 25-8-182]
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
5. PER LDC 25-8-323(C), FOR AREAS ON THE SITE THAT ARE TO REMAIN PERVIOUS AFTER DEVELOPMENT, ANY SOILS THAT ARE COMPACTED DURING SITE GRADING AND CONSTRUCTION OPERATIONS MUST BE DECOMPACTED IN COMPLIANCE WITH THE ECM AND IN COMPLIANCE WITH SSM 661S.
6. FINISHED ELEVATION FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS MUST BE AT LEAST SIX (6) BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL [ECM 1.4.7].
7. PER LDC 25-8323(C), FOR AREAS ON THE SITE THAT ARE TO REMAIN PERVIOUS AFTER DEVELOPMENT, ANY SOILS THAT ARE COMPACTED DURING SITE GRADING AND CONSTRUCTION OPERATIONS MUST BE DECOMPACTED IN COMPLIANCE WITH THE ECM AND IN COMPLIANCE WITH SSM 661S. FINISHED ELEVATION FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS MUST BE AT LEAST (6) INCHES BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL [ECM 1.4.7].
8. WHEN PROTECTING TREE CRITICAL ROOT ZONES MULCH LOGS ARE TO BE USED INSTEAD OF SILT FENCE.
9. IF FENCING CANNOT BE INSTALLED AROUND THE FULL CRZ:
   - 9.1. PLACE THE FENCING AT THE HALF CRZ AND ADD 8" OF HARDWOOD MULCH FROM THE HALF CRZ TO THE FULL CRZ.
   - 9.2. 2X4X6 OR GREATER SIZE LUMBER SHALL BE STRAPPED VERTICALLY TO THE TREE AND 8" OF HARDWOOD MULCH SHALL BE APPLIED WITHIN THE FULL CRZ., PER STANDARD DETAIL 610S-4
   - 9.3. TREE PROTECTION FENCING OR USE OF LUMBER STRAPPED TO TREES APPLIES TO ROW TREES.
10. CLEARING AND GRUBBING SHALL NOT OCCUR IN PHASES LARGER THAN 25 ACRES WITHOUT STABILIZATION BEING COMPLETED.
11. THE 4' TRAIL WITHIN THE IRRIGATION FIELD WILL BE COMPOSED OF MULCH. THE 4' TRAIL IN ALL OTHER AREAS ON THE SITE WILL BE COMPOSED OF DECOMPOSED GRANITE UNLESS OTHERWISE NOTED.
12. CONCRETE SIDEWALK WILL BE USED IN SPECIFIC LOCATIONS THROUGHOUT THE SITE FOR ADA PURPOSES.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

NO.	DESCRIPTION	DATE
A		

DESIGNED BY: MW

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GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

EROSION CONTROL PLAN (SHEET 1 OF 2)

THIS DOCUMENT IS ISSUED FOR REVIEW

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024
E.

9 OF 121

SP-2022-0579C

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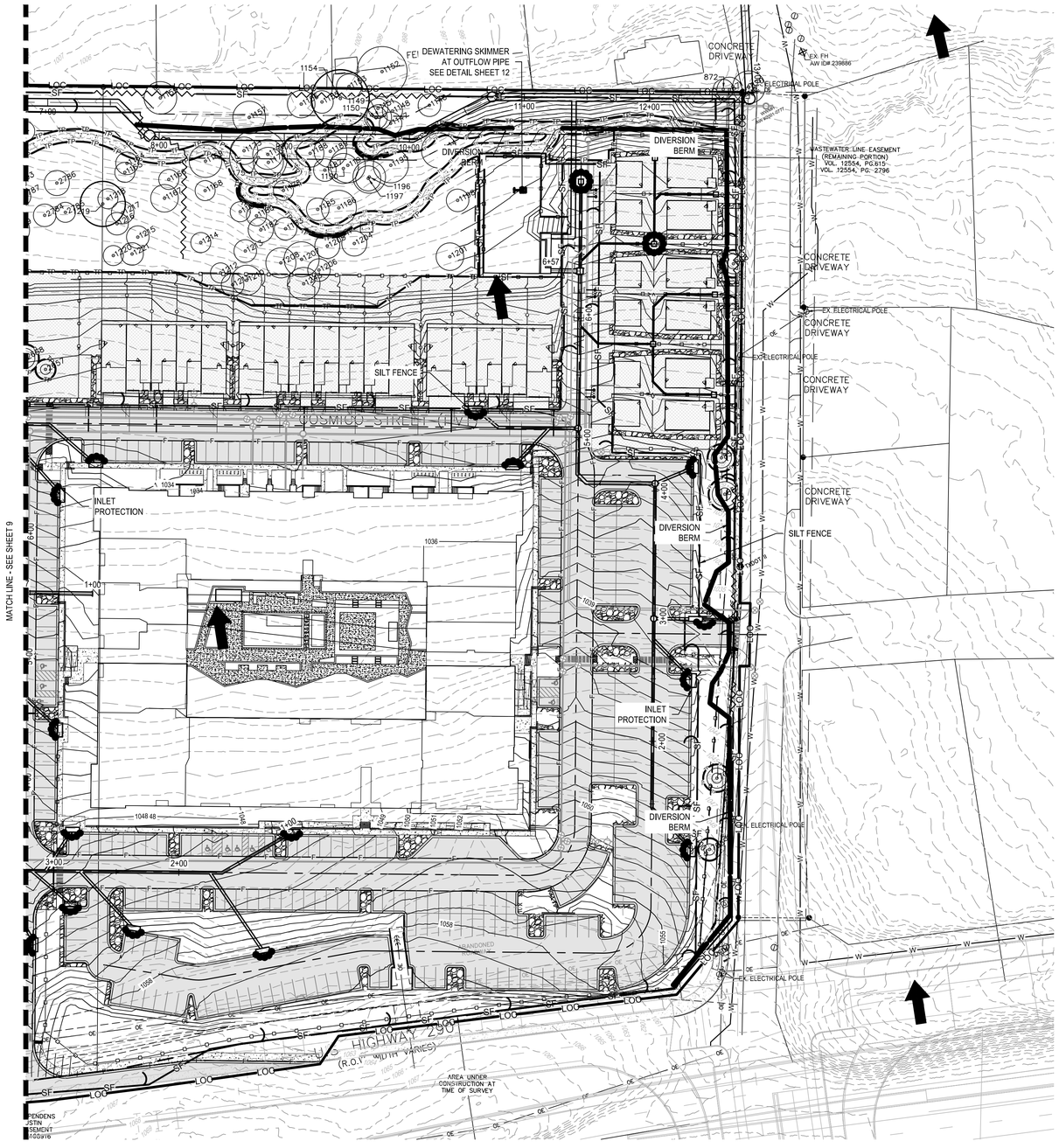
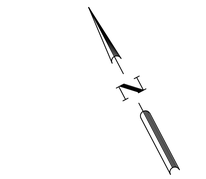


EROSION CONTROL			
ITEM	DESCRIPTION	QUATITY	UNIT
1	SILT FENCE	7,783	LF
2	STABILIZED CONSTRUCTION ENTRANCE	1	EA
3	REVEGITATION FOR EROSION CONTROL	171,330	SY
4	ON-SITE/OFF-SITE CLEAN UP	35.40	AC



LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY
- EXISTING TOPO MINOR
- EXISTING TOPO MAJOR
- PROPOSED GRADING MINOR
- PROPOSED GRADING MAJOR
- LIMITS OF CONSTRUCTION
- SILT FENCE
- TREE PROTECTION FENCE
- DIVERSION BERM
- MULCH SOCK
- CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C02.50)
- CONCRETE WASHOUT AREA (SEE DETAIL SHEET C02.50)
- CONSTRUCTION STAGING AREA
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- ROCK BERM
- INLET PROTECTION

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6. FINISHED ELEVATION FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS MUST BE AT LEAST SIX (6) BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL.[ECM 1.4.7].
9. IF FENCING CANNOT BE INSTALLED AROUND THE FULL CRZ:
   - 9.1. PLACE THE FENCING AT THE HALF CRZ AND ADD 8" OF HARDWOOD MULCH FROM THE HALF CRZ TO THE FULL CRZ.
   - 9.2. 2X4X6 OR GREATER SIZE LUMBER SHALL BE STRAPPED VERTICALLY TO THE TREE AND 8" OF HARDWOOD MULCH SHALL BE APPLIED WITHIN THE FULL CRZ. PER STANDARD DETAIL 610S-4
   - 9.3. TREE PROTECTION FENCING OR USE OF LUMBER STRAPPED TO TREES APPLIES TO ROW TREES.
10. CLEARING AND GRUBBING SHALL NOT OCCUR IN PHASES LARGER THAN 25 ACRES WITHOUT STABILIZATION BEING COMPLETED.
11. THE 4' TRAIL WITHIN THE IRRIGATION FIELD WILL BE COMPOSED OF MULCH. THE 4' TRAIL IN ALL OTHER AREAS ON THE SITE WILL BE COMPOSED OF DECOMPOSED GRANITE UNLESS OTHERWISE NOTED.
12. CONCRETE SIDEWALK WILL BE USED IN SPECIFIC LOCATIONS THROUGHOUT THE SITE FOR ADA PURPOSES.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE SHALL BE RESPONSIBLE FOR THE FULL REPAIR AND ANY DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

										APR
										DATE
										DESCRIPTION
										REV

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL. 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290

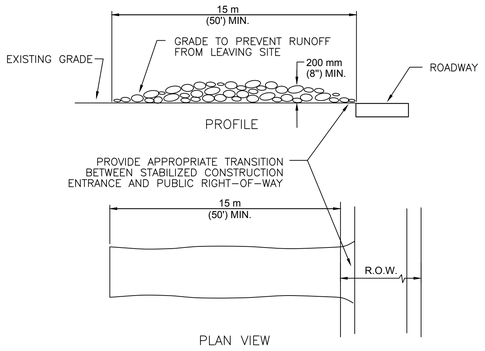
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

EROSION CONTROL PLAN (SHEET 2 OF 2)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-EROS.dwg Layout: EROSION CONTROL PLAN (SHEET 2 OF 2) Plotted: 1/24/2024 1:49:11 PM

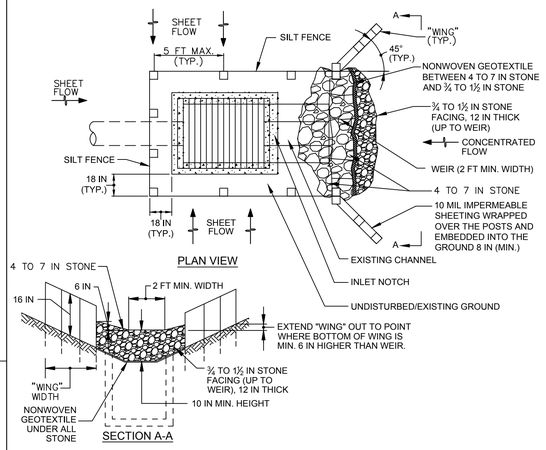


NOTES:

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.

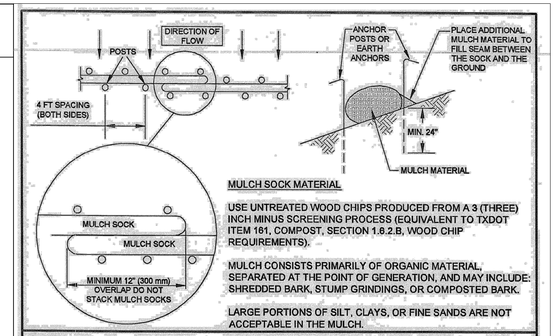
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1

INLET PROTECTION



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN CITY OF AUSTIN SPECIFICATION 620S.
2. INSTALL SILT FENCE ON ALL SIDES OF INLET RECEIVING SHEET FLOW. FENCE IS TO BE INSTALLED IN ACCORDANCE WITH SILT FENCE DETAIL 642S.
3. INSTALL STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.



MULCH SOCK MATERIAL

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

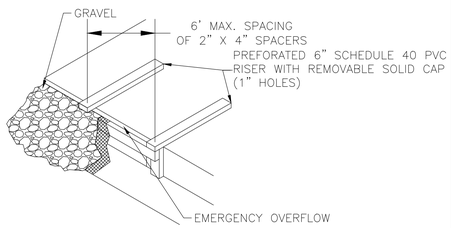
MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

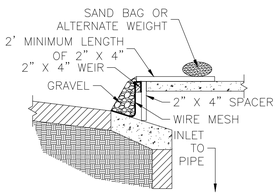
LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OFMULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	MULCH SOCK	
08/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 648S-1

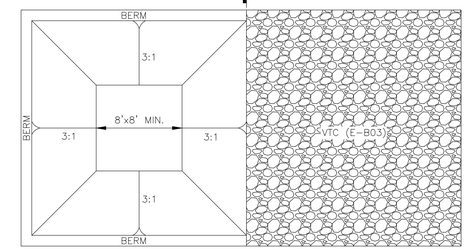




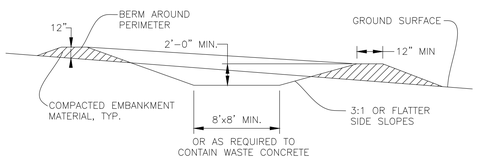
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

WOODEN WEIR CURB INLET PROTECTION DETAIL
N.T.S.



SECTION A
N.T.S



N.T.S.
SECTION B

CONCRETE WASHOUT AREA

CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SELECT A SUITABLE LOCATION FOR CONCRETE WASHOUT AREA(S). (TO BE PLACED A MINIMUM OF 100' FROM DRINAGEWAYS, BODIES OF WATER, AND INLETS.)
2. LOCATION FOR CONCRETE WASHOUT SHALL BE ADDED TO APPROVED SWP3 KEPT ON SITE.
3. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
4. VEHICLE TRACKING CONTROL (VTC E-B03) IS REQUIRED AT THE ACCESS POINT.
5. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
6. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

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

DATE	DESCRIPTION	REV
	8350 W US 290 HIGHWAY	APR

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

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1701 DIRECTORS BLVD, SUITE 1000
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TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 1 OF 3)

STATE OF TEXAS
8-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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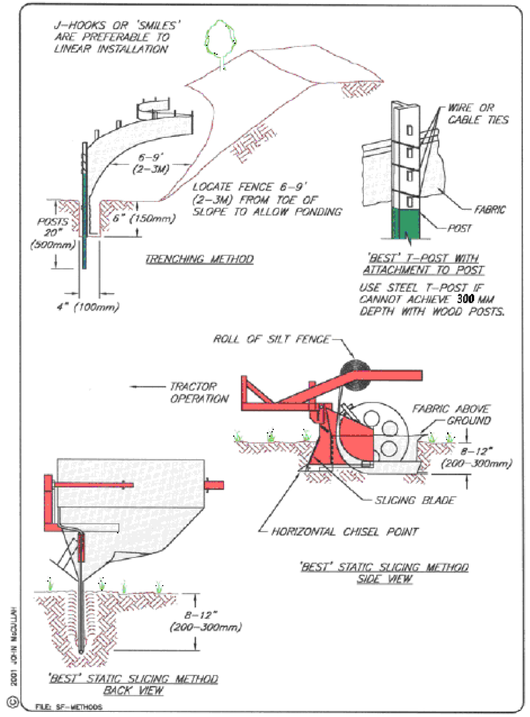


Figure 1.4-D Silt Fence Installation

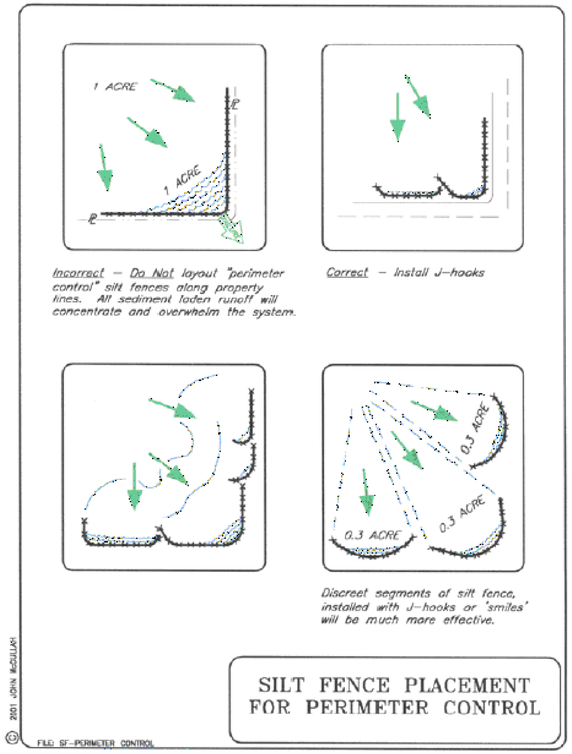
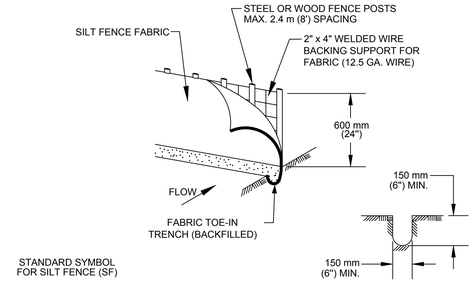


Figure 1.4-F Silt Fence Typical Placement – Two Slopes

SILT FENCE PLACEMENT FOR PERIMETER CONTROL



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

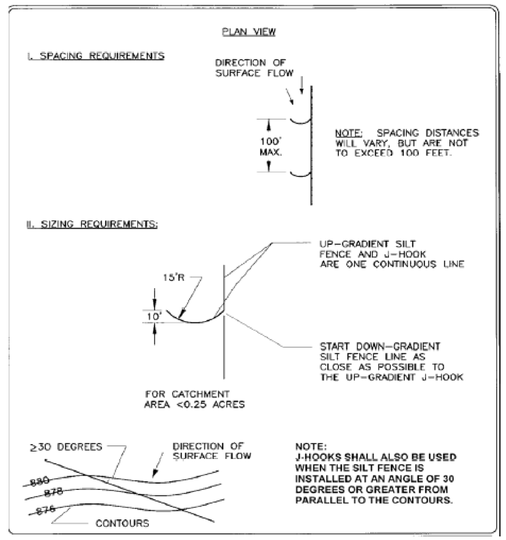


Figure 1.4-H Silt Fence J - Hook Detail (N.T.S.)

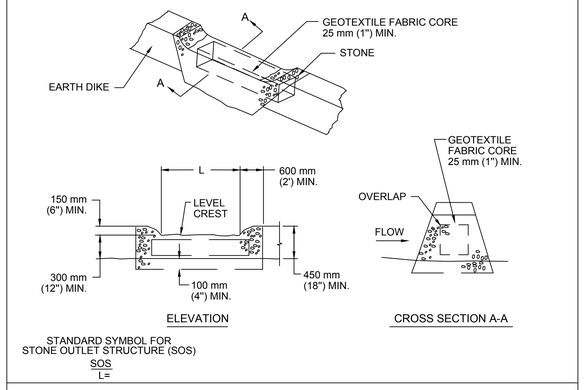


Figure 1.4-D Silt Fence Installation

NOTES:
1. THE STONE SHALL BE CRUSHED STONE. UNLESS OTHERWISE SPECIFIED, ALL AGGREGATE USED IN A STONE OUTLET STRUCTURE SHALL BE 75-125 mm (3-5") OPEN GRADED ROCK.
2. THE CREST OF THE STONE DIKE SHALL BE AT LEAST 150 mm (6") LOWER THAN THE LOWEST ELEVATION OF THE TOP OF THE EARTH DIKE AND SHALL BE LEVEL.
3. THE STONE OUTLET STRUCTURE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF 100 mm (4").
4. THE MINIMUM LENGTH OF THE CREST OF THE STONE OUTLET STRUCTURE SHALL BE EQUAL TO 6 TIMES THE NUMBER OF ACRES OF CONTRIBUTING DRAINAGE AREA.
5. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE STRUCTURE OR 150 mm (6"), WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION.
6. THE STONE OUTLET STRUCTURE SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY OR AFTER EACH RAIN, AND THE STONE SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE STONE, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
7. A GEOTEXTILE FABRIC CORE HAVING MINIMUM DIAMETER OF 300 mm (1') SHALL BE INCORPORATED IN THE STRUCTURE.
8. WHEN THE SITE IS COMPLETELY STABILIZED, THE STRUCTURE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STONE OUTLET STRUCTURE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	*5/23/00* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 643S-1

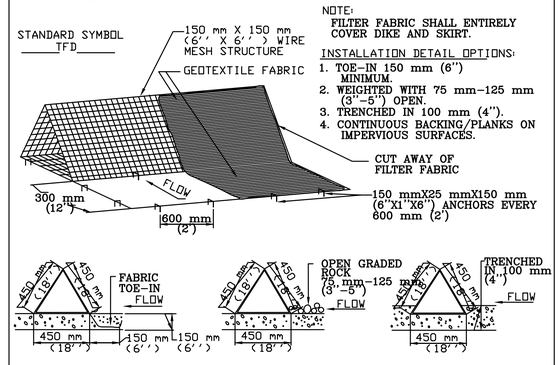


Figure 1.4-G Silt Fence Placement for Perimeter Control

GENERAL NOTES
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75-125 mm (3-5'') OPEN GRADED ROCK OR TOED-IN 150 mm (6'') WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4'').
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6'') WIRE STAPLES ON 600 mm (2') CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8 '') DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6'') TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE MW40-150 mmX150 mm (6 GA. 6''X6'') WIRE MESH, 450 mm (18'') ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6'') AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETLY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TRIANGULAR SEDIMENT FILTER DIKE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	*3/27/00* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 628S

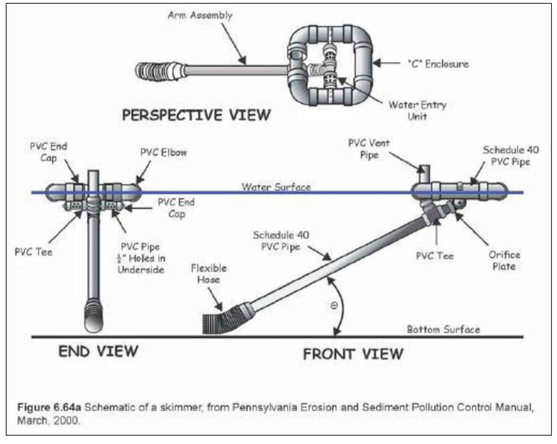


Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

DEWATERING SKIMMER
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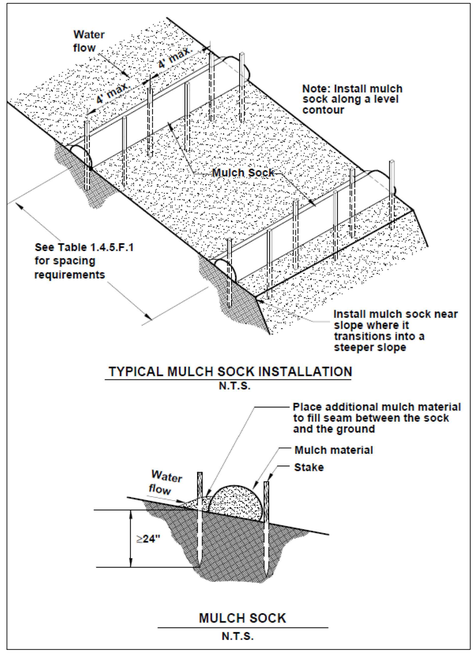

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REVIEWED BY: BG
DRAWN BY: MW

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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

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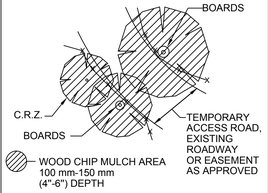
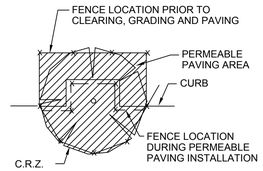
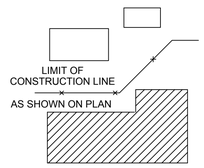


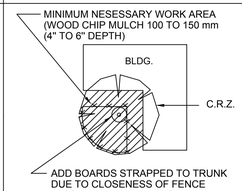
LINEAR CONSTRUCTION THROUGH TREES



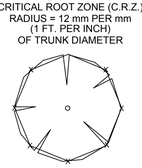
TREES IN PAVING AREA



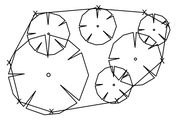
NATURAL AREAS



TREES NEAR CONSTRUCTION ACTIVITY

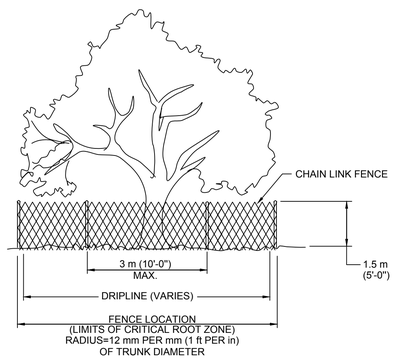


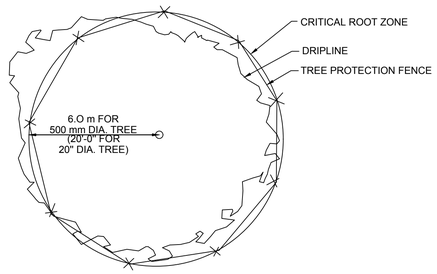
INDIVIDUAL TREE



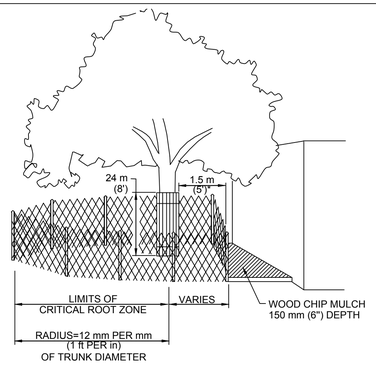
GROUP OF TREES

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

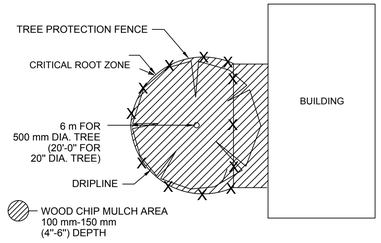




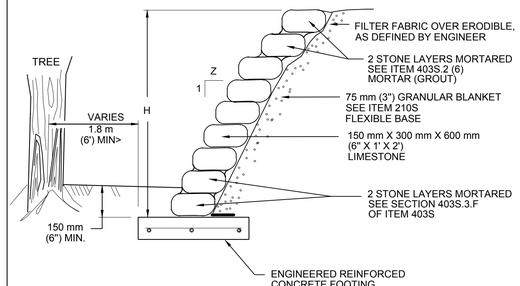
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROPTECTION FENCE TYPE A - CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2



*AS NEEDED TO PROVIDE MINIMUM NECESSARY WORK SPACE.
IF LESS THAN 1.5 m (5'), THEN ADD BOARDS STRAPPED TO TRUNK.



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE MODIFIED 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-4



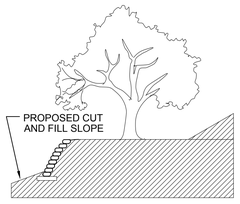
THIS STANDARD APPLIES ONLY UNDER THE FOLLOWING CONDITIONS:

A. H AND Z ARE SPECIFIED ON THE DRAWING.
B. GROUNDWATER IS NO HIGHER THAN THE BOTTOM OF THE FOOTING.
C. THE MATERIAL BELOW THE FOOTING IS FIRM AND STABLE.
D. THE MATERIAL BEHIND THE WALL HAS A LEVEL SURFACE.
E. THE MATERIAL IN FRONT OF THE WALL HAS A SLOPE NO STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL.
F. THE FACE OF THE WALL IS NO STEEPER THAN 1 HORIZONTAL TO 2 VERTICAL.
G. SURCHARGE LOADS BEHIND THE WALL ARE NO CLOSER THAN DISTANCE H FROM THE TOP OF WALL.

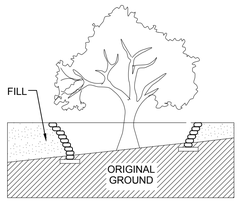
NOTES:

1. DESIGN AND CONSTRUCTION OF ROCK WALL SHALL CONFORM TO THE REQUIREMENTS OF CITY CODE 16-7-2, PLACEMENT OF FENCES IN STREET CORNER AREAS, AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL FOR MINIMIM SIGHT DISTANCE.
2. CONCRETE SHALL CONFORM TO ITEM 403S, "CONCRETE FOR STRUCTURES".

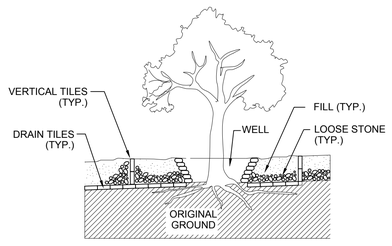
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	SLOPE PROTECTION AND TREE WELLS	
RECORD COPY SIGNED BY J. PATRICK MURPHY 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-6 1 OF 2

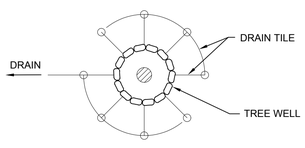


PERMANENT PROTECTIVE WALL

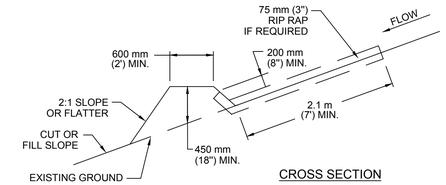


OPEN TREE WELL

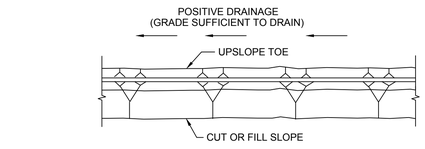




TREE WELL WITH RAISED GRADE



CROSS SECTION



PLAN VIEW

STANDARD SYMBOL
DD

GENERAL NOTES :

1. ALL DIKES SHALL BE MACHINE COMPACTED.
2. ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. a. DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO AN UNDISTURBED STABILIZED AREA OR INTO A LEVEL SPREADER OR GRADE STABILIZATION STRUCTURE.
   b. DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE, SUCH AS A ROCK BERM, BRUSH BERM, STONE OUTLET STRUCTURE, SEDIMENT TRAP OR SEDIMENT BASIN OR TO AN AREA PROTECTED BY ANY OF THESE PRACTICES.
4. UNLESS OTHERWISE SPECIFIED, EROSION STABILIZATION SHALL BE OPEN GRADED ROCK 75 TO 125 mm (3 TO 5 inches) IN DIAMETER EMBEDDED IN SOIL SURFACE.
5. INSPECTION SHALL BE CONDUCTED WEEKLY OR AFTER EACH RAINFALL EVENT.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	SLOPE PROTECTION AND TREE WELLS	
RECORD COPY SIGNED BY J. PATRICK MURPHY 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-6 2 OF 2

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	DIVERSION DIKE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 3/27/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 622S-1

REV	DESCRIPTION	DATE	APR

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 3 OF 3)

STATE OF TEXAS
1-23-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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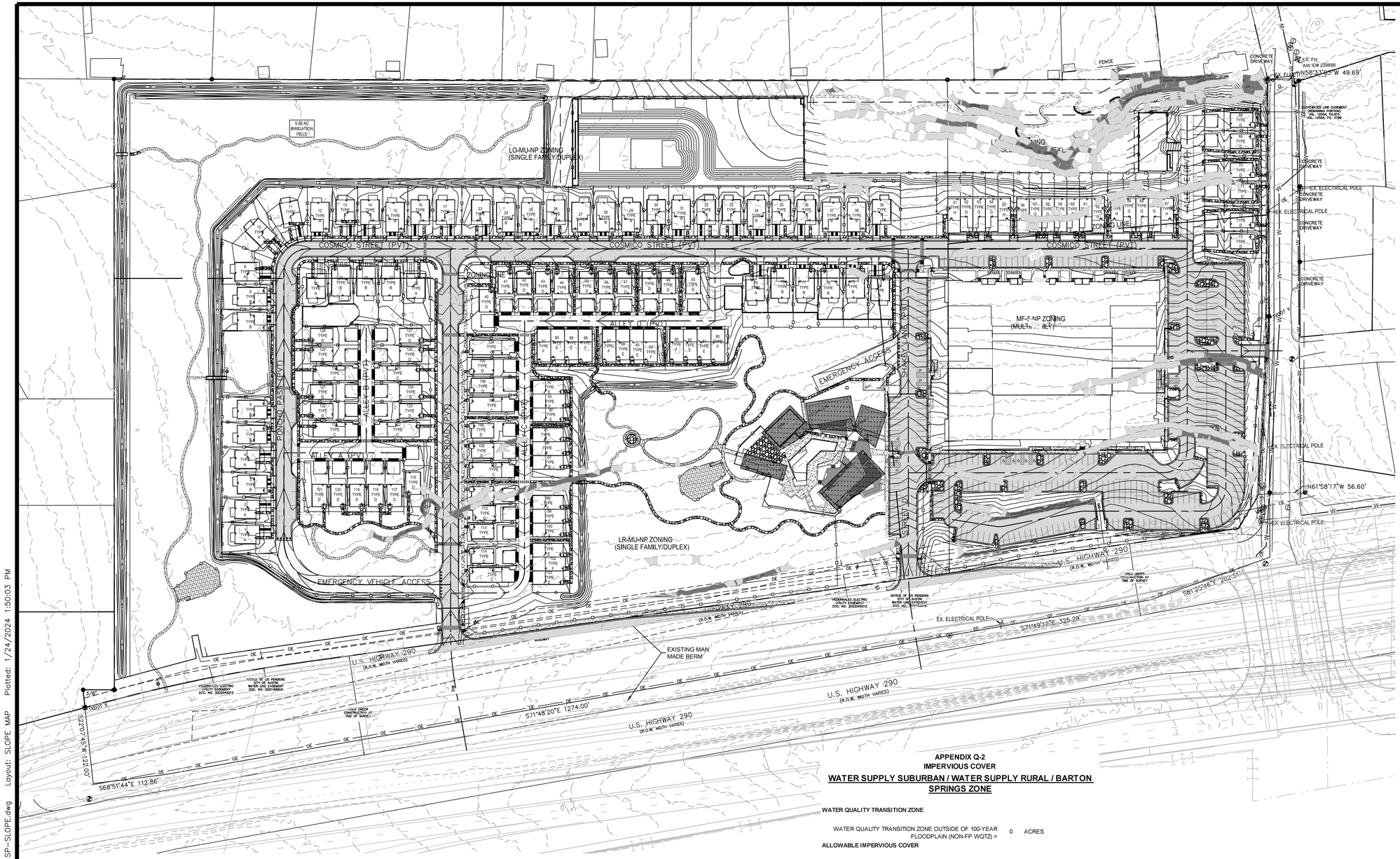

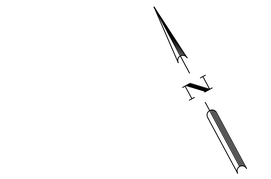

LEGEND

- PROPERTY BOUNDARY
- 1044 EXISTING MINOR CONTOUR
- 1045 EXISTING MAJOR CONTOUR
- 1044 PROPOSED MINOR CONTOUR
- 1045 PROPOSED MAJOR CONTOUR

Slopes Table

Number	Minimum Slope	Maximum Slope	Area	Color
1	15.00%	25.00%	5672.81	
2	25.00%	35.00%	2972.48	
3	35.00%	100.00%	355.33	

APPENDIX Q-1
NET SITE AREA

NOTE: NET SITE AREA IS ONLY APPLICABLE TO WATERSHEDS CLASSIFID AS WATER SUPPLY SUBURBAN/WATER SUPPLY RURAL/BARTON SPRINGS ZONE

TOTAL GROSS SITE AREA = 35.57 ACRES

SITE DEDUCTIONS

CRITICAL WATER QUALITY ZONE (CWQZ) =	0 ACRES
WATER QUALITY TRANSITION ZONE (WQTZ) =	0 ACRES
WASTEWATER IRRIGATION AREAS =	0 ACRES
DEDUCTION SUBTOTAL =	0 ACRES

UPLAND AREA (GROSS AREA MINUS TOTAL DEDUCTIONS) = 35.57 ACRES

NET SITE AREA CALCULATION

West Lot - Barton Springs Zone

AREA OF UPLANDS WITH SLOPES 0 - 15% =	26.70	X 100% =	26.70 ACRES
AREA OF UPLANDS WITH SLOPES 15 - 25% =	0.27	X 40% =	0.11 ACRES
AREA OF UPLANDS WITH SLOPES 25% - 35% =	0.05	X 20% =	0.01 ACRES
AREA OF UPLANDS WITH SLOPES > 35% =	0.01	X 0% =	0.00 ACRES
NET SITE AREA TOTAL			26.82 ACRES

East Lot - Restrictive Covenant, C14-85-288(79)

AREA OF UPLANDS WITH SLOPES 0 - 15% =	7.64	X 100% =	7.64 ACRES
AREA OF UPLANDS WITH SLOPES 15 - 25% =	0.77	X 40% =	0.31 ACRES
AREA OF UPLANDS WITH SLOPES 25% - 35% =	0.18	X 20% =	0.04 ACRES
AREA OF UPLANDS WITH SLOPES > 35% =	0.07	X 0% =	0.00 ACRES
NET SITE AREA TOTAL			7.98 ACRES

APPENDIX Q-2
IMPERVIOUS COVER
WATER SUPPLY SUBURBAN / WATER SUPPLY RURAL / BARTON SPRINGS ZONE

WATER QUALITY TRANSITION ZONE

WATER QUALITY TRANSITION ZONE OUTSIDE OF 100-YEAR FLOODPLAIN (NON-FP WQTZ) = 0 ACRES

ALLOWABLE IMPERVIOUS COVER

IMPERVIOUS COVER ALLOWED AT	0%	X	NON-FP WQTZ =	0.00 ACRES
IMPERVIOUS COVER ALLOWED AT	25%	X	NET SITE AREA =	6.70 ACRES

TOTAL IMPERVIOUS COVER ALLOWED = 6.70 ACRES

ALLOWABLE IMPERVIOUS COVER BREAKDOWN BY SLOPE CATEGORY

TOTAL ACREAGE 15 - 25 % = 0.26605 X 10 % = 0.027

PROPOSED TOTAL IMPERVIOUS COVER

IMPERVIOUS COVER IN NON-FP WQTZ =	0 ACRES =	0.0%
IMPERVIOUS COVER IN UPLANDS ZONE =	6.70 ACRES =	25.0%

TOTAL PROPOSED IMPERVIOUS COVER = 6.70 ACRES

PROPOSED IMPERVIOUS COVER ON SLOPES

SLOPE CATEGORIES	ACRES	IMPERVIOUS COVER: BUILDING / AND OTHER IMPERVIOUS COVER ACRES	% OF CATEGORY	DRIVEWAYS / ROADWAYS ACRES
0 - 15 %	26.70	0.031	0.1%	0.027
15 - 25 %	0.11	0	0.0%	0.002
25 - 35 %	0.01	0	0.0%	0
OVER 35 %	0.00	0	0.0%	0
TOTAL SITE AREA	26.82	0.031		0.028

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

REV	DESCRIPTION	DATE	APR

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

SLOPE MAP

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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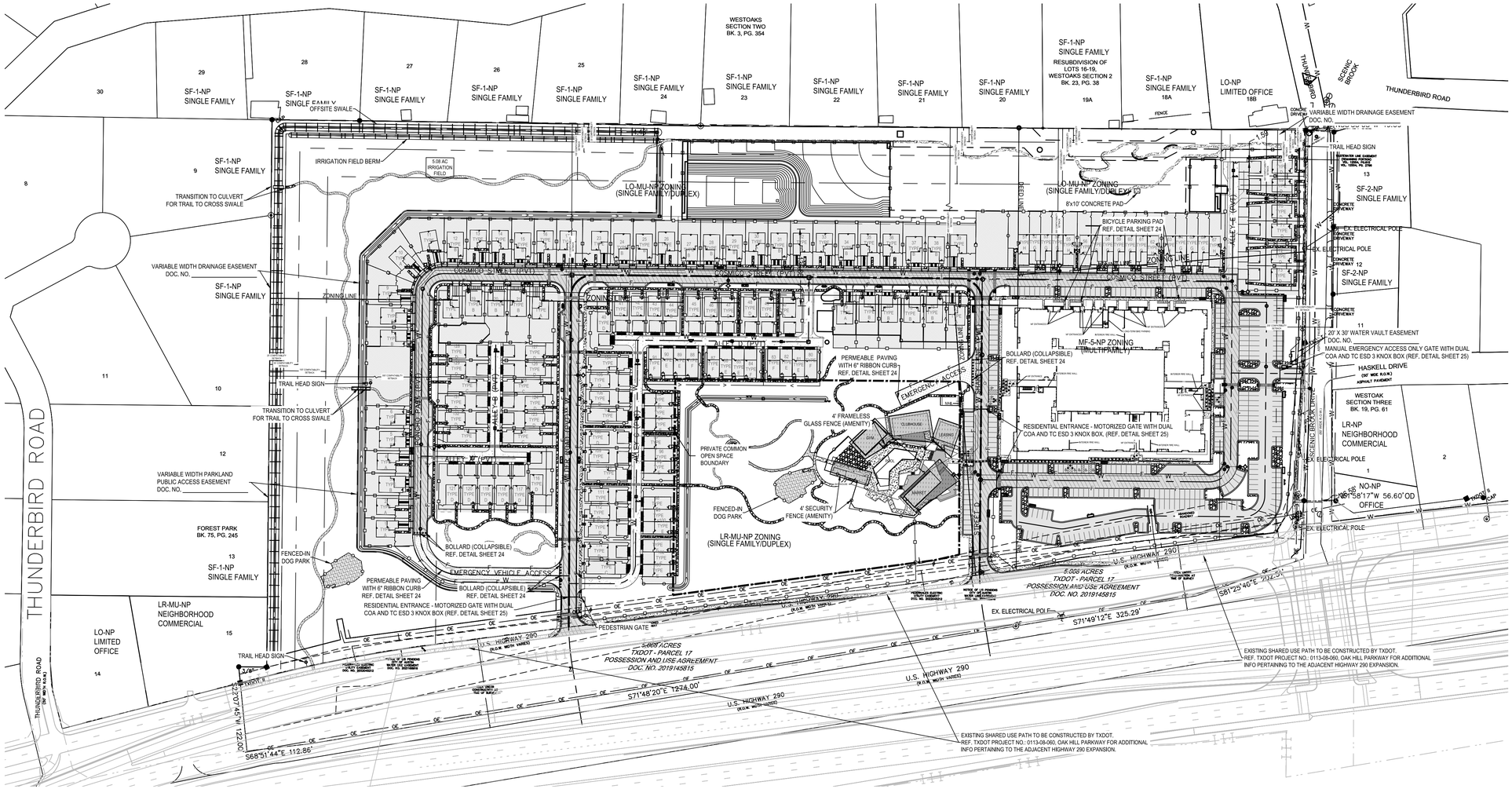
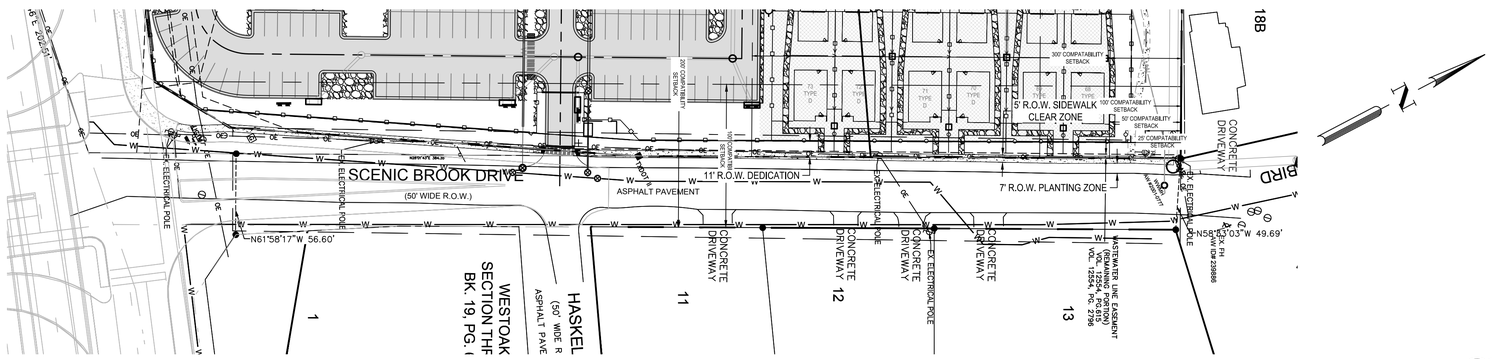


LEGEND

- PROPERTY BOUNDARY
- DEED LINE (BOUNDARY OF RESTRICTIVE COVENANT)
- ZONING BOUNDARY
- 1044 EXISTING MINOR CONTOUR
- 1045 EXISTING MAJOR CONTOUR
- 1044 PROPOSED MINOR CONTOUR
- 1045 PROPOSED MAJOR CONTOUR
- 6 FT ORNAMENTAL FENCE W/ GATE
- 4 FT DECORATIVE FENCE W/ UNLOCKED GATE FOR FIRE ACCESS
- PROPOSED CONTOUR
- ROAD CENTERLINE
- F FIRE LANE STRIPING
- ADA ACCESSIBILITY ROUTE
- INTERNAL CIRCULATION ROUTE
- PERVIOUS GRAVEL SIDEWALK
- AREA TO BE CONSTRUCTED BY OTHERS (HOME BUILDER)
- LIGHT-DUTY CONCRETE PAVEMENT (SEE SHEET 24)
- MEDIUM-DUTY CONCRETE PAVEMENT (SEE SHEET 24)
- CONCRETE
- PERMEABLE PAVER
- GRAVEL (REF. LANDSCAPE)
- MULCH (REF. LANDSCAPE)
- AMENITY DECK (REF. LANDSCAPE)
- AMENITY PERVIOUS CONCRETE (REF. LANDSCAPE)
- AMENITY BUILDING OVERHANG (REF. LANDSCAPE)
- FIRE HYDRANT
- INLET
- LUMINATION LIGHT
- TRANSFORMER/ELECTRIC PAD
- PULL BOX
- STORM SEWER SIGN (SEE NOTE 1, SHEET 16)
- ORNAMENTAL FENCE (REF. LANDSCAPE)



SCENIC BROOK R.O.W.
SCALE: 1" = 50'

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

SITE PLAN

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

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ZONING DATA TABLE

ZONING	BY ZONING DISTRICT						ENTIRE SITE	
	LR-MU-NP		LO-MU-NP		MF-5-NP		LR-MU-NP; LO-MU-NP; MF-5-NP	
	"Neighborhood Commercial-Mixed Use-Neighborhood Plan"		*"Neighborhood Commercial-Neighborhood Plan"*		*"Multifamily-High Density-Neighborhood Plan"*			
TRACT	TRACT 1		TRACT 1/TRACT 2		TRACT 1/TRACT 2		ENTIRE SITE	
EXISTING LAND USE	VACANT		VACANT		VACANT		VACANT	
PROPOSED LAND USE	MULTIFAMILY RESIDENTIAL		MULTIFAMILY RESIDENTIAL		MULTIFAMILY RESIDENTIAL		MULTIFAMILY RESIDENTIAL	
SITE ACREAGE / GROSS SITE AREA	707,790	16.25	542,406	12.45	299,272	6.87	1,549,468	35.57
MAX IMP. COVER	566,232 SF; 12.999 AC	80%	379,684 SF; 8.716 AC	70%	209,490 SF; 4.809 AC	70%	1,155,407	26.52
MAX BUILDING COVERAGE	353,895 SF; 8.124 AC	50%	271,203 SF; 6.226 AC	50%	179,563 SF; 4.122 AC	60%	804,661	18.47
BUILDING COVERAGE	112,536	16%	64,929	12%	66,565	22%	244,030	5.60
GROSS FLOOR AREA**	144,390	-	87,534	-	218,886	-	450,810	10.35
IMPERVIOUS COVER	183,530	26%	117,015	22%	202,662	68%	503,207	11.55
NUMBER OF STORIES	3		3		4		-	
MAXIMUM BUILDING HEIGHT	40 FT OR 3 STORIES		40 FT OR 3 STORIES		60 FT		-	
BUILDING HEIGHT**	37.33		37.33		58.875		-	
FOUNDATION TYPE	Concrete Slab-on-Grade		Concrete Slab-on-Grade		Type III Post-Tensioned Slab-on-Grade		-	
REQUIRED PRIVATE COMMON OPEN SPACE	-		-		-		77,473	MIN. 5%
PROVIDED PRIVATE COMMON OPEN SPACE	-		-		-		176,806	11%
MAX FAR	0.5:1		0.7:1		1:1		-	
FAR	0.2:1		0.1:1		0.2:1			

*PER ORDINANCE NO. 20081211-097, ZONING CASE NO. C14-2022-0160
**SEE BUILDING INFORMATION TABLE

Dwelling Unit Zoning Table (Minimum Site Area)

	Unit Type	LR-MU-NP	LO-MU-NP	MF-5-NP	TOTAL
SINGLE FAMILY	SF-A (2,400 sf)	7	14	1	22
	SF-B (2,400 sf)	12	11	-	23
	SF-C (2,400 sf)	-	8	-	8
	SF-D (2,400 sf)	33	4	2	39
	TH-G (2,400 sf)	-	11	-	11
	TH-H (2,400 sf)	-	6	-	6
	A312 (2,400 sf)	14	-	-	14
	A313 (2,400 sf)	10	-	-	10
MULTI-FAMILY	STUDIO (800 SF)	-	-	47	47.00
	1-BED (1,000 SF)	-	-	101	101
	2-BED (1,200 SF)	-	-	60	60
Dwelling Unit Per Zoning		**76**	**54**	**211**	**341**
Min. Site Area (SF)		182,400	129,600	428,400	**740,400**
Provided Site Area (SF)		707,790	542,406	299,272	**1,549,468**

Building Information Table

Unit Name	Count	Gross Square Footage	Number of Stories	Construction Type	Height
SF-A	22	1,700	2	V-B	34'
SF-B	23	2,173	2	V-B	37'-4"
SF-C	8	1,512	2	V-B	35'
SF-D	39	1,657	2	V-B	35'
TH-G	11	1,419	2	V-B	30'-9"
TH-H	6	1,377	2	V-B	33'-10"
A312	14	1,595	2	V-B	32'-2.5"
A313	10	1,818	2	V-B	32'-2.5"
MF	1	215,209	4	V-A	58'-10.5"
AMENITY	6	7,116	1	V-B	-
TOTAL	140	*SEE BELOW*	-	-	-
Total Residential Building SF		443,688			
Total Building SF (With Amenity Center)		450,804			
Note: Amenity rooves overlap resulting in 8,555 sf for fire demand.					

Building Unit Information

Unit Type	Bedrooms/Unit	Unit Quantity	Total Bedroom Count
SF-A	3	22	66
SF-B	4	23	92
SF-C	2	8	16
SF-D	3	39	117
TH-G	2	11	22
TH-H	3	6	18
A312	3	14	42
A313	3	10	30
MF STUDIO	1	47	47
MF 1-BED	1	101	101
MF 2-BED	2	60	120
Total	**-**	**341**	**671**

Building Foundation Information

	FFE	Foundation Type
SINGLE FAMILY	***varies****	**Engineered Post-Tension Slab-on-Grade**
MULTIFAMILY	***varies****	**Type III Post-Tensioned Slab-on-Grade**
AMENITY	***varies****	**Concrete Slab-on-Grade**
***Note: FFEs vary across buildings. Reference Grading Plan Sheets for Addt'l info.**		

PARKING SUMMARY

Unit type	Units	Spaces per Unit	Total Required	Spaces Provided
Studio	47	1	47	
1 room	101	1.5	151.5	
2 room	60	2	120	
3 room	0	2.5	0	
Multi-family Sub-Total	208		318.5	
Multi-family Reduction (10%)			31.85	
Multi-family Total			**287**	**323**
Single Family Parallel				15
Single Family Garages & Driveways	133	2	266	233
Site Total	**341**		**553**	**571**
Bike (10%)			56	
Accessible			8	14
Van Accessible			2	7

*Multifamily reduction is based on providing two shower and changing facilities to each gender in accordance with LDC 25-6-478 (D)

AMENITY CENTER BUILDING BREAKDOWN	SQFT	CONSTRUCTION TYPE	SPRINKLED	HEIGHT
MARKET	1,749	V-B	NO	12.5'
LEASING	1,065	V-B	NO	12.5'
CLUBHOUSE	2,020	V-B	NO	12.5'
GYM	1,702	V-B	NO	12.5'
BATHHOUSE	287	V-B	NO	9.67'
MAIL CANOPY	293	V-B	NO	9.67'

PARKLAND IMPERVIOUS COVER ALLOTMENT

Impervious Cover Site Availability		Total Lot Area SF	Total Lot Area AC	IC %	IC Available SF	IC Available AC
Lot	East (Restrictive Covenant)	377,251	8.66	4.73%	17,860	0.41
Lot	West (Barton Springs Zone)	1,168,279	26.82	0.00%	34.03	0.00
Lot	Fee Simple (Pending)	56,410	1.30	25.00%	14,103	0.32
Total		1,601,940	36.78	2.00%	31,996	0.73

PARKLAND PUBLIC ACCESS EASEMENT

	SQFT	AC
Total Easement Area	383,050	8.79
Re-Irrigation Field	221,605	5.09
Drainage/Detention Easement	63,763	1.46
25' Setback (NW)	68,881	1.58
Total Impedence Area	354,249	8.13
Total Unencumbered Area	28,801	0.66

LANDSCAPED AREA TABLE

A	Gross site area (AC)	35.571
B	Area of site that is established as turf or landscaped. This excludes areas that are undisturbed or restored to natural conditions (AC)	5.088
C	Fraction of A that is established as turf or landscaped: B/A=C (%)	14.30%

IC CALCS TABLE - BARTON SPRINGS ZONE

GROSS SITE AREA (NOT USED)	26.91	AC
	1,172,217	SF
NET SITE AREA (USED)	26.82	AC
	1,168,279	SF
ROW (EXCLUDED FROM NET AND GROSS)	4.07	AC
	177,376	SF
STEEP SLOPES (EXCLUDED FROM NET)	0.09	AC
	3,833	SF
BUILDING COVERAGE	3.57	AC
	155,334	SF
	13.30%	%
TOTAL GROSS FLOOR AREA	203,612	SF
EXISTING IMPERVIOUS COVER	0.25	AC
	10,684	SF
PROPOSED IMPERVIOUS COVER (ON-SITE)	6.70	AC
	292,035.8	SF
IMPERVIOUS COVER (%) - (ON-SITE)	24.997%	
ZONING	MF-5	
PROPOSED USE	MULTIFAMILY RESIDENTIAL	
SINGLE FAMILY DWELLING UNITS	111	
IMPERVIOUS COVER HELD AT 25%		
REFER TO BUILDING DATA TABLE FOR ADDITIONAL BUILDING HEIGHT (PLEASE REFERENCE ARCHITECTURAL PLANS)		

IC CALCS TABLE - RESTRICTIVE COVENANT C14-85-288(79)

GROSS SITE AREA (USED)	8.66	AC
	377,251	SF
NET SITE AREA (NOT USED)	7.98	AC
	347,609	SF
ROW (EXCLUDED FROM NET AND GROSS)	1.14	AC
	49767.594	SF
STEEP SLOPES (INCLUDED IN GROSS)	0.68	AC
	29,708	SF
BUILDING COVERAGE	2.08	AC
	90,526	SF
	21%	%
TOTAL GROSS FLOOR AREA	249,022	SF
EXISTING IMPERVIOUS COVER	0.22	AC
	9,677	SF
PROPOSED IMPERVIOUS COVER (ON-SITE)	4.87	AC
	211,980.4	SF
IMPERVIOUS COVER (%) - (ON-SITE)	56.19%	
ZONING	MF-5	
PROPOSED USE	MULTIFAMILY RESIDENTIAL	
SINGLE FAMILY DWELLING UNITS	22	
IMPERVIOUSCOVER HELD AT 65%		
REFER TO BUILDING DATA TABLE FOR ADDITIONAL BUILDING HEIGHT (PLEASE REFERENCE ARCHITECTURAL PLANS)		

COMBINED IC CALCS TABLE - ENTIRE SITE

Net Site Area (LOC)	1,549,468	SF
	35.57	AC
Building Coverage	245,860	SF
	5.64	AC
	15.87%	%
Total Gross Floor Area	452,634	SF
Existing Impervious Cover	20,473	SF
	0.47	AC
Proposed Impervious Cover	504,016	SF
	11.57	AC
Impervious Cover (%) - (ON-SITE)	32.53%	
Zoning	LP-MU-NP	
Proposed Use(s)	Multifamily; Single Family For Rent	
Private Open Space Natural & Undeveloped	169,690	SF
	3.90	AC
	9.55%	of gross site area
Private Open Space Amenity & Pool Areas	7,116	SF
	0.16	AC
	0.40%	of gross site area

NOTES:
1. STENCILED SIGN TO BE POSTED WHICH READS: "THIS INLET DRAINS TO LOCAL WATERWAYS. NO WASTE SHOULD BE DUMPED."
2. ALL EXTERIOR LIGHTING WILL BE FULL CUT-OFF AND FULLY SHIELDED IN COMPLIANCE WITH SUBCHAPTER E 2.5 AND WILL BE REVIEWED DURING BUILDING PLAN REVIEW. ANY CHANGE OR SUBSTITUTION OF LAMP/LIGHT FIXTURES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL IN ACCORDANCE WITH SECTION 2.5.2.E.
3. ALL EXTERIOR LIGHTING WILL BE HOODED OR SHIELDED FROM THE VIEW OF ADJACENT RESIDENTIAL PROPERTY. [SECTION 25-2-1064].
4. EXTERIOR LIGHTING ABOVE THE SECOND FLOOR IS PROHIBITED IN THE GO, LR, GR, CS, OR CS-1 ZONING DISTRICTS, WHEN ADJACENT TO AN SF-5 OR MORE RESTRICTIVE ZONING DISTRICT [SECTION 25-2-585].
5. ALL DUMPSTERS AND ANY PERMANENTLY PLACED REFUSE RECEPTACLES WILL BE LOCATED AT A MINIMUM OF TWENTY (20) FEET FROM A PROPERTY USED OR ZONED AS SF-5 OR MORE RESTRICTIVE. [SECTION 25-2-1067].
6. THE USE OF HIGHLY REFLECTIVE SURFACES, SUCH AS REFLECTIVE GLASS AND REFLECTIVE METAL ROOFS, WHOSE PITCH IS MORE THAN A RUN OF SEVEN (7) TO A RISE OF TWELVE (12), WILL BE PROHIBITED. [SECTION 25-2-1067].
7. THE NOISE LEVEL OF MECHANICAL EQUIPMENT WILL NOT EXCEED 70 DBA AT THE PROPERTY LINE ADJACENT TO RESIDENTIAL USES. [SECTION 25-2-1067].
8. VEGETATIVE SCREENING, BERMS, FENCES, OR YARDS SHALL BE PROVIDED TO SCREEN ADJACENT SF-5 OR MORE RESTRICTIVE RESIDENTIAL DISTRICTS FROM VIEWS OF OFF-STREET PARKING AREAS, MECHANICAL EQUIPMENT, STORAGE AREAS, AND FOR REFUSE COLLECTION [SECTION 25-2-1066].
9. ALL EMERGENCY ACCESS ROADWAYS & FIRE LANES SHALL BE ENGINEERED & INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. THESE ROADWAYS SHALL BE DESIGNED TO SUPPORT A 75,000 POUND LOADING FROM A FIRE APPARATUS.
10. PROVIDE A KNOX KEY SWITCH AT ALL POWER OPERATED GATES AND A KNOX BOX AT ALL MANUAL GATES ACROSS FIRE ACCESS ROADS FOR FIRE DEPARTMENT ACCESS.
11. ALL GATES ACROSS FIRE ACCESS ROADS SHALL OPEN THE FULL WIDTH OF THE FIRE ACCESS ROAD SO THE FIRE ACCESS ROAD IS NOT OBSTRUCTED IN ANYWAY BY THE GATE OR ANY OF THE GATE COMPONENTS.
12. ALL POWER OPERATED GATES ACROSS FIRE ACCESS ROADS SHALL BE EQUIPPED WITH GATE OPERATORS LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER ASTM F2200. A MANUAL MEANS OF OPENING THE GATE IN THE EVENT OF POWER LOSS IS REQUIRED.
13. TO COMPLY WITH SUBCHAPTER E, 2.2.5.E, ALTERNATIVE EQUIVALENT COMPLIANCE WAS APPROVED TO ALLOW THE MEANDERING PEDESTRIAN PATHS THROUGHOUT THE OVERALL SITE, AS DEPICTED ON THE SITE PLAN, TO PROVIDE SUFFICIENT PEDESTRIAN CIRCULATION FOR THE PROPOSED DEVELOPMENT.
14. PER SUBCHAPTER E, 2.3.1(A), THIS PROJECT HAS A NET SITE AREA OF THREE ACRES OR MORE IN A NONRESIDENTIAL ZONING DISTRICT, AND MUST PROVIDE AT LEAST TWO (2) ADDITIONAL MEASURES TO IMPROVE CONNECTIVITY. THESE MEASURES ARE AS FOLLOWS PER SUBCHAPTER E, 2.3.1.(B)(2)(TABLE B) AND AS REFLECTED ON THE SITE PLAN:
    14.1. PROVIDE PEDESTRIAN AND BICYCLE CONNECTION TO ADJACENT RESIDENTIAL DEVELOPMENT. THIS CONNECTION IS REFLECTED AT THE NORTHEASTERN CORNER OF THE PROPERTY.
    14.2. LIMIT CURB CUTS TO GREATER THAN 330 FEET. CURB CUTS ONLY W HWY 290 ARE GREATER THAN 330'.
15. SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR OF EQUAL QUALITY TO, PRINCIPAL BUILDING MATERIALS.
16. DECORATIVE FENCES WITHOUT KNOX BOXES AT THE GATE WILL BE 4' OR LESS UNLESS OTHERWISE STATED.
17. LANDSCAPE BUFFERING IS PROVIDED BETWEEN THE PARKING AREA AND THE SIDEWALK AND 100% OF THE BUILDING FRONTAGE FACING THE PRINCIPAL STREET IS BUILT TO THE CLEAR ZONE. THIS AEC PER CHAPTER 25-2, SUBCHAPTER E, ARTICLE 2.2.4(E), ALLOWS SURFACE PARKING WITHIN 100 FEET OF THE CORNER.
18. PRIVACY FENCING SHALL ONLY RUN PARALLEL TO THE STRUCTURE/PERCEIVED LOT LINES, IT WILL NOT CUT OFF OR INHIBIT FIRE DEPARTMENT ACCESS. THE FOLLOWING UNITS SHALL NOT BE FULLY ENCLOSED WITH PRIVACY FENCING: 51-67, 80-104, 107-108, 110-111, 113-115.
19. GEOTECHNICAL ENGINEER IS TO BE ONSITE DURING INSTALLATION OF THE POROUS PAVER SYSTEM.
20. REFERENCE GEOTECHNICAL RECOMMENDATIONS FOR PERMEABLE PAVEMENT SYSTEM LETTER FOR PERMEABLE PAVEMENT DETAILS.

							APR
							DATE
							DESCRIPTION
							REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

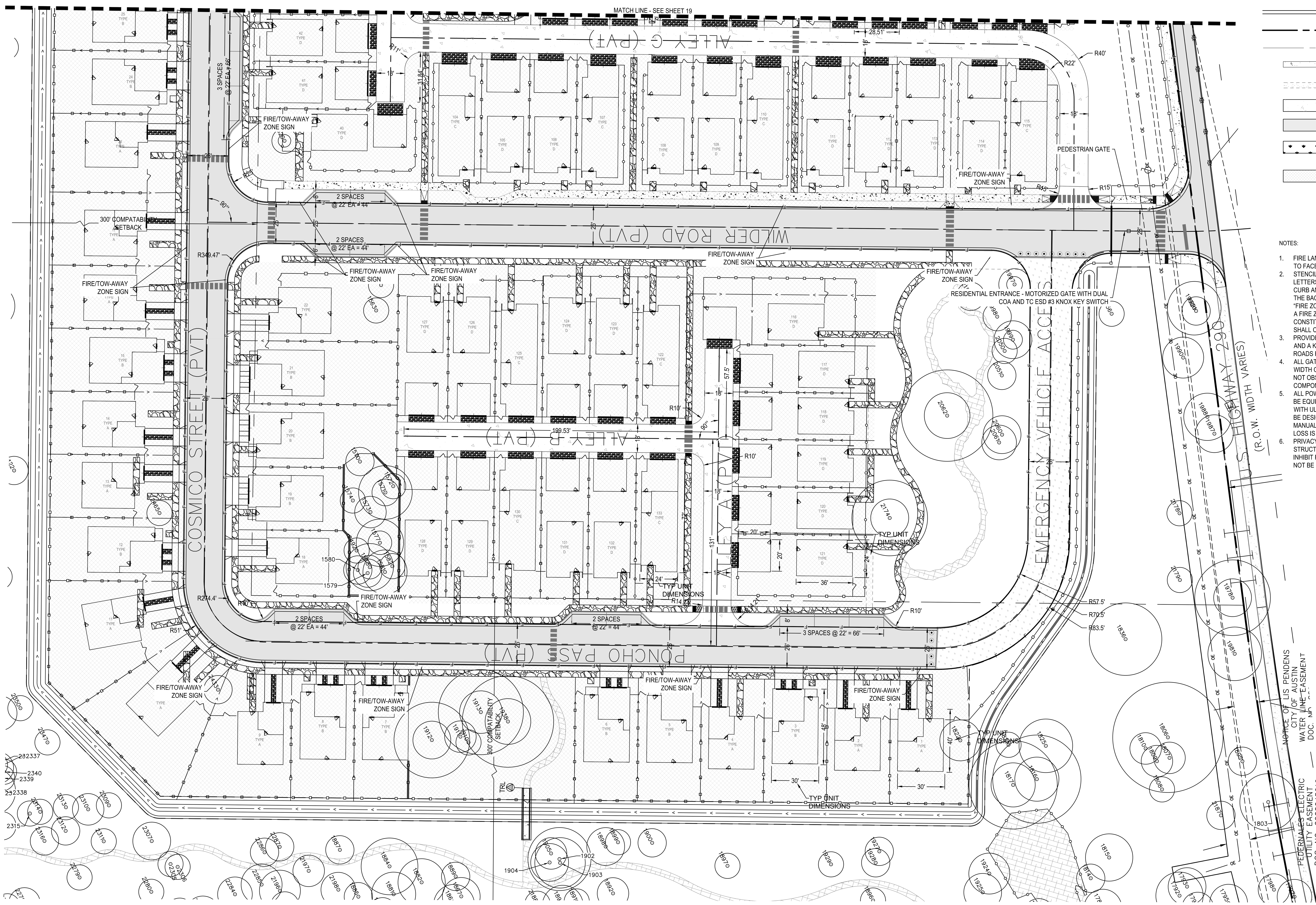
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

SITE PLAN NOTES & CALCS

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975--C--SP--SITE.dwg Layout: SITE PLAN NOTES & CALCS Plotted: 1/24/2024 1:52:40 PM



LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- CONCRETE SIDEWALK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE
- PAVEMENT
- PERMEABLE PAVER (FOR FIRE ACCESS ONLY)
- AREA TO BE CONSTRUCTED BY OTHERS (HOMEBUILDER)

0 15' 30' 60'
SCALE: 1" = 30'

NOTES:

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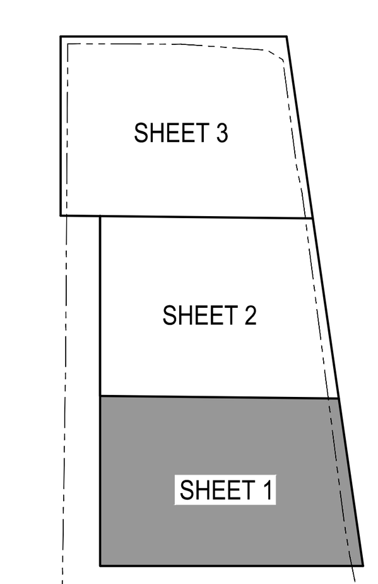

KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DIMENSION CONTROL PLAN (SHEET 1 OF 3)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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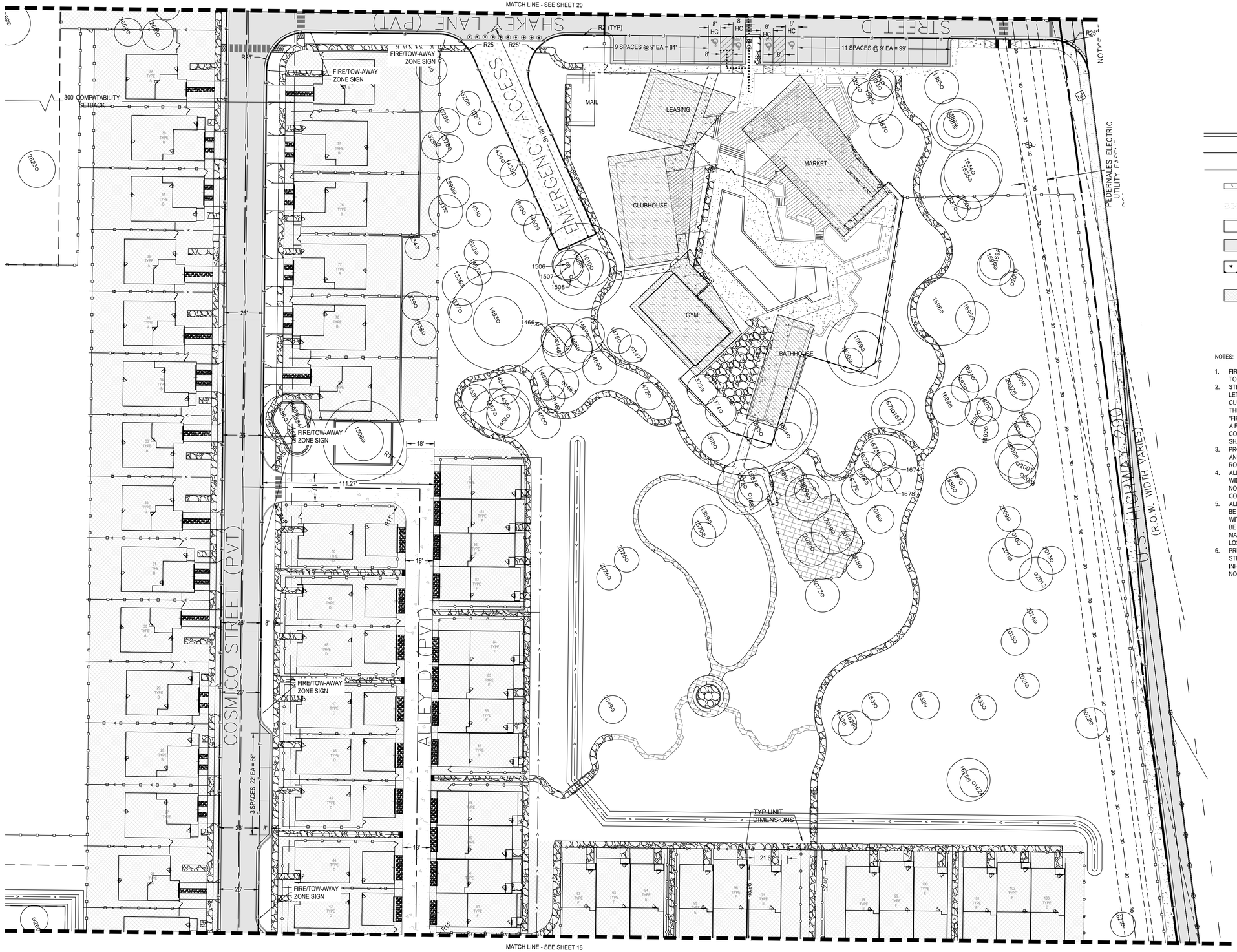

0 15' 30' 60'

SCALE: 1" = 30'

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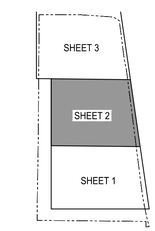

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DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DIMENSION CONTROL PLAN (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-17-2024

SP-2022-0579C

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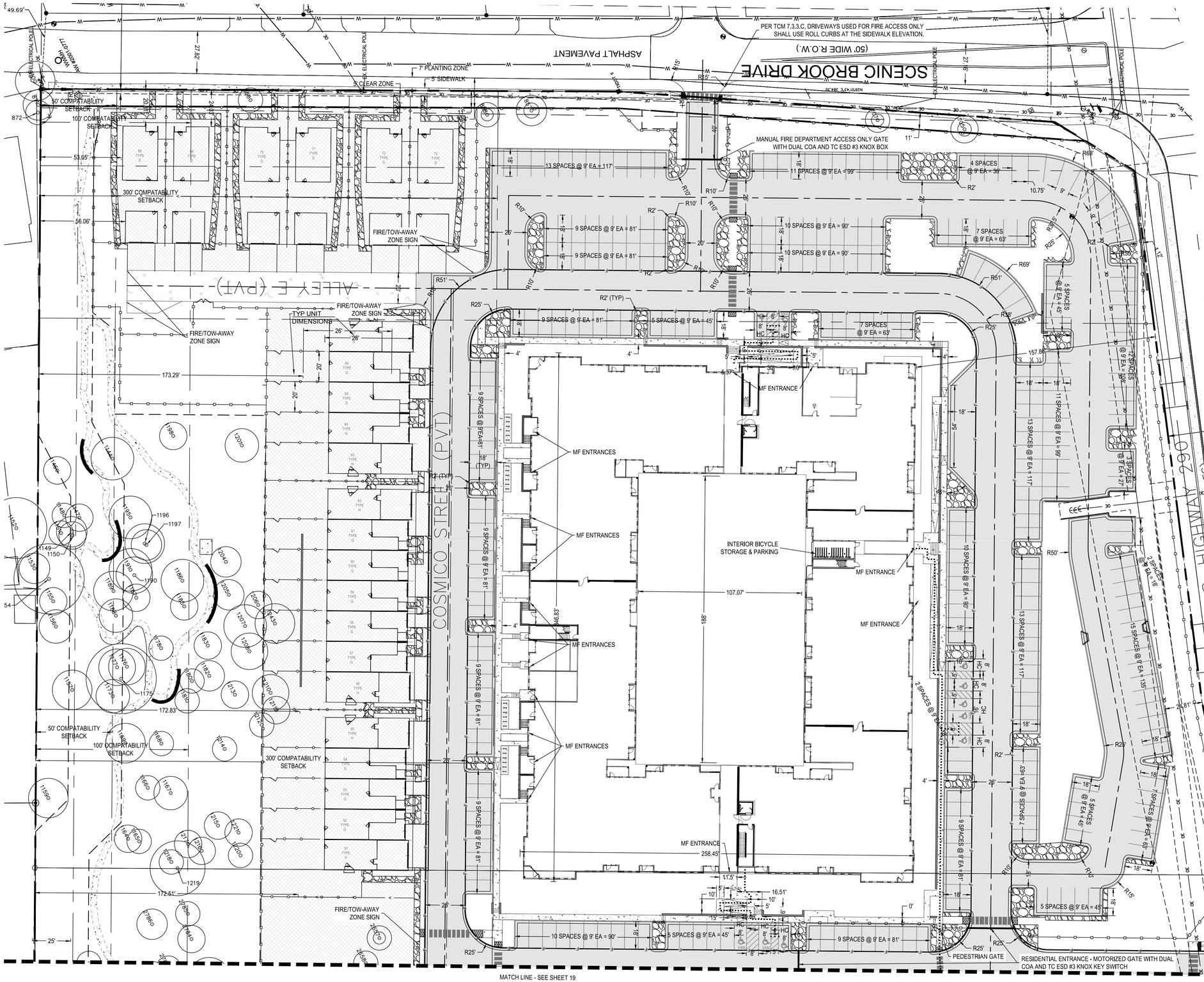

0 15' 30' 60'

SCALE: 1" = 30'

LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- ADA ACCESSIBILITY ROUTE
- 11' ROW DEDICATION
- CONCRETE SIDEWALK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE
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811 Know what's below. Call before you dig.

SHEET 3
SHEET 2
SHEET 1

KEY MAP
N.T.S

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DIMENSION CONTROL PLAN (SHEET 3 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-19-2024

SP-2022-0579C

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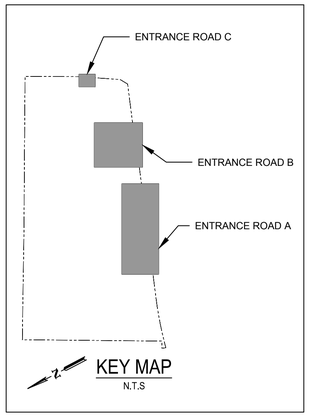
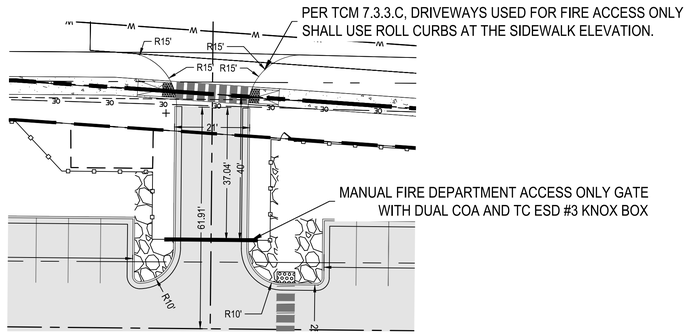


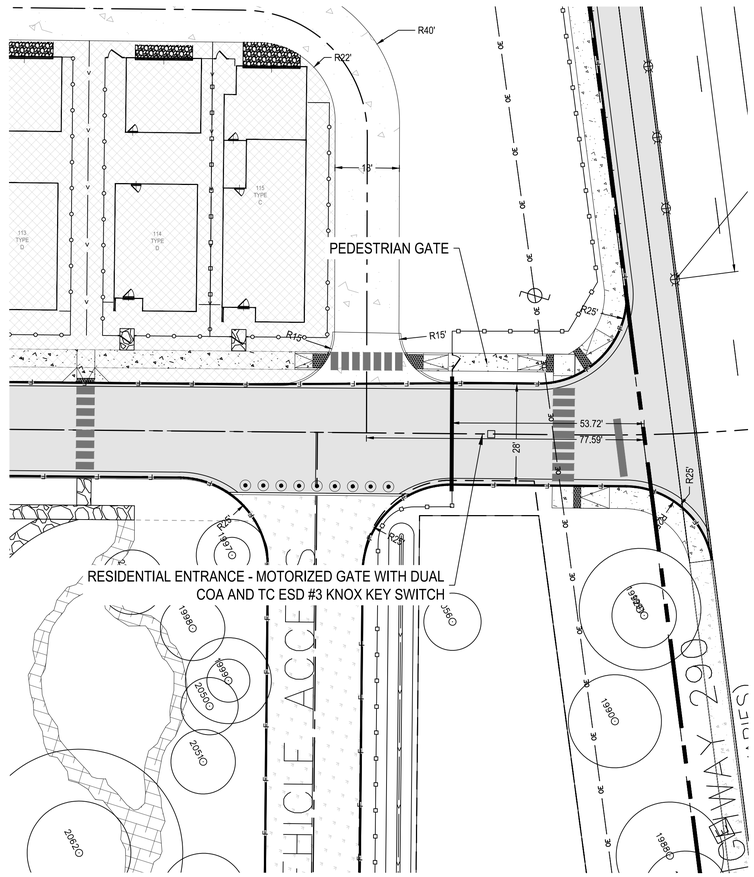


SCENIC BROOK EMERGENCY VEHICLE ACCESS
(*ENTRANCE C*)

0 10' 20' 40'
SCALE: 1" = 20'

HWY 290 - MULTIFAMILY ENTRANCE: STREET D
(ENTRANCE *B*)

0 10' 20' 40'
SCALE: 1" = 20'



HWY 290 - SINGLE FAMILY ENTRANCE: WILDER ROAD
(ENTRANCE *A*)

0 10' 20' 40'
SCALE: 1" = 20'

0 10' 20' 40'
SCALE: 1" = 20'

LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- ROW DEDICATION
- CONCRETE SIDEWALK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE
- ASPHALT PAVEMENT
- PERMEABLE PAVER (FOR FIRE ACCESS ONLY)
- AREA TO BE CONSTRUCTED BY OTHERS (HOMEBUILDER)

NOTES:

1. PLEASE REFERENCE TEXAS DEPARTMENT OF TRANSPORTATION PROJECT NUMBER: 0113-08-060, OAK HILL PARKWAY FOR ADDITIONAL INFORMATION PERTAINING TO THE ADJACENT HIGHWAY 290 EXPANSION AND DECELERATION LANES THAT CONNECT INTO THE PROJECT SITE.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE BY EXCAVATION THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

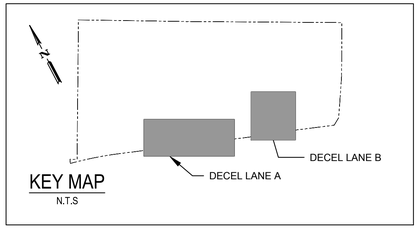
DRIVEWAY DIM. CONTROL PLAN

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

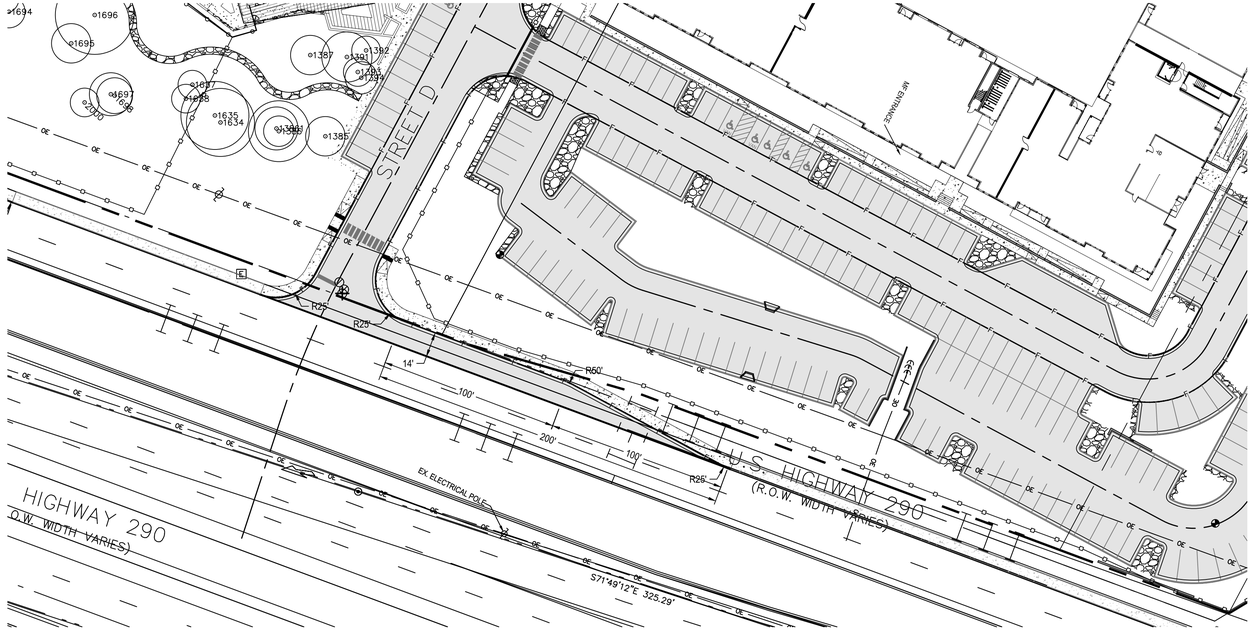
SP-2022-0579C

8350 W US 290 HIGHWAY

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DIMENSION.dwg Layout: DRIVEWAY DIM. CONTROL PLAN Plotted: 1/24/2024 1:54:27 PM

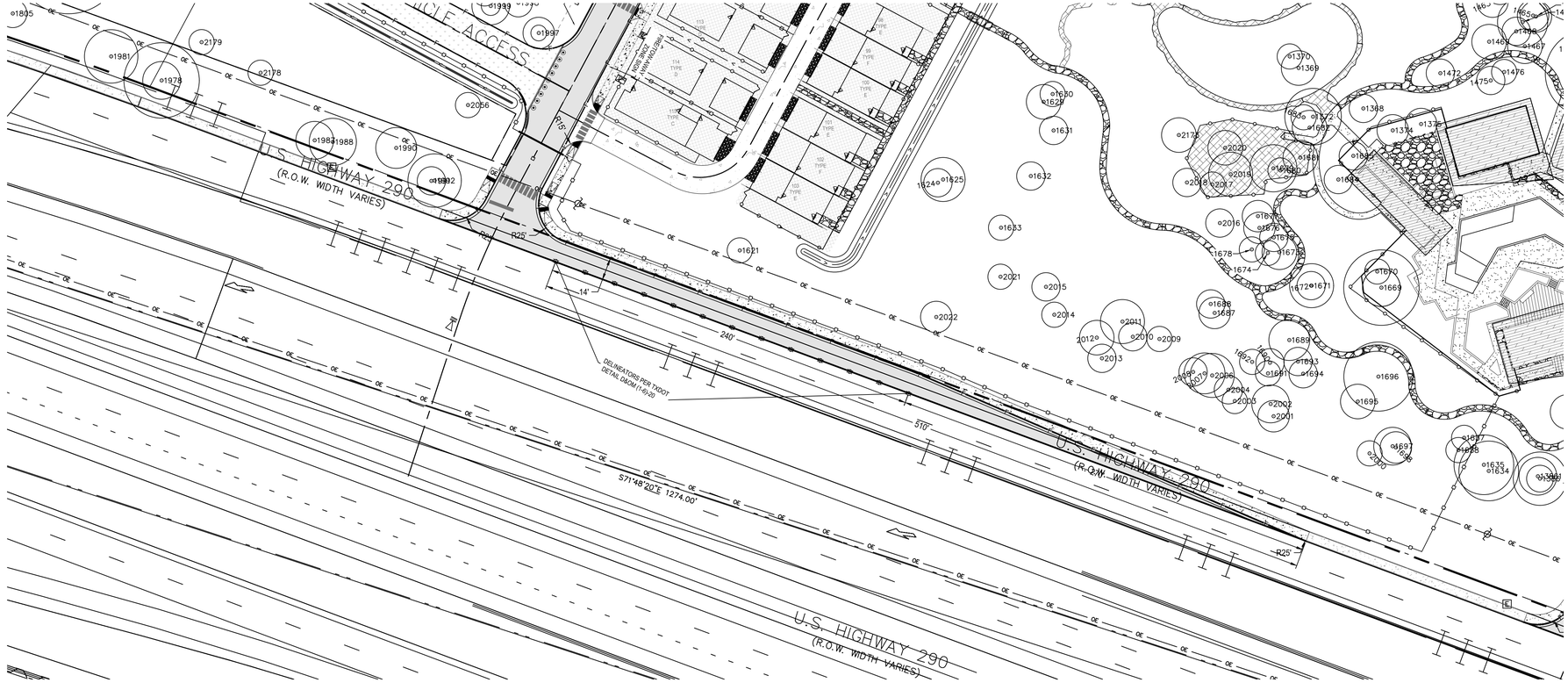


KEY MAP
N.T.S



HWY 290 - SINGLE FAMILY ENTRANCE: *DECEL LANE B*

0 20' 40' 80'
SCALE: 1" = 40'



HWY 290 - MULTIFAMILY ENTRANCE: *DECEL LANE A*

0 20' 40' 80'
SCALE: 1" = 40'

0 10' 20' 40'
SCALE: 1" = 20'

LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- 11' ROW DEDICATION
- CONCRETE SIDEWALK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE
- ASPHALT PAVEMENT
- PERMEABLE PAVER (FOR FIRE ACCESS ONLY)
- AREA TO BE CONSTRUCTED BY OTHERS (HOMEBUILDER)

NOTES:

1. PLEASE REFERENCE TEXAS DEPARTMENT OF TRANSPORTATION PROJECT NUMBER: 0113-08-060, OAK HILL PARKWAY FOR ADDITIONAL INFORMATION PERTAINING TO THE ADJACENT HIGHWAY 290 EXPANSION.
2. THE SHARED USE PATH (SUP) ALONG HWY 290 WILL BE INSTALLED BY TXDOT AND MODIFIED BY THIS PROJECT TO ACCOMMODATE THE DECELERATION LANES.
3. REFERENCE PM-22 FOR RIGHT TURN LANE AND DECELERATION LANE STRIPING.
4. SEE SHEET 24 FOR THE PAVEMENT WIDENING DETAIL FOR THE WIDENING PROPOSED FOR U.S. HIGHWAY 290.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

								APR
								DATE
								DESCRIPTION
								REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

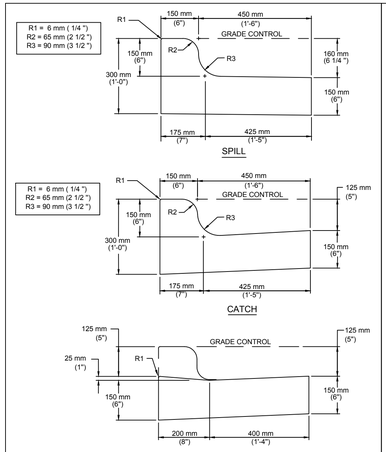
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

DECEL LANE DIM. CONTROL PLAN

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DIMENSION.dwg Layout: DECEL LANE DIM. CONTROL PLAN Plotted: 1/24/2024 1:54:38 PM



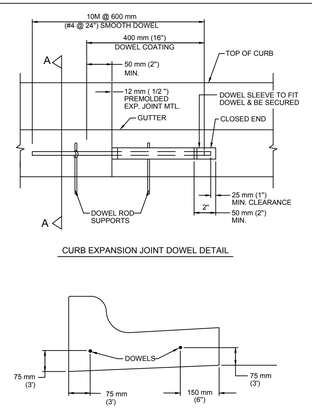
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

CURB AND GUTTER SECTION

RECORD COPY SIGNED BY LINO RIVERA — 9/29/99 ADOPTED

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

STANDARD NO. 430S-1



SEE STANDARD 430S-1 FOR TYPICAL CURB AND GUTTER SECTIONS.

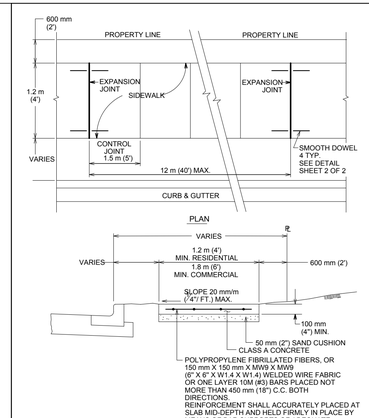
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

CURB EXPANSION JOINT DOWEL DETAIL

RECORD COPY SIGNED BY LINO RIVERA — 9/29/99 ADOPTED

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

STANDARD NO. 430S-3



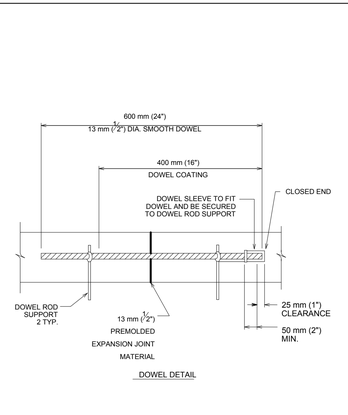
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED

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

STANDARD NO. 432S-1 1 OF 3



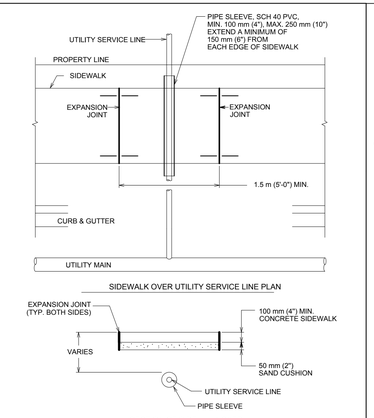
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED

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

STANDARD NO. 432S-1 2 OF 3



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

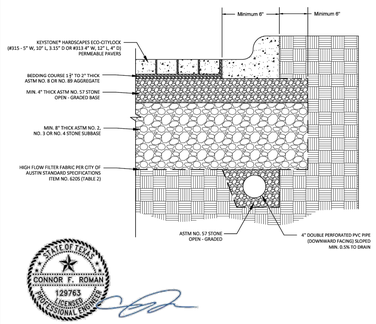
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIDEWALK

RECORD COPY SIGNED BY BILL GARDNER — 03/26/08 ADOPTED

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

STANDARD NO. 432S-1 3 OF 3



Electronic seal approved by Connor F. Roman, P.E. on May 4, 2023.

ECS

Title: Permeable Paver Detail

Project: Scenic Brook Multifamily Development
NWC of Scenic Brook Drive & US-290
Austin, Texas

ECS Southwest, LLP
14050 Summit Drive, Suite 101
Austin Texas 78728

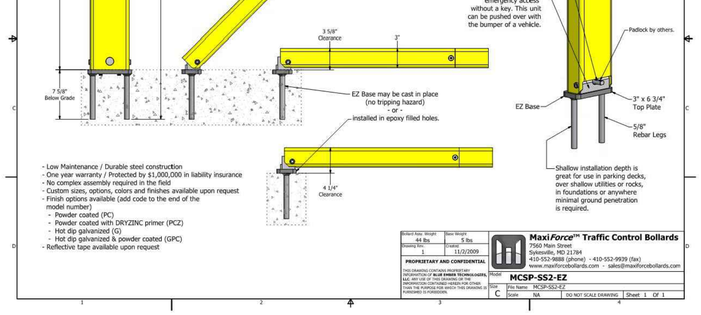
Notes: Not To Scale

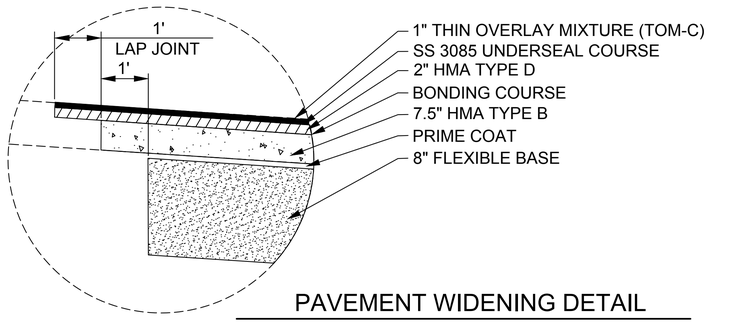
Project No.: 17-5880 | Date: MAY 2023 | Scale: NTS | Figure No.: 1

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

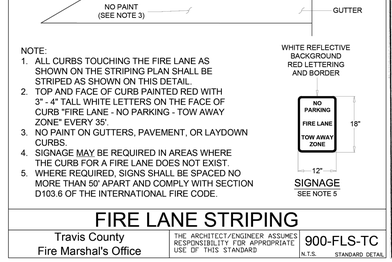
APR | DATE | DESCRIPTION | REV

8350 W US 290 HIGHWAY





PAVEMENT WIDENING DETAIL

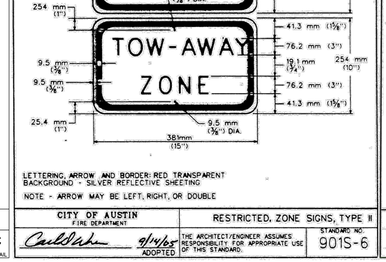


FIRE LANE STRIPING

Travis County
Fire Marshal's Office

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

900-FLS-TC
N.T.S.
STANDARD DETAIL



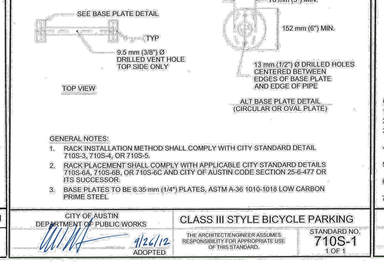
CITY OF AUSTIN
FIRE DEPARTMENT

RESTRICTED ZONE SIGNS, TYPE II

9/14/05 ADOPTED

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

STANDARD NO. 901S-6



GENERAL NOTES:
1. RACK INSTALLATION METHOD SHALL COMPLY WITH CITY STANDARD DETAIL 710S-3, 710S-4, OR 710S-5.
2. RACK PLACEMENT SHALL COMPLY WITH APPLICABLE CITY STANDARD DETAILS 710S-6A, 710S-6B, OR 710S-6C AND CITY OF AUSTIN CODE SECTION 25-6-477 OR ITS SUCCESSOR.
3. BASE PLATES TO BE 6.35 mm (1/4") PLATES, ASTM A-36 1010-1018 LOW CARBON PRIME STEEL.

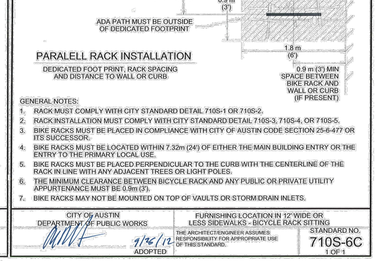
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

CLASS III STYLE BICYCLE PARKING

7/24/12 ADOPTED

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

STANDARD NO. 710S-1 1 OF 1



GENERAL NOTES:
1. RACK MUST COMPLY WITH CITY STANDARD DETAIL 710S-1 OR 710S-2.
2. RACK INSTALLATION MUST COMPLY WITH CITY STANDARD DETAIL 710S-3, 710S-4, OR 710S-5.
3. BIKE RACKS MUST BE PLACED IN COMPLIANCE WITH CITY OF AUSTIN CODE SECTION 25-6-477 OR ITS SUCCESSOR.
4. BIKE RACKS MUST BE LOCATED WITHIN 7.32m (24') OF EITHER THE MAIN BUILDING ENTRY OR THE ENTRY TO THE PRIMARY LOCAL USE.
5. BIKE RACKS MUST BE PLACED PERPENDICULAR TO THE CURB WITH THE CENTERLINE OF THE RACK IN LINE WITH ANY ADJACENT TREES OR LIGHT POLES.
6. THE MINIMUM CLEARANCE BETWEEN BICYCLE RACK AND ANY PUBLIC OR PRIVATE UTILITY APPURTENANCE MUST BE 0.9m (3').
7. BIKE RACKS MAY NOT BE MOUNTED ON TOP OF VAULTS OR STORM DRAIN INLETS.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

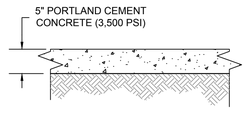
FURNISHING LOCATION IN 12' WIDE OR LESS SIDEWALKS - BICYCLE RACK SITTING

7/24/12 ADOPTED

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

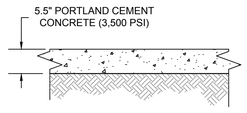
STANDARD NO. 710S-6C 1 OF 1

Figure 34:
Examples of fully-shielded light fixtures.



NOTES:
1. CONTRACTOR TO CONFIRM PAVEMENT SECTIONS WITH GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION. BGE, INC. MAKES NO PRESENTATION OR WARRANTIES TO GEOTECHNICAL INFORMATION CONTAINED HEREIN.
2. REFER TO GEOTECHNICAL REPORT DATED APRIL 15TH, 2020 AND GEOTECHNICAL REPORT ADDENDUM DATED OCTOBER 12TH, 2020 PREPARED BY ECS SOUTHWEST, LLP FOR SUBGRADE, PAVEMENT, EXPANSION JOINT, CONSTRUCTION JOINT, REINFORCEMENT, AND ADDITIONAL REQUIREMENTS.

LIGHT DUTY
RIGID PAVEMENT SECTION
NO SCALE



NOTES:
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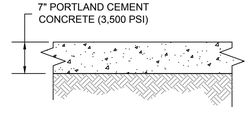
MEDIUM DUTY
RIGID PAVEMENT SECTION
NO SCALE



NOTES:
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HEAVY DUTY
RIGID PAVEMENT SECTION
NO SCALE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

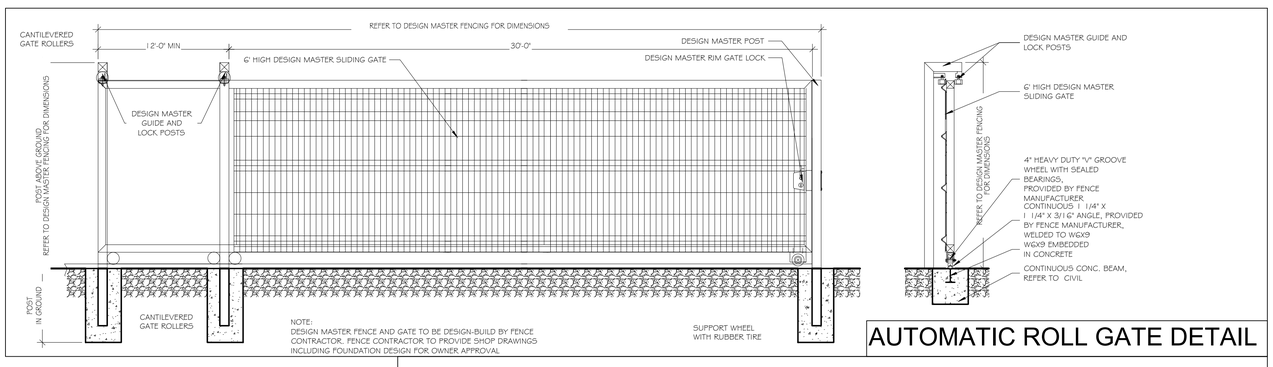
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
SITE DETAILS (SHEET 1 OF 3)

SP-2022-0579C

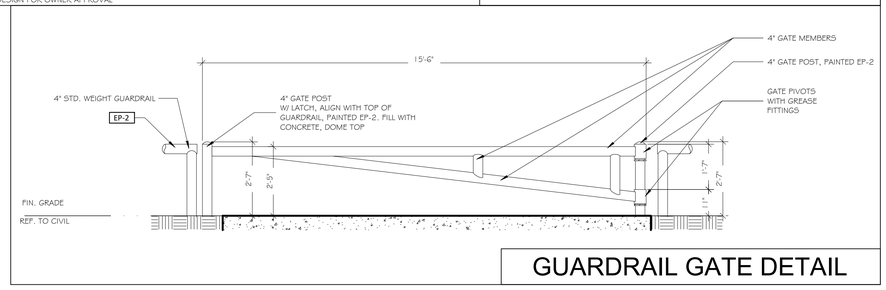
G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DETL-SITE.dwg Layout: SITE DETAILS (SHEET 1 OF 3) Plotted: 1/24/2024 1:55:57 PM

RECOMMENDED PAVEMENT SECTION OPTIONS						
Component	Light-Duty 20,000 ESALs		Moderate-Duty 80,000 ESALs		Heavy-Duty 250,000 ESALs	
	Rigid	Asphalt	Rigid	Asphalt	Rigid	Asphalt
Portland Cement Reinforced Concrete (PCC)	5.0 in	--	5.5 in	--	6.5 in	--
Hot Mixed Asphalt Concrete (HMAC)	--	2.0 in	--	2.5 in	--	--
Crushed Limestone Base (CLB)	--	7.0 in	--	9.0 in	--	--

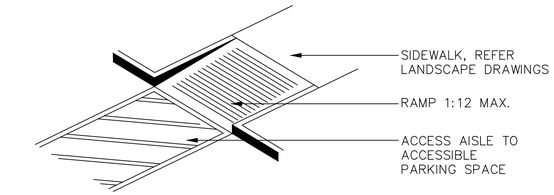
*Retrieved from the Scenic Brook Multifamily Development ECS Southwest, LLP Geotechnical Engineering Report (ECS Project Number 17:5880) on June 20th, 2022.



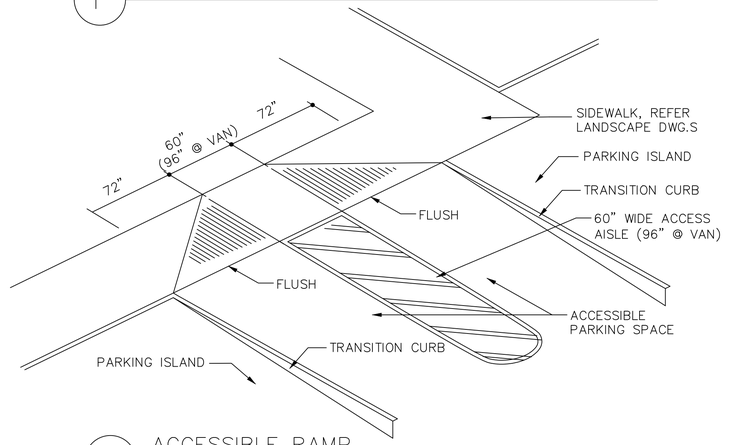
AUTOMATIC ROLL GATE DETAIL



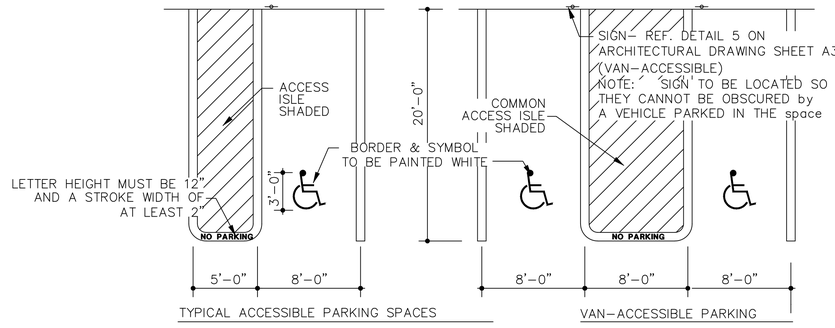
GUARDRAIL GATE DETAIL



1 TYPICAL ACCESSIBLE CROSSWALK



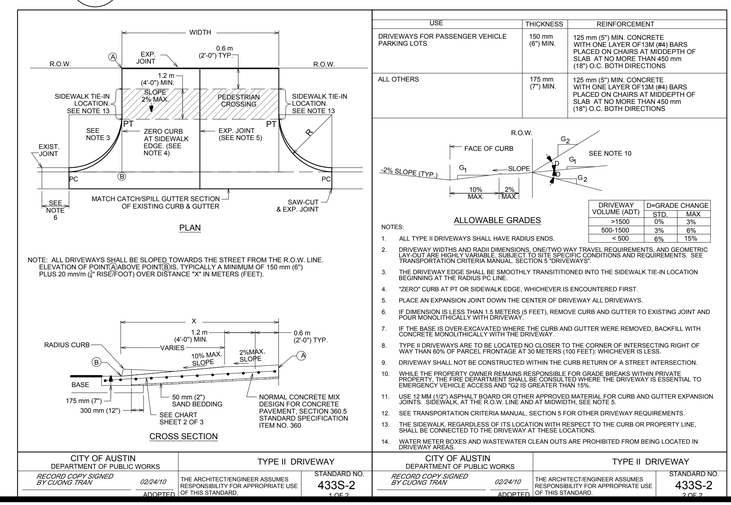
2 ACCESSIBLE RAMP



NOTE: PARKING SPACE & ACCESS ISLE SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2% IN ALL DIRECTIONS

3 ACCESSIBLE PARKING

PAVEMENT SECTION
NO SCALE



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

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

ALLOWABLE GRADES

NOTES:
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT 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 5.
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		CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2	RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

								APR
								DATE
								DESCRIPTION
								REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
SITE DETAILS (SHEET 2 OF 3)

MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-24-2024

SP-2022-0579C

8350 W US 290 HIGHWAY

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DETL-SITE.dwg Layout: SITE DETAILS (SHEET 2 OF 3) Plotted: 1/24/2024 1:56:01 PM

REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS

	SIZE 1	SIZE 2	SIZE 3	SIZE 4
DEVICE	3" ± 1/16" ; 4" ± 1/16"	4" ± 1/16" ; 4" ± 1/16"	6" ± 1/8" ; 12" ± 1/8"	3" ± 1/16" ; 12" ± 1/8"
SHEETING	Yellow, White or Red Type B or C reflective sheeting			
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.			

DELINEATORS

	SINGLE		DOUBLE	
DEVICE	1-Size 2 reflector unit	1-Size 1 reflector unit	2-Size 2 reflector units	2-Size 1 reflector units
SHEETING	Yellow, White or Red Type B or C Reflective Sheeting			
POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX
MOUNT TYPE	GND	GND, SRF	GND	GND, SRF

D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX(XX)

NUMBER OF REFLECTORS
S = Single
D = Double

COLOR OF REFLECTORS
W = White
Y = Yellow
R = Red

REFLECTOR UNIT SIZE
1 or 2

TYPE OF POST OR DELINEATOR
WC = Wing Channel Post
YFLX = Yellow Flexible Post
WFLX = White Flexible Post
BRF = Barrier Reflector

TYPE OF MOUNT
GND = Embedded (drivable or set in concrete)
CTB = Concrete Barrier Mount
GF1 or GF2 = Guard Fence Attachment
SRF = Surface Mount

DIRECTION
If Required
BI = Bi-Directional
BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXXX)XXX(XX)

TYPE OF OBJECT MARKER
1, 2, 3, or 4

NUMBER OF REFLECTORS OR DIRECTION
X = 3-Size 2 reflector units (Type 2 only)
Y = 1-Size 3 reflector unit (Type 2 only)
Z = 3-Size 1 or 1-Size 4 reflector unit(s)(Type 2 only)
L = Left Side (Type 3 Object Marker only)
R = Right Side (Type 3 Object Marker only)
C = Center (Type 3 Object Marker only)

TYPE OF POST
WC = Wing Channel Post
WFLX = White Flexible Post
TWT = Thin Walled Tubing

TYPE OF MOUNT
GND = Embedded (drivable)
SRF = Surface Mount
WAS = Wedge Anchor Steel
WAP = Wedge Anchor Plastic

DIRECTION
If Required
BI = Bi-Directional

DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

OBJECT MARKERS

	Type 1 (OM-1)	Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4
DEVICE	18" x 18"	3-Size 2 reflector units	1-Size 3 reflector unit	3-Size 1 reflector units or 1-Size 4 reflector unit	12" x 36"	12" x 36"	12" x 36"	18" x 18"
SHEETING	Yellow-Type B_{FL} or C_{FL} Sheeting	Yellow - Type B or C Sheeting			Alternating acrylic black and retroflective yellow - Type B_{FL} or C_{FL} Sheeting			Red -Type B_{FL} or C_{FL} Sheeting
POST TYPE	TWT	WC	WC	WFLX	TWT			TWT
MOUNT TYPE	WAS, WAP	GND	GND	GND, SRF	WAS, WAP			WAS, WAP

BARRIER REFLECTORS (BRF)

	GF1	GF2	CTB
DEVICE	1. Barrier reflectors shall meet the requirements of DMS 8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.		
SHEETING	Yellow, White, Red		
NOTE	1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.		

CHEVRONS

	W1-8			
SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional Oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only	

ONE DIRECTION LARGE ARROW

	W1-6	
SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0"	

NOTE
1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies).
2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).

NOTE:
Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION
D & OM(1)-20

FILE: dom1-20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT
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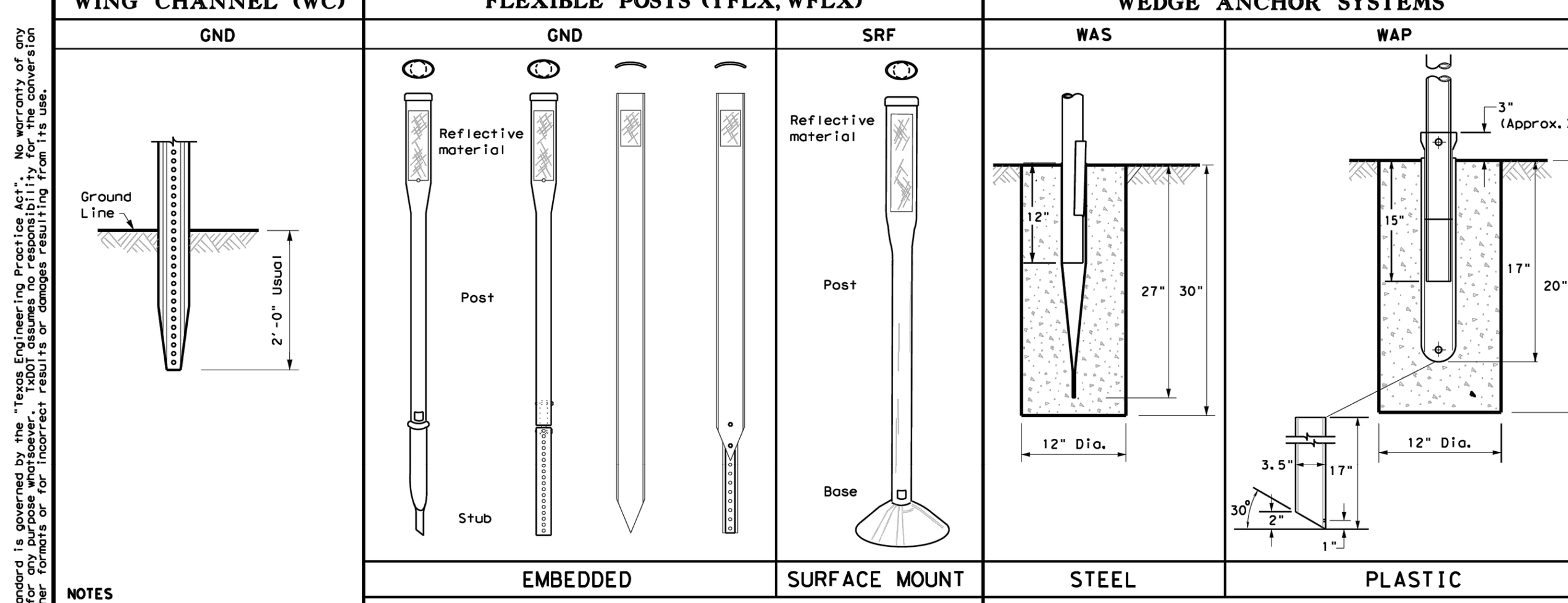
REVISIONS 10-09 3-15 4-10 7-20 | DIST | COUNTY | SHEET NO.
20A

POST TYPE AND SUPPORT FOUNDATION DETAILS

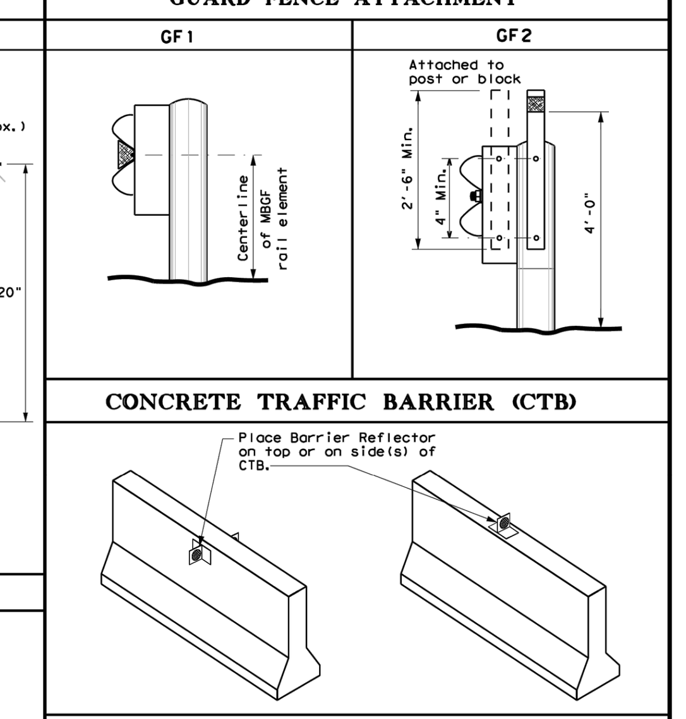


NOTES
1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

NOTES
1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.
4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.

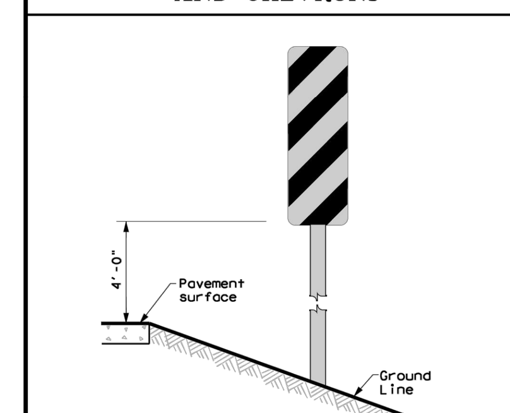
NOTE
1. Install per manufacturer's recommendations.

TYPE OF BARRIER MOUNTS



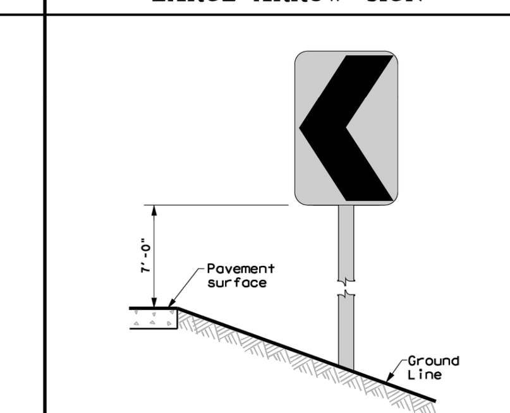
GENERAL NOTES
1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

TYPES 1, 3, AND 4 OBJECT MARKERS AND CHEVRONS



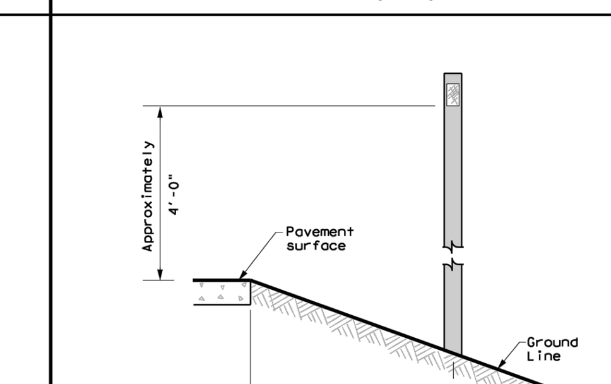
NOTE
Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)

CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN



NOTE
Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.

DELINEATORS AND TYPE 2 OBJECT MARKERS



See general notes 1, 2 and 3.

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER INSTALLATION
D & OM(2)-20

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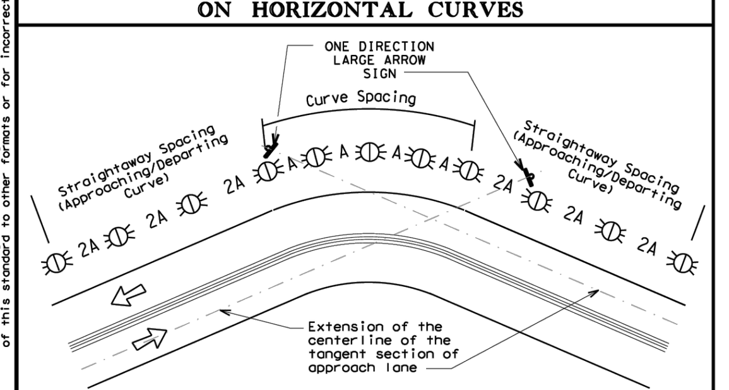
20B

MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

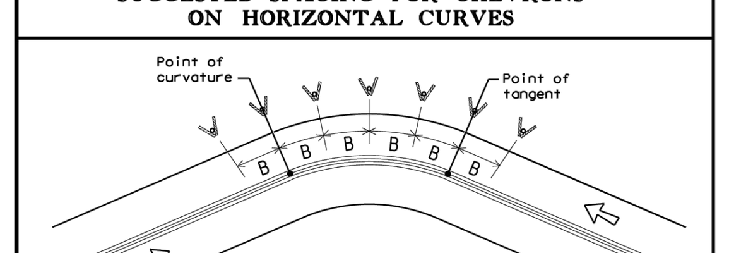
Amount by which Advisory Speed is less than Posted Speed	Curve Advisory Speed: Turn (30 MPH or less)	Curve Advisory Speed: Curve (35 MPH or more)
5 MPH & 10 MPH	• RPMs	• RPMs
15 MPH & 20 MPH	• RPMs and One Direction Large Arrow sign	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons.
25 MPH & more	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons	• RPMs and Chevrons

SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES



NOTE
ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



NOTE
At least one chevron pair is installed beyond the point of tangent in tangent section.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN

Degree of Curve	Radius of Curve (FEET)	Spacing in Curve (FEET)	Spacing in Straightaway (FEET)	Chevron Spacing in Curve (FEET)
		A	2A	B
1	5730	225	450	—
2	2865	160	320	—
3	1910	130	260	200
4	1433	110	220	160
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN

Advisory Speed (MPH)	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
	A	2xA	B
65	130	260	200
60	110	220	160
55	100	200	160
50	85	170	160
45	75	150	120
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

CONDITION	REQUIRED TREATMENT	MINIMUM SPACING
Frwy./Exp. Tangent	RPMs	See PM-series and FPM-series standard sheets
Frwy./Exp. Curve	Single delineators on right side	See delineator spacing table
Frwy/Exp.Ramp	Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 3 on D&OM(4))	100 feet on ramp tangents. Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves)
Acceleration/Deceleration Lane	Double delineators (see Detail 3 on D&OM(4))	100 feet (See Detail 3 on D & OM (4))
Truck Escape Ramp	Single red delineators on both sides	50 feet
Bridge Rail (steel or concrete)and Metal Beam Guard Fence	Bi-Directional Delineators when undivided with one lane each direction. Single Delineators when multiple lanes each direction	Equal spacing (100'max) but not less than 3 delineators
Concrete Traffic Barrier (CTB) or Steel Traffic Barrier	Barrier reflectors matching the color of the edge line	Equal spacing 100' max
Cable Barrier	Reflectors matching the color of the edge line	Every 5th cable barrier post (up to 100'max)
Guard Rail Terminus/Impact Head	Divided highway - Object marker on approach end. Undivided 2-lane highways - Object marker on approach and departure end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end. See D & OM (5) and D & OM (6)
Bridges with no Approach Rail	Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail	See D & OM(5)
Reduced Width Approaches to Bridge Rail	Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end. See D & OM (5)
Culverts without MBGF	Type 2 Object Markers	See Detail 2 on D & OM(4)
Crossovers	Double yellow delineators and RPMs	See Detail 1 on D & OM (4)
Pavement Narrowing (lane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet

NOTES
1. Unless indicated otherwise, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
2. Barrier reflectors may be used to replace required delineators.
3. Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications

LEGEND	
(symbol)	Bi-directional Delineator
(symbol)	Delineator
(symbol)	Sign

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS
D & OM(3)-20

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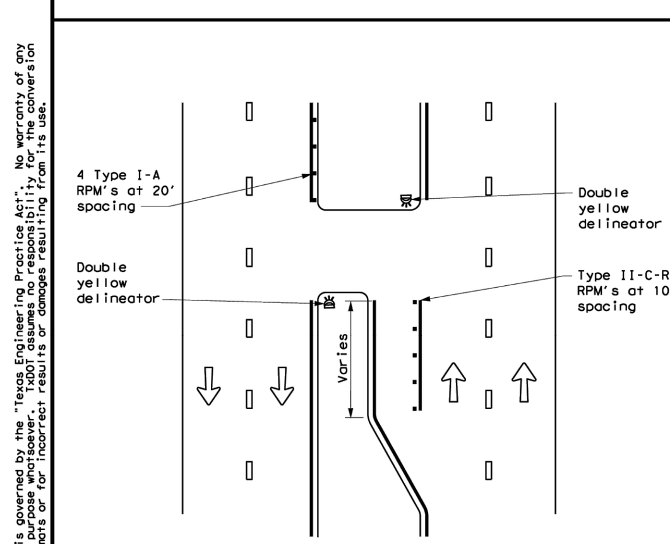
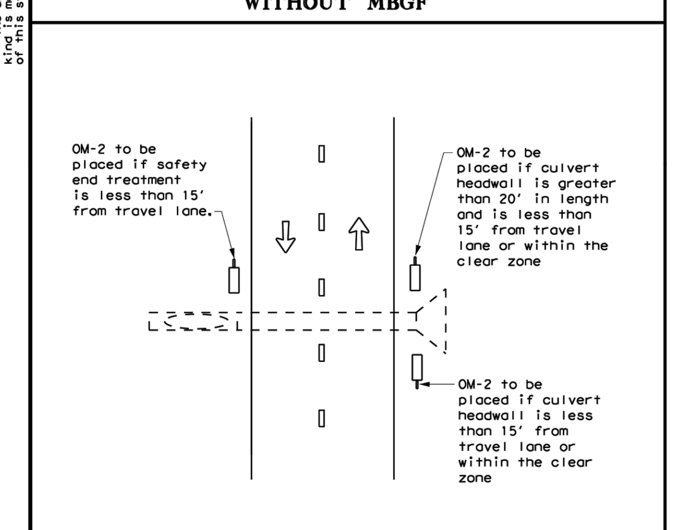
REVISIONS 3-15 8-15 8-15 7-20 | DIST | COUNTY | SHEET NO.
20C

CROSSOVERS



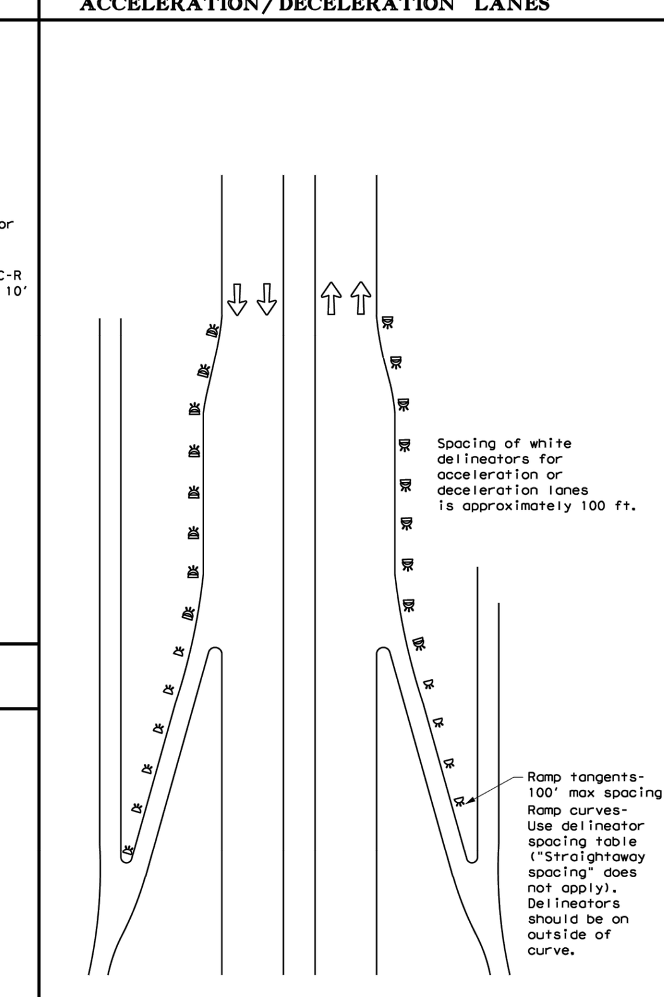
DETAIL 1

FOR CULVERTS WITHOUT MBGF



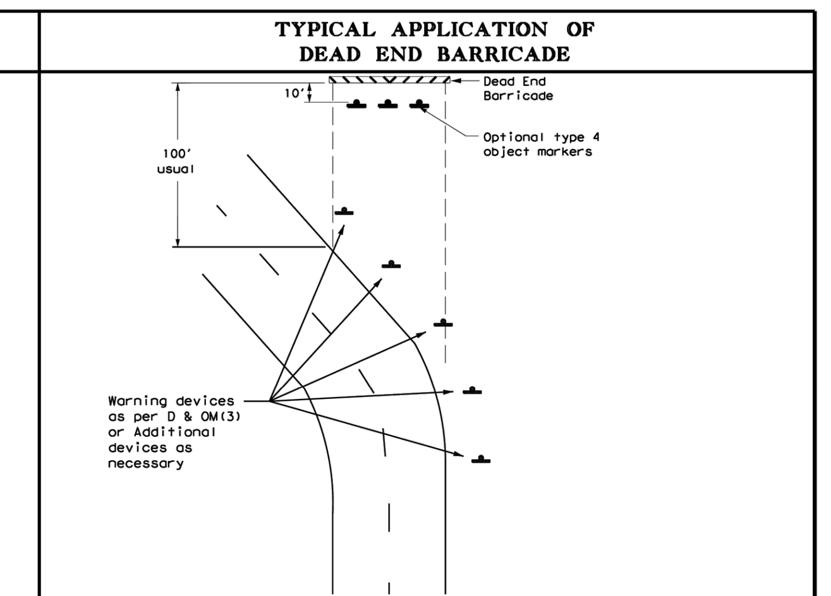
DETAIL 2

FREEWAY DELINEATION FOR RAMPS AND ACCELERATION/DECELERATION LANES



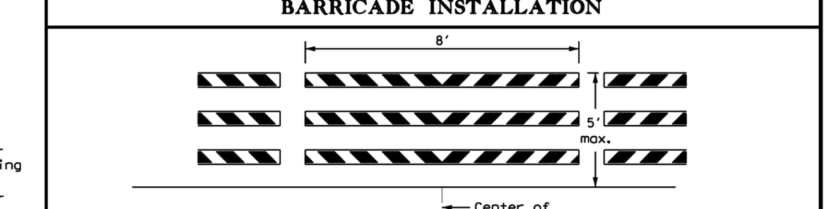
DETAIL 3

TYPICAL APPLICATION OF DEAD END BARRICADE



DETAIL 4

TYPICAL DEAD END BARRICADE INSTALLATION



NOTES
1. Barricade striping shall be red and white reflective sheeting for all permanent road closures.
2. Barricade striping is red and white sloping toward the center of the roadway.
3. Type 3 Barricade Supports should be anchored to soil or pavement as described in compliant Work Zone Traffic Control Devices List, section D.2.f and D.2.g.

DETAIL 5

LEGEND	
(symbol)	Bidirectional Delineator
(symbol)	Delineator
(symbol)	OM-3
(symbol)	Barricade
(symbol)	Sign
(symbol)	OM-2
(symbol)	Double Delineator

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DELINEATOR & OBJECT MARKER PLACEMENT DETAILS
D & OM(4)-20

FILE: dom4-20.dgn | DN: TXDOT | CK: TXDOT | DW: TXDOT | CK: TXDOT
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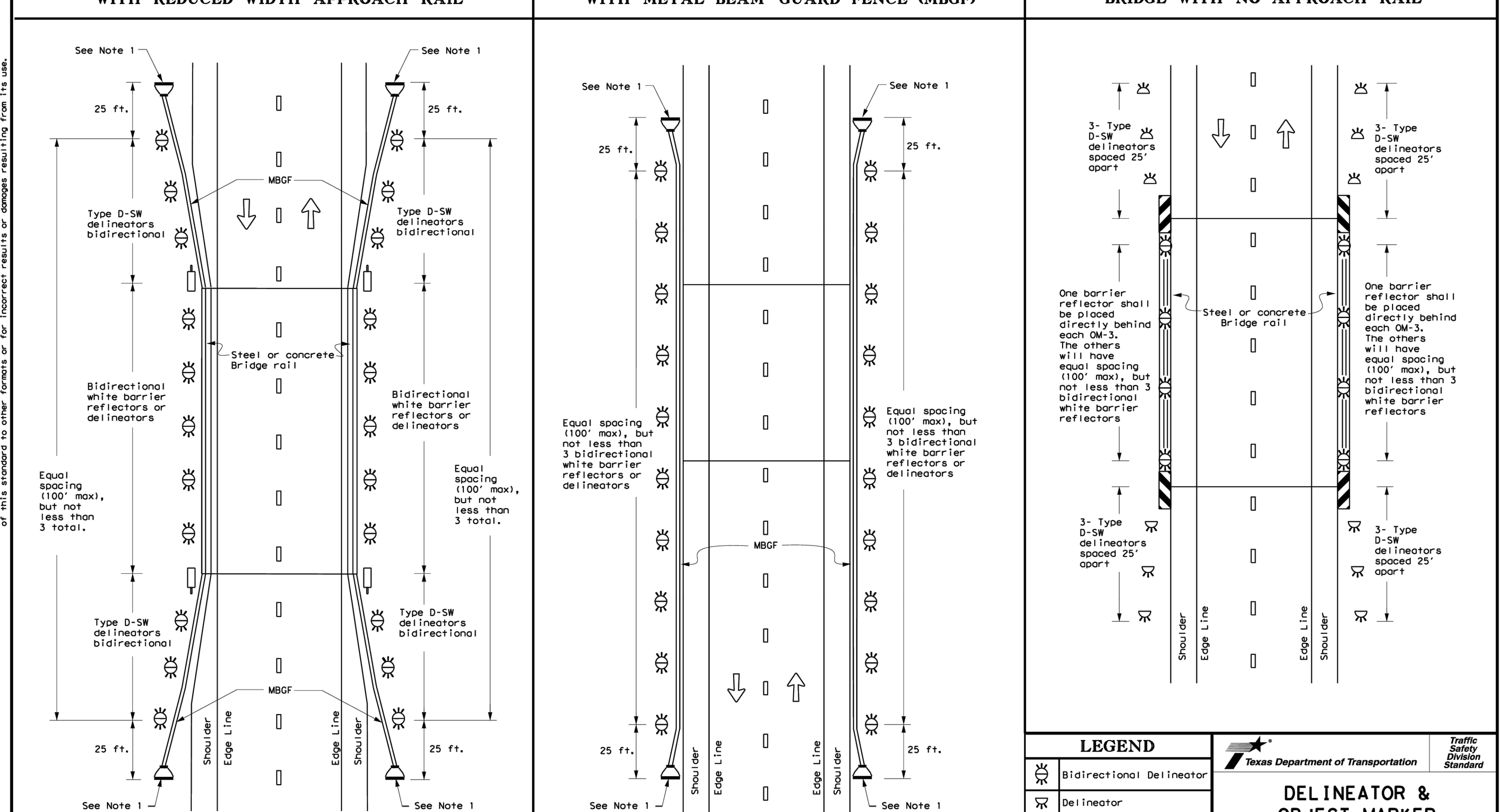
20D

TWO-WAY, TWO LANE ROADWAY WITH REDUCED WIDTH APPROACH RAIL

TWO-WAY, TWO LANE ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)

TWO-WAY, TWO LANE ROADWAY BRIDGE WITH NO APPROACH RAIL



NOTE:
1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

NOTE:
1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

LEGEND	
(symbol)	Bidirectional Delineator
(symbol)	Delineator
(symbol)	OM-3
(symbol)	OM-2
(symbol)	Terminal End
(symbol)	Traffic Flow

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DELINEATOR & OBJECT MARKER PLACEMENT DETAILS
D & OM(5)-20

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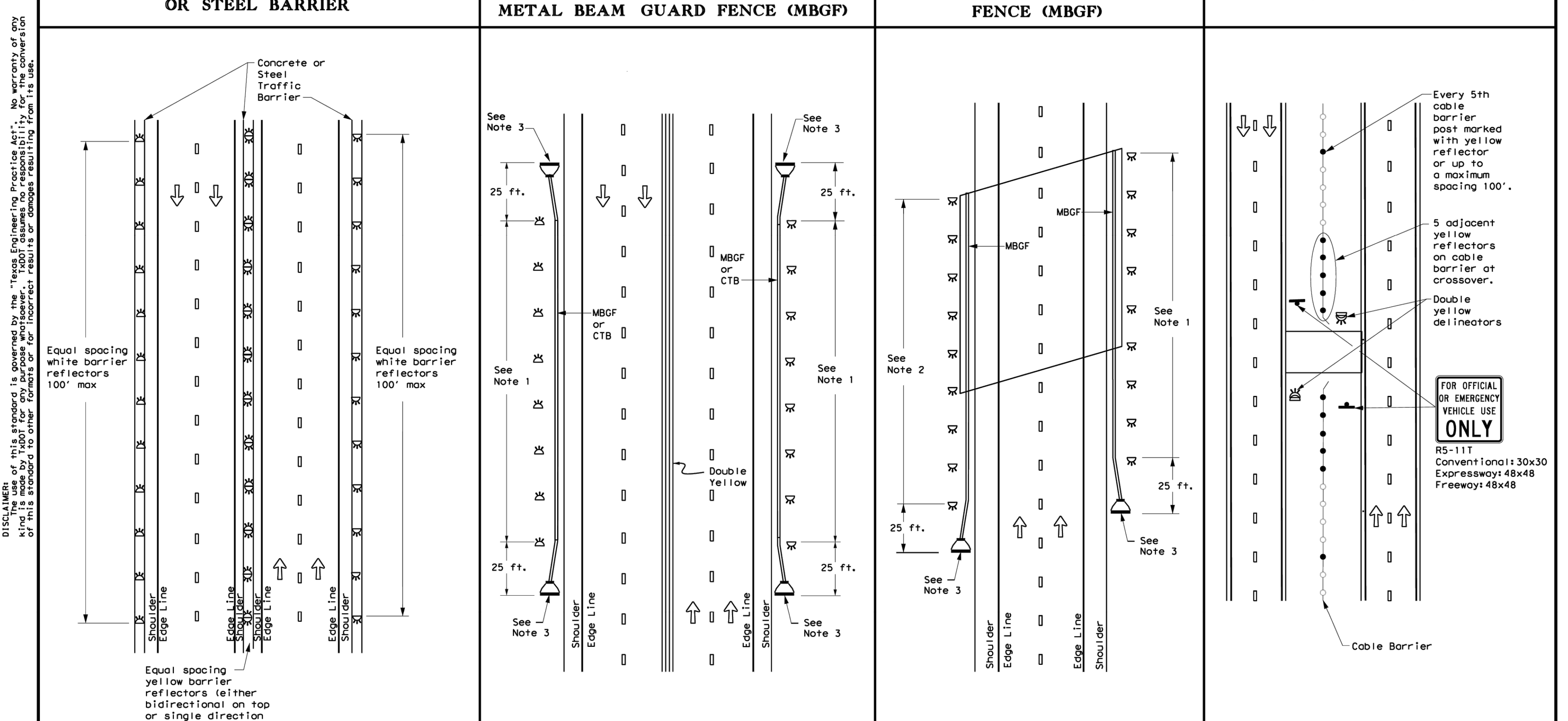
20E

CONTINUOUS CONCRETE OR STEEL BARRIER

MULTI-LANE UNDIVIDED, TWO-WAY ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)

DIVIDED ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)

EMERGENCY CROSSOVER



NOTES
1. Equal spacing (100' max), but not less than 3 single directional white barrier reflectors or delineators. On Continuos Barrier, equal spacing (100' max.)
2. Equal spacing (100' max), but not less than 3 single directional yellow barrier reflectors or delineators.
3. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3)in front of the terminal end.

LEGEND	
(symbol)	Bidirectional Delineator
(symbol)	Delineator
(symbol)	OM-3
(symbol)	OM-2
(symbol)	Terminal End
(symbol)	Traffic Flow

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS
D & OM(6)-20

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REVISIONS 7-20 | DIST | COUNTY | SHEET NO.
20F

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

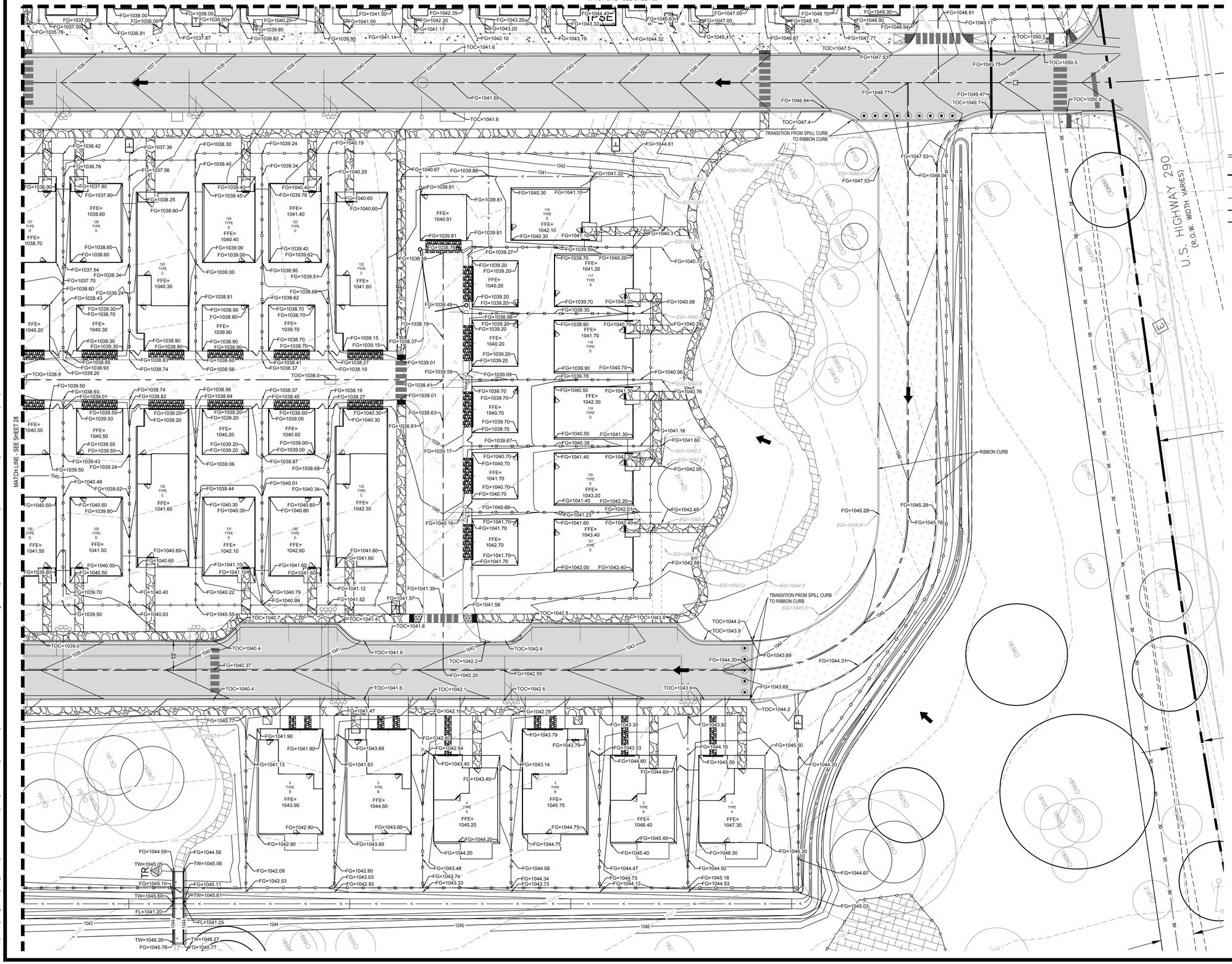
SITE DETAILS (SHEET 3 OF 3)

STATE OF TEXAS — 1-24-2024 — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

MATCH LINE - SEE SHEET 29

MATCH LINE - SEE SHEET 28



0 10' 20' 40'

SCALE: 1" = 20'

LEGEND

	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION
FPE	FINISHED PAD ELEVATION
FG	FINISHED GRADE
HP	HIGH POINT
LP	LOW POINT
FL	FLOW LINE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE

SHEET 8	SHEET 7
SHEET 6	SHEET 5
SHEET 4	SHEET 3
SHEET 2	SHEET 1

KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE/SHE SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

								APR
								DATE
								DESCRIPTION
								REV

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 1 OF 8)

8350 W US 290 HIGHWAY

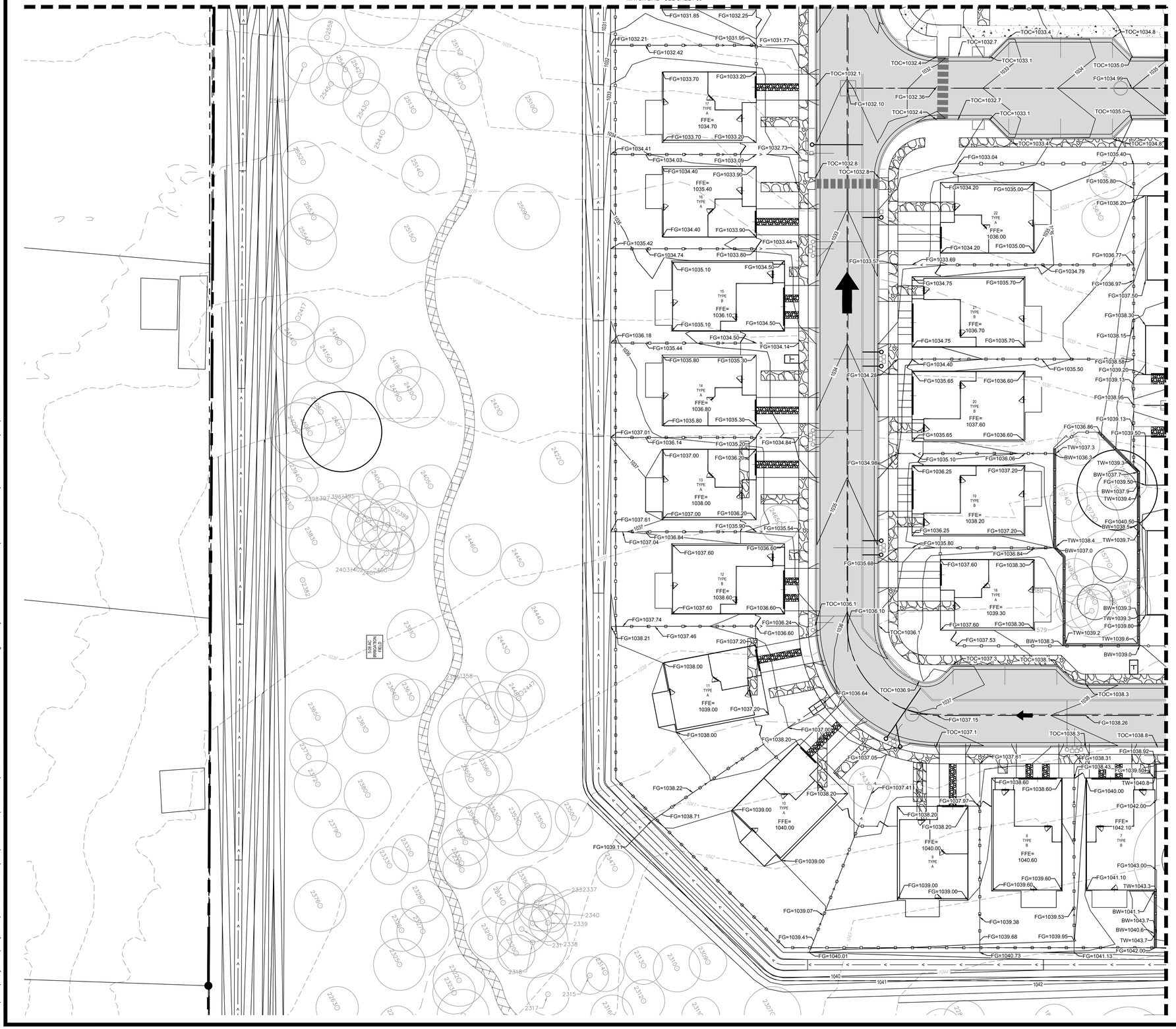
STATE OF TEXAS
12-23-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

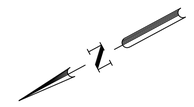
SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 1 OF 8) Plotted: 1/24/2024 1:56:46 PM

MATCH LINE - SEE SHEET 30

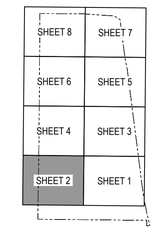
MATCH LINE - SEE SHEET 27





LEGEND

	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION
FPE	FINISHED PAD ELEVATION
FG	FINISHED GRADE
HP	HIGH POINT
LP	LOW POINT
FL	FLOW LINE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE



KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

								APR
								DATE
								DESCRIPTION
								REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

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1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

BGE

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 2 OF 8)

STATE OF TEXAS
1-22-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 2 OF 8) Plotted: 1/24/2024 1:56:52 PM

MATCH LINE - SEE SHEET 31

MATCH LINE - SEE SHEET 30

MATCH LINE - SEE SHEET 27

0 10' 20' 40'

SCALE: 1" = 20'

LEGEND

	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION
FPE	FINISHED PAD ELEVATION
FG	FINISHED GRADE
HP	HIGH POINT
LP	LOW POINT
FL	FLOW LINE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE

PEDERNALES ELECTRIC
UTILITY EASEMENT
DOC. NO. 2022045212

U.S. HIGHWAY 290
(R.O.W. WIDTH VARIES)
ROADWAY

SHEET 8	SHEET 7
SHEET 6	SHEET 5
SHEET 4	SHEET 3
SHEET 2	SHEET 1

KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

									APR
									DATE
									DESCRIPTION
									REV

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

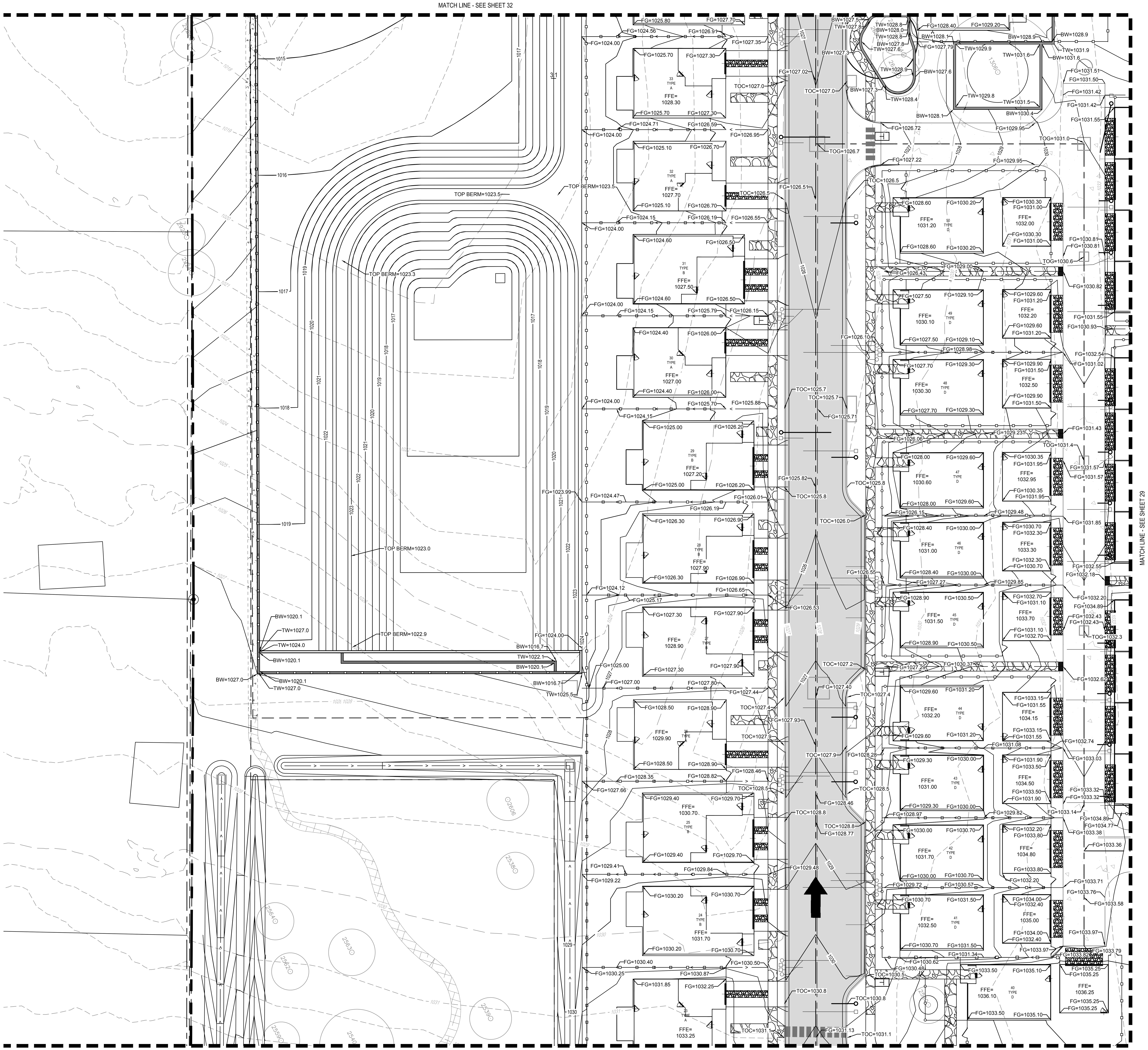
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 3 OF 8)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-2-2024

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\9975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 3 OF 8) Plotted: 1/24/2024 1:56:57 PM



SCALE: 1" = 20'

0 10' 20' 40'

LEGEND

	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION
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FG	FINISHED GRADE
HP	HIGH POINT
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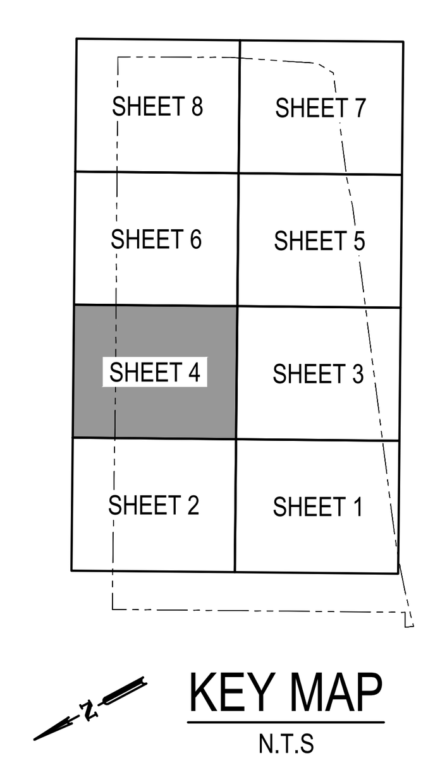
FL	FLOW LINE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE



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

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE

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1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 4 OF 8)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 4 OF 8) Plotted: 1/24/2024 1:57:03 PM

MATCH LINE - SEE SHEET 33

0 10' 20' 40'
SCALE: 1" = 20'

LEGEND

— — —	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION
FPE	FINISHED PAD ELEVATION
FG	FINISHED GRADE
HP	HIGH POINT
LP	LOW POINT
FL	FLOW LINE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE

SHEET 8	SHEET 7
SHEET 6	SHEET 5
SHEET 4	SHEET 3
SHEET 2	SHEET 1

KEY MAP
N.T.S

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
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1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
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TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
GRADING PLAN (SHEET 5 OF 8)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD – 20 Scale.dwg Layout: GRADING PLAN (SHEET 5 OF 8) Plotted: 1/24/2024 1:57:09 PM

MATCH LINE - SEE SHEET 34

MATCH LINE - SEE SHEET 30

MATCH LINE - SEE SHEET 31

0 10' 20' 40'

SCALE: 1" = 20'

LEGEND

PROPERTY BOUNDARY	
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
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EG	EXISTING GRADE

SHEET 8	SHEET 7
SHEET 6	SHEET 5
SHEET 4	SHEET 3
SHEET 2	SHEET 1

KEY MAP
N.T.S

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APR	DATE	DESCRIPTION	REV
		8350 W US 290 HIGHWAY	

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

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1701 DIRECTORS BLVD, SUITE 1000
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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 6 OF 8)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-11-2024

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 6 OF 8) Plotted: 1/24/2024 1:57:16 PM

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 7 OF 8) Plotted: 1/24/2024 1:57:23 PM

APR	DATE	DESCRIPTION	REV
		8350 W US 290 HIGHWAY	

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

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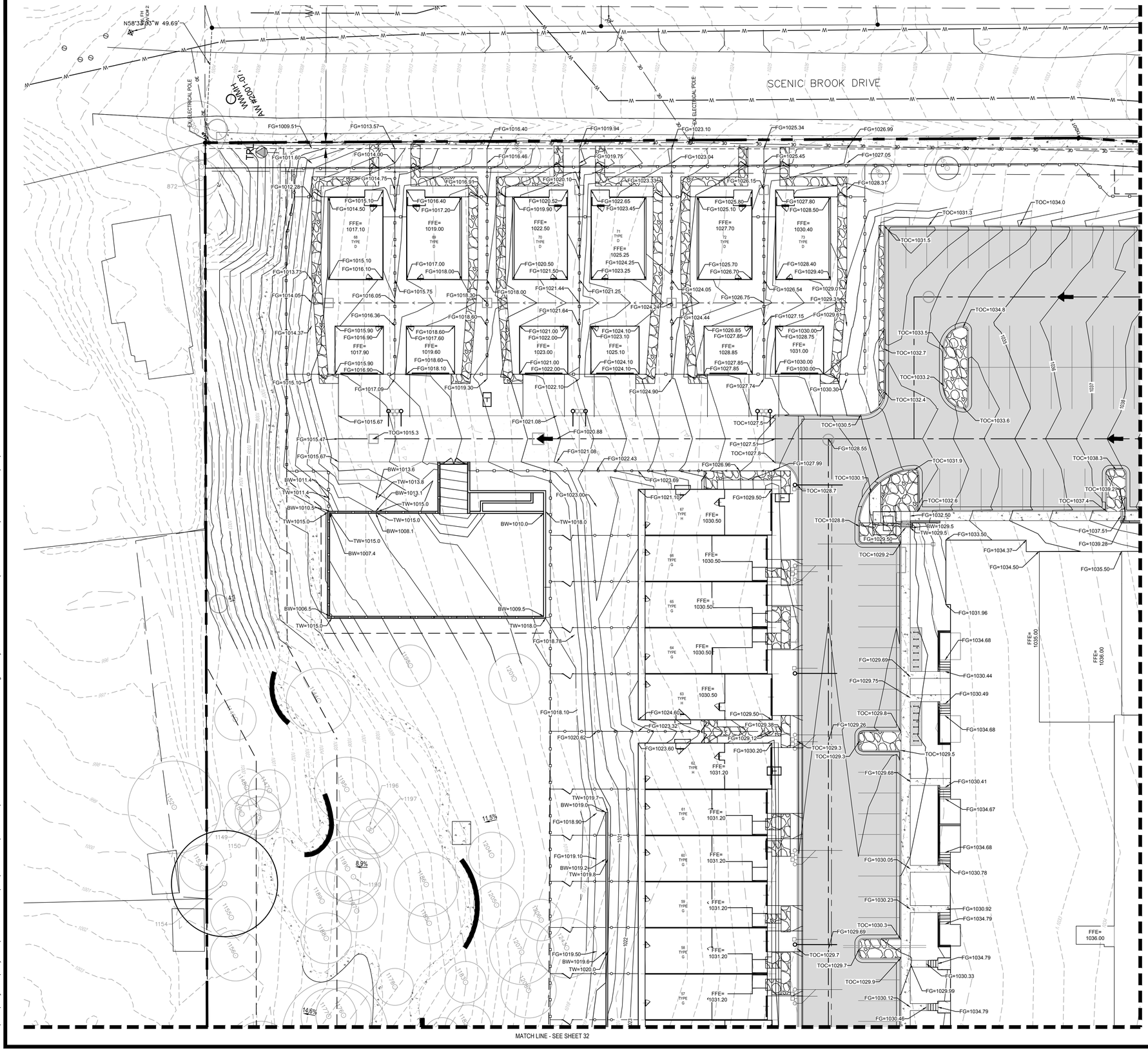
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

GRADING PLAN (SHEET 7 OF 8)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER



0 10' 20' 40'

SCALE: 1" = 20'

LEGEND

	PROPERTY BOUNDARY
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
TOC	TOP OF CURB
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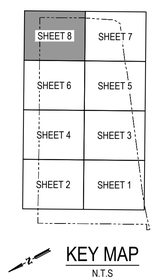

KEY MAP
N.T.S.

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		DATE
	DESCRIPTION	
		REV

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

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AUSTIN, TX 78731
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TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290

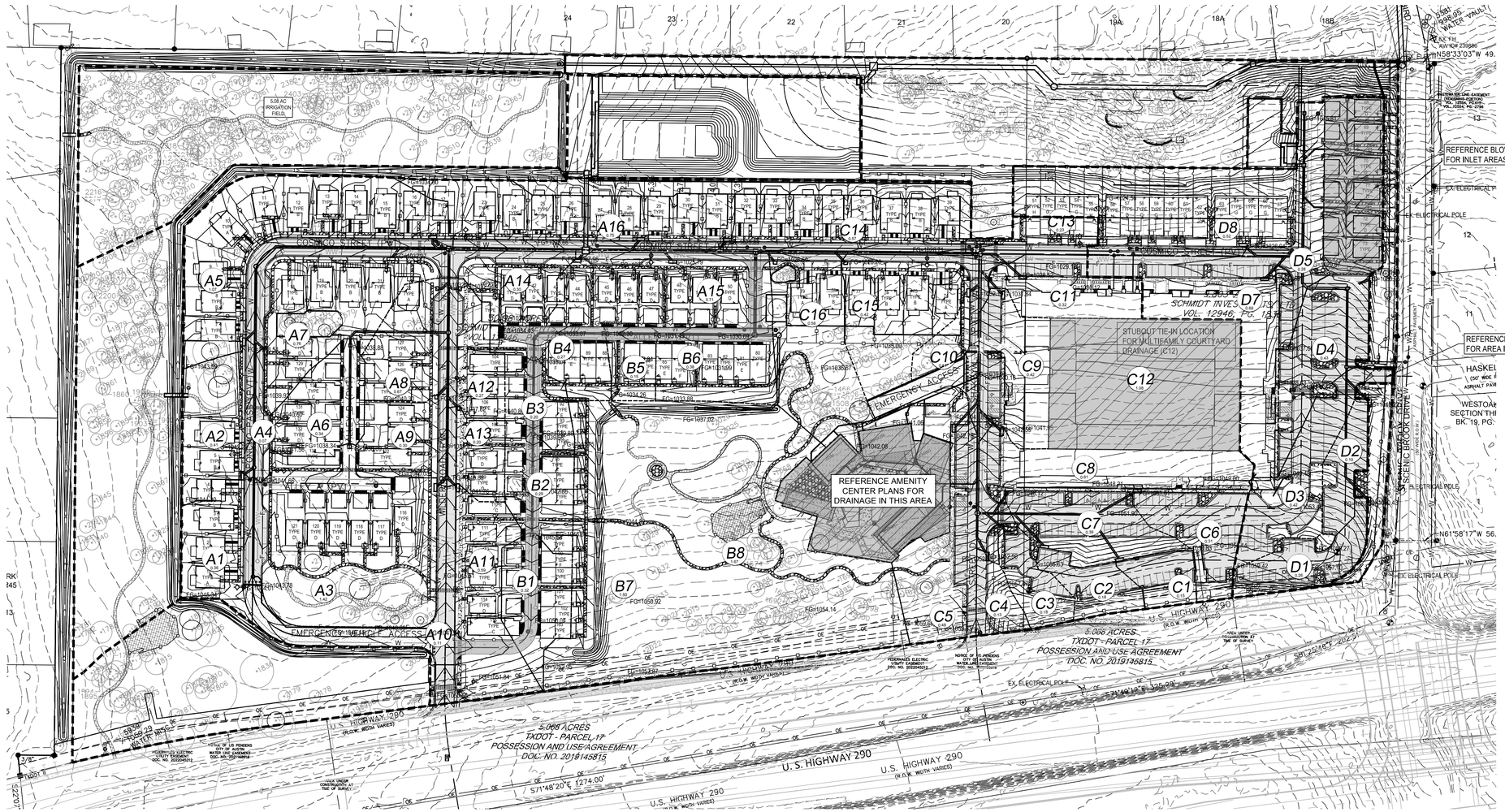
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

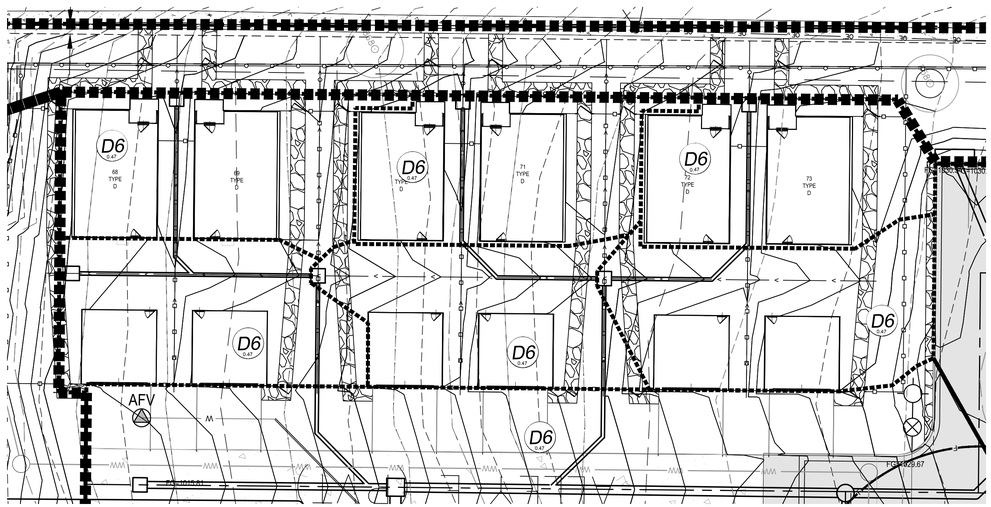
GRADING PLAN (SHEET 8 OF 8)

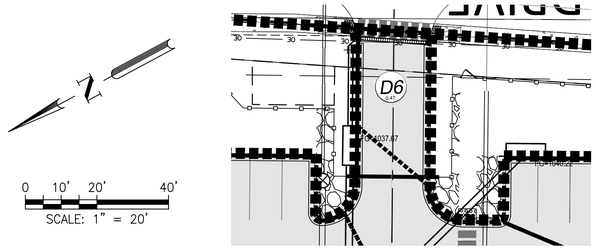
STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-GRAD - 20 Scale.dwg Layout: GRADING PLAN (SHEET 8 OF 8) Plotted: 1/24/2024 1:57:29 PM







0 10' 20' 40'
SCALE: 1" = 20'

LEGEND

- DRAINAGE DIVIDE
- SWALE
- FLOW DIRECTION
- XXX MAJOR ELEV. CONTOUR
- XXX MINOR ELEV. CONTOUR
- ## DRAINAGE AREA ID
- DRAINAGE AREA

NOTES:

1. RUNOFF FROM THE UNITS WILL BE DIRECTED TO ON-SITE STORMWATER DRAINAGE SYSTEMS ACCORDING TO THE INLET DRAINAGE AREAS ON THIS SHEET AND VIA GUTTERS AND DOWNSPOUTS ON EACH UNIT.
2. CONTOURS SHOWN AT ONE FOOT INTERVALS. THESE CONTOURS ARE A MIX OF GIS OFFSITE AND GROUND SURVEY ONSITE.
3. THIS PLAN IS DESIGNED TO COMPLY WITH THE CURRENT CITY OF AUSTIN DRAINAGE CRITERIA MANUAL.

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

INLET DRAINAGE AREA MAP

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975--C--SP--PROP--DRAIN MAP.dwg Layout: INLET DRAINAGE AREA MAP Plotted: 1/24/2024 2:02:46 PM

CONSTANTS

COA C-Values (Sec. 2.4.1, Table 2-3)

	2	10	25	100
Impervious	0.73	0.81	0.86	0.95
Pervious	0.33	0.38	0.42	0.49

← FAIR CONDITION AVERAGE 2-7% SLOPE

COA Atlas 14 IDF Curve Values [Ina/(t+b)^c] (Zone 1)

Year	a	b	c
2	45.240	9.339	0.7399
10	61.250	8.352	0.7147
25	69.960	7.941	0.6954
100	77.310	6.832	0.6524

IDF values are based on COA Drainage Criteria Manual which includes Atlas 14

Manning's Roughness Coefficient		"n" Value
Channel	Concrete Lined Channel	0.015
	Grass Lined (Earth) Channel with regular maintenance	0.035
	Vegetated Channel with trees, little or no underbrush	0.055
	Natural Channel with trees, moderate underbrush	0.075
	Natural Channel with trees, dense underbrush	0.090
	Natural Channel with dense trees and dense underbrush	0.100
Street	Concrete Pavement	0.015
	Asphalt Pavement	0.016
	Smooth Surface (Gravel or Bare Soil)	0.011
Grass	Dense Grass	0.240
	Short Grass Prairie	0.150
	Bermudagrass	0.410
	Range (natural)	0.130
	Woods (Light Underbrush)	0.400
	Woods (Dense Underbrush)	0.800

ON GRADE CURB INLETS (G-1)

Inlet ID	D.A. #	Depressed	Curb Length (ft)	S_L (ft/ft)	S_x (ft/ft)	n	S_e (ft/ft)	a	W	E_o	Q_a (cfs)	Q_t (cfs)	By-Pass (cfs)	By-Pass to	Q_o (cfs)	L_t (ft)	E	Ponded Width (ft)	Ponded Depth (ft)
A-1	A-1	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	2.67	2.67	0.00		2.67	7.36	1.00	4.28	0.26
A-2	A-2	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	3.10	3.10	0.00		3.10	7.84	1.00	4.53	0.27
A-4	A-4	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	0.84	0.84	0.00		0.84	4.52	1.00	2.77	0.17
A-5	A-5	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	9.79	9.19	0.60	A16	9.79	**12.70**	0.94	6.97	0.42
A-8	A-8	Yes	5	0.03	0.06	0.016	0.33	2	2	0.7	3.57	2.89	0.68		3.57	8.32	0.81	4.78	0.29
A-9	A-9	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	4.60	4.60	0.00		4.60	9.25	1.00	5.25	0.32
A-10	A-10	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	1.38	1.38	0.00		1.38	5.58	1.00	3.34	0.20
A-11	A-11	Yes	5	0.03	0.06	0.016	0.33	2	2	0.7	6.09	4.22	1.87	A13	6.09	**10.40**	0.69	5.83	0.35
A-12	A-12	Yes	10	0.03	0.06	0.016	0.33	2	2	0.7	2.88	2.88	0.00		2.88	7.60	1.00	4.41	0.26
A-13	A-13	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	2.01	2.01	0.00		3.89	8.62	1.00	9.81	0.20
A-14	A-14	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	3.21	3.21	0.00		3.21	7.95	1.00	9.13	0.18
C-1	C-1	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	1.33	1.33	0.00		1.33	5.50	1.00	6.57	0.13
C-2	C-2	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	2.21	2.21	0.00		2.21	6.80	1.00	7.94	0.16
C-4	C-4	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	1.21	1.21	0.00		1.21	5.28	1.00	6.33	0.13
C-5	C-5	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	4.68	4.68	0.00		4.68	9.32	1.00	10.52	0.21
C-10	C-10	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	5.34	5.34	0.00		5.34	9.84	1.00	11.05	0.22
C-13	C-13	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	2.09	2.09	0.00		2.09	6.64	1.00	7.77	0.16
C-14	C-14	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	5.21	5.21	0.00		5.21	9.74	1.00	10.94	0.22
C-15	C-15	Yes	5	0.03	0.02	0.016	0.33	2	2	0.7	3.19	2.66	0.53		3.19	7.93	0.83	9.11	0.18
C-16	C-16	Yes	5	0.03	0.02	0.016	0.33	2	2	0.7	4.40	3.36	1.04		4.40	9.08	0.76	10.28	0.21
D-3	D-3	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	5.34	5.34	0.00		5.34	9.85	1.00	11.05	0.22
D-7	D-7	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	8.64	8.28	0.36	D8	8.64	**12.05**	0.96	13.23	0.26
D-8	D-8	Yes	10	0.03	0.02	0.016	0.33	2	2	0.7	4.64	4.64	0.00		5.00	9.58	1.00	10.78	0.22

IN SUMP CURB INLETS (Type S-1 & S-4)

Inlet ID	D.A. #	Length (ft)	C_w	D(ft)	Depression?	W (ft)	P(ft)	Slope (ft/ft)	Delta h (ft)	H_{Actual} (ft)	Inlet Operation	Q (cfs)	Q_{Weir} (cfs)	$Q_{Orifice}$ (cfs)	Design Met?
A-7	A-7	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	6.13	13.99	-	TRUE
A-15	A-15	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	6.72	8.13	**20.04**	TRUE
A-16	A-16	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	8.12	8.13	**26.59**	TRUE
C-3	C-3	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	1.95	8.13	**3.13**	TRUE
C-6	C-6	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	3.70	8.13	**8.19**	TRUE
C-7	C-7	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	4.47	8.13	**10.88**	TRUE
C-8	C-8	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	5.32	8.13	**14.10**	TRUE
C-9	C-9	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	4.19	8.13	**9.85**	TRUE
C-11	C-11	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	2.96	8.13	**5.85**	TRUE
D-1	D-1	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	3.25	8.13	**6.73**	TRUE
D-2	D-2	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	2.55	8.13	**4.68**	TRUE
D-4	D-4	10	2.3	0.50	Yes	4.00	17.20	0.02	0.50	0.50	Weir	5.80	8.13	**16.05**	TRUE

ON GRADE GRATE INLETS (G-2)

Inlet ID	D.A. #	S_L (ft/ft)	S_X (ft/ft)	n	W (ft)	L (ft)	d (ft)*	a (sf)	P (ft)	T (ft)	Q (cfs)	Q (cfs)	V (ft)*	E_o	V_o	R_f	R_s	E	Clogging Factor (%)	Q_t (cfs)*	By-Pass (cfs)*	By-Pass to
B-1	B-1	2.0%	5.0%	0.016	4	4	0.24	1.11	9.45	9.44	3.51	3.51	3.16	0.77	5.80	1.00	0.51	0.89	35%	2.03	1.49	B-2
B-2	B-2	2.0%	5.0%	0.016	4	4	0.23	1.02	9.06	9.05	3.14	4.63	3.07	0.79	5.80	1.00	0.52	0.90	35%	1.84	1.31	B-3
B-3	B-3	2.0%	5.0%	0.016	4	4	0.19	0.76	7.79	7.78	2.10	3.41	2.78	0.85	5.80	1.00	0.56	0.94	35%	1.28	0.82	B-4
B-4	B-4	2.0%	5.0%	0.016	4	4	0.21	0.91	8.53	8.52	2.68	3.50	2.95	0.82	5.80	1.00	0.54	0.91	35%	1.59	1.09	B-5
B-5	B-5	2.0%	5.0%	0.016	4	4	0.17	0.57	6.74	6.73	1.43	2.51	2.52	0.91	5.80	1.00	0.61	0.96	35%	0.89	0.53	B-6

IN SUMP GRATE INLETS (S-2)

Inlet ID	D.A. #	Inlet Operation	$C_{o/w}$	W (ft)	T (ft)	Clogging Factor (%)	P (ft)	P (ft)	Permieter Met?	D (ft)	D (ft)	Depth Met?	A (ft^2)	A_g (ft^2)	Q (cfs)	Q_w (cfs)	Q_o (cfs)	Design Met?
A-3	A-3	Weir	3	5	5	30%	6.00	3.9754193	TRUE	1	0.76	TRUE	25	7.5	11.93	18.00	-	TRUE
A-6	A-6	Weir	3	4	4	30%	4.80	1.1834164	TRUE	1	0.39	TRUE	16	4.8	3.55	14.40	-	TRUE
B-6	B-6	Weir	3	4	4	30%	4.80	1.2895644	TRUE	1	0.41	TRUE	16	4.8	3.87	14.40	-	TRUE
B-7	B-7	Weir	3	4	4	30%	4.80	3.1700892	TRUE	1	0.76	TRUE	16	4.8	9.51	14.40	-	TRUE
B-8	B-8	Weir	3	4	4	30%	4.80	3.3329834	TRUE	1	0.78	TRUE	16	4.8	10.00	14.40	-	TRUE
D-5	D-5	Weir	3	4	4	30%	4.80	1.1270308	TRUE	1	0.38	TRUE	16	4.8	3.38	14.40	-	TRUE
D-6	D-6	Weir	3	4	4	30%	4.80	1.408917	TRUE	1	0.44	TRUE	16	4.8	4.23	14.40	-	TRUE

FLOW CALCULATIONS

DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	I.C. (SF)	I.C. (AC)	I.C. (%)	Tc (Min.)	C2	C10	C25	C100	I2	I10	I25	I100	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
A-1	PR ON 1	15,719	0.36	7,834	0.18	49.84%	15.7	0.54	0.60	0.65	0.73	4.18	6.32	7.77	10.14	0.81	1.38	1.82	2.67
A-2	PR ON 1	17,910	0.41	6,844	0.16	38.21%	12.5	0.49	0.55	0.60	0.67	4.62	7.00	8.59	11.21	0.93	1.59	2.10	3.10
A-3	PR ON 1	61,897	1.42	15,526	0.36	25.08%	7.3	0.44	0.49	0.54	0.61	5.66	8.59	10.54	13.75	3.50	6.01	**8.0**	**11.9**
A-4	PR ON 1	3,156	0.07	2,925	0.07	92.71%	9.8	0.72	0.80	0.85	0.93	5.10	7.72	9.48	12.36	0.27	0.45	0.58	0.84
A-5	PR ON 1	46,766	1.07	22,825	0.52	48.81%	9.3	0.53	0.60	0.64	0.72	5.19	7.87	9.65	12.59	2.98	5.06	6.68	9.79
A-6	PR ON 1	14,831	0.34	5,983	0.14	40.34%	5.2	0.50	0.56	0.61	0.68	6.24	9.51	11.66	15.25	1.06	1.82	**2.4**	**3.6**
A-7	PR ON 1	33,019	0.76	15,881	0.36	48.10%	12.4	0.53	0.60	0.64	0.72	4.63	7.00	8.60	11.22	1.87	3.17	4.18	6.13
A-8	PR ON 1	16,138	0.37	7,263	0.17	45.00%	7.4	0.52	0.58	0.63	0.71	5.62	8.53	10.47	13.67	1.08	1.84	2.43	3.57
A-9	PR ON 1	12,863	0.30	5,788	0.13	45.00%		0.52	0.58	0.63	0.71	8.66	13.44	16.56	22.07	1.33	2.31	3.07	4.60
A-10	PR ON 1	4,900	0.11	4,036	0.09	82.36%	7.1	0.68	0.75	0.80	0.89	5.69	8.65	10.61	13.85	0.43	0.73	0.95	1.38
A-11	PR ON 1	25,880	0.59	13,202	0.30	51.01%	7.0	0.54	0.61	0.65	0.73	5.73	8.71	10.68	13.95	1.85	3.15	4.16	6.09
A-12	PR ON 1	11,861	0.27	6,925	0.16	58.38%	7.3	0.58	0.64	0.69	0.77	5.65	8.58	10.53	13.75	0.89	1.50	1.97	2.88
A-13	PR ON 1	8,785	0.20	5,129	0.12	58.38%	8.6	0.58	0.64	0.69	0.77	5.34	8.09	9.93	12.96	0.62	1.05	1.38	2.01
A-14	PR ON 1	13,170	0.30	7,002	0.16	53.17%	6.5	0.55	0.62	0.66	0.75	5.85	8.89	10.91	14.25	0.98	1.67	2.19	3.21
A-15	PR ON 1	30,785	0.71	15,762	0.36	51.20%	8.7	0.55	0.61	0.66	0.74	5.33	8.07	9.91	12.93	2.05	3.48	4.59	6.72
A-16	PR ON 1	32,875	0.75	20,623	0.47	62.73%	7.5	0.59	0.66	0.71	0.79	5.59	8.49	10.42	13.59	2.51	4.24	**5.57**	**8.12**
B-1	PR ON 1	14,088	0.32	9,353	0.21	66.39%	7.8	0.61	0.68	0.73	0.81	5.53	8.39	10.30	13.44	1.09	1.84	2.42	3.51
B-2	PR ON 1	12,436	0.29	7,683	0.18	61.78%	6.9	0.59	0.66	0.70	0.79	5.75	8.74	10.72	14.00	0.97	1.64	2.16	3.14
B-3	PR ON 1	8,749	0.20	5,875	0.13	67.15%	8.8	0.61	0.68	0.73	0.81	5.30	8.04	9.87	12.87	0.65	1.10	1.44	2.10
B-4	PR ON 1	11,887	0.27	8,000	0.18	67.30%	10.4	0.61	0.68	0.73	0.81	4.98	7.53	9.25	12.06	0.83	1.40	1.84	2.68
B-5	PR ON 1	6,557	0.15	3,715	0.09	56.66%	9.6	0.57	0.63	0.68	0.76	5.13	7.77	9.53	12.43	0.44	0.74	0.98	1.43
B-6	PR ON 1	16,721	0.38	9,565	0.22	57.20%	8.2	0.57	0.64	0.68	0.76	5.43	8.23	10.10	13.18	1.19	2.01	2.65	3.87
B-7	PR ON 1	65,410	1.50	2,059	0.05	3.15%	9.4	0.34	0.39	0.43	0.51	5.17	7.83	9.61	12.54	2.66	4.64	6.27	9.51
B-8	PR ON 1	72,695	1.67				10.1	0.33	0.38	0.42	0.49	5.04	7.64	9.37	12.23	2.78	4.84	6.57	10.00
C-1	PR ON 1	6,326	0.15	3,909	0.09	61.78%	11.3	0.59	0.66	0.70	0.79	4.82	7.29	8.95	11.68	0.41	0.70	0.92	1.33
C-2	PR ON 1	7,775	0.18	5,069	0.12	65.19%	5.0	0.60	0.67	0.72	0.80	6.31	9.61	11.79	15.42	0.68	1.15	1.52	2.21
C-3	PR ON 1	7,943	0.18	3,354	0.08	42.22%	5.0	0.51	0.57	0.61	0.69	6.31	9.61	11.79	15.42	0.58	1.00	**1.32**	**1.95**
C-4	PR ON 1	5,490	0.13	1,509	0.03	27.49%	5.0	0.45	0.50	0.55	0.62	6.31	9.61	11.79	15.42	0.35	0.61	0.81	1.21
C-5	PR ON 1	20,962	0.48	8,072	0.19	38.51%	6.3	0.49	0.55	0.60	0.67	5.92	9.00	11.04	14.42	1.40	2.40	3.17	4.68
C-6	PR ON 1	13,466	0.31	10,536	0.24	78.25%	7.1	0.66	0.73	0.78	0.87	5.69	8.64	10.60	13.84	1.16	1.96	2.56	3.70
C-7	PR ON 1	17,113	0.39	10,554	0.24	61.67%	6.2	0.59	0.66	0.70	0.79	5.94	9.04	11.09	14.49	1.38	2.33	3.07	4.47
C-8	PR ON 1	26,412	0.61	17,728	0.41	67.12%	13.6	0.61	0.68	0.73	0.81	4.45	6.73	8.27	10.80	1.65	2.78	3.66	5.32
C-9	PR ON 1	18,118	0.42	12,011	0.28	66.29%	9.6	0.61	0.68	0.72	0.81	5.13	7.78	9.55	12.45	1.30	2.19	2.88	4.19
C-10	PR ON 1	26,455	0.61	9,147	0.21	34.58%	7.8	0.48	0.54	0.58	0.66	5.52	8.37	10.27	13.40	1.59	2.72	3.61	5.34
C-11	PR ON 1	14,015	0.32	9,452	0.22	67.44%	12.2	0.61	0.68	0.73	0.81	4.66	7.05	8.66	11.29	0.92	1.55	2.03	2.96
C-12	PR ON 1	47,228	1.08	31,969	0.73	67.69%	9.2	0.61	0.68	0.73	0.81	5.21	7.90	9.69	12.64	3.47	5.86	7.69	11.17
C-13	PR ON 1	10,236	0.23	9,584	0.22	93.63%	18.1	0.72	0.80	0.85	0.94	3.90	5.89	7.24	9.48	0.66	1.11	**1.45**	**2.09**
C-14	PR ON 1	24,684	0.57	16,850	0.39	68.26%	12.4	0.62	0.69	0.73	0.82	4.64	7.01	8.61	11.24	1.62	2.73	3.58	5.21
C-15	PR ON 1	18,347	0.42	3,888	0.09	21.19%	8.9	0.42	0.48	0.52	0.59	5.28	8.00	9.82	12.81	0.93	1.60	2.14	3.19
C-16	PR ON 1	25,335	0.58	5,369	0.12	21.19%	8.9	0.42	0.48	0.52	0.59	5.27	7.99	9.81	12.79	1.28	2.21	2.95	4.40
D-1	PR ON 2	11,119	0.26	8,607	0.20	77.41%	5.8	0.66	0.73	0.78	0.86	6.05	9.21	11.30	14.77	1.01	1.71	**2.24**	**3.25**
D-2	PR ON 2	8,188	0.19	7,360	0.17	89.89%	5.9	0.71	0.78	0.83	0.92	6.04	9.18	11.27	14.72	0.80	1.35	1.77	2.55
D-3	PR ON 2	18,487	0.42	14,251	0.33	77.09%	6.0	0.65	0.73	0.77	0.86	6.00	9.13	11.20	14.63	1.66	2.82	3.68	5.34
D-4	PR ON 2	18,888	0.43	16,721	0.38	88.53%	6.0	0.70	0.78	0.83	0.91	5.99	9.12	11.19	14.61	1.82	3.08	4.01	5.80
D-5	PR ON 2	12,211	0.28	8,196	0.19	67.12%	5.7	0.61	0.68	0.73	0.81	6.09	9.26	11.36	14.85	1.04	1.77	2.32	3.38
D-6	PR ON 2	20,354	0.47	8,357	0.19	41.06%	8.2	0.50	0.56	0.61	0.69	5.42	8.22	10.09	13.17	1.27	2.17	2.87	4.23
D-7	PR ON 2	30,026	0.69	23,011	0.53	76.64%	6.0	0.65	0.72	0.77	0.86	5.99	9.11	11.18	14.60	2.69	4.55	5.95	8.64
D-8	PR ON 2	22,648	0.52	20,293	0.47	89.60%	17.2	0.71	0.78	0.83	0.92	4.00	6.04	7.42	9.71	1.47	2.46	3.21	4.64

	APR
	DATE
DESCRIPTION	
8350 W US 290 HIGHWAY	
	REV

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

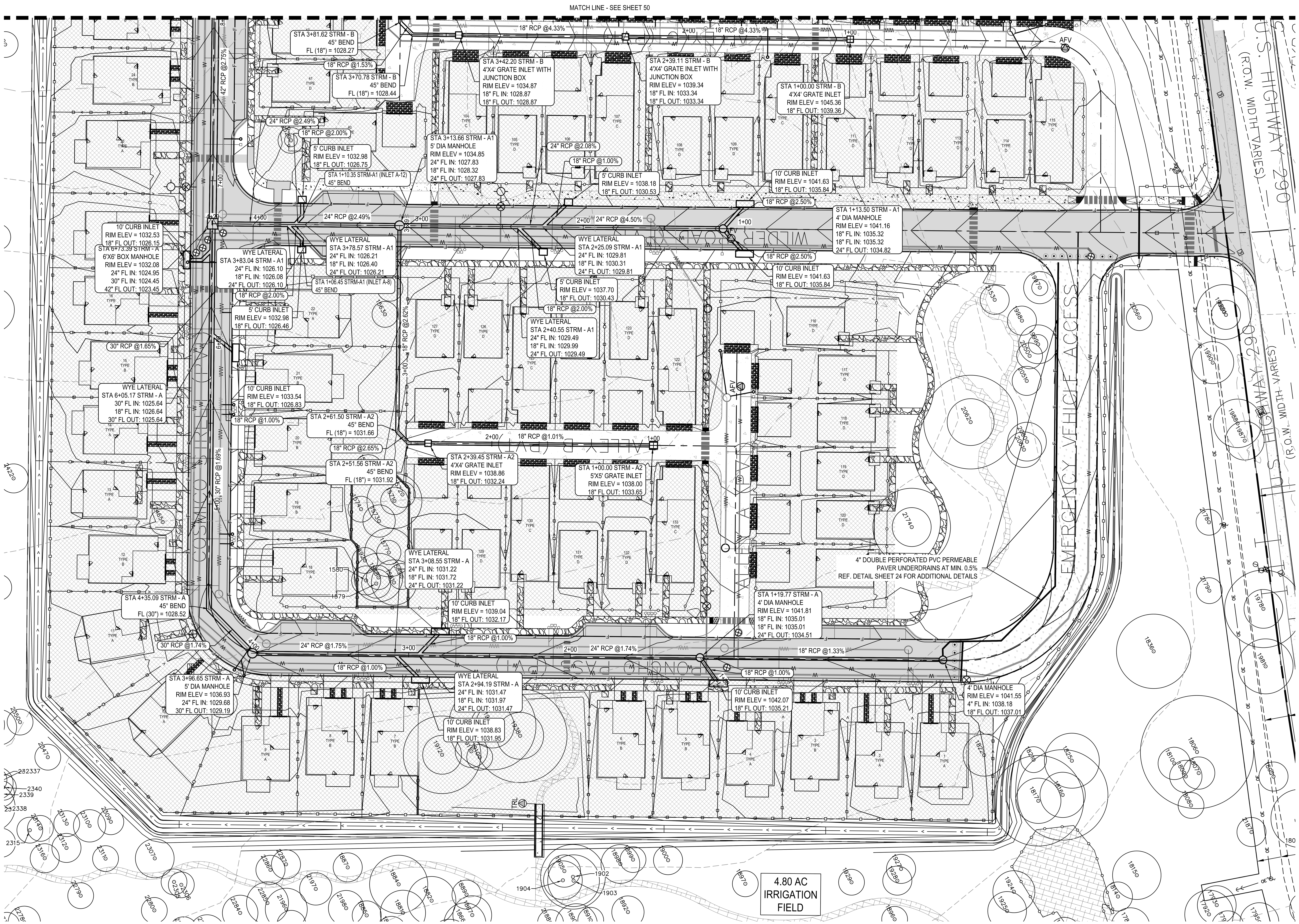
INLET DRAINAGE CALCULATIONS

STATE OF TEXAS
1-29-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

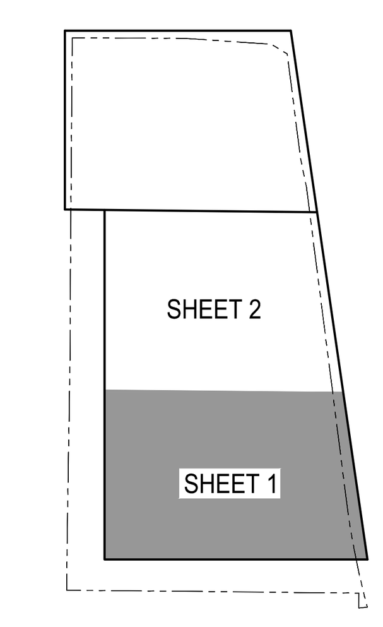
G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-PROP-DRAIN MAP.dwg Layout: INLET DRAINAGE CALCULATIONS Plotted: 1/24/2024 2:02:48 PM

MATCH LINE - SEE SHEET 50


STA 3+81.62 STRM - B
45° BEND
FL (18") = 1028.27
18" RCP @1.53%
STA 3+70.78 STRM - B
45° BEND
FL (18") = 1028.44
18" RCP @4.33%
18" RCP @4.33%
STA 3+42.20 STRM - B
4'X4' GRATE INLET WITH JUNCTION BOX
RIM ELEV = 1034.87
18" FL IN: 1028.87
18" FL OUT: 1028.87
STA 2+39.11 STRM - B
4'X4' GRATE INLET WITH JUNCTION BOX
RIM ELEV = 1039.34
18" FL IN: 1033.34
18" FL OUT: 1033.34
STA 1+00.00 STRM - B
4'X4' GRATE INLET
RIM ELEV = 1045.36
18" FL OUT: 1039.36
AFV
24" RCP @2.49%
18" RCP @2.00%
5' CURB INLET
RIM ELEV = 1032.98
18" FL OUT: 1026.75
STA 1+10.35 STRM-A1 (INLET A-12)
45° BEND
STA 3+13.66 STRM - A1
5' DIA MANHOLE
RIM ELEV = 1034.85
24" FL IN: 1027.83
18" FL IN: 1028.32
24" FL OUT: 1027.83
24" RCP @2.08%
18" RCP @1.00%
5' CURB INLET
RIM ELEV = 1038.18
18" FL OUT: 1030.53
10' CURB INLET
RIM ELEV = 1041.63
18" FL OUT: 1035.84
18" RCP @2.50%
STA 1+13.50 STRM - A1
4' DIA MANHOLE
RIM ELEV = 1041.16
18" FL IN: 1035.32
18" FL IN: 1035.32
24" FL OUT: 1034.82
24" RCP @2.49%
24" RCP @4.50%
WILDER ROAD
10' CURB INLET
RIM ELEV = 1032.53
18" FL OUT: 1026.15
STA 6+73.39 STRM - A
6'X6' BOX MANHOLE
RIM ELEV = 1032.08
24" FL IN: 1024.95
30" FL IN: 1024.45
42" FL OUT: 1023.45
WYE LATERAL
STA 3+83.04 STRM - A1
24" FL IN: 1026.10
18" FL IN: 1026.08
24" FL OUT: 1026.10
WYE LATERAL
STA 3+78.57 STRM - A1
24" FL IN: 1026.21
18" FL IN: 1026.40
24" FL OUT: 1026.21
STA 1+06.45 STRM-A1 (INLET A-8)
45° BEND
WYE LATERAL
STA 2+25.09 STRM - A1
24" FL IN: 1029.81
18" FL IN: 1030.31
24" FL OUT: 1029.81
18" RCP @2.50%
10' CURB INLET
RIM ELEV = 1041.63
18" FL OUT: 1035.84
5' CURB INLET
RIM ELEV = 1037.70
18" FL OUT: 1030.43
18" RCP @2.00%
18" RCP @2.00%
5' CURB INLET
RIM ELEV = 1032.98
18" FL OUT: 1026.46
WYE LATERAL
STA 2+40.55 STRM - A1
24" FL IN: 1029.49
18" FL IN: 1029.99
24" FL OUT: 1029.49
30" RCP @1.65%
WYE LATERAL
STA 6+05.17 STRM - A
30" FL IN: 1025.64
18" FL IN: 1026.64
30" FL OUT: 1025.64
10' CURB INLET
RIM ELEV = 1033.54
18" FL OUT: 1026.83
18" RCP @1.00%
STA 2+61.50 STRM - A2
45° BEND
FL (18") = 1031.66
18" RCP @2.65%
18" RCP @1.01%
ALLEY B
STA 2+51.56 STRM - A2
45° BEND
FL (18") = 1031.92
STA 2+39.45 STRM - A2
4'X4' GRATE INLET
RIM ELEV = 1038.86
18" FL OUT: 1032.24
STA 1+00.00 STRM - A2
5'X5' GRATE INLET
RIM ELEV = 1038.00
18" FL OUT: 1033.65
EMERGENCY VEHICLE ACCESS
COSMOS
42" RCP @2.75%
30" RCP @1.68%
WYE LATERAL
STA 3+08.55 STRM - A
24" FL IN: 1031.22
18" FL IN: 1031.72
24" FL OUT: 1031.22
4" DOUBLE PERFORATED PVC PERMEABLE
PAVER UNDERDRAINS AT MIN. 0.5%
REF. DETAIL SHEET 24 FOR ADDITIONAL DETAILS
STA 4+35.09 STRM - A
45° BEND
FL (30") = 1028.52
10' CURB INLET
RIM ELEV = 1039.04
18" FL OUT: 1032.17
STA 1+19.77 STRM - A
4' DIA MANHOLE
RIM ELEV = 1041.81
18" FL IN: 1035.01
18" FL IN: 1035.01
24" FL OUT: 1034.51
30" RCP @1.74%
24" RCP @1.75%
18" RCP @1.00%
24" RCP @1.74%
18" RCP @1.33%
18" RCP @1.00%
18" RCP @1.00%
STA 3+96.65 STRM - A
5' DIA MANHOLE
RIM ELEV = 1036.93
24" FL IN: 1029.68
30" FL OUT: 1029.19
WYE LATERAL
STA 2+94.19 STRM - A
24" FL IN: 1031.47
18" FL IN: 1031.97
24" FL OUT: 1031.47
10' CURB INLET
RIM ELEV = 1042.07
18" FL OUT: 1035.21
4' DIA MANHOLE
RIM ELEV = 1041.55
4" FL IN: 1038.18
18" FL OUT: 1037.01
10' CURB INLET
RIM ELEV = 1038.83
18" FL OUT: 1031.95
U.S. HIGHWAY 290
(R.O.W. WIDTH VARIES)
4.80 AC
IRRIGATION
FIELD
0 15' 30' 60'
SCALE: 1" = 30'

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.



KEY MAP
N.T.S

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

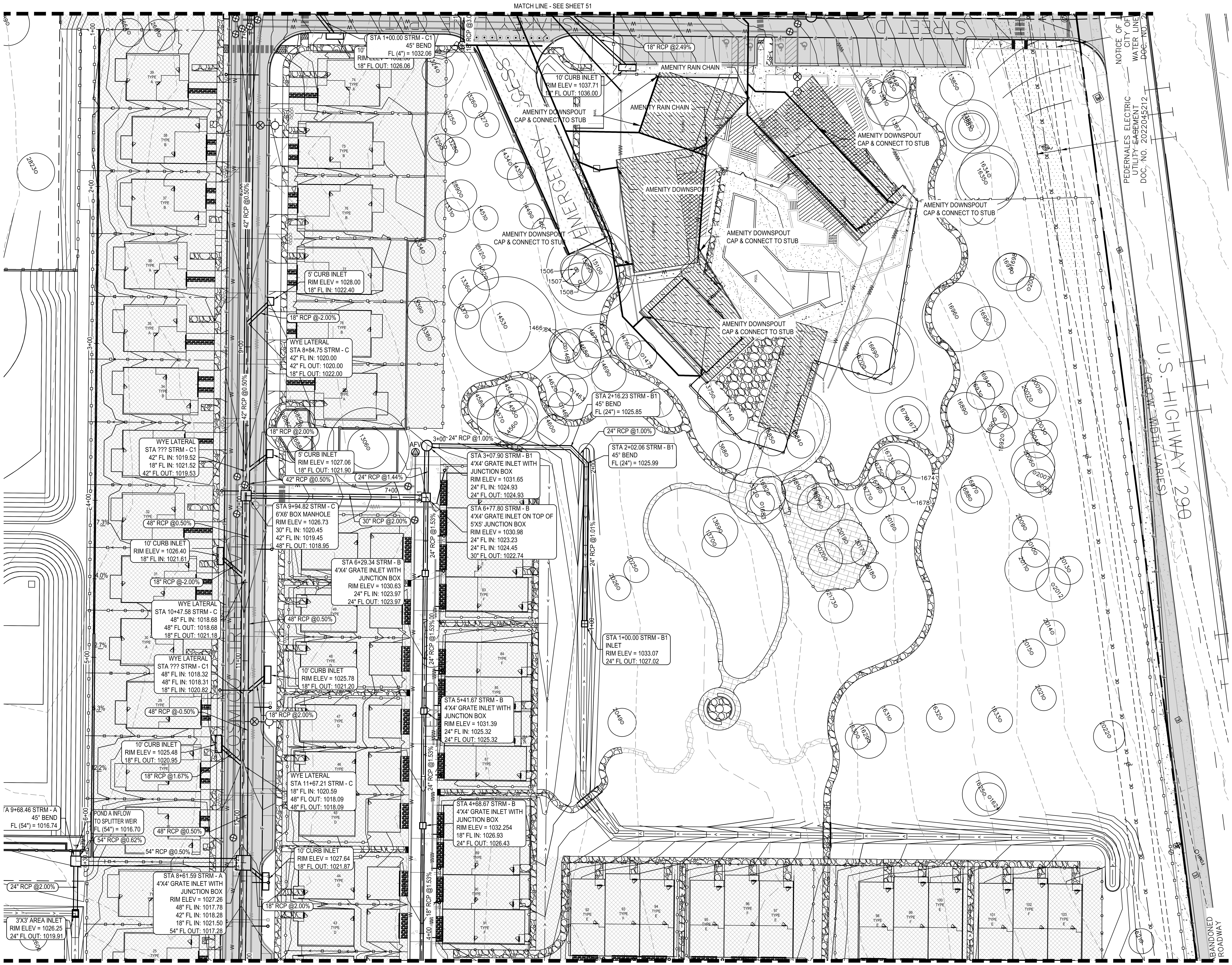
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
STORM SEWER PLAN (PVT) (SHEET 1 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-STRM.dwg Layout: STORM SEWER PLAN (PVT) (SHEET 1 OF 3) Plotted: 1/24/2024 2:03:50 PM

MATCH LINE - SEE SHEET 51

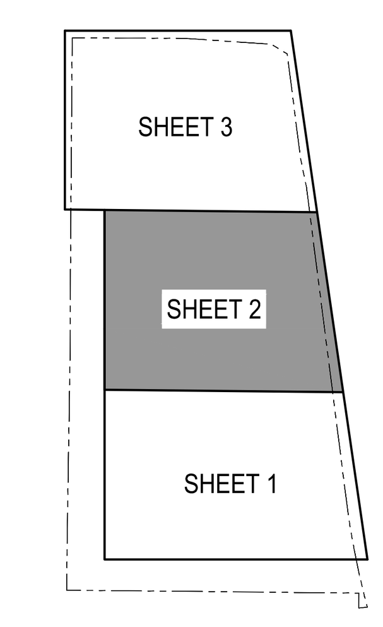

STA 1+00.00 STRM - C1
45° BEND
FL (4") = 1032.06
18" FL OUT: 1026.06
18" RCP @2.49%
AMENITY RAIN CHAIN
10' CURB INLET
RIM ELEV = 1037.71
18" FL OUT: 1036.00
AMENITY DOWNSPOUT
CAP & CONNECT TO STUB
AMENITY RAIN CHAIN
EMERGENCY ACCESS
AMENITY DOWNSPOUT
CAP & CONNECT TO STUB
5' CURB INLET
RIM ELEV = 1028.00
18" FL IN: 1022.40
18" RCP @-2.00%
WYE LATERAL
STA 8+84.75 STRM - C
42" FL IN: 1020.00
42" FL OUT: 1020.00
18" FL IN: 1022.00
STA 2+16.23 STRM - B1
45° BEND
FL (24") = 1025.85
24" RCP @1.00%
STA 2+02.06 STRM - B1
45° BEND
FL (24") = 1025.99
18" RCP @2.00%
5' CURB INLET
RIM ELEV = 1027.06
18" FL OUT: 1021.90
WYE LATERAL
STA ??? STRM - C1
42" FL IN: 1019.52
18" FL IN: 1021.52
42" FL OUT: 1019.53
42" RCP @0.50%
24" RCP @1.44%
STA 3+07.90 STRM - B1
4'X4' GRATE INLET WITH
JUNCTION BOX
RIM ELEV = 1031.65
24" FL IN: 1024.93
24" FL OUT: 1024.93
STA 9+94.82 STRM - C
6'X6' BOX MANHOLE
RIM ELEV = 1026.73
30" FL IN: 1020.45
42" FL IN: 1019.45
48" FL OUT: 1018.95
30" RCP @2.00%
STA 6+77.80 STRM - B
4'X4' GRATE INLET ON TOP OF
5'X5' JUNCTION BOX
RIM ELEV = 1030.98
24" FL IN: 1023.23
24" FL IN: 1024.45
30" FL OUT: 1022.74
48" RCP @0.50%
10' CURB INLET
RIM ELEV = 1026.40
18" FL IN: 1021.61
STA 6+29.34 STRM - B
4'X4' GRATE INLET WITH
JUNCTION BOX
RIM ELEV = 1030.63
24" FL IN: 1023.97
24" FL OUT: 1023.97
18" RCP @-2.00%
WYE LATERAL
STA 10+47.58 STRM - C
48" FL IN: 1018.68
48" FL OUT: 1018.68
18" FL IN: 1021.18
48" RCP @0.50%
STA 1+00.00 STRM - B1
INLET
RIM ELEV = 1033.07
24" FL OUT: 1027.02
WYE LATERAL
STA ??? STRM - C1
48" FL IN: 1018.32
48" FL OUT: 1018.31
18" FL IN: 1020.82
10' CURB INLET
RIM ELEV = 1025.78
18" FL OUT: 1021.20
STA 5+41.67 STRM - B
4'X4' GRATE INLET WITH
JUNCTION BOX
RIM ELEV = 1031.39
24" FL IN: 1025.32
24" FL OUT: 1025.32
48" RCP @-0.50%
18" RCP @2.00%
10' CURB INLET
RIM ELEV = 1025.48
18" FL OUT: 1020.95
18" RCP @1.67%
WYE LATERAL
STA 11+67.21 STRM - C
18" FL IN: 1020.59
48" FL OUT: 1018.09
48" FL IN: 1018.09
STA 9+68.46 STRM - A
45° BEND
FL (54") = 1016.74
POND A INFLOW
TO SPLITTER WEIR
FL (54") = 1016.70
54" RCP @0.62%
48" RCP @0.50%
54" RCP @0.50%
STA 4+68.67 STRM - B
4'X4' GRATE INLET WITH
JUNCTION BOX
RIM ELEV = 1032.254
18" FL IN: 1026.93
24" FL OUT: 1026.43
10' CURB INLET
RIM ELEV = 1027.64
18" FL OUT: 1021.87
24" RCP @2.00%
STA 8+61.59 STRM - A
4'X4' GRATE INLET WITH
JUNCTION BOX
RIM ELEV = 1027.26
48" FL IN: 1017.78
42" FL IN: 1018.28
18" FL IN: 1021.50
54" FL OUT: 1017.28
18" RCP @2.00%
3'X3' AREA INLET
RIM ELEV = 1026.25
24" FL OUT: 1019.91
AMENITY DOWNSPOUT
CAP & CONNECT TO STUB
NOTICE OF CITY OF WATER LINE DOC. NO.
PEDERNALES ELECTRIC UTILITY EASEMENT DOC. NO. 2022045212
U.S. HIGHWAY 290
(R.O.W. WIDTH VARIES)
STREET D
ABANDONED ROADWAY

MATCH LINE - SEE SHEET 49

0 15' 30' 60'
SCALE: 1" = 30'

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.



KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

REV	DATE	DESCRIPTION	APR
		8350 W US 290 HIGHWAY	

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

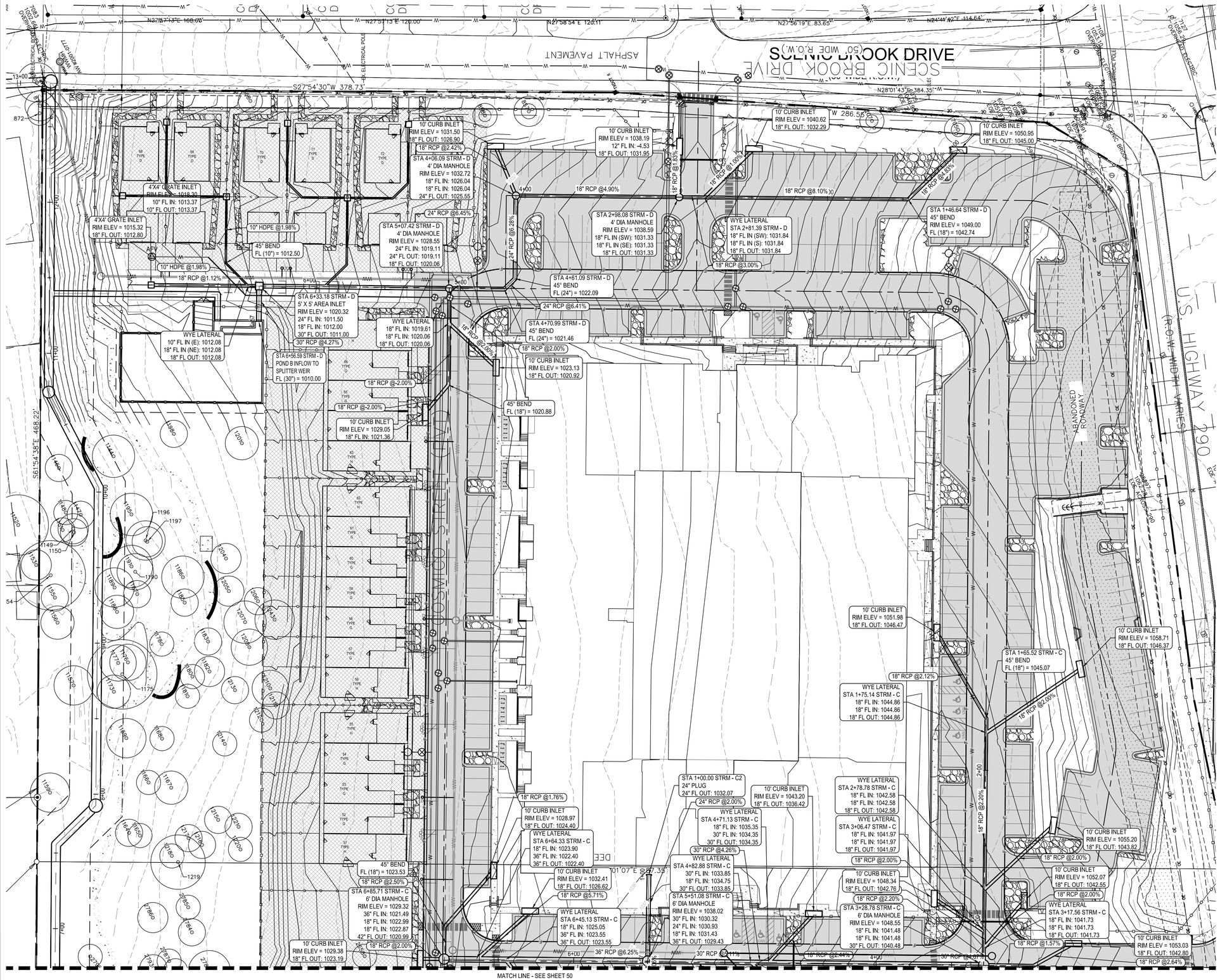
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

STORM SEWER PLAN (PVT) (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

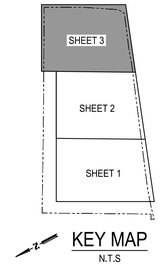
SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-STRM.dwg Layout: STORM SEWER PLAN (PVT) (SHEET 2 OF 3) Plotted: 1/24/2024 2:04:00 PM



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.



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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

STORM SEWER PLAN (PVT) (SHEET 3 OF 3)

STATE OF TEXAS
11-21-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL
ENGINEER

51 OF 121

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-STRM.dwg Layout: STORM SEWER PLAN (PVT) (SHEET 3 OF 3) Plotted: 1/24/2024 2:04:08 PM

HORIZ. SCALE: 1" = 100'
VERT. SCALE: 1" = 10'

PROPOSED GRADE

EXISTING GRADE

N

0 15' 30' 60'
SCALE: 1" = 30'

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE AREA BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR

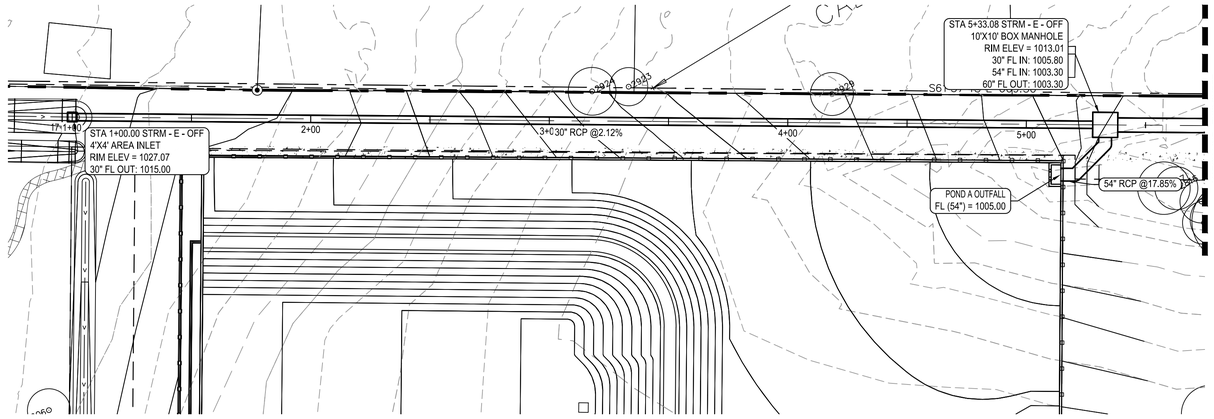
NOTES:

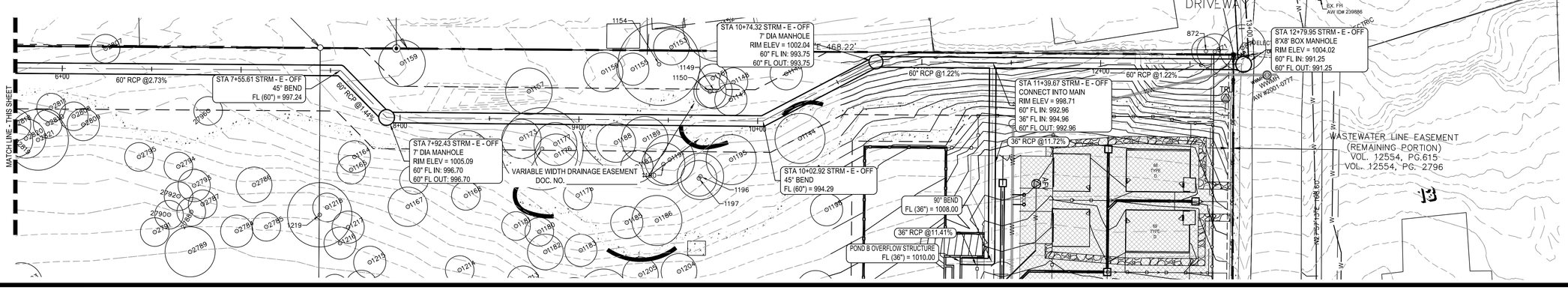
1. ALL INLET WYE CONNECTIONS TO BE 45 DEGREES UNLESS OTHERWISE NOTED.
2. DRAINAGE FOR THIS DEVELOPMENT DOES NOT DRAIN TO TXDOT ROW, DOES NOT CAUSE TXDOT DRAINAGE TO BE BLOCKED, AND HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.
3. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE NOTED.
4. 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.

OFFSITE CHANNEL ASSESSMENT						
PIPE	PIPE SIZE	PIPE LENGTH	ELEVATION		SLOPE	FULL-FLOW CAPACITY (CFS)
			START	END		
A	42"	78.54	987.46	985.03	3.09%	176.95
B	42"	77.40	987.50	985.05	3.17%	179.12
C	42"	77.66	987.63	985.10	3.26%	181.65
				TOTAL FULL FLOW CAPACITY:		537.72

Peak Discharge Comparison Table (CFS)

	EX 2-yr	EX 10-yr	EX 25-yr	EX 100-yr	PR 2-yr	PR 10-yr	PR 25-yr	PR 100-yr	DELTA 2-yr	DELTA 10-yr	DELTA 25-yr	DELTA 100-yr
POA - SITE	61.30	144.40	194.50	272.70	38.30	130.80	185.70	268.50	23.00	13.60	8.80	4.20





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							APR
							DATE
							DESCRIPTION
							REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

OFFSITE STORM SEWER PLAN & PROFILE

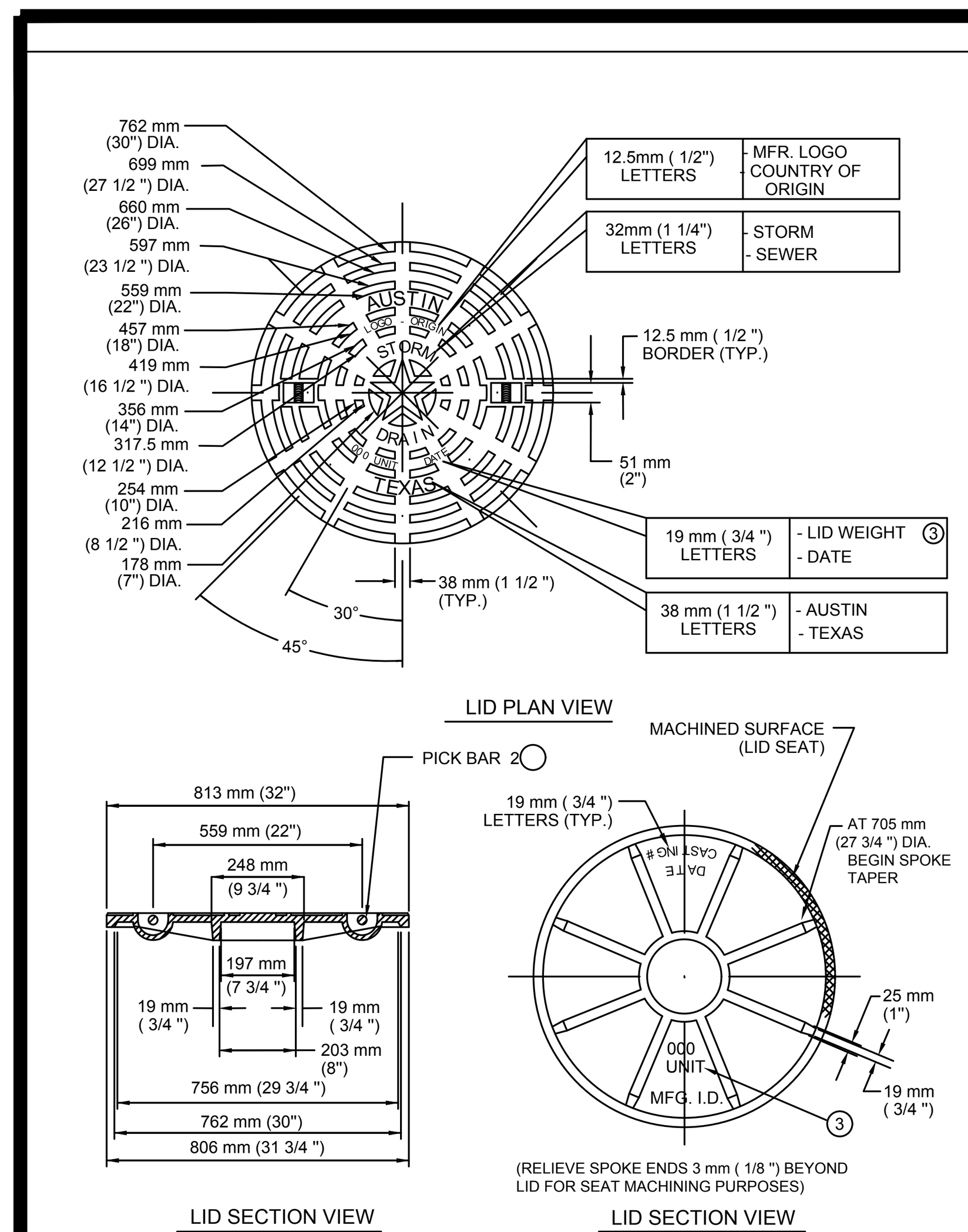
STATE OF TEXAS
12-27-2023
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

52 OF 121

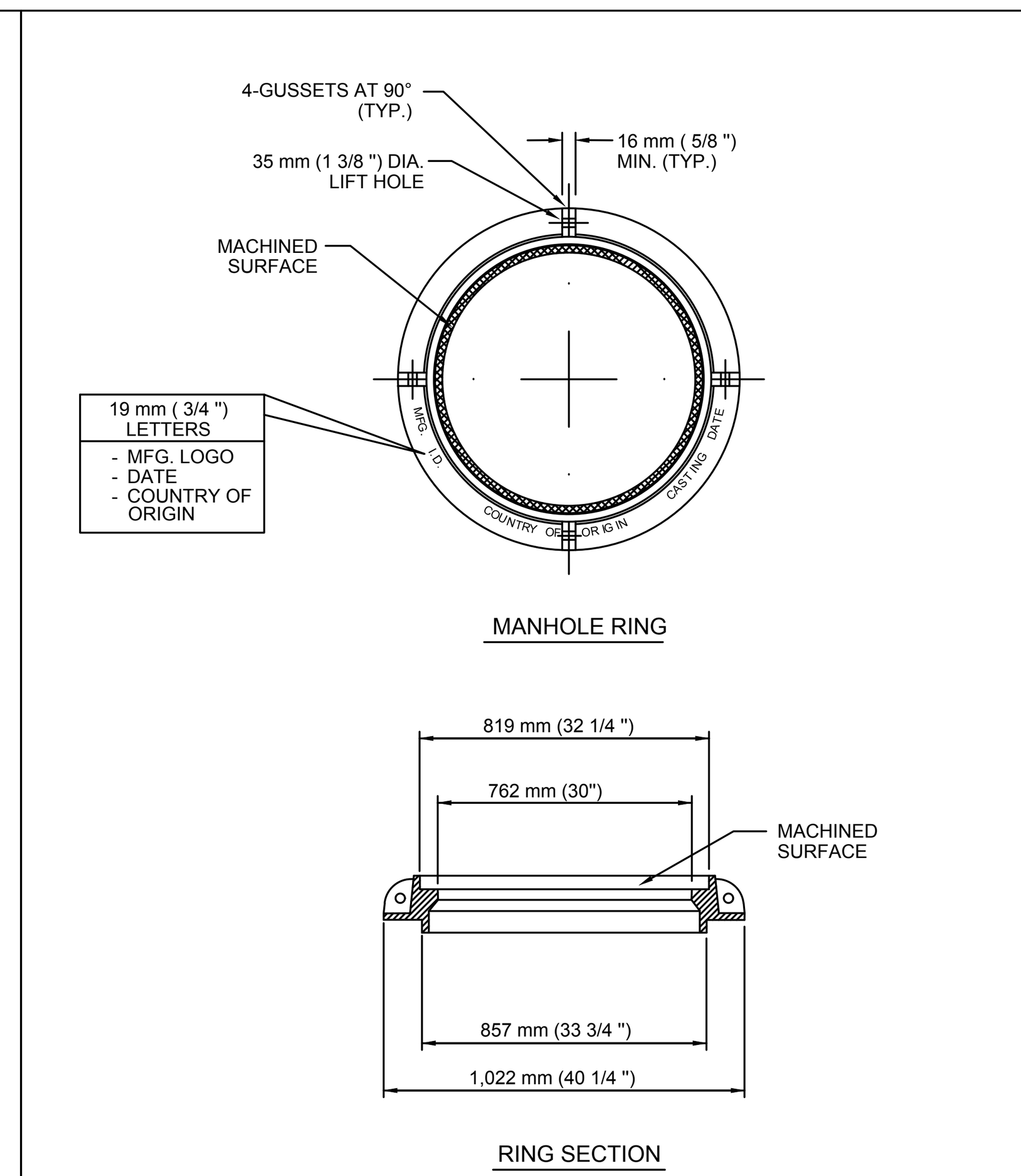
SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975--C--SP--STRM.dwg Layout: OFFSITE STORM SEWER PLAN & PROFILE Plotted: 1/24/2024 2:04:27 PM

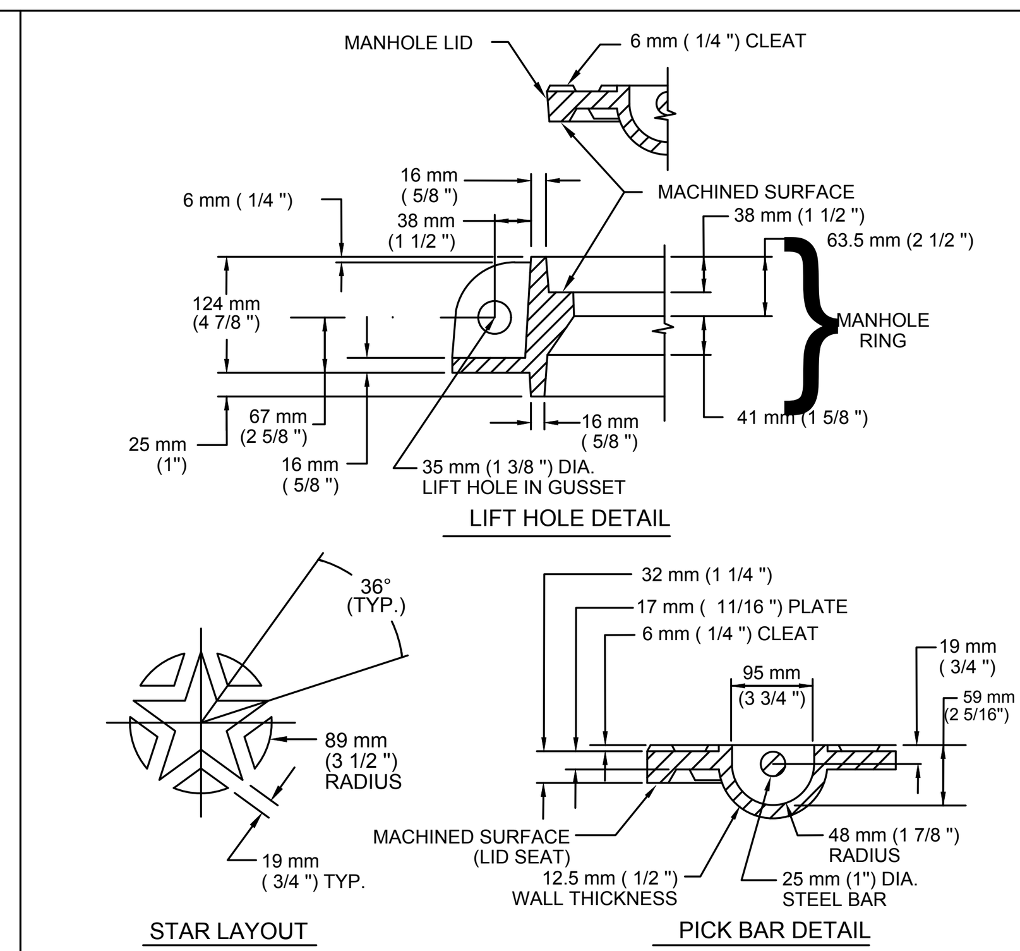
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DRAINAGE DETAILS (SHEET 1 OF 2)



CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STORM DRAIN MANHOLE RING AND 813 mm (32") COVER
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 503S-4S, 1 OF 3

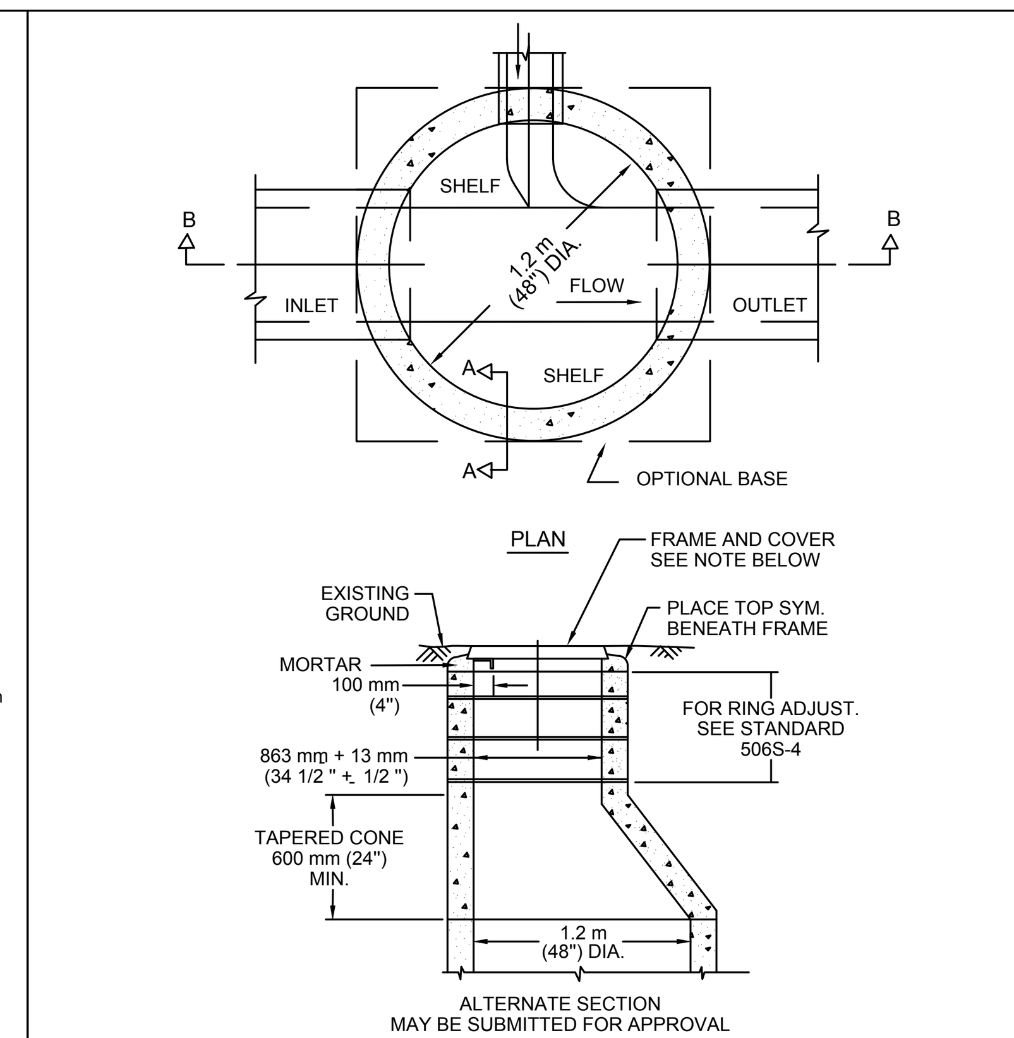


CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STORM DRAIN MANHOLE RING AND 813 mm (32") COVER
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 503S-4S, 2 OF 3



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 935 N (210 LBS.) FOR CAST IRON OR 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 25,000 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.

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STORM DRAIN MANHOLE RING AND 813 mm (32") COVER
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 503S-4S, 3 OF 3

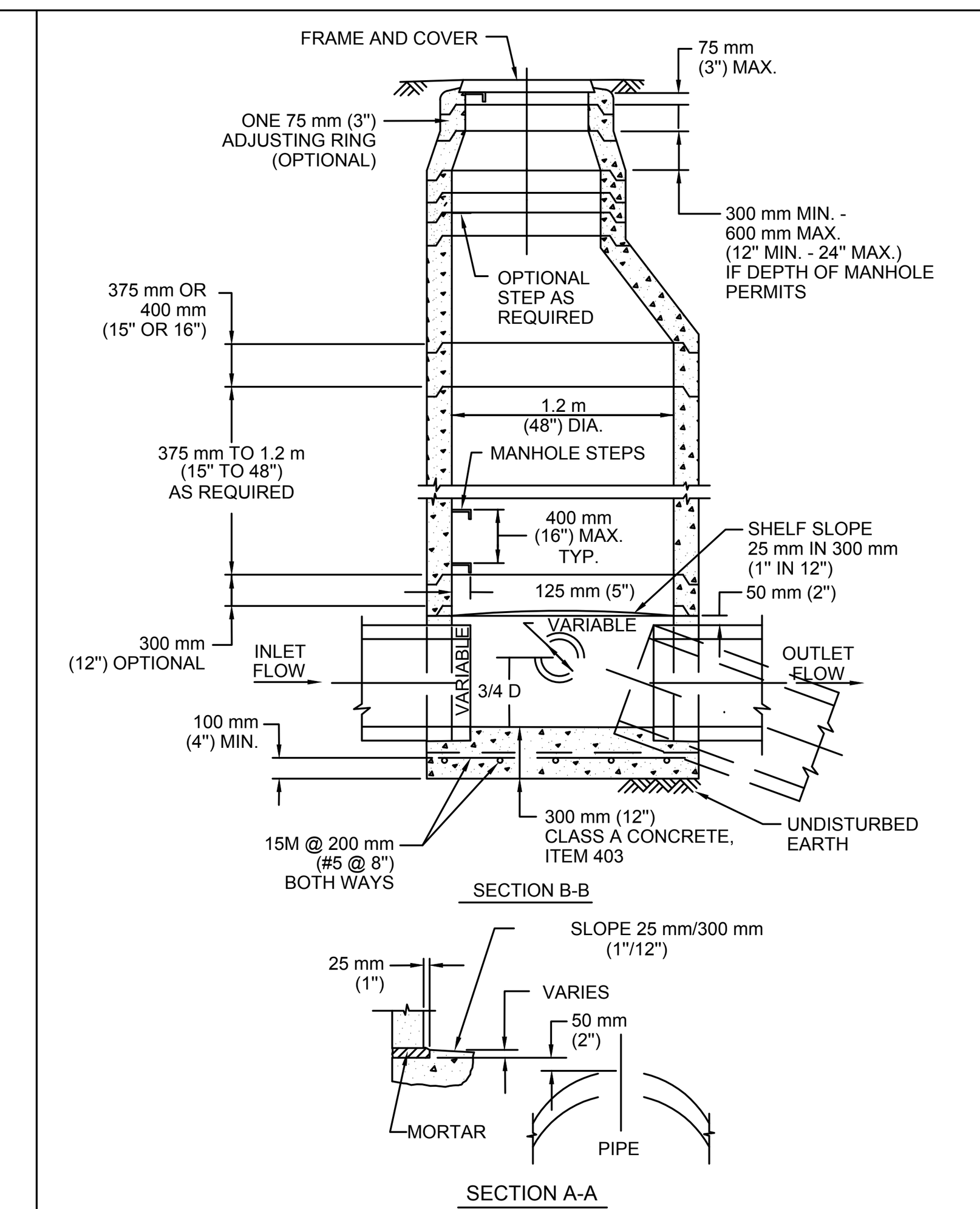


NOTE:
USE 800 mm (32") FRAME AND COVER.

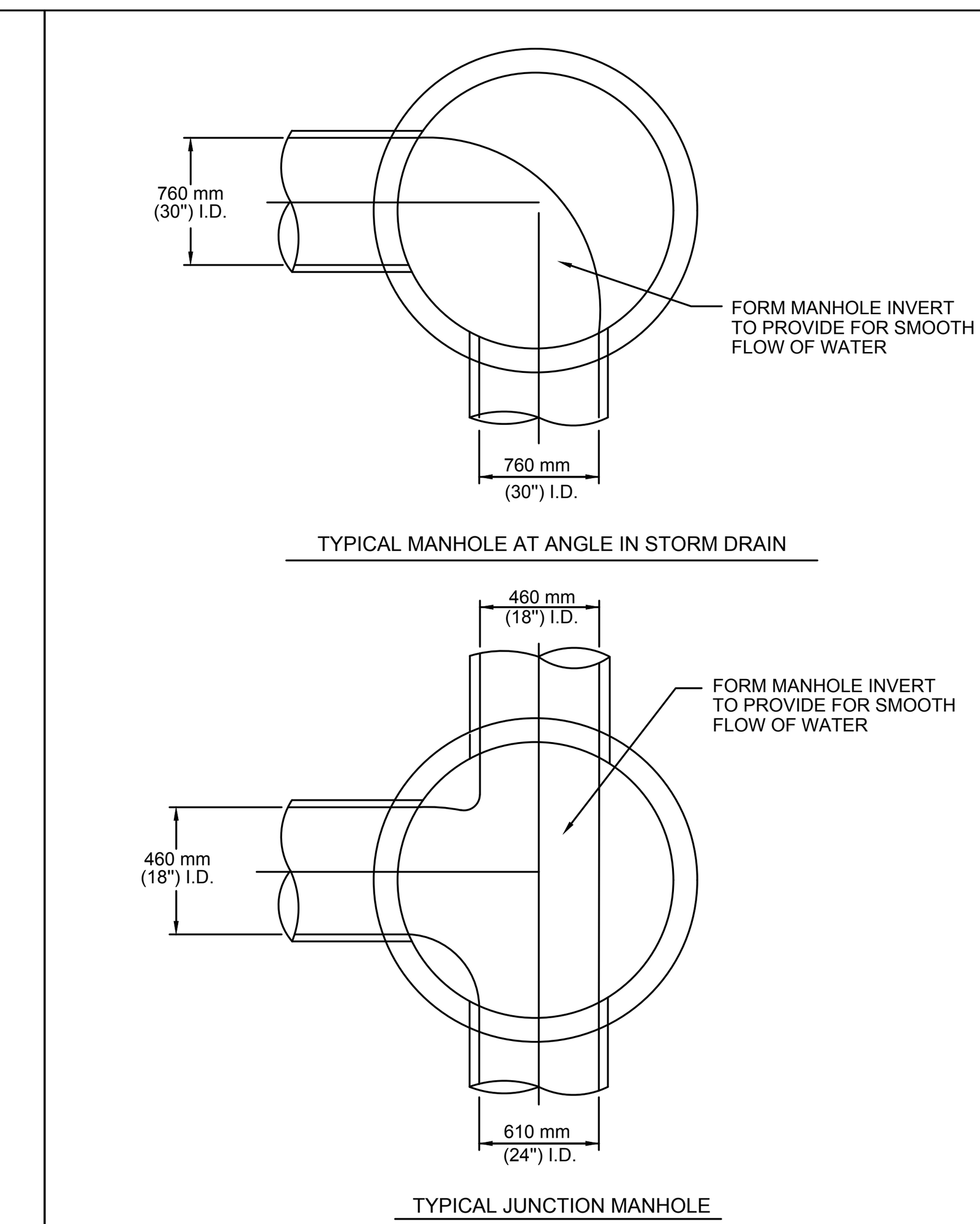
MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18 TO 24")
1.5 m (5')	750 mm TO 1.1 m (30 TO 42")
1.8 m (6')	1.2 TO 1.4 m (48 TO 54")
2.1 m (7')	1.5 TO 1.7 m (60 TO 66")

SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

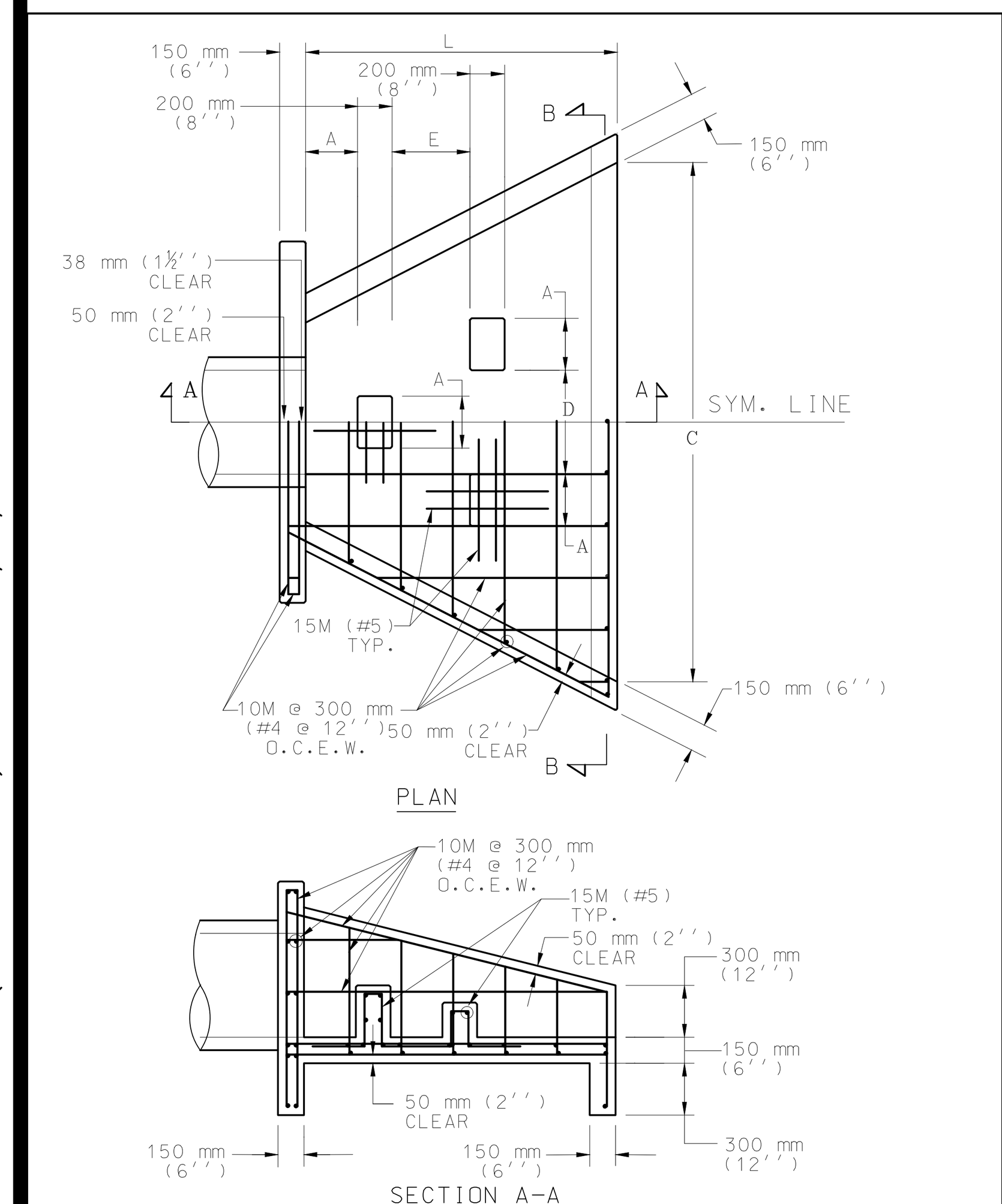
CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
PRE-CAST CONCRETE STORM DRAIN MANHOLE
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-3, 1 OF 2



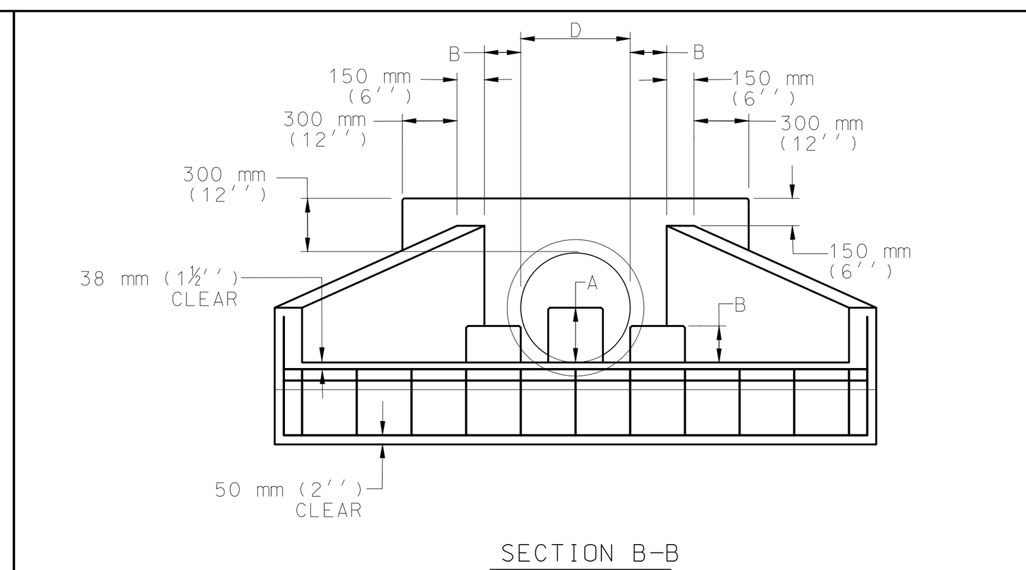
CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
PRE-CAST CONCRETE STORM DRAIN MANHOLE
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-3, 2 OF 2



CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
MANHOLE INVERT PLAN
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-1



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

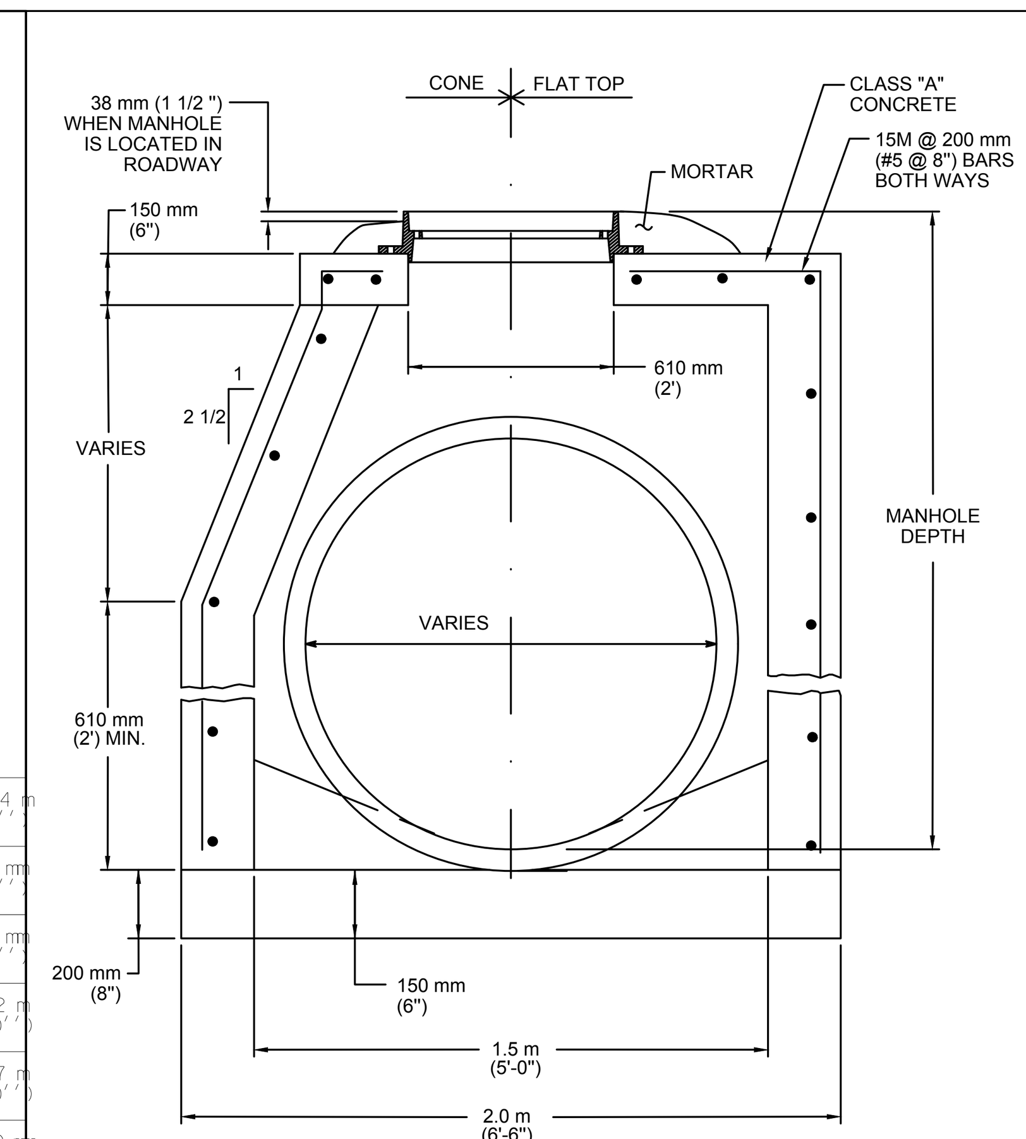


NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S, CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

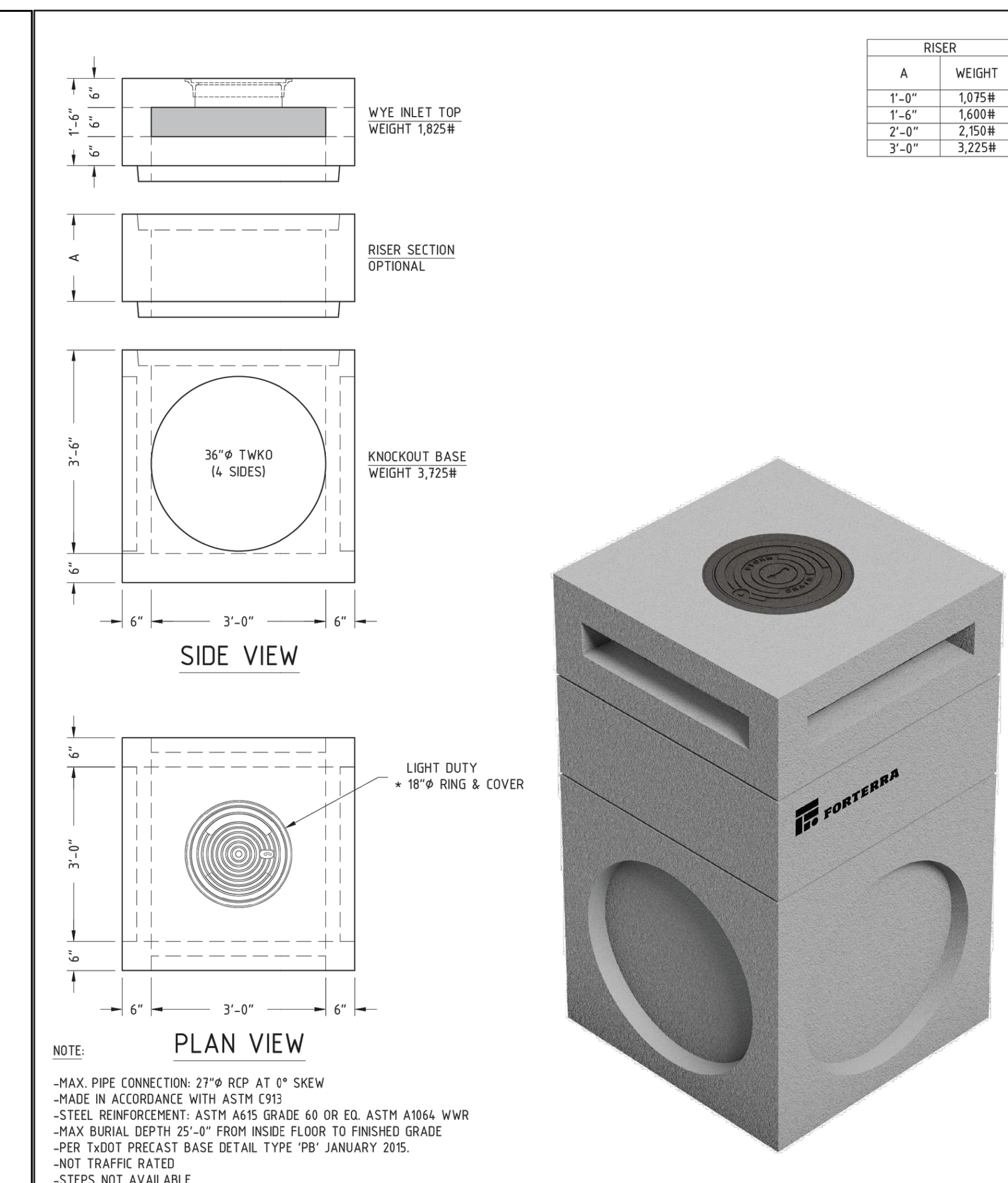
D	457 mm (18'')	533 mm (21'')	610 mm (24'')	685 mm (27'')	765 mm (30'')	838 mm (33'')	914 mm (36'')	1.067 m (42'')	1.219 m (48'')	1.372 m (54'')	1.524 m (60'')
A	225 mm (9'')	250 mm (10'')	300 mm (12'')	350 mm (14'')	375 mm (15'')	400 mm (16'')	450 mm (18'')	525 mm (21'')	600 mm (24'')	675 mm (27'')	750 mm (30'')
B	150 mm (6'')	175 mm (7'')	200 mm (8'')	225 mm (9'')	250 mm (10'')	275 mm (11'')	300 mm (12'')	350 mm (14'')	400 mm (16'')	450 mm (18'')	500 mm (20'')
C	2.29 m (90'')	2.67 m (105'')	3.05 m (120'')	343 m (135'')	3.81 m (150'')	4.19 m (165'')	4.57 m (180'')	5.33 m (210'')	6.10 m (240'')	6.86 m (270'')	7.62 m (300'')
L	1.37 m (54'')	1.60 m (63'')	1.83 m (72'')	2.06 m (81'')	2.29 m (90'')	2.51 m (99'')	2.74 m (108'')	3.20 m (126'')	3.66 m (144'')	4.11 m (162'')	4.57 m (180'')
E	300 mm (12'')	350 mm (14'')	400 mm (16'')	450 mm (18'')	500 mm (20'')	550 mm (22'')	600 mm (24'')	700 mm (28'')	800m (32'')	900 mm (36'')	1000 mm (40'')

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

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

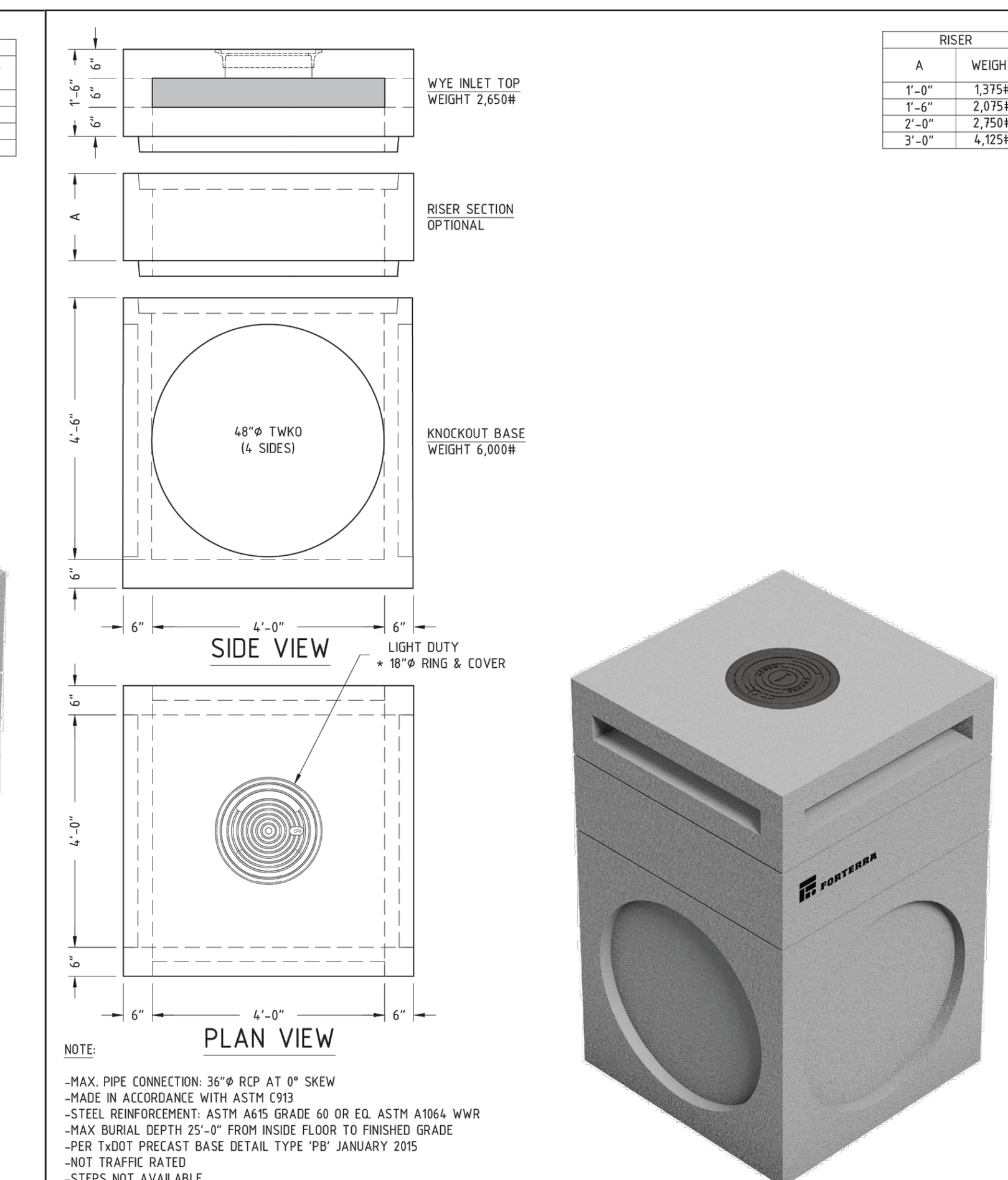


CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STORM DRAIN MANHOLE DETAIL
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-11



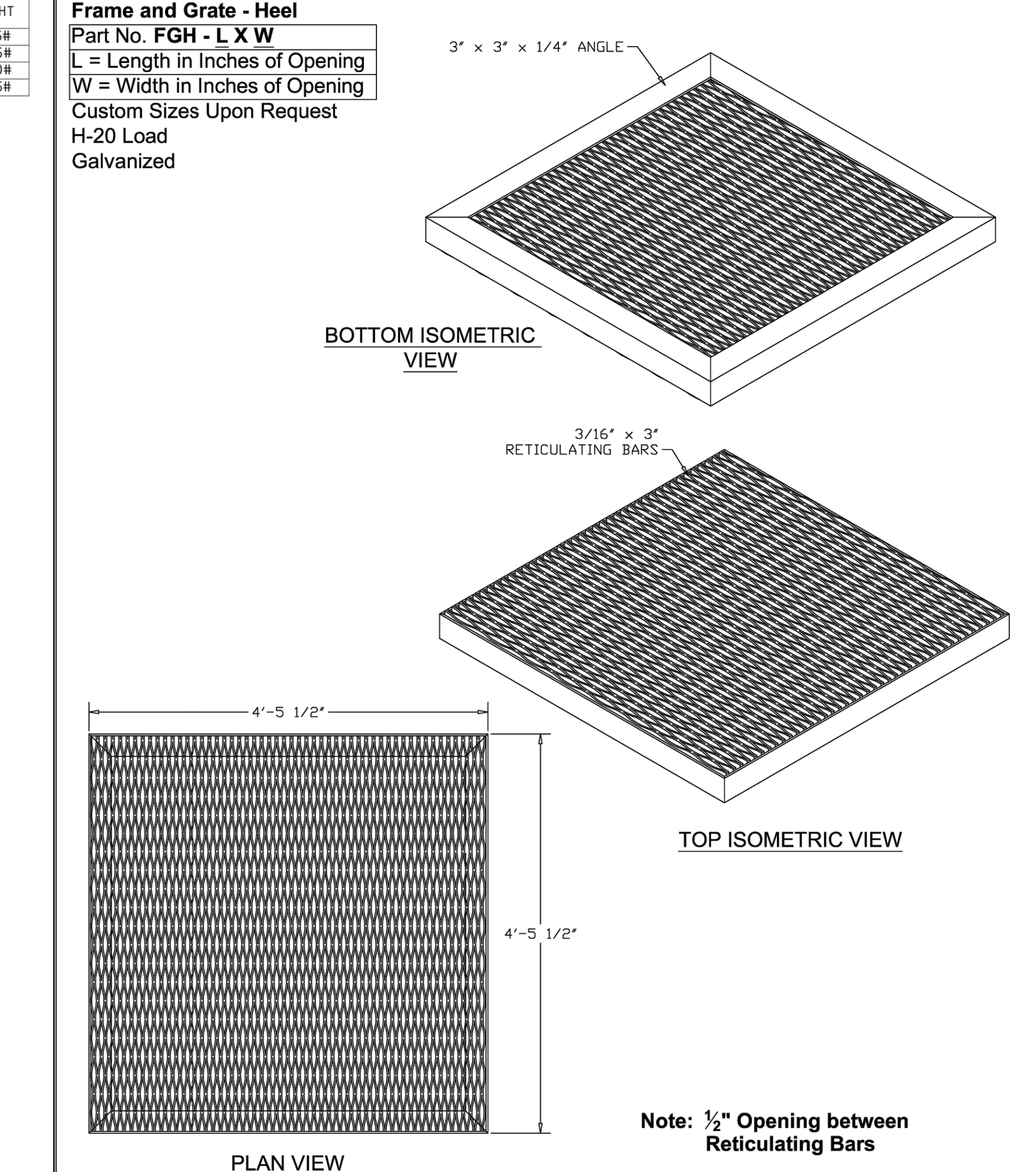
-NUMEROUS RING & COVER OPTIONS ARE AVAILABLE.

FORTERRA — REGION, STATE: CENTRAL TX — DATE: 2018 — SECT.PAGE: 2.5.5
WYE INLET 3'-0" x 3'-0"



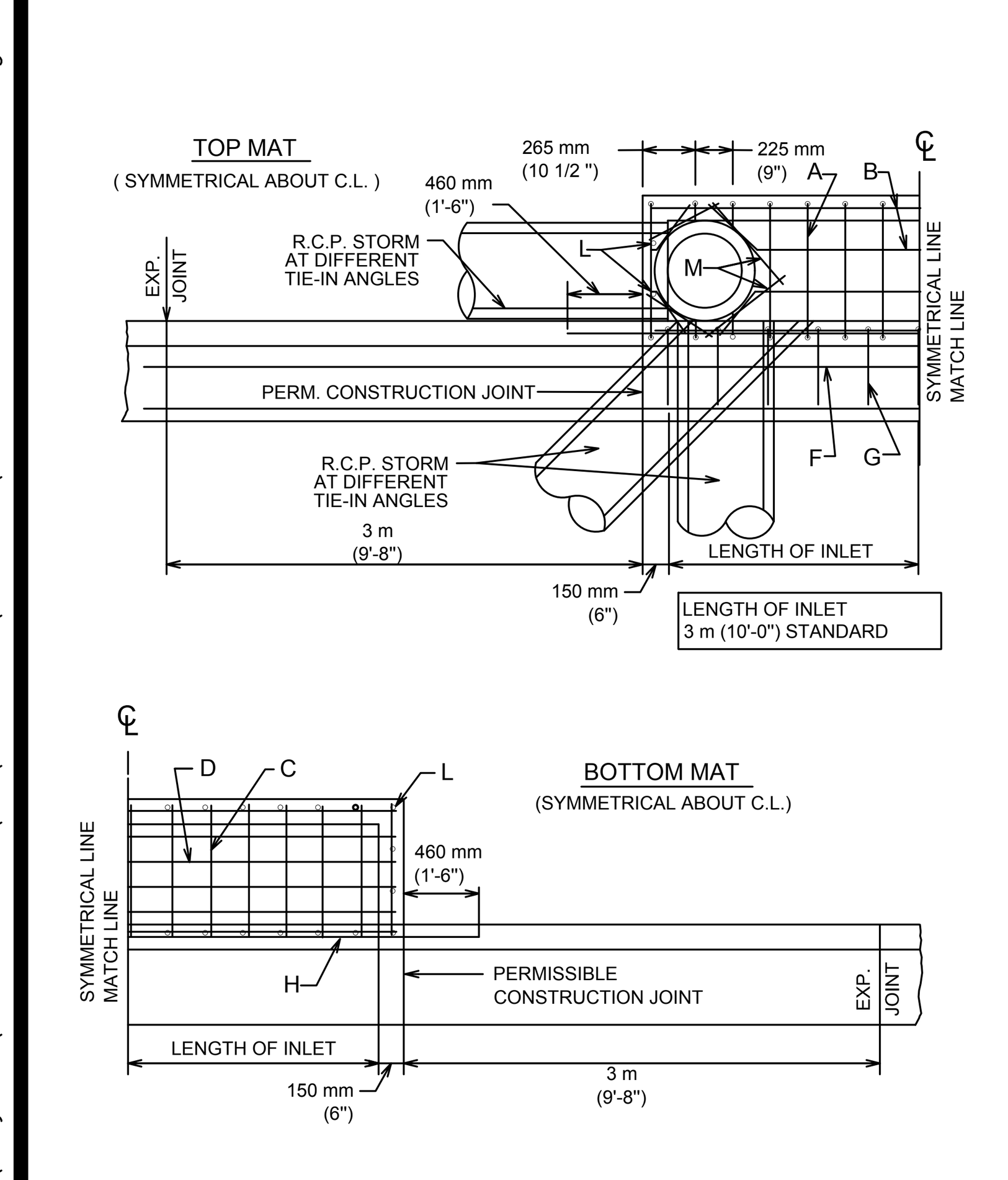
FORTERRA — REGION, STATE: CENTRAL TX — DATE: 2018 — SECT.PAGE: 2.5.6
WYE INLET 4'-0" x 4'-0"

Frame and Grate - Heel
Part No. FGH - L X W
L = Length in Inches of Opening
W = Width in Inches of Opening
Custom Sizes Upon Request
H-20 Load
Galvanized

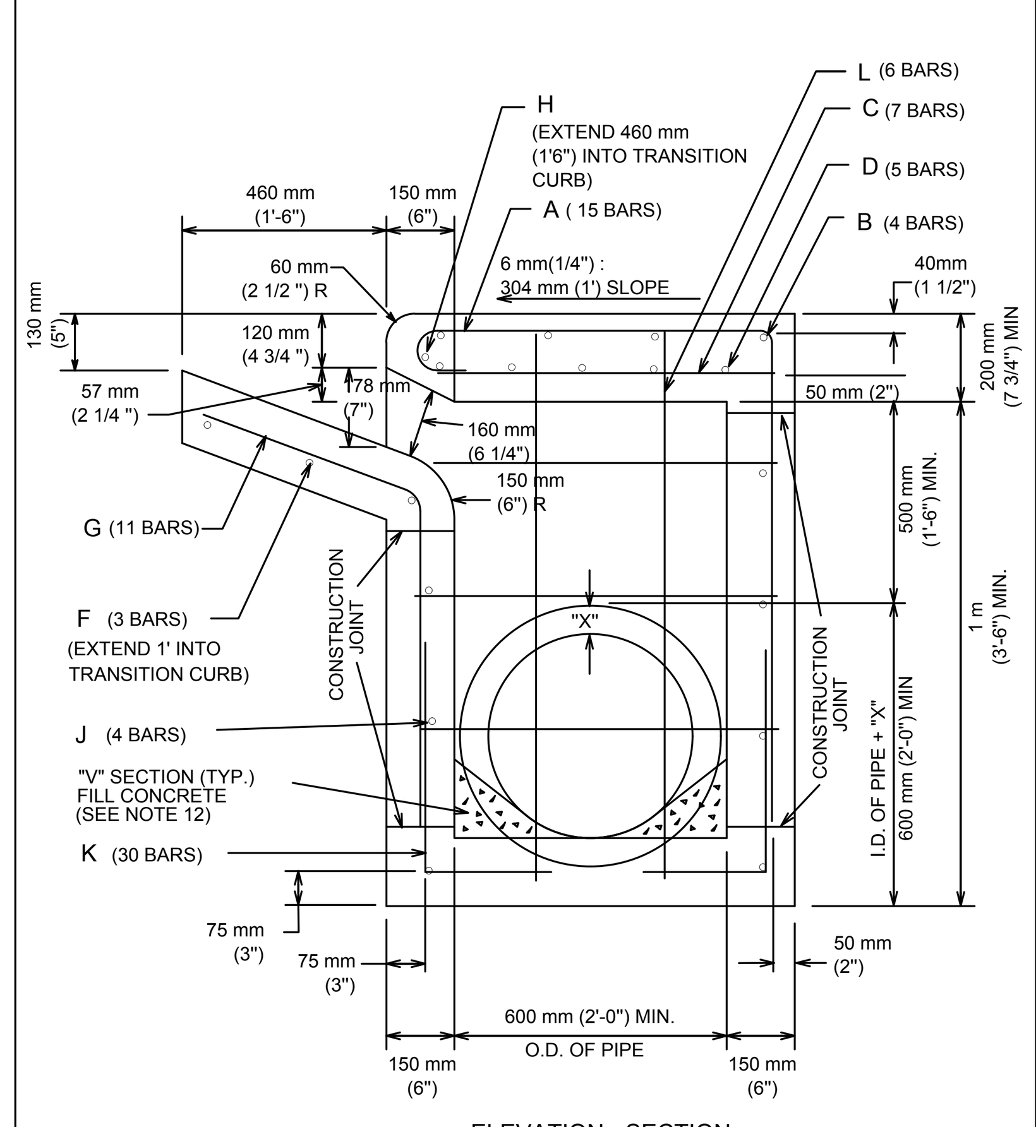


Note: ½" Opening between Reticulating Bars

A Div. of Wabb Industries, Inc.
Frame and Grate – Heel 4X4
Part No. FGH – X
4/08/2003 DRAWN BY: RR FGH4X4 Page GF-15



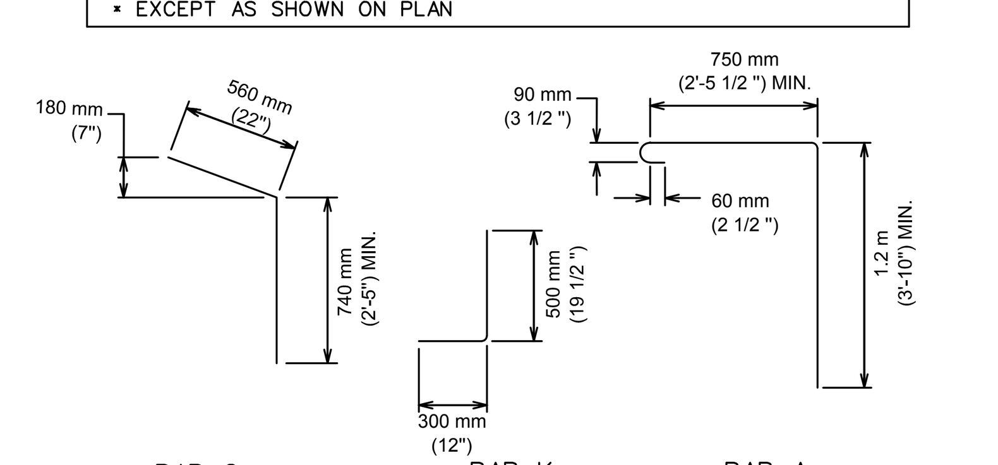
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
TYPICAL DETAILS FOR CURB INLET
RECORD COPY SIGNED BY BILL GARDNER — 12/09/08 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3, 1 OF 4



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
TYPICAL DETAILS FOR CURB INLET
RECORD COPY SIGNED BY BILL GARDNER — 12/09/08 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3, 2 OF 4

TABLE OF QUANTITIES
FOR 18'' OUTLET PIPE
REINFORCING STEEL QUANTITIES

BARS	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	230mm (9'')*	15	2 m (7'-0'')	73
B	4	250 mm (10")	4	3.25 m (10'-8'')	29
C	4	460 mm (18'')	7	760 mm (2'-6'')	12
D	6	150 mm (6")	5	3.25 m (10'-8'')	80
E	4	300 mm (12'')	6	760 mm (2'-6'')	10
F	4	250 mm (10")	3	4 m (13'-0'')	35
G	4	300 mm (12'')	11	1.25 m (4'-3'')	31
H	6	–	1	4.25 m (14'-0'')	20
J	4	300 mm (12'')	7	3.25 m (10'-8'')	50
K	4	230 mm (9'')*	30	800 mm (2'-7 1/2'')	52
L	4	300 mm (12'')*	6	1.3 m (4'-4'')	17
M	4	-	4	500 mm (1'-8'') AVG	4
TOTAL STEEL, LB.					413
TOTAL CONCRETE, C.Y.					4.06
* EXCEPT AS SHOWN ON PLAN					

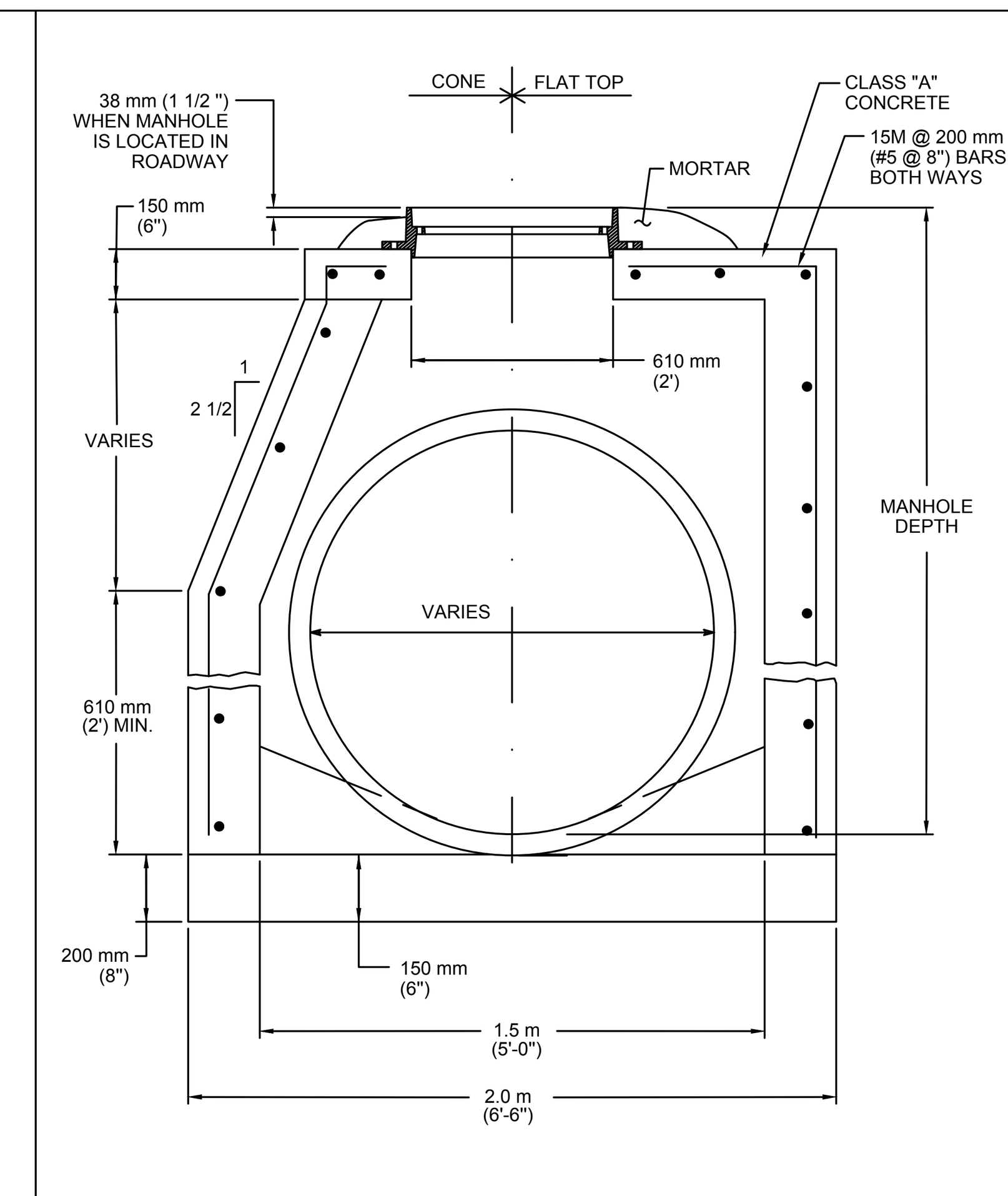


CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
TYPICAL DETAILS FOR CURB INLET
RECORD COPY SIGNED BY BILL GARDNER — 12/09/08 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3, 3 OF 4

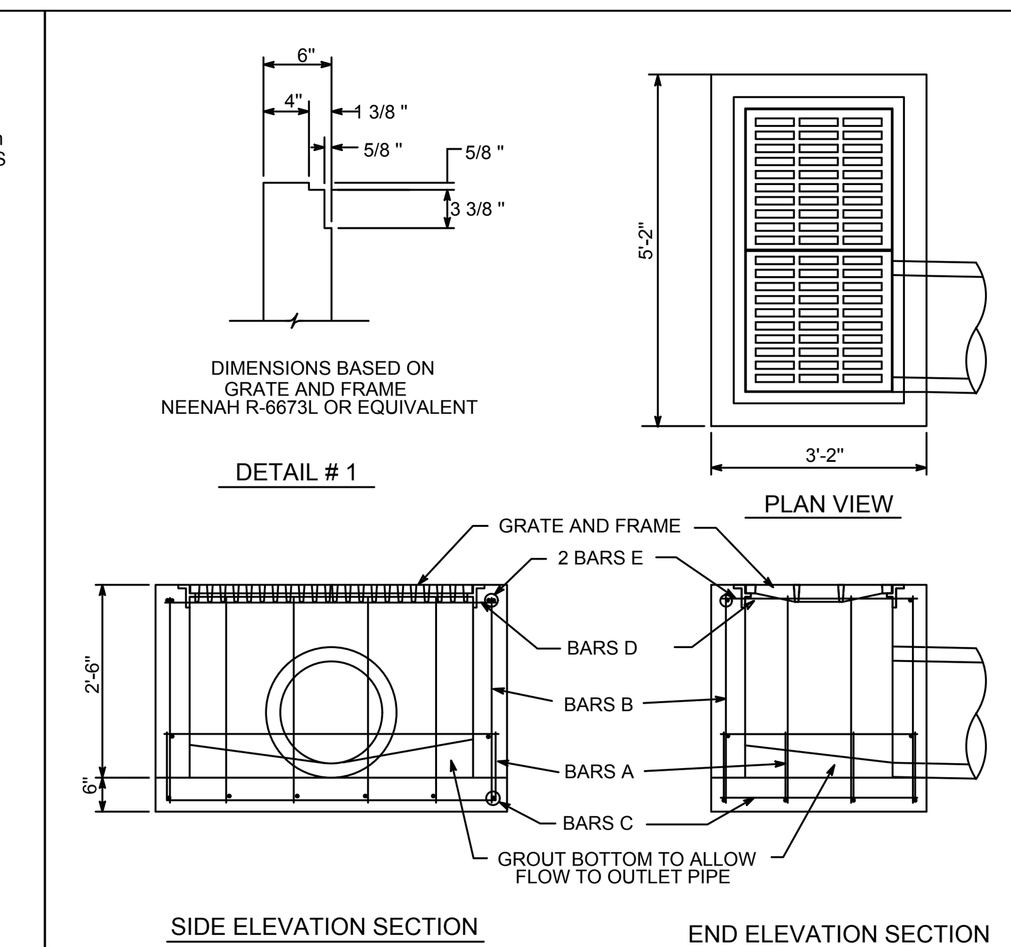
NOTES:
1. ALL CONCRETE SHALL BE CLASS "A"
2. ALL REINFORCING STEEL SHALL BE GRADE 60
3. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
4. VERTICAL STEEL MAY BE SPLICED (380 mm or 15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS
5. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
6. QUANTITIES SHOWN HEREON ARE FOR THE CONTRACTOR'S INFORMATION ONLY. PAYMENT WILL BE MADE FOR EACH INLET OF THE TYPE SPECIFIED, COMPLETE IN PLACE INCLUDING MANHOLE FRAME AND OVER.
7. CHAMFER ALL EXPOSED EDGES 20 mm (3/4 ").
8. MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
9. THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS, INCLUDING PRECAST UNITS. PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION.
10. ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAT EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES.
11. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB.
12. INVERT OF INLET SHALL BE SLOPED 1:20 WITH FILL CONCRETE, SHAPED AS "V" SECTION
13. NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED UNLESS OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.

REFERENCES:
FOR EXPANSION JOINT DOWEL AND DOWEL LOCATION DETAILS SEE STD. 430S-3, "CURB EXPANSION JOINT DOWEL DETAIL".
FOR 18" MANHOLE FRAME AND COVER DETAILS SEE STD. 503S-1, "18" COVER AND FRAME".

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
TYPICAL DETAILS FOR CURB INLET
RECORD COPY SIGNED BY BILL GARDNER — 12/09/08 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-3, 4 OF 4



CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STORM DRAIN MANHOLE DETAIL
RECORD COPY SIGNED BY GEORGE E. OSWALD — 2/14/02 — ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-11



REINFORCING STEEL SCHEDULE

BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	6'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
TOTAL WEIGHT---91 LB.					

CITY OF AUSTIN
DRAINAGE UTILITY
STANDARD DROP INLET
RECORD COPY SIGNED BY ALLEN BRECHER — APPROVED — 5/24/88 — DATE
ADOPTED: 04-01-88
SCALE: N.T.S.
INITIAL: B.H.
STANDARD NO. 508-11

REV	DESCRIPTION	DATE	APR

8350 W US 290 HIGHWAY

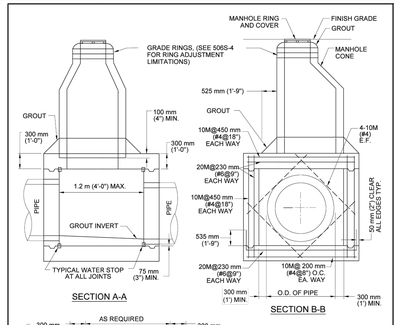
DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

STATE OF TEXAS — 1-24-2024 — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER

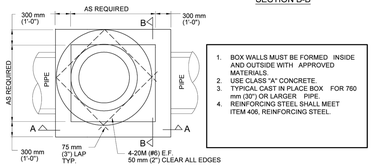
SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DETL-STRM.dwg Layout: DRAINAGE DETAILS (SHEET 1 OF 2) Plotted: 1/24/2024 2:04:42 PM

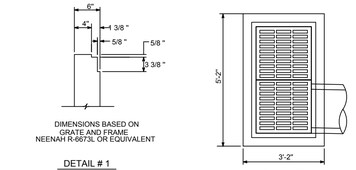


SECTION A-A

SECTION B-B



1. BOX WALLS MUST BE FORMED INSIDE AND OUTSIDE WITH APPROVED MATERIALS.
2. USE CLASS "A" CONCRETE.
3. TYPICAL CAST IN PLACE BOX FOR 760 mm (30") OR LARGER PIPE.
4. REINFORCING STEEL SHALL MEET ITEM 406, REINFORCING STEEL.



SIDE ELEVATION SECTION

END ELEVATION SECTION

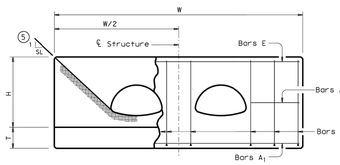
REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	6'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
TOTAL WEIGHT---91 LB.					

CITY OF AUSTIN WATER AND WASTEWATER UTILITY		TYPICAL BOX MANHOLE 760 mm (30") & LARGER PIPE		CITY OF AUSTIN DRAINAGE UTILITY		STANDARD DROP INLET	
RECORD COPY SIGNED BY KATHI F. PAYNE	2/17/00	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 506S-5 1 OF 1	*RECORD COPY SIGNED BY ALLEN BRECHER*	*5/24/88*	ADOPTED: 04-01-88 SCALE: N.T.S. INITIAL: B.H.	STANDARD NO. 508-11
ADOPTED				APPROVED	DATE		

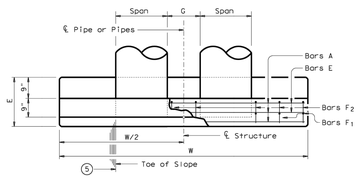
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation shall not be responsible for incorrect results or damages resulting from its use.

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (4)

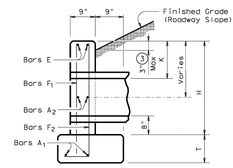
SLOPE	DESIGN	SIZE OF PIPE ARCH Span	Rise	Values for one Pipe W	Reinf (Lbs) (1)	Conc (CY) (2)	Values to be added for each addt'l Pipe W	Reinf (Lbs) (1)	Conc (CY) (2)
2:1	1	17"	13"	9'- 9"	130	1.1	2'- 5"	28	0.3
	2	21"	15"	10'- 9"	139	1.3	2'-11"	33	0.3
	3	28"	20"	13'- 0"	184	1.8	3'- 9"	43	0.5
	4	35"	24"	14'-11"	249	2.2	4'- 7"	50	0.6
	5	42"	29"	17'- 2"	311	3.2	5'- 5"	69	0.9
	6	49"	33"	19'- 1"	342	3.8	6'- 3"	77	1.1
	7	57"	38"	21'- 5"	438	4.7	7'- 2"	86	1.4
	8	64"	43"	23'- 8"	508	5.6	8'- 2"	110	1.6
	9	71"	47"	25'- 7"	577	6.5	9'- 1"	120	2.0
3:1	1	17"	13"	13'-11"	182	1.6	2'- 5"	28	0.3
	2	21"	15"	15'- 3"	196	1.8	2'-11"	33	0.3
	3	28"	20"	18'- 4"	270	2.6	3'- 9"	42	0.5
	4	35"	24"	20'-11"	356	3.2	4'- 7"	50	0.6
	5	42"	29"	24'- 0"	434	4.5	5'- 5"	70	0.9
	6	49"	33"	26'- 7"	499	5.4	6'- 3"	77	1.1
	7	57"	38"	29'- 9"	628	6.7	7'- 2"	87	1.4
	8	64"	43"	32'-10"	715	7.9	8'- 2"	111	1.6
	9	71"	47"	35'- 5"	798	9.2	9'- 1"	120	2.0
4:1	1	17"	13"	18'- 1"	236	2.1	2'- 5"	28	0.3
	2	21"	15"	19'- 9"	268	2.4	2'-11"	33	0.3
	3	28"	20"	23'- 8"	336	3.3	3'- 9"	42	0.5
	4	35"	24"	26'-11"	460	4.2	4'- 7"	50	0.6
	5	42"	29"	30'-10"	557	5.8	5'- 5"	69	0.9
	6	49"	33"	34'- 1"	653	6.9	6'- 3"	78	1.1
	7	57"	38"	38'- 1"	819	8.6	7'- 2"	87	1.4
	8	64"	43"	42'- 0"	950	10.2	8'- 2"	111	1.7
	9	71"	47"	45'- 3"	1053	11.9	9'- 1"	120	2.0
6:1	1	17"	13"	26'- 5"	343	3.1	2'- 5"	29	0.3
	2	21"	15"	28'- 9"	381	3.5	2'-11"	33	0.3
	3	28"	20"	34'- 4"	504	4.9	3'- 9"	42	0.5
	4	35"	24"	38'-11"	673	6.1	4'- 7"	50	0.6
	5	42"	29"	44'- 6"	823	8.5	5'- 5"	70	0.9
	6	49"	33"	49'- 1"	945	10.1	6'- 3"	78	1.1
	7	57"	38"	54'- 9"	1227	12.5	7'- 2"	87	1.4
	8	64"	43"	60'- 4"	1399	14.8	8'- 2"	110	1.7
	9	71"	47"	64'-11"	1563	17.3	9'- 1"	119	2.0



ELEVATION



PLAN



℄ SECTION

(1) Total quantities include one 15" lap for all bars over 60 ft in length.

(2) Quantities shown are for metal pipe and will decrease slightly for concrete pipe installations.

(3) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(4) Quantities shown are for one structure end only (one headwall).

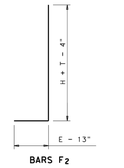
(5) Indicated slope is perpendicular to centerline Pipe or Pipes.

TABLE OF DIMENSIONS NOT VARIED WITH SLOPE

DESIGN	SIZE OF PIPE ARCH Span	Rise	G	K	H	T	E
1	17"	13"	1'- 0"	1'- 0"	2'- 7"	10"	1'- 6"
2	21"	15"	1'- 2"	1'- 0"	2'- 9"	10"	1'- 6"
3	28"	20"	1'- 5"	1'- 0"	3'- 2"	10"	1'-10"
4	35"	24"	1'- 8"	1'- 0"	3'- 6"	10"	2'- 0"
5	42"	29"	1'-11"	1'- 0"	3'-11"	1'- 0"	2'- 4"
6	49"	33"	2'- 2"	1'- 0"	4'- 3"	1'- 0"	2'- 6"
7	57"	38"	2'- 5"	1'- 0"	4'- 8"	1'- 0"	2'-10"
8	64"	43"	2'-10"	1'- 0"	5'- 1"	1'- 0"	3'- 0"
9	71"	47"	3'- 2"	1'- 0"	5'- 5"	1'- 0"	3'- 4"

TABLE OF REINFORCING STEEL (4)

Bar	Size	Spa	No.
A1	# 5	~	2
A2	# 5	1'-6"	~
E	# 5	~	2
F	# 5	1'-0"	~



BARS F2

GENERAL NOTES:
Designed according to AASHTO LRFD Specifications.
Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.
All reinforcing steel shall be Grade 60.
All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.
No bridge rails of any type may be mounted directly to these culvert headwalls.

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED ARCH PIPE CULVERTS

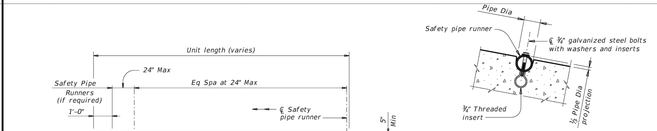
CH-PW-A-0

FILE: chpwa0e.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-10: Removed Bars F.	DIST	COUNTY		SHEET NO.

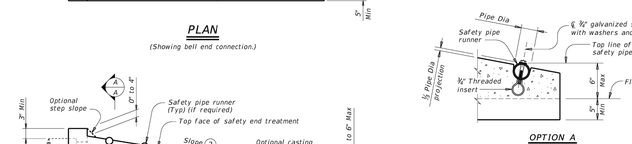
DATE PLOTTED

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

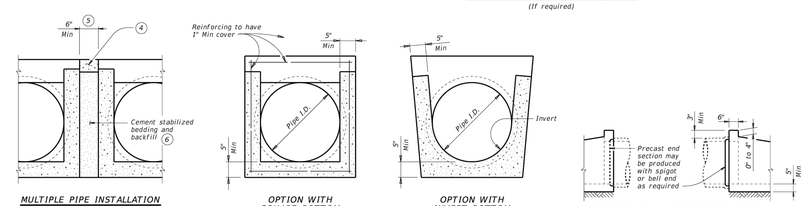
Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (7)	"D" (1)	Slope	Min Length	Pipe Runners Required Single Pipe	Pipe Runners Required Multiple Pipe	Required Pipe Runner Size Nominal Dia.	O.D.	I.D.
12"	2"	1.15"	17.00"	6:1	4' - 9"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
15"	2 ¼"	1.30"	20.50"	6:1	6' - 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 ½"	1.60"	24.00"	6:1	8' - 0"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31.00"	6:1	11' - 3"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
30"	3 ½"	2.65"	38.50"	6:1	14' - 8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17' - 11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 ½"	2.7"	52.50"	6:1	21' - 2"	Yes	Yes	4" STD	4.500"	4.026"



INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS
(If required)



END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS
(If required)



(1) Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.

(2) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

(3) Toewall to be used only when dimension is shown elsewhere in the plans.

(4) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

(5) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

(6) Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(7) Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:
Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".
When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below :
A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).
B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).
At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.
Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5L/X52.
Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.
Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464, "Reinforced Concrete Pipe". Connect TP by grouting. See Pipe and Box Grouted Connections (PBGC) standard for grouted connections with TP and precast safety end treatment.

Texas Department of Transportation — Bridge Division Standard

PRECAST SAFETY END TREATMENT
TYPE II ~ PARALLEL DRAINAGE

PSET-SP

FILE: psetsp2a-21.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 10-21: Moved AZ 19.	DIST	COUNTY		SHEET NO.

DATE PLOTTED

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

REV	DESCRIPTION	DATE	APR

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DRAINAGE DETAILS (SHEET 2 OF 2)

STATE OF TEXAS — 1-24-2024 — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

CN	
DRAINAGE AREA	CN
EX ON 1	80
EX ON 2	80
EX OFF 1	80
EX OFF 2	80

IMPERVIOUS COVER TABLE

DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	PERVIOUS COVER (SF)	I.C. (SF)	I.C. (AC)	I.C. (%)	PERVIOUS COVER INPUTS		
EX ON 1	EX - POA	81,189	1.86	81,189	0	0.00	0.00%	81,189		
EX ON 2	EX - POA	1,468,279	33.71	1,447,918	20361	0.47	1.39%	1,447,918		
EX OFF 1	EX - POA	42,234	0.97	36,575	5659	0.13	13.40%	36,575		
EX OFF 2	EX - POA	153,501	3.52	140,300	13201	0.30	8.60%	140,300		

TIME OF CONCENTRATION

DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	SHEET FLOW							SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	Lag Time
		Manning's n	L (ft)	P_2 (in)	Start Elev.	End Elev.	S (%)	T_t(min)	ved/Unpav	V (ft/s)	L (ft)	Start Elev.	End Elev.	S (%)	T_t(min)	L (ft)	V (ft/s)	T_t(min)	Tc(min)	Tc(min)
EX ON 1	EX - POA	0.41	100	4.14	1047.6	1044.7	2.9%	16.6	Unpaved	2.3	405	1044.7	1036.6	2.00	3.0			0.0	**19.6**	**11.7**
EX ON 2	EX - POA	0.41	100	4.14	1053	1050.5	2.5%	17.6	Unpaved	2.7	1888	1050.5	997.8	2.79	11.7			0.0	**29.3**	**17.6**
EX OFF 1	EX - POA	0.24	100	4.14	1056.5	1055.9	0.6%	20.3	Unpaved	3.4	225	1055.9	1046.1	4.36	1.1			0.0	**21.4**	**12.9**
EX OFF 2	EX - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.8	4.13	1.3			0.0	**11.3**	**6.8**

FLOW CALCULATIONS (RATIONAL)

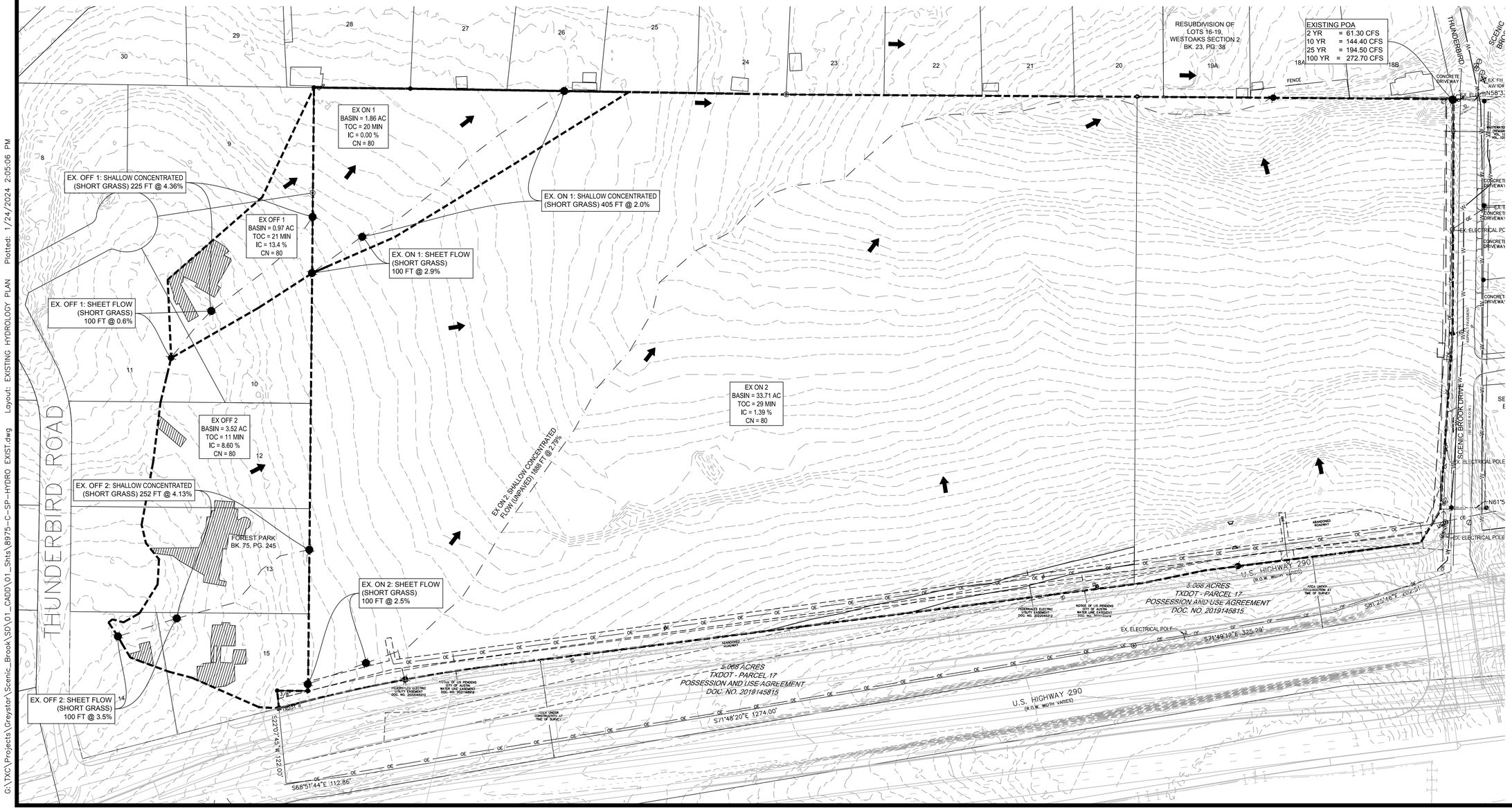
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	AREA (MI2)	I.C. (SF)	I.C. (AC)	I.C. (%)	Tc (Min.)	C2	C10	C25	C100	I2	I10	I25	I100	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
EX ON 1	EX - POA	81,189	1.86	0.0029123	0	0.00	0.00%	19.6	0.33	0.38	0.42	0.49	3.76	5.67	6.98	9.14	2.31	4.02	5.47	8.35
EX ON 2	EX - POA	1,468,279	33.71	0.0526673	20,361	0.47	1.39%	29.3	0.34	0.39	0.43	0.50	3.03	4.58	5.66	7.45	34.27	59.60	81.23	124.60
EX OFF 1	EX - POA	42,234	0.97	0.0015149	5,659	0.13	13.40%	21.4	0.38	0.44	0.48	0.55	3.59	5.42	6.67	8.74	1.33	2.30	3.10	4.68
EX OFF 2	EX - POA	153,501	3.52	0.0055061	13,201	0.30	8.60%	11.3	0.36	0.42	0.46	0.53	4.82	7.29	8.95	11.67	6.18	10.71	14.43	21.78

FLOW CALCS (HEC-HMS 4.8)

Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
3.60	8.40	11.40	15.90
51.30	121.30	163.40	229.30
2.50	5.60	7.40	10.20
9.50	21.40	28.40	39.50

Peak Discharge Comparison Table (CFS)

	EX 2-yr	EX 10-yr	EX 25-yr	EX 100-yr	PR 2-yr	PR 10-yr	PR 25-yr	PR 100-yr	DELTA 2-yr	DELTA 10-yr	DELTA 25-yr	DELTA 100-yr
POA - SITE	61.30	144.40	194.50	272.70	38.30	130.80	185.70	268.50	23.00	13.60	8.80	4.20



LEGEND

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION LINE

FLOW DIRECTION

EX	EXISTING DRAINAGE AREA
ON	ONSITE DRAINAGE AREA
OFF	OFFSITE DRAINAGE AREA
LOA	LINE OF ANALYSIS
UM	UNMANAGEABLE
POA	POINT OF ANALYSIS

0 40' 80' 160'
SCALE: 1" = 80'

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE/SHE SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

							APR
							DATE
							DESCRIPTION
							REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

EXISTING HYDROLOGY PLAN

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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IMPERVIOUS COVER TABLE											
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	PERVIOUS COVER (SF)	I.C. (SF)	I.C. (AC)	I.C. (%)	PERVIOUS COVER INPUTS		
PR OFF 1	PR - POA	171,746	3.94	133,411	38335	0.88	22.32%	133,411		
PR OFF 2	PR - POA	69,017	1.58	58,475	10543	0.24	15.28%	58,475		
PR OFF (1+2)	OFFSITE CHANNEL	248,799	5.71	199,921	48878	1.12	19.65%	199,921		
PR OFF 3	PR - POA	109,649	2.52	109,649	0	0.00	0.00%	109,649		
PR OFF 4	PR - POA	19,458	0.45	19,458	0	0.00	0.00%	19,458		
PR ON 1 (POND A)	PR - POA	1,154,145	26.50	765,189	388956	8.93	33.70%	765,189		
PR ON 2 (POND B)	PR - POA	160,650	3.69	45,590	115060	2.64	71.62%	45,590		

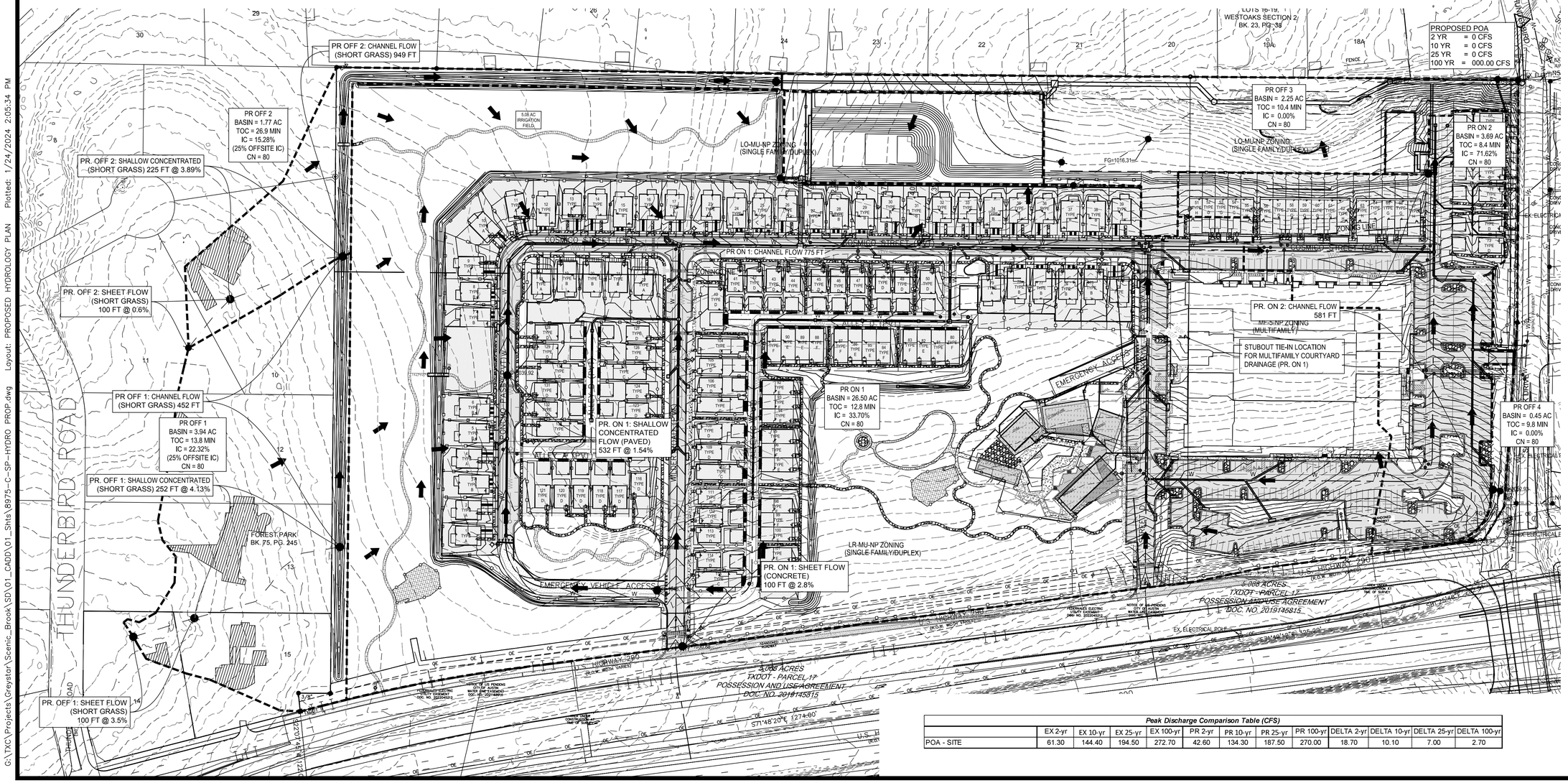
TIME OF CONCENTRATION																			
		SHEET FLOW							SHALLOW CONCENTRATED FLOW							CHANNEL FLOW			TOTAL	Lag Time
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	Manning's n	L (ft)	P_2 (in)	Start Elev.	End Elev.	S (%)	T_t(min)	ved/Unpav	V (ft/s)	L (ft)	Start Elev.	End Elev.	S (%)	T_t(min)	L (ft)	V (ft/s)	T_t(min)	Tc(min)	Tc(min)
PR OFF 1	PR - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	452.00	3	2.5	**13.8**	**8.3**
PR OFF 2	PR - POA	0.24	100	4.14	1056.5	1055.9	0.6%	20.3	Unpaved	3.2	252	1055.9	1046.1	3.89	1.3	949.00	3	5.3	**26.9**	**16.1**
PR OFF (1+2)	OFFSITE CHANNEL	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.5	225	1062.2	1051.792	4.63	1.1	1401.00	3	7.8	**18.9**	**11.3**
PR OFF 3	PR - POA	0.24	100	4.14	1025.55	1016.31	9.2%	6.8	Unpaved	2.7	591	1016.31	999.73	2.81	3.6			0.0	**10.4**	**6.3**
PR OFF 4	PR - POA	0.24	100	4.14	1059.97	1052.93	7.0%	7.6	Unpaved	4.7	633	1052.93	999.73	8.40	2.3			0.0	**9.8**	**5.9**
PR ON 1 (POND A)	PR - POA	0.015	100	4.14	1050.88	1048.11	2.8%	5.0	Paved	2.5	532	1048.11	1039.92	1.54	3.5	775.00	3	4.3	**12.8**	**7.7**
PR ON 2 (POND B)	PR - POA	0.015	50	4.14	1058.18	1055.16	6.0%	5.0	Paved	4.6	50	1055.16	1052.61	5.10	0.2	581.00	3	3.2	**8.4**	**5.0**

CN	
DRAINAGE AREA	CN
PR OFF 1	80
PR OFF 2	80
PR OFF (1+2)	80
PR OFF 3	80
PR OFF 4	80
PR ON 1 (POND A)	80
PR ON 2 (POND B)	80

*Soil Group D

FLOW CALCULATIONS (RATIONAL)																			
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	AREA (MI2)	I.C. (SF)	I.C. (AC)	I.C. (%)	Tc (Min.)	C2	C10	C25	C100	I2	I10	I25	I100	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
PR OFF 1	PR - POA	171,746	3.94	0.0061605	38,335	0.88	22.32%	13.8	0.42	0.48	0.52	0.59	4.42	6.69	8.21	10.72	7.31	12.55	16.78	25.06
PR OFF 2	PR - POA	69,017	1.58	0.0024756	10,543	0.24	15.28%	26.9	0.39	0.45	0.49	0.56	3.18	4.80	5.92	7.79	1.97	3.39	4.57	6.91
PR OFF (1+2)	OFFSITE CHANNEL	248,799	5.71	0.0089244	48,878	1.12	19.65%	18.9	0.41	0.46	0.51	0.58	3.82	5.77	7.10	9.29	8.92	15.31	20.54	30.80
PR OFF 3	PR - POA	109,649	2.52	0.0039331	0	0.00	0.00%	10.4	0.33	0.38	0.42	0.49	4.97	7.52	9.24	12.05	4.13	7.20	9.76	14.86
PR OFF 4	PR - POA	19,458	0.45	0.0006980	0	0.00	0.00%	9.8	0.33	0.38	0.42	0.49	5.09	7.70	9.45	12.33	0.75	1.31	1.77	2.70
PR ON 1 (POND A)	PR - POA	1,154,145	26.50	0.0413993	388,956	8.93	33.70%	12.8	0.46	0.52	0.57	0.65	4.57	6.91	8.49	11.08	56.28	96.12	127.81	189.30
PR ON 2 (POND B)	PR - POA	160,650	3.69	0.0057625	115,060	2.64	71.62%	8.4	0.62	0.69	0.74	0.82	5.39	8.17	10.02	13.07	12.25	20.72	27.17	39.51

FLOW CALCS (HEC-HMS 4.8)				
Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)	
10.00	21.30	28.00	38.50	
3.00	6.80	9.00	12.50	
-	-	-	-	
6.10	14.20	19.00	26.60	
1.10	2.60	3.50	4.80	
70.10	142.80	185.90	253.00	
14.80	26.90	34.00	45.10	



Peak Discharge Comparison Table (CFS)												
	EX 2-yr	EX 10-yr	EX 25-yr	EX 100-yr	PR 2-yr	PR 10-yr	PR 25-yr	PR 100-yr	DELTA 2-yr	DELTA 10-yr	DELTA 25-yr	DELTA 100-yr
POA - SITE	61.30	144.40	194.50	272.70	42.60	134.30	187.50	270.00	18.70	10.10	7.00	2.70

LEGEND

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION LINE

FLOW DIRECTION

EX	EXISTING DRAINAGE AREA
ON	ONSITE DRAINAGE AREA
OFF	OFFSITE DRAINAGE AREA
LOA	LINE OF ANALYSIS
UM	UNMANAGEABLE
POA	POINT OF ANALYSIS

0 40' 80' 160'
SCALE: 1" = 80'

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

PROPOSED HYDROLOGY PLAN

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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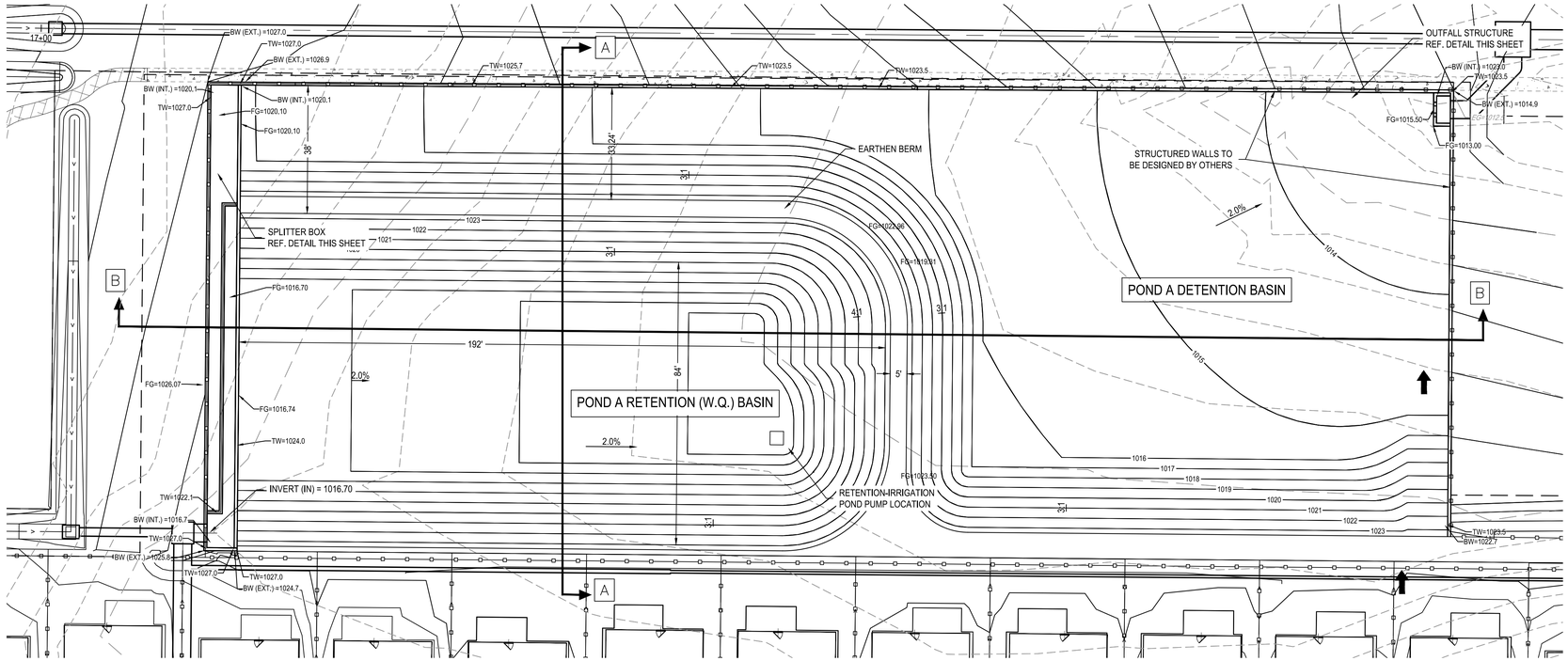


LEGEND

- PROPERTY BOUNDARY
- 1044 EXISTING TOPO MINOR
- 1045 EXISTING TOPO MAJOR
- 1044 PROPOSED GRADING MINOR
- 1045 PROPOSED GRADING MAJOR
- FG FINISHED GRADE
- TW TOP OF WALL
- BW BOTTOM OF WALL
- EG EXISTING GRADE

0 10' 20' 40'
SCALE: 1" = 20'

NOTES:

1. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DETENTION AND FILTRATION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
2. POND BOTTOMS, SIDE SLOPES AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT MAXIMUM DENSITY, IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. EXPANSION JOINTS ON FREE-STANDING WALLS SHALL HAVE WATER TIGHT SEALS PER CITY OF AUSTIN STANDARD SPECIFICATIONS.
4. RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE BOTTOM OF WALL FOOTING TO THE TOP OF THE WALL, SHALL BE ENGINEERED AND WILL REQUIRE A SEPARATE PERMIT.
5. ALL STRUCTURAL WALL DETAILS TO BE PROVIDED BY THE OWNER'S STRUCTURAL ENGINEER.
6. BIOFILTRATION MEDIA SHALL COMPLY WITH ECM 1.6.7.C.4(A).
7. SPECIFICATIONS FOR ALL EQUIPMENT/COMPONENTRY OF THE WATER QUALITY CONTROL SYSTEMS SHALL BE SUBMITTED TO THE OPERATING PERMIT (OP) INSPECTION STAFF AND ENGINEER OF RECORD PRIOR TO THE INSTALLATION OF PUMP STATIONS AND IRRIGATION SYSTEMS, AND PRIOR TO THE MID-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. THIS IS INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT SUCH AS PUMPS, PANELS, PIPING, DISTRIBUTION COMPONENTS AND ANY OTHER ANCILLARY EQUIPMENT. FINAL APPROVAL OF SUBMITTAL AND EQUIPMENT, AND TESTING OF ALL COMPONENTS OF WATER QUALITY SYSTEM, IS REQUIRED BY WPD OP INSPECTION STAFF PRIOR TO CO. FINAL DOCUMENTATION OF OPERATIONS/MAINTENANCE MANUAL AND AS-BUILTS SHALL BE SUBMITTED TO OP INSPECTION STAFF AFTER BUILD-OUT AND MUST BE APPROVED BY STAFF PRIOR TO THE END OF THE ONE-YEAR PERFORMANCE PERIOD.

APPENDIX R-5
RETENTION/IRRIGATION POND CALCULATIONS
FOR DEVELOPMENT PERMITS

Legend
Not In Compliance
Do Not Modify Values

DRAINAGE AREA DATA:

Drainage area to control (DA)		26.496	ac.		
Drainage area Impervious Cover		33.70%			
Capture Depth (CD)		0.820	in		
WATER QUALITY CONTROL CALCULATIONS		Required		Provided	
The Water Quality Control is to be **Retention Irrigation**					
25-year peak flow rate to control (Q25)		127.81	cfs	127.90	cfs
100-year peak flow rate to control (Q100)		189.30	cfs		
Water Qualtiy Volume (WQV=CD*DA*3630)	≥	78,867	cf	85,192	cf
Retention Pond Volume (min WQV)	≥	85,192	cf	85,192	cf
Water Quality Elevation				1022.10	ft msl
Elevation of Splitter/Overflow Weir (min WQ elevation)	≥	1022.10	ft msl	1022.10	ft msl
Length of Splitter Weir				99.50	ft
Required Head to Pass Q100 (maximum 1.0 ft)	≤	1.00	ft	0.68	ft
Pond Freeboard Provided to Pass Q100 (minimum 0.25 ft)	≥	0.4651	ft	0.5156	ft
IRRIGATION AREA CALCULATIONS					
Soil Permeability, *k* (minimum 0.03 in/hr)	≥	0.03	in/hr	0.20	in/hr
Pond Drawdown Time, DT (maximum 72 hrs)	≤	72	hrs.	60	hrs.
Irrigation Rate, *r*	≤	0.20	in/hr	0.20	in/hr.
Irrigation Area [WQV/(3630*(*k* **or** *r*)*((DT-12)*50%))]	≥	3.91	ac.	3.91	ac.

****Note above:** if $0.03 \le r \le k$, then *r*; else greater of *k* or 0.03

POND A WATER QUALITY - RETENTION

Req. WQV = 82,121 CF

Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Volume (cf)	Cumulative Volume (cf)	
1013.50	0.00	0.00	16.00	0	0	
1014.00	0.50	0.50	1136.69	215	215	
1015.00	1.00	1.50	3859.06	2,363	2,578	
1016.00	1.00	2.50	7214.54	5,450	8,028	
1017.00	1.00	3.50	10213.12	8,671	16,699	
1018.00	1.00	4.50	11435.80	10,819	27,517	
1019.00	1.00	5.50	12691.58	12,058	39,575	
1020.00	1.00	6.50	13980.47	13,331	52,906	
1021.00	1.00	7.50	15302.46	14,636	67,543	
1021.92	0.92	8.42	*16549.14*	14,648	82,191	**ELEV @ REQ. WQV**
1022.00	0.08	8.50	16657.55	1,328	83,519	**DETENTION WSEL (100YR)**
1022.10	0.10	8.60	*16796.36*	1,673	85,192	**SPLITTER/WQE @ 85,192**
1023.00	0.90	9.50	18045.72	15,676	100,867	
1023.30	0.30	9.80	18045.72	5,414	106,281	**TOP OF POND (BERM ELEV.)**

POND A DETENTION

Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Area (ac)	Volume (cf)	Cumulative Volume (cf)	
1013.00	0.00	0.00	15.00	0.000344	0	0	
1014.00	1.00	1.00	2595.47	0.059584	936	936	
1015.00	1.00	2.00	8710.06	0.199955	5,353	6,289	
1016.00	1.00	3.00	15226.24	0.349546	11,817	18,107	
1017.00	1.00	4.00	17250.00	0.396005	16,228	34,334	
1018.00	1.00	5.00	18951.10	0.435057	18,094	52,428	
1019.00	1.00	6.00	20944.02	0.480809	19,939	72,368	
1020.00	1.00	7.00	23228.54	0.533254	22,076	94,444	**Inflow Elevation**
1021.00	1.00	8.00	24645.71	0.565788	23,934	118,378	
1022.00	1.00	9.00	25963.31	0.596035	25,302	143,679	**Splitter Elevation/Q100 WSEL**
1023.00	1.00	10.00	27279.00	0.626240	26,618	170,298	
1023.30	0.30	10.30	27936.12	0.641325	8,282	178,580	**Top of Berm**

POND A (DETENTION) ELEVATION DISCHARGE				
EVENT	2	10	25	100
INFLOW (Q)	70.1	142.8	185.9	253.0
DISCHARGE (Q)	27.6	91.4	128.0	184.8
WSEL	1016.60	1019.60	1020.60	1022.00
PONDING DEPTH	3.60	6.60	7.60	9.00
FREEBOARD	6.70	3.70	2.70	1.30

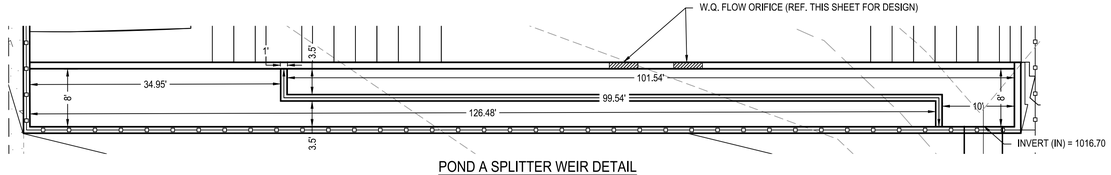
FALLING HEAD ORIFICE CALCULATIONS

Surface Area (sq. ft.)	18759.68
Orifice coefficient (use 0.6 per DCM)	0.6
h_1 (ft)	7.78
h_2 (ft)	0
t (hrs.)	48
A_o orifice area (sq. ft.)	0.126
Orifice diameter (in.)	4.80

RETENTION-IRRIGATION POND MAINTENANCE

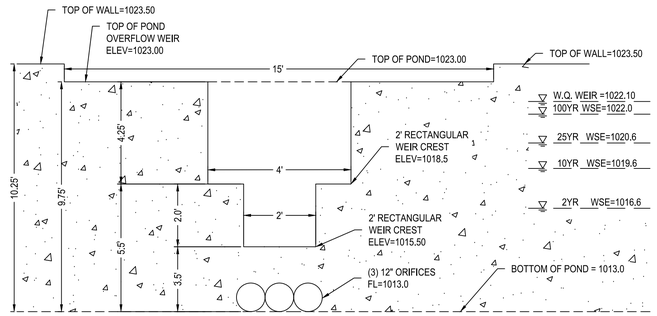
AS PER COA ECM 1.6.3:

1. (BASINS) STRUCTURAL INTEGRITY OF BASINS SHALL BE MAINTAINED AT ALL TIMES. WOODY VEGETATION SHOULD BE CONTROLLED/REMOVED TO PREVENT BASIN LEAKAGE. THE ABILITY OF THE BASIN TO RETAIN THE WATER QUALITY VOLUME SHALL BE EVALUATED BY THE COA.
2. (IRRIGATION AREAS) TO THE GREATEST EXTENT PRACTICABLE, IRRIGATION AREAS ARE TO REMAIN IN THEIR NATURAL STATE. HOWEVER, VEGETATION MUST BE MAINTAINED IN THE IRRIGATION AREA SUCH THAT IT DOES NOT IMPEDE THE SPRAY OF WATER FROM THE IRRIGATION HEADS. TREE AND SHRUB TRIMMINGS AND OTHER LARGE DEBRIS MUST BE REMOVED FROM THE IRRIGATION AREA. SEE REQUIREMENTS IN SECTION 1.6.7.A.3.(G) AND (H) REGARDING REQUIREMENTS FOR SOIL AND VEGETATION IN IRRIGATION AREAS.
3. PUMPS AND IRRIGATION SYSTEM) THE PUMPS AND IRRIGATION SYSTEM MUST BE INSPECTED OR TESTED A MINIMUM OF SIX (6) TIMES PER YEAR TO SHOW ALL COMPONENTS ARE OPERATING AS INTENDED. TWO (2) OF THESE SIX (6) INSPECTIONS SHOULD BE AFTER RAIN EVENTS TO ENSURE THAT THE IRRIGATION SYSTEM AND ALL OF ITS COMPONENTS PERFORM AS DESIGNED. THIS INCLUDES CONTROLS SUCH AS WEATHER STATIONS OR RAIN SENSORS, DELAYS, VALVES, ALARM SYSTEM, DISTRIBUTION LINES, OR OTHER COMPONENTS AS SPECIFIED IN THE SYSTEM DESIGN. SPRINKLER HEADS MUST BE CHECKED TO DETERMINE IF ANY ARE BROKEN, CLOGGED, OR NOT SPRAYING PROPERLY. ALL INSPECTION AND TESTING REPORTS MUST BE KEPT ON SITE AND ACCESSIBLE TO THE CITY OF AUSTIN.
4. THE OVERALL SYSTEM SHALL BE INSPECTED FOR THE ABILITY TO RETAIN THE WATER QUALITY VOLUME ON SITE PER ECM SECTION 1.6.7.A



POND A SPLITTER WEIR DETAIL
N.T.S.

Capability of Water Quality Control Inlet to Safely Convey 25 Yr. Storm			
Type of Inlet control	Orifice		
Elevation of Weir/Orifice Flowline	1016.75	ft. (MSL)	
Head above Inlet/Splitter Elevation	5.35	ft.	
Orifice Type	Rectangular		
Number of orifices	2		
	H	W	
Rectangular orifice opening	1.75	4	ft.
C_o = orifice coefficient (use 0.6)	0.60		OVERRIDE
$Q_{inlet\ (cfs)}$	127.90	cfs	
V_{inlet} (fps)	18.272	fps	



DETENTION OUTFALL DETAIL
N.T.S.

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

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

POND A PLAN

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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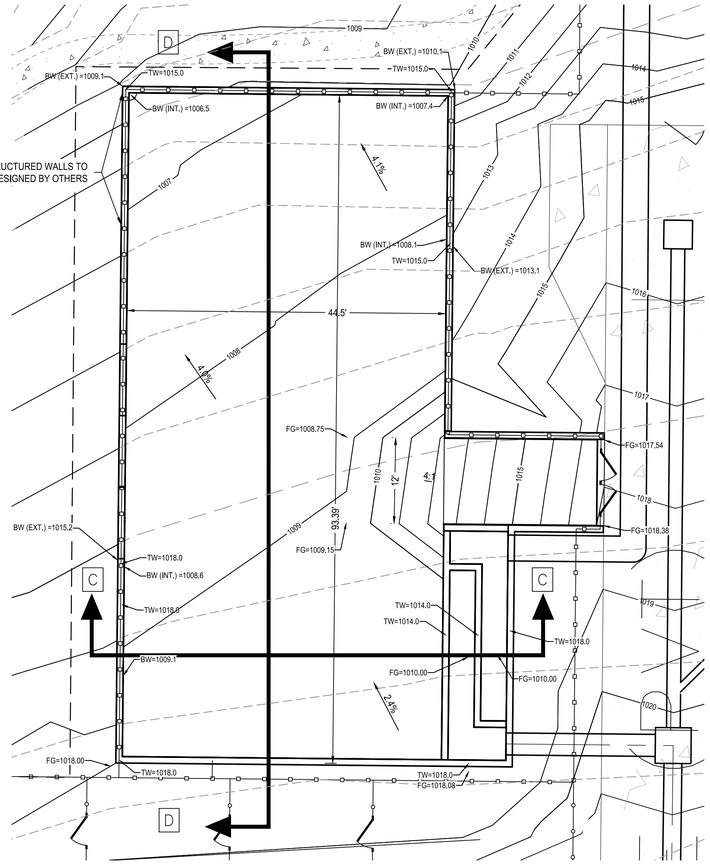


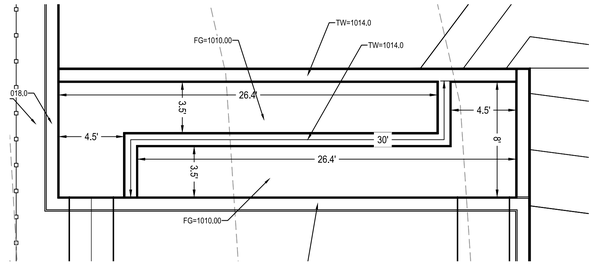
APPENDIX R-5
RETENTION/IRRIGATION POND CALCULATIONS
FOR DEVELOPMENT PERMITS

Legend
Not In Compliance
Do Not Modify Values

DRAINAGE AREA DATA:					
Drainage area to control (DA)		3.688	ac.		
Drainage area Impervious Cover		71.62%			
Capture Depth (CD)		1.620	in		
WATER QUALITY CONTROL CALCULATIONS		Required		Provided	
The Water Quality Control is to be **Retention Irrigation**					
25-year peak flow rate to control (Q25)		27.17	cfs	29.94	cfs
100-year peak flow rate to control (Q100)		39.51	cfs		
Water Qualtiy Volume (WQV=CD*DA*3630)	≥	21,688	cf	22,366	cf
Retention Pond Volume (min WQV)	≥	22,366	cf	22,366	cf
Water Quality Elevation				1014.00	ft msl
Elevation of Splitter/Overflow Weir (min WQ elevation)	≥	1014	ft msl	1014.00	ft msl
Length of Splitter Weir				30.00	ft
Required Head to Pass Q100 (maximum 1.0 ft)	≤	1.00	ft	0.54	ft
Pond Freeboard Provided to Pass Q100 (minimum 0.25 ft)	≥	0.3268	ft	0.46	ft
IRRIGATION AREA CALCULATIONS					
Soil Permeability, *k* (minimum 0.03 in/hr)	≥	0.03	in/hr	0.20	in/hr
Pond Drawdown Time, DT (maximum 72 hrs)	≤	72	hrs.	60	hrs.
Irrigation Rate, *r*	≤	0.20	in/hr	0.20	in/hr.
Irrigation Area [WQV/(3630*(*k* **or** *r*)*((DT-12)*50%))]	≥	1.027	ac.	1.030	ac.
****Note above:** if $0.03 \le r \le k$, then *r*; else greater of *k* or 0.03					

POND B (RETENTION)

Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Volume (cf)	Cumulative Volume (cf)	
1006.50	0.00	0.00	0.50	0	0	
1007.00	0.50	0.50	179.14	32	32	
1008.00	1.00	1.50	1382.25	686	718	
1009.00	1.00	2.50	2651.05	1,983	2,700	
1010.00	1.00	3.50	3951.23	3,280	5,980	
1011.00	1.00	4.50	4047.21	3,999	9,979	
1012.00	1.00	5.50	4119.33	4,083	14,062	
1013.00	1.00	6.50	4155.53	4,137	18,200	
1014.00	1.00	7.50	4179.14	4,167	22,367	**WQE @ 22365.882**
1015.00	1.00	8.50	4202.76	4,191	26,558	**TOP OF POND**



POND B SPLITTER WEIR DETAIL
N.T.S.

Capability of Water Quality Control Inlet to Safely Convey 25 Yr. Storm			
Type of Inlet control	Orifice		
Elevation of Weir/Orifice Flowline	1010.00	ft. (MSL)	
Head above Inlet/Splitter Elevation	4.00	ft.	
Orifice Type	Rectangular		
Number of orifices	2		
	H	W	
Rectangular orifice opening	1.25	1.5	ft.
C_o = orifice coefficient (use 0.6)	0.60		**OVERRIDE**
$Q_{inlet\ (cfs)}$	29.94	cfs	
V_{inlet} (fps)	15.969	fps	

FALLING HEAD ORIFICE CALCULATIONS

Surface Area (sq. ft.)		4202.76
Orifice coefficient (use 0.6 per DCM)		0.6
h_1 (ft)	◥	8.5
h_2 (ft)	◥	0
t (hrs.)	◥	48
A_o orifice area (sq. ft.)		0.029
Orifice diameter (in.)		2.32

NOTES:

1. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DETENTION AND FILTRATION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
2. POND BOTTOMS, SIDE SLOPES AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT MAXIMUM DENSITY, IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. EXPANSION JOINTS ON FREE-STANDING WALLS SHALL HAVE WATER TIGHT SEALS PER CITY OF AUSTIN STANDARD SPECIFICATIONS.
4. RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE BOTTOM OF WALL FOOTING TO THE TOP OF THE WALL, SHALL BE ENGINEERED AND WILL REQUIRE A SEPARATE PERMIT.
5. ALL STRUCTURAL WALL DETAILS TO BE PROVIDED BY THE OWNER'S STRUCTURAL ENGINEER.
6. BIOFILTRATION MEDIA SHALL COMPLY WITH ECM 1.6.7.C.4(A).
7. SPECIFICATIONS FOR ALL EQUIPMENT/COMPONENTRY OF THE WATER QUALITY CONTROL SYSTEMS SHALL BE SUBMITTED TO THE OPERATING PERMIT (OP) INSPECTION STAFF AND ENGINEER OF RECORD PRIOR TO THE INSTALLATION OF PUMP STATIONS AND IRRIGATION SYSTEMS, AND PRIOR TO THE MID-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. THIS IS INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT SUCH AS PUMPS, PANELS, PIPING, DISTRIBUTION COMPONENTS AND ANY OTHER ANCILLARY EQUIPMENT. FINAL APPROVAL OF SUBMITTAL AND EQUIPMENT, AND TESTING OF ALL COMPONENTS OF WATER QUALITY SYSTEM, IS REQUIRED BY WPD OP INSPECTION STAFF PRIOR TO CO. FINAL DOCUMENTATION OF OPERATIONS/MAINTENANCE MANUAL AND AS-BUILTS SHALL BE SUBMITTED TO OP INSPECTION STAFF AFTER BUILD-OUT AND MUST BE APPROVED BY STAFF PRIOR TO THE END OF THE ONE-YEAR PERFORMANCE PERIOD.

RETENTION-IRRIGATION POND MAINTENANCE

AS PER COA ECM 1.6.3:

1. (BASINS) STRUCTURAL INTEGRITY OF BASINS SHALL BE MAINTAINED AT ALL TIMES. WOODY VEGETATION SHOULD BE CONTROLLED/REMOVED TO PREVENT BASIN LEAKAGE. THE ABILITY OF THE BASIN TO RETAIN THE WATER QUALITY VOLUME SHALL BE EVALUATED BY THE COA.
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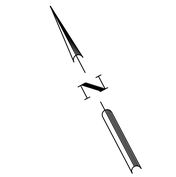

LEGEND

PROPERTY BOUNDARY	
1044	EXISTING TOPO MINOR
1045	EXISTING TOPO MAJOR
1044	PROPOSED GRADING MINOR
1045	PROPOSED GRADING MAJOR
FG	FINISHED GRADE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EG	EXISTING GRADE

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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

POND B PLAN

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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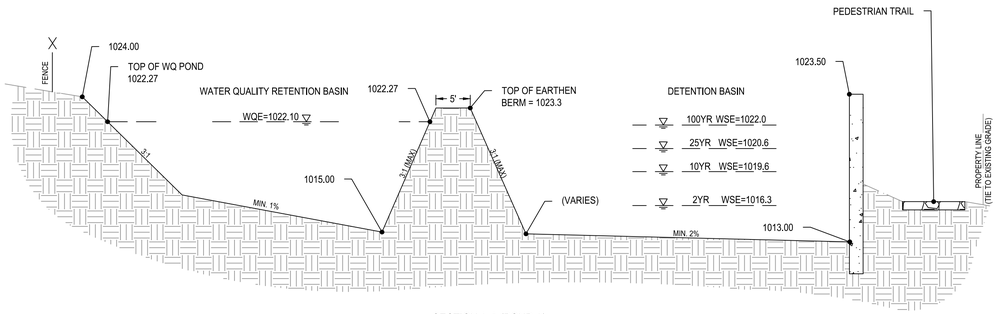
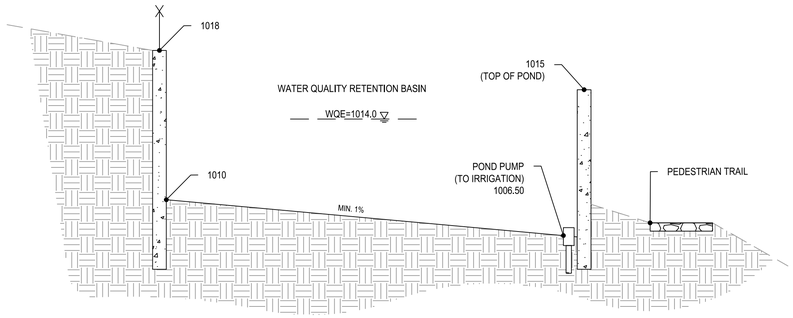
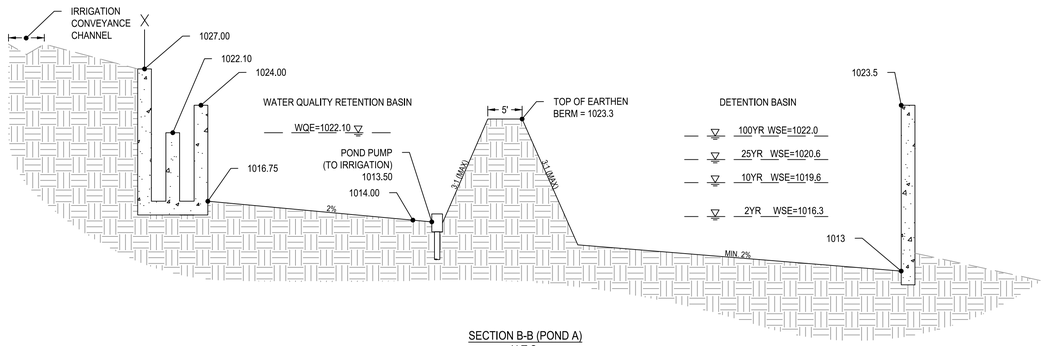


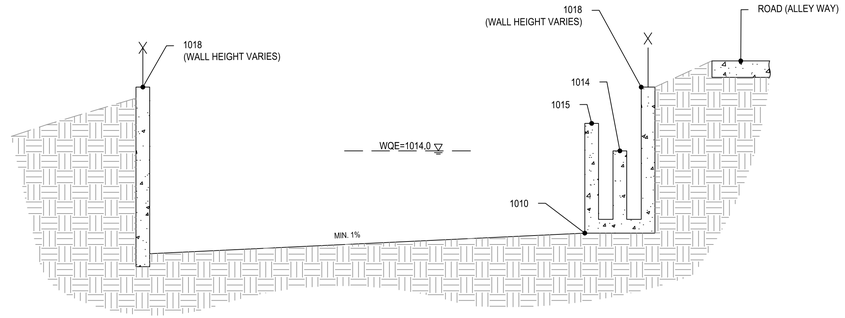
SECTION A-A (POND A)
N.T.S.



SECTION C-C (POND B)
N.T.S.



SECTION B-B (POND A)
N.T.S.



SECTION D-D (POND B)
N.T.S.

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1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

POND AND ONSITE CHANNEL DETAILS

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

8350 W US 290 HIGHWAY

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IMPERVIOUS COVER TABLE										
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	PERVIOUS COVER (SF)	I.C. (SF)	I.C. (AC)	I.C. (%)	PERVIOUS COVER INPUTS		
EX ON 1	EX - POA	81,189	1.86	81,189	0	0.00	0.00%	81,189		
EX ON 2	EX - POA	1,468,279	33.71	1,447,918	20361	0.47	1.39%	1,447,918		
EX OFF 1	EX - POA	42,234	0.97	36,575	5659	0.13	13.40%	36,575		
EX OFF 2	EX - POA	153,501	3.52	140,300	13201	0.30	8.60%	140,300		
PR OFF 1	PR - POA	171,746	3.94	133,411	38335	0.88	22.32%	133,411		
PR OFF 2	PR - POA	69,017	1.58	58,475	10543	0.24	15.28%	58,475		
PR OFF (1+2)	OFFSITE CHANNEL	248,799	5.71	199,921	48878	1.12	19.65%	199,921		
PR OFF 3	PR - POA	109,649	2.52	109,649	0	0.00	0.00%	109,649		
PR OFF 4	PR - POA	19,458	0.45	19,458	0	0.00	0.00%	19,458		
PR ON 1 (POND A)	PR - POA	1,154,145	26.50	765,189	388956	8.93	33.70%	765,189		
PR ON 2 (POND B)	PR - POA	160,650	3.69	45,590	115060	2.64	71.62%	45,590		

FLOW CALCULATIONS (RATIONAL)																				
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	AREA (MI2)	I.C. (SF)	I.C. (AC)	I.C. (%)	Tc (Min.)	C2	C10	C25	C100	I2	I10	I25	I100	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
EX ON 1	EX - POA	81,189	1.86	0.0029123	0	0.00	0.00%	19.6	0.33	0.38	0.42	0.49	3.76	5.67	6.98	9.14	2.31	4.02	5.47	8.35
EX ON 2	EX - POA	1,468,279	33.71	0.0526673	20,361	0.47	1.39%	29.3	0.34	0.39	0.43	0.50	3.03	4.58	5.66	7.45	34.27	59.60	81.23	124.60
EX OFF 1	EX - POA	42,234	0.97	0.0015149	5,659	0.13	13.40%	21.4	0.38	0.44	0.48	0.55	3.59	5.42	6.67	8.74	1.33	2.30	3.10	4.68
EX OFF 2	EX - POA	153,501	3.52	0.0055061	13,201	0.30	8.60%	11.3	0.36	0.42	0.46	0.53	4.82	7.29	8.95	11.67	6.18	10.71	14.43	21.78
PR OFF 1	PR - POA	171,746	3.94	0.0061605	38,335	0.88	22.32%	13.8	0.42	0.48	0.52	0.59	4.42	6.69	8.21	10.72	7.31	12.55	16.78	25.06
PR OFF 2	PR - POA	69,017	1.58	0.0024756	10,543	0.24	15.28%	26.9	0.39	0.45	0.49	0.56	3.18	4.80	5.92	7.79	1.97	3.39	4.57	6.91
PR OFF (1+2)	OFFSITE CHANNEL	248,799	5.71	0.0089244	48,878	1.12	19.65%	18.9	0.41	0.46	0.51	0.58	3.82	5.77	7.10	9.29	8.92	15.31	20.54	30.80
PR OFF 3	PR - POA	109,649	2.52	0.0039331	0	0.00	0.00%	10.4	0.33	0.38	0.42	0.49	4.97	7.52	9.24	12.05	4.13	7.20	9.76	14.86
PR OFF 4	PR - POA	19,458	0.45	0.0006980	0	0.00	0.00%	9.8	0.33	0.38	0.42	0.49	5.09	7.70	9.45	12.33	0.75	1.31	1.77	2.70
PR ON 1 (POND A)	PR - POA	1,154,145	26.50	0.0413993	388,956	8.93	33.70%	12.8	0.46	0.52	0.57	0.65	4.57	6.91	8.49	11.08	56.28	96.12	127.81	189.30
PR ON 2 (POND B)	PR - POA	160,650	3.69	0.0057625	115,060	2.64	71.62%	8.4	0.62	0.69	0.74	0.82	5.39	8.17	10.02	13.07	12.25	20.72	27.17	39.51

FLOW CALCS (HEC-HMS 4.8)			
Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
3.60	8.40	11.40	15.90
51.30	121.30	163.40	229.30
2.50	5.60	7.40	10.20
9.50	21.40	28.40	39.50
10.00	21.30	28.00	38.50
3.00	6.80	9.00	12.50
-	-	-	-
6.10	14.20	19.00	26.60
1.10	2.60	3.50	4.80
70.10	142.80	185.90	253.00
14.80	26.90	34.00	45.10

CN	
DRAINAGE AREA	CN
EX ON 1	80
EX ON 2	80
EX OFF 1	80
EX OFF 2	80
PR OFF 1	80
PR OFF 2	80
PR OFF (1+2)	80
PR OFF 3	80
PR OFF 4	80
PR ON 1 (POND A)	80
PR ON 2 (POND B)	80

*Soil Group D

TIME OF CONCENTRATION																			
		SHEET FLOW							SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	Lag Time
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	Manning's n	L (ft)	P_2 (in)	Start Elev.	End Elev.	S (%)	T_t(min)	aved/Unpav	V (ft/s)	L (ft)	Start Elev.	End Elev.	S (%)	T_t(min)	L (ft)	V (ft/s)	T_t(min)	Tc(min)	Tc(min)
EX ON 1	EX - POA	0.41	100	4.14	1047.6	1044.7	2.9%	16.6	Unpaved	2.3	405	1044.7	1036.6	2.00	3.0			0.0	**19.6**	**11.7**
EX ON 2	EX - POA	0.41	100	4.14	1053	1050.5	2.5%	17.6	Unpaved	2.7	1888	1050.5	997.8	2.79	11.7			0.0	**29.3**	**17.6**
EX OFF 1	EX - POA	0.24	100	4.14	1056.5	1055.9	0.6%	20.3	Unpaved	3.4	225	1055.9	1046.1	4.36	1.1			0.0	**21.4**	**12.9**
EX OFF 2	EX - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.8	4.13	1.3			0.0	**11.3**	**6.8**
PR OFF 1	PR - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	452.00	3	2.5	**13.8**	**8.3**
PR OFF 2	PR - POA	0.24	100	4.14	1056.5	1055.9	0.6%	20.3	Unpaved	3.2	252	1055.9	1046.1	3.89	1.3	949.00	3	5.3	**26.9**	**16.1**
PR OFF (1+2)	OFFSITE CHANNEL	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.5	225	1062.2	1051.792	4.63	1.1	1401.00	3	7.8	**18.9**	**11.3**
PR OFF 3	PR - POA	0.24	100	4.14	1025.55	1016.31	9.2%	6.8	Unpaved	2.7	591	1016.31	999.73	2.81	3.6			0.0	**10.4**	**6.3**
PR OFF 4	PR - POA	0.24	100	4.14	1059.97	1052.93	7.0%	7.6	Unpaved	4.7	633	1052.93	999.73	8.40	2.3			0.0	**9.8**	**5.9**
PR ON 1 (POND A)	PR - POA	0.015	100	4.14	1050.88	1048.11	2.8%	5.0	Paved	2.5	532	1048.11	1039.92	1.54	3.5	775.00	3	4.3	**12.8**	**7.7**
PR ON 2 (POND B)	PR - POA	0.015	50	4.14	1058.18	1055.16	6.0%	5.0	Paved	4.6	50	1055.16	1052.61	5.10	0.2	581.00	3	3.2	**8.4**	**5.0**

Peak Discharge Comparison Table (CFS)												
	EX 2-yr	EX 10-yr	EX 25-yr	EX 100-yr	PR 2-yr	PR 10-yr	PR 25-yr	PR 100-yr	DELTA 2-yr	DELTA 10-yr	DELTA 25-yr	DELTA 100-yr
POA - SITE	61.30	144.40	194.50	272.70	42.60	134.30	187.50	270.00	18.70	10.10	7.00	2.70

TCEQ TSS REMOVAL - POND A

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Greystar 290
Date Prepared: 11/27/2023

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-348 Pages 3-27 to 3-30

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

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

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

County =	Travis	
Total project area included in plan * =	38.67	acres
Predevelopment impervious area within the limits of the plan * =	0.47	acres
Total post-development impervious area within the limits of the plan * =	11.67	acres
Total post-development impervious cover fraction * =	0.33	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	9661	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 =	26.50	acres
Predevelopment impervious area within drainage basin/outfall area =	0.47	acres
Post-development impervious area within drainage basin/outfall area =	8.83	acres
Post-development impervious fraction within drainage basin/outfall area =	0.34	
$L_{M\ THIS\ BASIN}$ =	7364	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	26.50	acres
A_I =	8.83	acres
A_P =	17.37	acres
L_R =	10191	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 9700 lbs.

F = 0.95

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

Rainfall Depth = 2.60 inches
Post Development Runoff Coefficient = 0.28
On-site Water Quality Volume = 69179 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 = 13836
Total Capture Volume (required water quality volume(s) x 1.20) = 83015 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

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

Required Water Quality Volume for retention basin = 83015 cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.2	in/hr
Irrigation area =	166030	square feet
	3.81	acres

Enter determined permeability rate or assumed value of 0.1

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

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = NA cubic feet

Minimum filter basin area = NA square feet

Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = NA square feet For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = NA cubic feet

Minimum filter basin area = NA square feet

Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = NA square feet For maximum water depth of 8 feet

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

Required Water Quality Volume for Bioretention Basin = NA cubic feet

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

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

12. Constructed Wetlands Designed as Required in RG-348 Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands = NA cubic feet

13. AquaLogic™ Cartridge System Designed as Required in RG-348 Pages 3-74 to 3-78

** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.

Required Sedimentation chamber capacity = NA cubic feet
Filter canisters (FCs) to treat WQV = NA cartridges
Filter basin area (WA_F) = NA square feet

14. Stormwater Management StormFilter® by CONTECH

Required Water Quality Volume for Contech StormFilter System = NA cubic feet

TCEQ TSS REMOVAL - POND B

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Greystar 290
Date Prepared: 2/23/2023

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-348 Pages 3-27 to 3-30

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

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

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

County =	Travis	
Total project area included in plan * =	38.67	acres
Predevelopment impervious area within the limits of the plan * =	0.47	acres
Total post-development impervious area within the limits of the plan * =	11.05	acres
Total post-development impervious cover fraction * =	0.32	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	9644	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 =	3.69	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.64	acres
Post-development impervious fraction within drainage basin/outfall area =	0.72	
$L_{M\ THIS\ BASIN}$ =	2298	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 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: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	3.69	acres
A_I =	2.64	acres
A_P =	1.05	acres
L_R =	2941	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2700 lbs.

F = 0.92

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

Rainfall Depth = 2.00 inches
Post Development Runoff Coefficient = 0.52
On-site Water Quality Volume = 13971 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 = 2794
Total Capture Volume (required water quality volume(s) x 1.20) = 16765 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

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

Required Water Quality Volume for retention basin = 16765 cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.2	in/hr
Irrigation area =	33530	square feet
	0.77	acres

Enter determined permeability rate or assumed value of 0.1

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

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = NA cubic feet

Minimum filter basin area = NA square feet

Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = NA square feet For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = NA cubic feet

Minimum filter basin area = NA square feet

Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = NA square feet For maximum water depth of 8 feet

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

Required Water Quality Volume for Bioretention Basin = NA cubic feet

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

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

12. Constructed Wetlands Designed as Required in RG-348 Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands = NA cubic feet

13. AquaLogic™ Cartridge System Designed as Required in RG-348 Pages 3-74 to 3-78

** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

									APR
									DATE
									DESCRIPTION
									REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

DRAINAGE CALCULATIONS

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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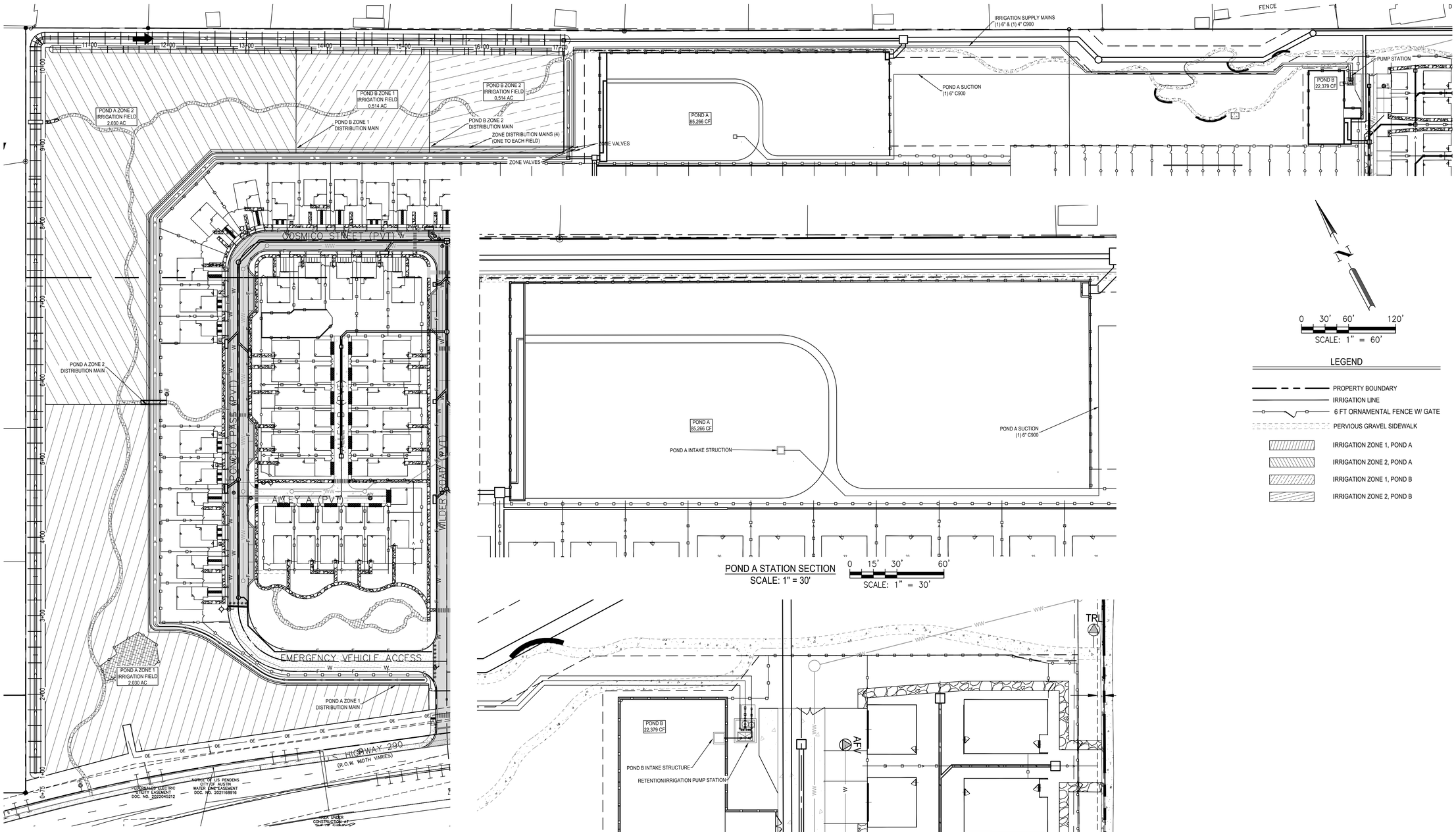


POND A STATION SECTION
SCALE: 1" = 30'

0 15' 30' 60'
SCALE: 1" = 30'

POND B AND PUMP STATION SECTION
SCALE: 1" = 20'

0 10' 20' 40'
SCALE: 1" = 20'

0 30' 60' 120'
SCALE: 1" = 60'

LEGEND

- PROPERTY BOUNDARY
- IRRIGATION LINE
- 6 FT ORNAMENTAL FENCE W/ GATE
- PERVIOUS GRAVEL SIDEWALK
- IRRIGATION ZONE 1, POND A
- IRRIGATION ZONE 2, POND A
- IRRIGATION ZONE 1, POND B
- IRRIGATION ZONE 2, POND B

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

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

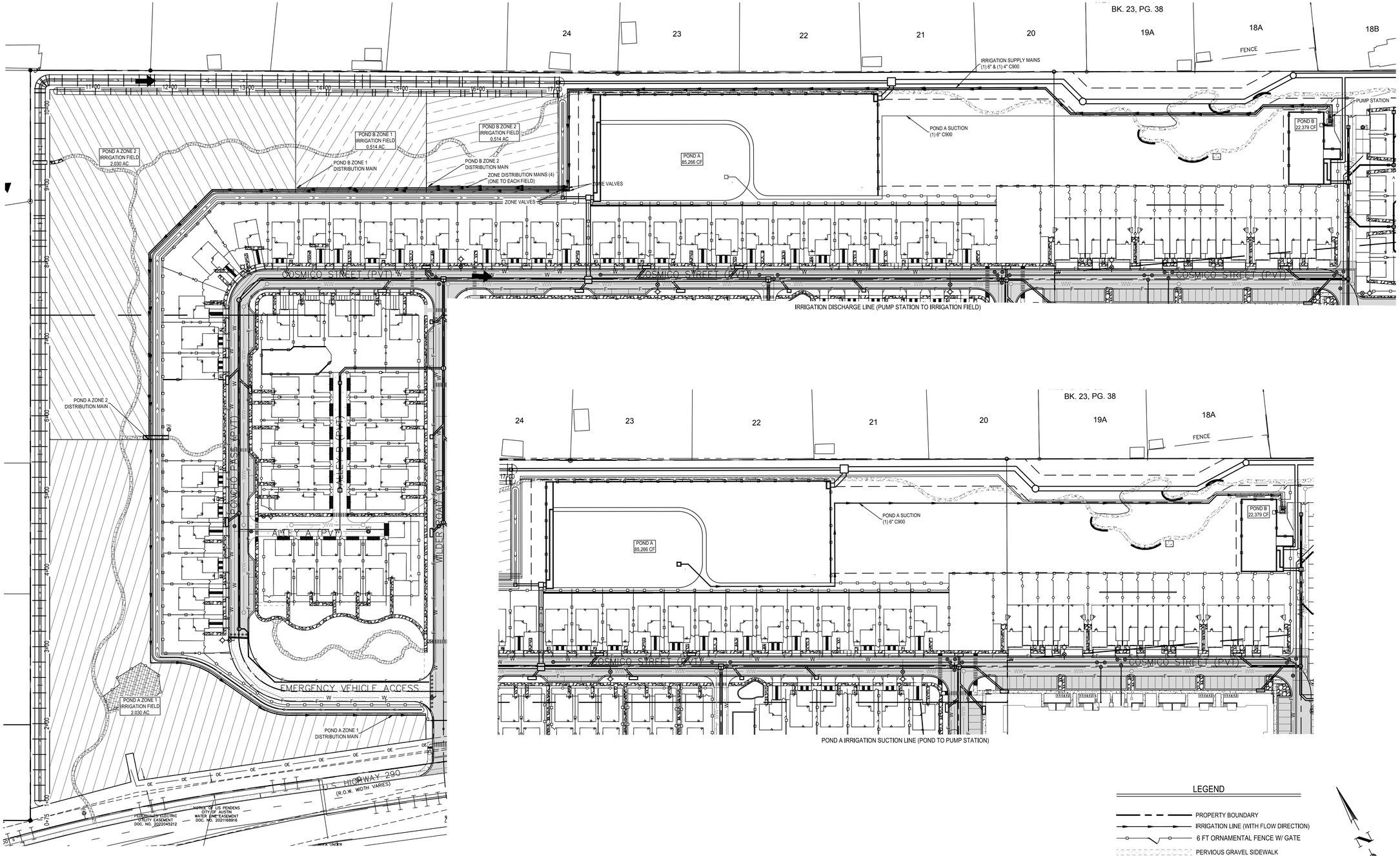
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

IRRIGATION PUMP PLAN & SECTIONS

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-POND-PUMP.dwg Layout: IRRIGATION PUMP PLAN & SECTIONS Plotted: 1/24/2024 2:07:17 PM



LEGEND

- PROPERTY BOUNDARY
- IRRIGATION LINE (WITH FLOW DIRECTION)
- 6 FT ORNAMENTAL FENCE W/ GATE
- PERVIOUS GRAVEL SIDEWALK
- IRRIGATION ZONE 1, POND A
- IRRIGATION ZONE 2, POND A
- IRRIGATION ZONE 1, POND B
- IRRIGATION ZONE 2, POND B

0 30' 60' 120'
SCALE: 1" = 60'

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

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

REV	DESCRIPTION	DATE	APR

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

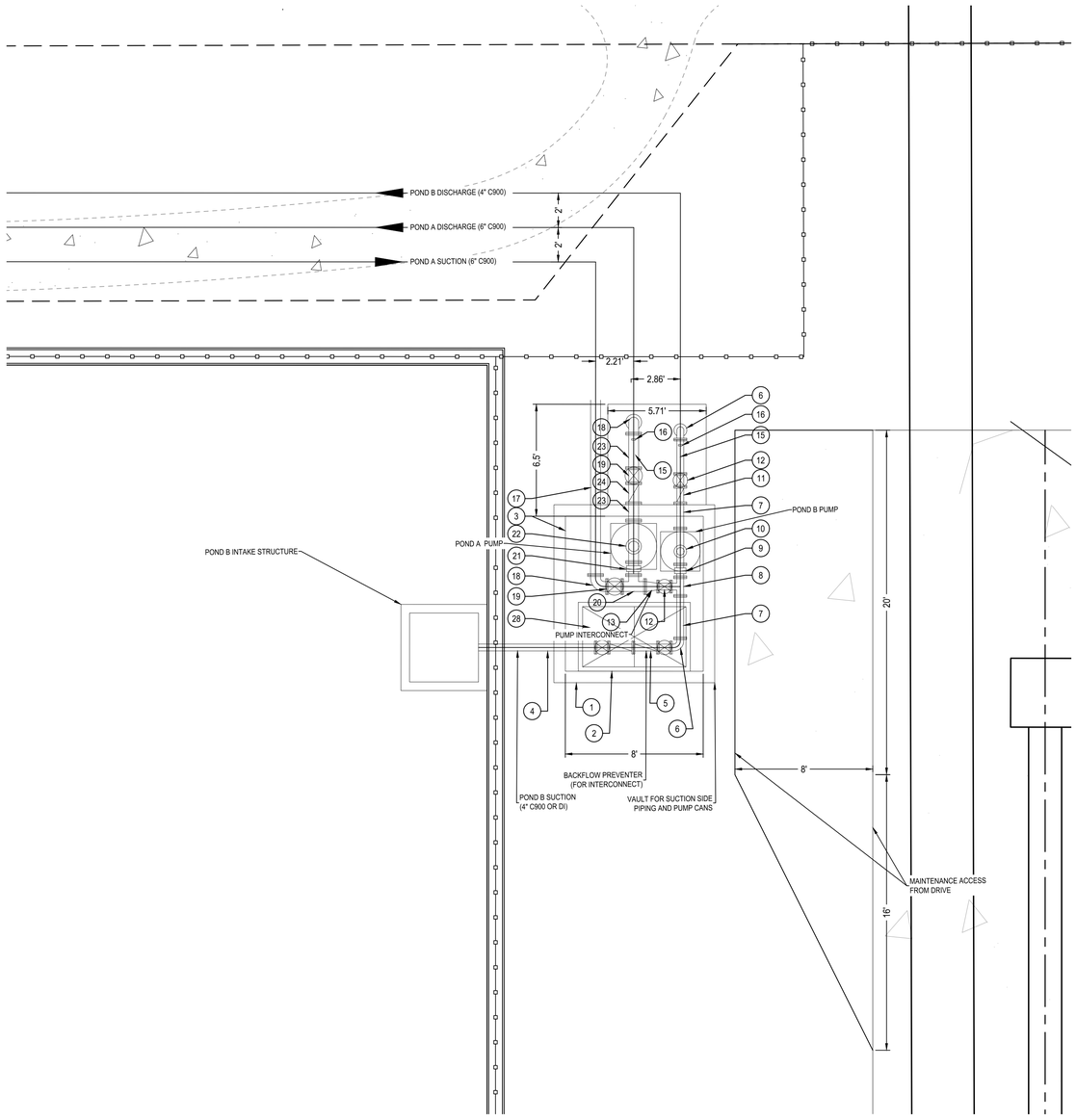
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

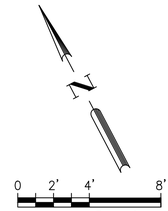
PUMP SUCTION & DISCHARGE SECTIONS

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-POND-PUMP.dwg Layout: PUMP SUCTION & DISCHARGE SECTIONS Plotted: 1/24/2024 2:07:29 PM





PART	DESCRIPTION
1	8' x 9' PUMP VAULT
2	TWO DOOR HATCH W/ SAFETY GRATE, 72" x 42" CLEAR OPENING, HALLIDAY S2S7242 OR EQUAL
3	4" STEEL GOOSENECK VENT
4	4" DI FLANGE x PLAIN END SPOOL
5	4" DOUBLE CHECK VALVE ASSEMBLY (DCVA) BACKFLOW PREVENTER
6	4" DI FLANGED 90° SHORT RADIUS BEND
7	4" DI FLANGED SPOOL
8	4" DI FLANGED TEE
9	4" DI FLANGED PLATE STRAINER, BADGER OR EQUAL
10	4" POND B CANNED VERTICAL TURBINE PUMP (SEE NOTES)
11	4" DI FLANGED EXTERNAL SWING ARM CHECK VALVE
12	4" DI FLANGED RESILIENT WEDGE GATE VALVE
13	6" x 4" DI FLANGED REDUCER
14	CONCRETE VALVE PAD
15	2" ARI D-025 COMBINATION AIR VALVE ASSEMBLY (SEE DETAIL)
16	PRESSURE GAUGE ASSEMBLY (SEE DETAIL)
17	6" DI FLANGE x PLAIN END SPOOL
18	6" DI FLANGED 90° SHORT RADIUS BEND
19	6" DI FLANGED RESILIENT WEDGE GATE VALVE
20	6" DI FLANGED TEE
21	6" DI FLANGED PLATE STRAINER, BADGER OR EQUAL
22	6" POND A CANNED VERTICAL TURBINE PUMP (SEE NOTES)
23	6" DI FLANGED SPOOL
24	6" DI FLANGED EXTERNAL SWING ARM CHECK VALVE
25	4" DI MJ 90° BEND
26	6" DI MJ 90° BEND
27	PIPE SUPPORT
28	LADDER

JOINT RESTRAINT:
1. INSTALL JOINT RESTRAINT ON ALL FITTINGS.
2. INSTALL JOINT RESTRAINT ON ALL JOINTS WITHIN THE DISTANCE FROM THE FITTING AS SHOWN IN THE TABLE ACCORDING TO THE TYPE OF FITTING.
3. THE VALUES IN THE TABLE ARE CALCULATED USING THE EBAA IRON RESTRAINT LENGTH CALCULATOR V 7.1.3 (EXCEPT THE VERTICAL 90° BEND). THE INPUT VALUES ARE 4 OR 6-INCH PVC (C900) PIPE, SOIL TYPE CH/GRANULAR FILL, A FACTOR OF SAFETY OF 1.5, TRENCH TYPE 5, 3 FEET COVER, AND 150 PSI TEST PRESSURE.
4. ALL JOINTS ABOVE GRADE SHALL BE FULLY RESTRAINED THROUGH THE USE OF FLANGES OR MECHANICAL JOINT RESTRAINT.
5. IF CASES ARE NEEDED THAT ARE NOT COVERED BY THE TABLE, CONTACT THE ENGINEER.

Force Main Joint Restraint		
	4" C900	6" C900
Horizontal Bend		
90°	16 lf	22 lf
45°	7 lf	9 lf
22.5°	4 lf	5 lf
11.25°	2 lf	3 lf
Vertical Bend		
90°	42 lf	58 lf
45°	18 lf	24 lf
22.5°	9 lf	12 lf
11.25°	5 lf	6 lf
Tee (Fitting fully restrained)		
On branch	37 lf	53 lf
Other		
Valve	42 lf	58 lf
Above Grade	All	

PUMP STATION NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS TO ENSURE THAT ALL PROPOSED ITEMS FIT WITHIN THE SPECIFIED CLEARANCES. A LARGER VAULT, HATCH, PUMP MOUNTS, ETC. MAY BE REQUIRED BASED ON THE ACTUAL DIMENSIONS OF THE SUPPLIED PARTS. THERE SHALL BE A MINIMUM OF 1 FOOT OF CLEARANCE AROUND ALL PIPING AND FLANGES FOR ACCESS (INSIDE AND OUTSIDE THE VAULT INCLUDING TO THE VALVE PAD).
2. THE PUMP MOUNTING MAY REQUIRE MODIFICATION BASED ON THE SUPPLIED PUMPS.
3. ALL PIPING USED IN THE VAULT OR ABOVE GROUND SHALL BE FLANGED DUCTILE IRON. ALL BOLTS AND HARDWARE SHALL BE 316 STAINLESS STEEL.
4. ALL LINES SHALL HAVE ADEQUATE PIPE SUPPORTS AND THRUST RESTRAINT.
5. FOLLOWING THE PUMP DISCHARGE SHALL BE, IN SEQUENCE, A EXTERNAL SWING ARM CHECK VALVE, A RESILIENT WEDGE GATE VALVE, A COMBINATION AIR VALVE ASSEMBLY AND A PRESSURE GAUGE ASSEMBLY.
6. THE VENT SHALL BE COATED INSIDE AND OUT PER THE COA STANDARD SPECIFICATIONS.
7. A SUMP PUMP OR DRAIN SHALL BE INSTALLED IN THE VAULT AS NECESSARY TO PREVENT THE ACCUMULATION OF WATER IN THE VAULT.
8. PUMP/MOTOR DATA:
   PUMP A: 6-INCH CANNED VERTICAL TURBINE, SIMFLO MODEL SP7L, 6 STAGE VERTICAL TURBINE WITH 5.36 INCH IMPELLER, CURVE NO. SP7L.0S.O.4646.1022 RUNNING AT 1770 RPM USING A 10 HP, 3 PHASE 208 V 60 HZ MOTOR. THE PUMP DESIGN POINT IS 177.2 GPM AT 137.4 FEET TDH WITH 37.7 FEET OF STATIC HEAD.
   PUMP B: 4-INCH CANNED VERTICAL TURBINE, SIMFLO MODEL SP5XL, 9 STAGE VERTICAL TURBINE WITH 3.97 INCH IMPELLER, CURVE NO. SP5XL0S.O.4646.1022 RUNNING AT 1770 RPM USING A 3 HP, 3 PHASE 208 V 60 HZ MOTOR. THE PUMP DESIGN POINT IS 46.5 GPM AT 116.9 FEET TDH WITH 31.5 FEET OF STATIC HEAD.
9. THE PUMPS SHALL BE CONTROLLED BY FLOAT SWITCHES IN EACH POND AND ACCORDING TO THE PUMP OPERATION NARRATIVE BELOW.
10. REFERENCE STRUCTURAL AND ELECTRICAL PLANS FOR THOSE DETAILS.
11. THE PUMP STATION SHALL BE CONSTRUCTED PER THE CITY OF AUSTIN SUBMERSIBLE LIFT STATION SPECIFICATIONS, 2012 EDITION, AS MODIFIED BELOW.

STORMWATER MAIN NOTES:
1. ALL PIPING SHALL BE AWWA C900 DR 18 PVC OR AWWA C150 CL350 DUCTILE IRON AS INDICATED.
2. JOINT RESTRAINT SHALL BE PROVIDED PER THE JOINT RESTRAINT TABLE AND NOTES.
3. ALL PIPING SHALL BE TESTED TO 150 PSI FOLLOWING COA STANDARD SPECIFICATION 510.3(27).
4. ALL PIPING SHALL HAVE A MINIMUM OF 3 FEET OF COVER, UNLESS OTHERWISE SPECIFIED.
5. THE POND A SUCTION MAIN SHALL HAVE NO HIGH POINTS BETWEEN THE POND AND PUMP. THE LINE SHALL SLOPE DOWN CONTINUOUSLY FROM THE POND TO THE PUMP. IF THAT IS NOT POSSIBLE, IT SHALL HAVE A LOW POINT WITH THE MAIN SLOPING UP TO THE PUMP AND THE POND CONTINUOUSLY.
6. ANY OTHER PIPING SHALL AVOID HIGH POINTS WHEN POSSIBLE AND HAVE A AUTOMATIC AIR RELEASE VALVE AT HIGH POINTS WHERE NOT POSSIBLE.

PUMP OPERATION
1. EACH POND SHALL HAVE TWO FLOAT SWITCHES FOR LEVEL CONTROL.
2. THE PUMP ON SWITCH IS SET AT THE BOTTOM ELEVATION OF THE POND AND TRIGGERS ON RISING WATER.
3. THE PUMP OFF SWITCH IS SET 6-INCHES BELOW THE PUMP ON SWITCH AND TRIGGERS ON FALLING WATER.
4. A RAIN SENSOR SHALL BE INSTALLED AT THE STATION. WHEN RAIN IS SENSED, THEN A 12-HOUR INTERRUPT IS TRIGGERED TO PREVENT PUMPING DURING THAT TIME.
5. WHEN A PUMP ON LEVEL IS TRIGGERED, THEN A 6-MINUTE START DELAY BEGINS BEFORE THE PUMP STARTS.
6. WHEN A PUMP OFF LEVEL IS TRIGGERED, THEN THE PUMP TURNS OFF.
7. ALARMS SHALL SOUND ON THE FOLLOWING CONDITIONS: POWER FAILURE, PUMP FAILURE, PHASE FAILURE, MOTOR CURRENT, AND SUSTAINED PUMP ON.
8. THE SUSTAINED PUMP ON ALARM SHALL TRIGGER WHEN A PUMP HAS BEEN RUNNING FOR MORE THAN 72 HOURS CONTINUOUSLY.
9. ALARMS SHALL USE A HORN AND LIGHT AT THE STATION AND SEND A MESSAGE VIA AUTODIALER TO THE OPERATOR.

MODIFIED CITY OF AUSTIN SUBMERSIBLE LIFT STATION SPECIFICATIONS
THE CITY OF AUSTIN SUBMERSIBLE LIFT STATION SPECIFICATIONS REVISED 2 FEBRUARY 2012 WILL BE USED AS MODIFIED BELOW.
ALL REFERENCES TO THE CITY OF AUSTIN OR AUSTIN WATER UTILITY ARE REPLACED BY THE OWNER OR ENGINEER AS APPROPRIATE. PDF COPIES OF DOCUMENTS, MANUALS AND SUBMITTALS ARE PREFERRED. AUTOCAD DRAWINGS UP TO VERSION 2021 ARE ACCEPTABLE.
01300 1.2.D.1 SUBMITTALS IN PDF ARE PREFERRED.
1.2.D.2 A SINGLE PDF COPY IS ACCEPTABLE.
01650 SECTIONS FOR EQUIPMENT THAT IS NOT REQUIRED ARE NOT APPLICABLE.
01700 SECTIONS FOR EQUIPMENT THAT IS NOT REQUIRED ARE NOT APPLICABLE.
1.1.C A PDF COPY OF THE RECORD DRAWINGS IS ACCEPTABLE.
02500 2.1.E, 2.1.F, AND 2.2.E DO NOT APPLY
2.1.A ROADWAY SHALL BE MINIMUM 8 FEET CONCRETE AS SHOWN ON PLAN
02800 1.2.C, 1.6, 1.7, 1.8, 1.9, 1.10, AND 1.11 DO NOT APPLY
1.4 FENCE SHALL BE 6 FEET TALL WITHOUT BARB WIRE MADE OF AN OPEN MATERIAL, SUCH AS CHAIN LINK FENCE
02805 2.1.M AND 3.1.F NO BARB WIRE SHALL BE USED
02820 DOES NOT APPLY
10435 2.2.A SIGN WILL HAVE THE CONTACT INFORMATION FOR THE OWNER OR OPERATOR IN PLACE OF THE CITY OF AUSTIN. THE CONTRACTOR WILL SUPPLY THE SIGN AS PART OF THE STATION CONSTRUCTION.
11305 2.4.B.2 NO SPARE PUMP IS REQUIRED
11306 DOES NOT APPLY.
13035 DOES NOT APPLY.
13040 DOES NOT APPLY.
13120 DOES NOT APPLY. AN ELECTRICAL PANEL IN AN ENCLOSURE WILL BE PROVIDED. REFERENCE THE ELECTRICAL PLANS AND SPECIFICATIONS.
13215 DOES NOT APPLY.
13219 DOES NOT APPLY.
13310 DOES NOT APPLY.
15065 2.2.A THE PIPE COVER SHALL BE 3 FEET MINIMM.
2.2.A.2 STANDARD RADIUS 90° BENDS ARE ACCEPTABLE.
2.2.A.3 DOES NOT APPLY.
2.2.A.4 FORCE MAIN SHALL BE CEMENT LINED C150 CL350 DUCTILE IRON PIPE OR C900 DR18 PVC, RESTRAINED AS INDICATED.
2.2.A.5 DOES NOT APPLY.
2.2.A.6 DOES NOT APPLY.
2.2.A.9 DOES NOT APPLY.
15202 DOES NOT APPLY.
15860 DOES NOT APPLY.
16110 - 16951 ELECTRICAL SPECIFICATIONS FROM THE ELECTRICAL DESIGN ENGINEER APPLY IN PLACE OF THESE, UNLESS THERE IS NO SPECIFICATION PROVIDED.

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

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								APR
								DATE
								DESCRIPTION
								REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

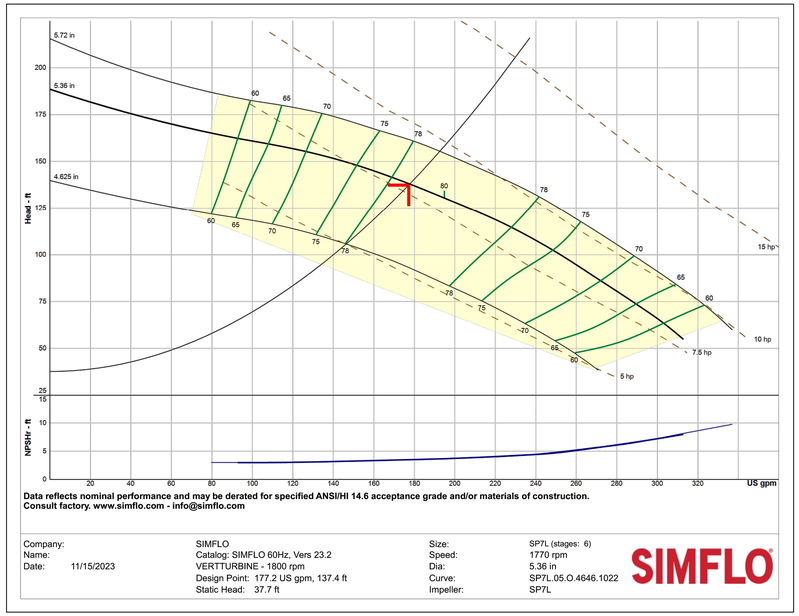
IRRIGATION PUMP STATION DETAILED PLAN

STATE OF TEXAS
12-19-2023
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP_POND_PUMP.dwg Layout: IRRIGATION PUMP STATION DETAILED PLAN Plotted: 1/24/2024 2:07:36 PM

POND A

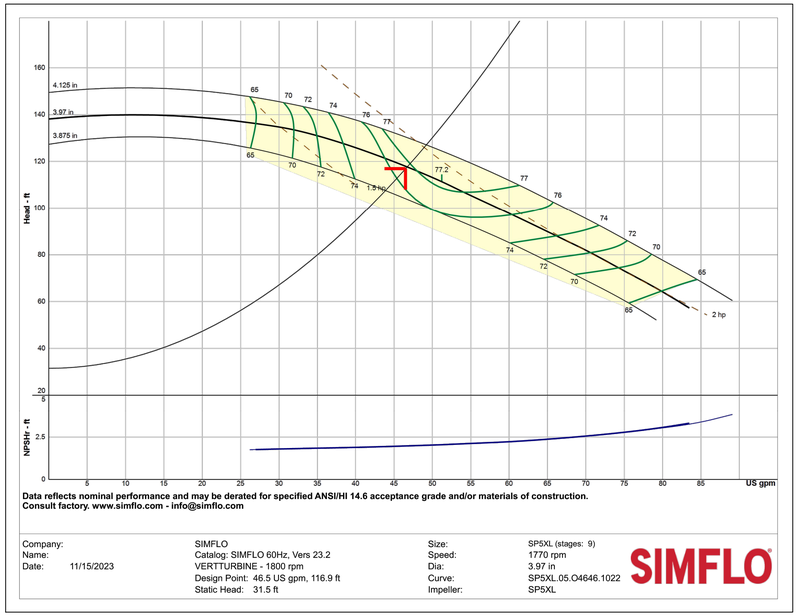


Data reflects nominal performance and may be derated for specified ANSI/HI 14.6 acceptance grade and/or materials of construction.
Consult factory. www.simflo.com - info@simflo.com

Company:	SIMFLO	Size:	SP7L (stages: 6)
Name:	Catalog: SIMFLO 60Hz, Vers 23.2	Speed:	1770 rpm
Date: 11/15/2023	VERTTURBINE - 1800 rpm	Dia:	5.36 in
	Design Point: 177.2 US gpm, 137.4 ft	Curve:	SP7L.05.O.4646.1022
	Static Head: 37.7 ft	Impeller:	SP7L

SIMFLO

POND B



Data reflects nominal performance and may be derated for specified ANSI/HI 14.6 acceptance grade and/or materials of construction.
Consult factory. www.simflo.com - info@simflo.com

Company:	SIMFLO	Size:	SP5XL (stages: 9)
Name:	Catalog: SIMFLO 60Hz, Vers 23.2	Speed:	1770 rpm
Date: 11/15/2023	VERTTURBINE - 1800 rpm	Dia:	3.97 in
	Design Point: 46.5 US gpm, 116.9 ft	Curve:	SP5XL.05.O4646.1022
	Static Head: 31.5 ft	Impeller:	SP5XL

SIMFLO

Pump Data Sheet - SIMFLO

Company:
Name:
Date: 11/15/2023

SIMFLO

Pump:

Size:	SP7L (stages: 6)	Dimensions:	
Type:	VERTTURBINE	Suction:	5 in
Synch Speed:	1800 rpm	Discharge:	5 in
Dia:	5.36 in	Vertical Turbine:	
Curve:	SP7L.05.O.4646.1022	Eye Area:	7.79 in²
Impeller:	SP7L	Bowl Size:	7.19 in
Specific Speeds:	Ns: 2279	Max Lateral:	0.63 in
	Nss: 9352	Thrust K Factor:	4.2 lb/ft

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Search Criteria:

Flow:	177.2 US gpr	Near Miss:	---
Head:	137.4 ft	Static Head:	37.7 ft

Pump Limits:

Temperature:	---	Sphere Size:	0.53 in
Wkg Pressure:	378 psi g	Power:	134 hp

Motor:

Standard:	US	Size:	10 hp
Enclosure:	TYPE 1	Speed:	1800 rpm
Frame:	----		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:
None

--- Duty Point ---

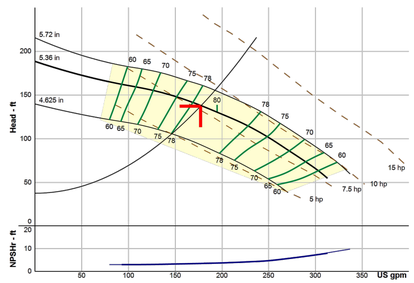
Flow:	178 US gpm
Head:	138 ft
Eff:	78.7%
Power:	7.84 hp
NPSHr:	3.51 ft
Speed:	1770 rpm

--- Design Curve ---

Shutoff Head:	189 ft
Shutoff dP:	81.7 psi
Min Flow:	--- US gpm
BEP:	80% @ 195 US gpm
NOL Power:	8.57 hp @ 248 US gpm

--- Max Curve ---

Max Power:
10.4 hp @ 262 US gpm



Data reflects nominal performance and may be derated for specified ANSI/HI 14.6 acceptance grade and/or materials of construction. Consult factory. www.simflo.com - info@simflo.com

Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
213	1770	122	78.9	8.27	3.97
177	1770	138	78.6	7.83	3.51
142	1770	151	73.1	7.38	3.2
106	1770	160	64.4	6.84	3
70.9	1770	169	52.7	5.85	3

Selected from catalog: SIMFLO 60Hz, Vers 23.2

Pump Data Sheet - SIMFLO

Company:
Name:
Date: 11/15/2023

SIMFLO

Pump:

Size:	SP5XL (stages: 9)	Dimensions:	
Type:	VERTTURBINE	Suction:	4 in
Synch Speed:	1800 rpm	Discharge:	3 in
Dia:	3.97 in	Vertical Turbine:	
Curve:	SP5XL.05.O4646.1022	Eye Area:	3.52 in²
Impeller:	SP5XL	Bowl Size:	5.25 in
Specific Speeds:	Ns: 1799	Max Lateral:	0.38 in
	Nss: 7424	Thrust K Factor:	2.3 lb/ft

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Pump Limits:

Temperature:	---	Sphere Size:	0.38 in
Wkg Pressure:	529 psi g	Power:	44 hp

Motor:

Standard:	US	Size:	3 hp
Enclosure:	TYPE 1	Speed:	1800 rpm
Frame:	----		
Sizing Criteria:	Max Power on Design Curve		

Search Criteria:

Flow:	46.5 US gpm	Near Miss:	---
Head:	116.9 ft	Static Head:	31.5 ft

Pump Selection Warnings:
None

--- Duty Point ---

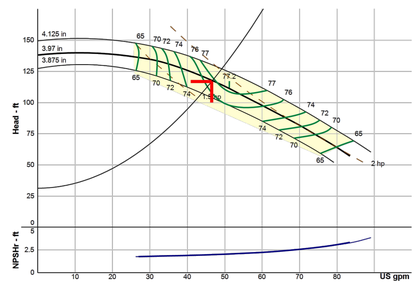
Flow:	46.7 US gpm
Head:	118 ft
Eff:	76.7%
Power:	1.81 hp
NPSHr:	1.99 ft
Speed:	1770 rpm

--- Design Curve ---

Shutoff Head:	138 ft
Shutoff dP:	59.8 psi
Min Flow:	--- US gpm
BEP:	77.2% @ 51.2 US gpm
NOL Power:	2 hp @ 70.6 US gpm

--- Max Curve ---

Max Power:
2.28 hp @ 89.1 US gpm



Data reflects nominal performance and may be derated for specified ANSI/HI 14.6 acceptance grade and/or materials of construction. Consult factory. www.simflo.com - info@simflo.com

Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
55.8	1770	104	76.7	1.91	2.15
46.5	1770	118	76.6	1.8	1.98
37.2	1770	129	73.3	1.65	1.87
27.9	1770	136	65.9	1.45	1.78
18.6	1770	---	---	---	---

Selected from catalog: SIMFLO 60Hz, Vers 23.2

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			APR
			DATE
			DESCRIPTION
			REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

POND PUMP DATA

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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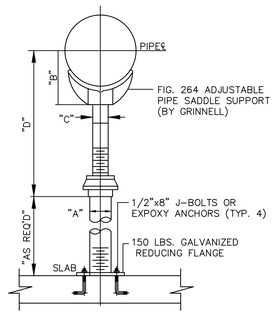


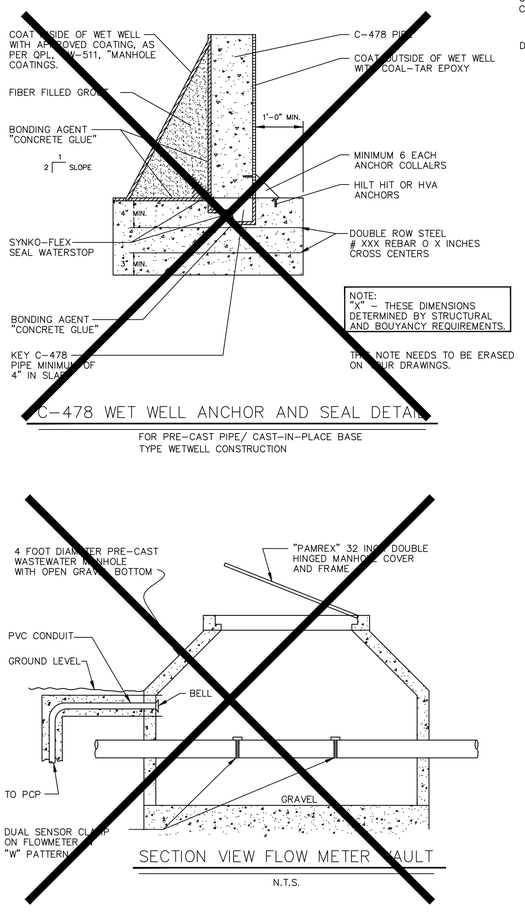
ADJUSTABLE PIPE SADDLE SUPPORT

N.T.S.

	WGT APPROX. LBS EACH					D	
PIPE SIZE	COMPLETE	SADDLE ONLY	A	A	A	MINIMUM	MAXIMUM
2 1/2	9.0	4.8	2 1/2	3 1/2	1 1/2	8	13
3	9.2	5.0	2 1/2	3 3/4	1 1/2	8 1/4	13 1/4
3 1/2	9.4	5.2	2 1/2	4	1 1/2	8 1/2	13 1/2
4	15.0	7.6	3	4 1/4	2 1/2	9 1/4	14
5	16.7	8.3	3	4 7/8	2 1/2	10	14 3/4
6	17.7	10.3	3	5 1/2	2 1/2	10 1/2	15 1/4
8	20.2	12.8	3	6 7/8	2 1/2	11 3/4	16 1/2
10	25.2	17.8	3	5 1/2	2 1/2	13 1/2	18 1/4
12	29.0	21.6	3	9 15/16	2 1/2	15	19 3/4
14	49.2	38.0	4	10 15/16	3	16 1/4	20 3/4
16	53.2	42.0	4	12 3/8	3	17 3/4	22 1/4
18	70.8	51.0	6	13 7/8	3 1/2	19 1/2	24
20	104.8	85.0	6	15 3/8	3 1/2	21	25 1/2
24	137.0	110.0	6	17 15/16	4	23 3/4	28 1/2
30	170.0	150.0	6	21 5/16	4	27	31 1/2
32	181.0	161.1	6	22 1/2	4	28 1/8	32 3/4
36	249.0	229.0	6	24 1/4	4	30 1/4	34 3/4

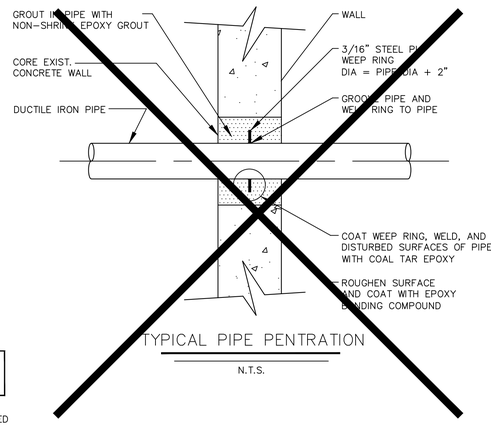
KEYNOTES:

1. WET WELL AND VALVE VAULT SHALL BE COATED INSIDE AND OUTSIDE.
2. THE ACCESS COVERS SHALL BE SIZED JOB SPECIFIC. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF ACCESS COVER TO THE WET WELL TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
3. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF THE GUIDE RAILS TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT. THE PUMP SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE. PERSONNEL SHALL HAVE NO REASON TO ENTER THE WET WELL. GUIDE RAILS SHALL BE SUPPORTED EVERY 10 FEET WITH STAINLESS STEEL SUPPORTS.
4. THE GUIDE BRACKETS SHALL BE CONSTURCTED OF 316 STAINLESS STEEL. GUIDE BRACKETS FOR EACH PUMP MUST BE SUPPLIED BY THE PUMP MANUFACTURER TO ENSURE COMPATIBILIYT WITH SUPPLIED EQUIPMENT.
5. EACH PUMPING UNIT SHALL BE PROVIDED WITH A STAINLESS STEEL LIFTING CHAIN OR CABLE. LIFTING CHAIN SHALL EXTEND AT LEAST 3-4 FEET ABOVE WET WELL.
6. A 316 STAINLESS STEEL FLOAT MOUNTING ASSEMBLY SHALL BE PROVIDED. THE FLOATS SHALL BE MOUNTED AWAY FROM THE WET WELL INLET, ANY CONTROL WIRING, AND THE PUMPS TO MINIMIZE DISTURBANCE BECAUSE OF TURBULENCE. LEVEL SETTINGS SHOWN ON SHEET E-9.
7. ALL HARDWARE IN THE WET WELL SHALL BE 316 STAINLESS STEEL.
8. PUMP/MOTOR DATA
   Q = X
   H = X
   HP= X
   RPM=X
   V = X
9. ALL STATIONARY PIPING USED IN THE LIFT STATION AND VALVE VAULT SHALL BE LINED DUCTILE IRON OR 300 SERIES STAINLESS STEEL. ALL PIPING BOLTS AND HARDWARE MUST BE 316 STAINLESS STEEL.
10. PUMP DISCHARGE LINES SHALL HAVE 1/4 INCH TAPS WITH STAINLESS STEEL OR BRONZE BALL VALVES.
11. ALL DISCHARGE LINES SHALL HAVE ADEQUATE THRUST SUPPORT MEMBERS AT EACH FITTING. WHERE POSSIBLE, LONG RADIUS 90 DEGREE BENDS SHALL BE USED.
12. THE DISCHARGE LINE FROM EACH PUMP SHALL BE FITTED WITH A CHECK VAVLE AND A ECCENTRIC PLUG VALVE, WITH THE CHECK VALVE ON THE PUMP SIDE OF THE ECCENTRIC PLUG VALVE. WHEN NECESSARY, AIR RELEASE VALVE(S) SHALL BE INSTALLED DOWNSTREAM OF THE ECCENTRIC PLUG VALVES.
13. THE VALVE VAULT SHALL BE SIZED LARGE ENOUGH TO PROVIDE AT LEAST 1 FOOT OF CLEARANCE AROUND ALL VALVES AND ALL FLANGES. THE LID OF THE VAULT SHALL BE A MINIMUM OF 42 INCHES BY 42 INCHES AND SHALL BE ABLE TO BE PADLOCKED. THE VALUT SHALL BE COATED WITH THE SAME COATINGS AS THE WET WELL.
14. THE VALVE VAULT SHALL HAVE A DRAIN TO THE WET WELL. THE DRAIN SHALL HAVE A 4 INCH MINIMUM DIAMETER AND BE FITTED WITH A FLAP VALVE OR BACK-FLOW PREVENTER AND A TRAP TO PREVENT GASES OR WATER FROM ENTERING THE VALVE VAULT. THE OPENING TO THE DRAIN SHALL BE COVERED WITH A STAINLESS STEEL SCREEN.
15. VENT SHALL BE COATED INSIDE AND OUT PER COA STANDARD SPECIFICATIONS. THE VENT SALL BE A TEE FITTED WITH STAINLESS STEEL SCREENS 10 FEET ABOVE WET WELL COVER.
16. THE VALVE VAULT SHALL HOUSE A SURGE RELIEF VALVE WITH A DISCHARGE RETURN LINE INTO THE WET WELL AS REQUIRED BY DESIGN.



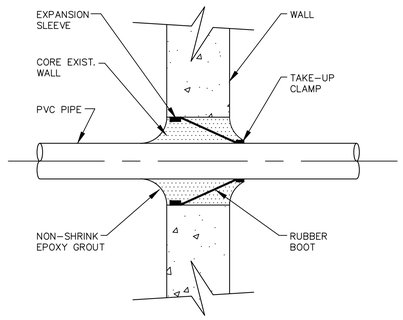
C-478 WET WELL ANCHOR AND SEAL DETAIL

FOR PRE-CAST PIPE/ CAST-IN-PLACE BASE TYPE WETWELL CONSTRUCTION



TYPICAL PIPE PENTRATION

N.T.S.



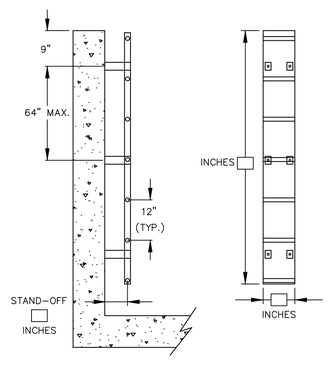
PSX DIRECT DRIVE

PIPE PENETRATION DETAIL

N.T.S.

SECTION VIEW FLOW METER VAULT

N.T.S.

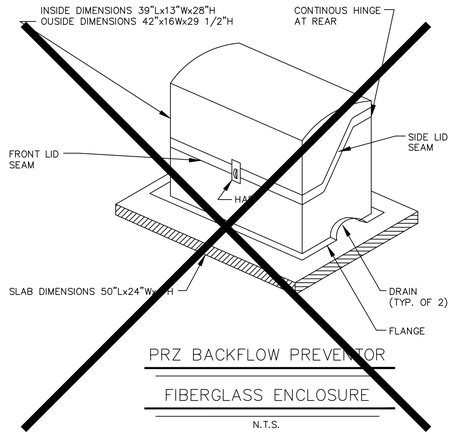


VALVE VAULT ACCESS LADDER

WALL MOUNT

N.T.S.

NOTE: HEIGHT, WIDTH, AND STAND-OFF DIMENSIONS SHALL NOT EXCEED MANUFACTURES RECOMMENDATIONS.



PRZ BACKFLOW PREVENTOR

FIBERGLASS ENCLOSURE

N.T.S.

("HOT BOX" ENCLOSURE; WWW.HOT-BOX, COM, OR APPROVED EQUAL)

APPROVED WATER & WASTEWATER UTILITY FACILITIES ENGINEERING DIVISION — DATE — EXPIRATION DATE

City of Austin Revision: 12

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CITY OF AUSTIN — WATER AND WASTEWATER UTILITY

STD. SUBMERSIBLE LIFT STA. 0-25 HP

PCP MECHANICAL DETAILS

NO.	DATE	REVISIONS	APP.
		DESCRIPTION	DATE
			REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

SCALE:
FIELD BOOK: — PAGE:
PROJECT ACC. NO. — IDENT. NO. — FILE NO. 12LS12-2P

DESIGNED BY: R. HUMPHREY
DRAWN BY: G. DALE GLASGOW
ENG. APPROVED: 04/19/06
DATE:
DATE:
DATE:

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

BGE

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

IRRIGATION PUMP SYSTEM DETAILS (1 OF 2)

8350 W US 290 HIGHWAY

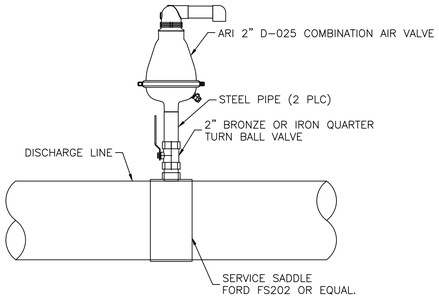
STATE OF TEXAS — 1-24-2024 — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER

SHEET M-2 OF 16

65 OF 121

SP-2022-0579C

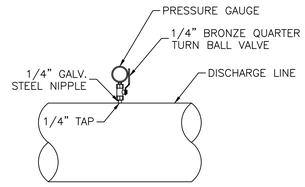
G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-POND-PUMP.dwg Layout: IRRIGATION PUMP SYSTEM DETAILS (1 OF 2) Plotted: 1/24/2024 2:07:44 PM



AIR VALVE DETAIL NOTES

1. AIR VALVE ASSEMBLY SHALL BE AS SHOWN OR APPROVED EQUAL. CONTRACTOR MAY PROPOSE ALTERNATIVES WHICH ARE SIMILAR IN FUNCTION.
2. THE ASSEMBLY SHALL CONSIST OF A TAP OR TEE ON THE TOP OF THE DISCHARGE MAIN PIPE, A CUT OFF VALVE AND 2-INCH COMBINATION AIR RELEASE VALVE. A SADDLE, IF USED, SHALL BE SUFFICIENT TO SUPPORT THE BALL AND AIR VALVES.
3. ALL PIPE SHALL BE IRON OR GALVANIZED STEEL. ALL VALVES SHALL BE IRON OR BRONZE. THE AIR VALVE BODY SHALL BE IRON OR STEEL. STAINLESS STEEL MAY BE USED AS WELL.
4. THE CONNECTION TO THE DISCHARGE LINE MAY BE MADE WITH A SERVICE SADDLE OR A REDUCING TEE ON THE DISCHARGE LINE.
5. THE CUT OFF VALVE SHALL HAVE ENOUGH CLEARANCE FOR THE HANDLE TO OPERATE THE VALVE. THE AIR VALVE SHALL NOT BE RAISED MORE THAN NECESSARY FOR SAID CLEARANCE.
6. DIRECT THE DISCHARGE OF THE AIR VALVE TO THE SIDE OF THE DISCHARGE LINE (NOT OVER THE PIPE).

AIR VALVE DETAIL
(NTS)



PRESSURE TAP DETAIL NOTES

1. TAP AND THREAD 1/4 INCH HOLE IN TOP OF DISCHARGE PIPE.
2. INSTALL 1/4 INCH GALVANIZED IRON PIPE AND 1/4 INCH BRONZE OR STAINLESS STEEL BALL VALVE.
3. INSTALL 1/4 INCH THREADED PRESSURE GAUGE LIKE MCMASTER CARR P/N 4003K11, 0-100 PSI OR EQUAL.

PRESSURE TAP DETAIL
(NTS)

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

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							APR
							DATE
							DESCRIPTION
							REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

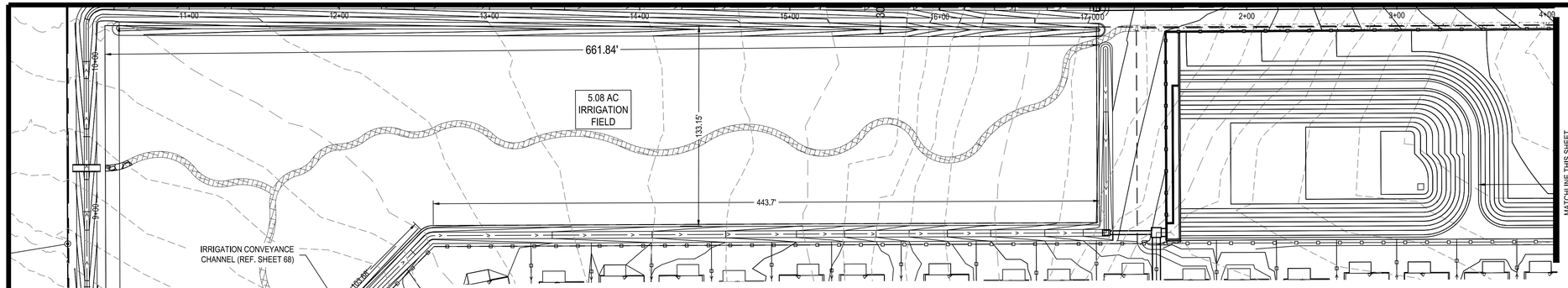
GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

IRRIGATION PUMP SYSTEM DETAILS (2 OF 2)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-POND-PUMP.dwg Layout: IRRIGATION PUMP SYSTEM DETAILS (2 OF 2) Plotted: 1/24/2024 2:07:45 PM



0 20' 40' 80'

SCALE: 1" = 40'

SLAT STORMWATER LOAD ANALYSIS TOOL 2.1 — 1/2

Site Name: Greystar 290 | By: BCJ | Date: 45217

RESULTS: COMPLIANCE TABLE — SLAT 2.1 - 08/2022

POLLUTANT		DEVELOPED LOAD, WITH CONTROLS					EXISTING LOAD	LOAD EQUIV. FACTOR, LEF	COMPLIES?
		Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	TOTAL LOAD,			
COD	lbs/yr	1.44E+02	3.11E+01	0.00E+00	0.00E+00	1.75E+02	3.47E+02	0.51	YES
E. coli	10^6 MPN/y	2.00E+05	4.47E+04	0.00E+00	0.00E+00	2.44E+05	3.38E+05	0.72	YES
Pb	lbs/yr	2.38E-02	6.44E-03	0.00E+00	0.00E+00	3.02E-02	3.82E-02	0.79	YES
TN	lbs/yr	5.13E+00	1.35E+00	0.00E+00	0.00E+00	6.48E+00	1.06E+01	0.61	YES
TP	lbs/yr	9.04E-01	2.02E-01	0.00E+00	0.00E+00	1.11E+00	1.11E+00	1.00	YES
TSS	lbs/yr	2.26E+02	3.48E+01	0.00E+00	0.00E+00	2.61E+02	1.48E+03	0.18	YES
Zn	lbs/yr	1.20E-01	3.91E-02	0.00E+00	0.00E+00	1.60E-01	2.10E-01	0.76	YES

ERROR CHECK PASSED

COMPLIANT

Results subject to review and approval by COA Development Services Department.

Change Inputs | Print Results | Jump to Loads Removed Table

SUMMARY OF INPUTS

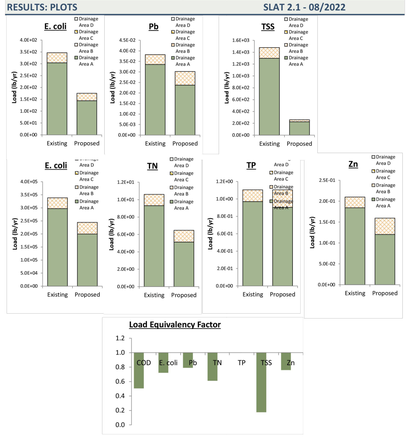
Site Location: Within Barton Springs Zone - Compare to Existing Loads

	Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	TOTALS
Drainage Area, An (Ac)	26.50	3.69	N/A	N/A	30.19
Developed IC, IC_o (%)	33.7	71.6	N/A	N/A	38%
SCM 1	Retention Basin	Retention Basin	N/A	N/A	-
Water Qual. Vol, WQV (in)	0.82	1.62	N/A	N/A	-
Actual Volume (ft3)	78880	21688	N/A	N/A	100568
Drawdown Time, DDT (hrs)	60	60	N/A	N/A	-
Flowrate (gpm)	163.89	45	N/A	N/A	-
SCM 2	Infiltration Field	Infiltration Field	N/A	N/A	-
Infiltration Rate (in/hr)	0.20	0.20	N/A	N/A	-
Appx. Min. Infilt. Field Area (Ac)	3.62	1.00	N/A	N/A	4.62
Irrigation Rate (gpm)	163.9	45.1	N/A	N/A	-
Error with Input Values?	NO	NO	NO	NO	

SLAT STORMWATER LOAD ANALYSIS TOOL 2.1 — 2/2

Site Name: Greystar 290 | By: BCJ | Date: 45217

RESULTS: PLOTS — SLAT 2.1 - 08/2022



SLAT STORMWATER LOAD ANALYSIS TOOL 2.1

Quick Guide

1. Enable Macros in the worksheet.
2. Click "Restore Defaults" button to the right.
3. Fill all **yellow cells** with project specifics, moving from top to bottom.
4. Click "View Full Results" button.
5. Project Passes if Green "COMPLIANT" button appears.

Find the **Full User Manual** at austintexas.gov/department/stormwater-management

Questions? Email SLAT@austintexas.gov

Click Here To Restore Defaults (For a New Analysis) | Click Here To View Results

KEY: Required User Input | **Key User Input** | Internal Calculation | Error | Calculator Output | Does Not Apply

Step 1: Input site characteristics in yellow highlighted cells

Greystar 290	BCJ	10/18/2023

SLAT2.1 - 08/2022

	Drainage Area A	Drainage Area B
Is your site within the Barton Springs Zone (BSZ)?	Yes	
How many drainage areas, n_{max}, does your site have?	2	
Drainage area to the control, A_n (acres)	26.50	3.69
Base impervious cover of the drainage area, IC_o (%)	0.0	0.0
Developed impervious cover of the drainage area, IC_d (%)	33.7	71.6

Step 2: Input SCM characteristics in yellow highlighted cells

	Drainage Area A	Drainage Area B
SCM 1 (First in Series)	SCM A1	SCM B1
SCM Type	Retention Basin	Retention Basin
Is SCM 1 **off-line**?	Yes (Off-Line)	Yes (Off-Line)
What is the Water Quality Volume, WQV (inches) [aka Capture Depth]	0.82	1.62
Minimum water quality volume allowed (in)	0.44	1.02
SCM 1 Actual Volume (ft^3)	78880	21688
Do you know the **drawdown time** or the **flow rate**?	Drawdown Time	Drawdown Time
Drawdown Time, DDT (hrs) [tot. time to empty full SCM	60	60
Flow Rate (gpm) [use only for "alternative" controls]		
Treatment Rate, D (in/hr)	0.054	0.027
Do you already know the **runoff capture efficiency**?	No	No
User Entered Runoff Capture Efficiency, RCE (%)		
Runoff Capture Efficiency, RCE (%)	#NAME?	#NAME?
Conveyance		
How is effluent from SCM 1 discharged?	Pumped	Pumped
Delay after end of rainfall before discharging SCM 1 (hrs)	12	12
SCM 2 (Second in Series)	SCM A2	SCM B2
SCM Type	Infiltration Field	Infiltration Field
Do you know the infiltrated or reused water quantity?	No; infiltrate all routed water	No; infiltrate all routed water
User-entered infilt. water quality volume, WQV_{usr} (in)		
-OR- Percent of yearly runoff infiltrated, RCE_{usr} (%)		
Soil infiltration rate (in/hr)	0.2	0.2
Ratio of drawdown time / irrigation time, for any zone	2	2
Approximate Minimum Field Area (Ac)	3.62	1.00

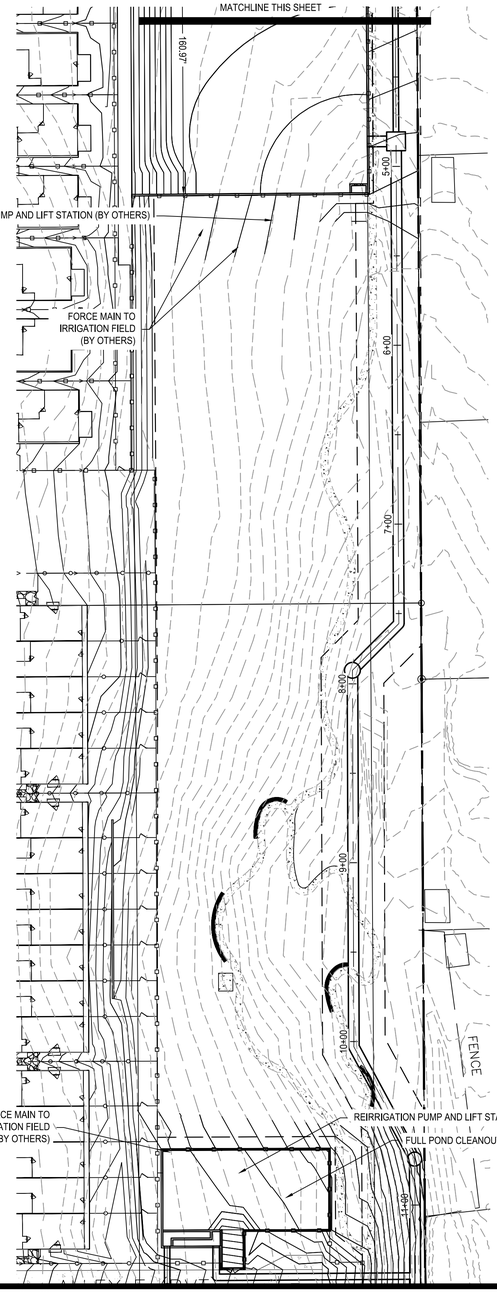
ECM 1.6.7(A) (2) - Sizing of Retention/Irrigation Systems

	WQV	PERMEABILITY		MIN. IRRIGATION AREA
	CF	*IN/HR*	*FT/HR*	*AC*
Provided	107,558	0.20	0.0167	4.938
Required	100,579			**4.618**

Required Area(sf) = WQV[CF] / (permeability[FT/HR] X 30 hours)

LEGEND

- PROPERTY BOUNDARY
- 1044 EXISTING TOPO MINOR
- 1045 EXISTING TOPO MAJOR
- 1044 PROPOSED GRADING MINOR
- 1045 PROPOSED GRADING MAJOR



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TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

IRRIGATION FIELD PLAN

STATE OF TEXAS — MARISSA A. WYRICK — 134601 — LICENSED PROFESSIONAL ENGINEER — 10-24-2023

SP-2022-0579C

Plotted: 1/24/2024 2:08:31 PM

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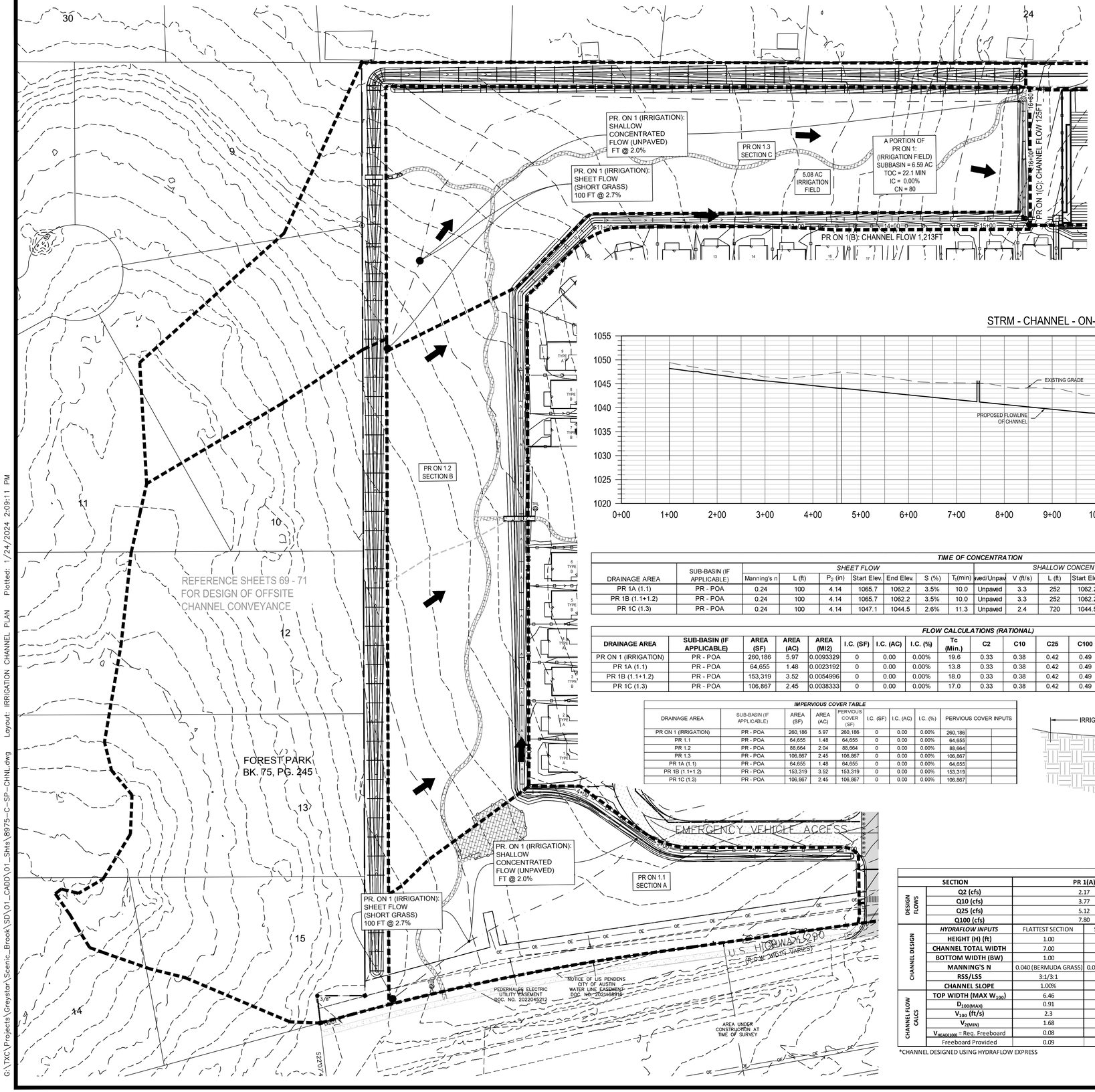


LEGEND

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION LINE

FLOW DIRECTION

EX	EXISTING DRAINAGE AREA
ON	ONSITE DRAINAGE AREA
OFF	OFFSITE DRAINAGE AREA
LOA	LINE OF ANALYSIS
UM	UNMANAGEABLE
POA	POINT OF ANALYSIS

0 25' 50' 100'

SCALE: 1" = 50'

STRM - CHANNEL - ON-SITE

PROFILE SCALE:
1"=100' H
1"=10' V

TIME OF CONCENTRATION

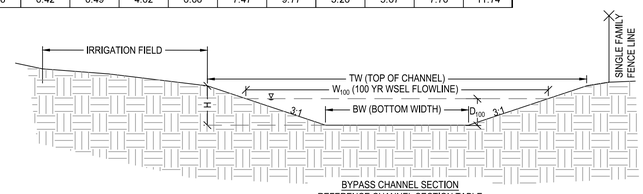
DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	SHEET FLOW							SHALLOW CONCENTRATED FLOW							CHANNEL FLOW			TOTAL	Lag Time
		Manning's n	L (ft)	P_2 (in)	Start Elev.	End Elev.	S (%)	T_t(min)	ved/Unpav	V (ft/s)	L (ft)	Start Elev.	End Elev.	S (%)	T_t(min)	L (ft)	V (ft/s)	T_t(min)	Tc(min)	Tc(min)
PR 1A (1.1)	PR - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	452.00	3	2.5	**13.8**	**8.3**
PR 1B (1.1+1.2)	PR - POA	0.24	100	4.14	1065.7	1062.2	3.5%	10.0	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	1213.00	3	6.7	**18.0**	**10.8**
PR 1C (1.3)	PR - POA	0.24	100	4.14	1047.1	1044.5	2.6%	11.3	Unpaved	2.4	720	1044.5	1028.6	2.21	5.0	125.00	3	0.7	**17.0**	**10.2**

FLOW CALCULATIONS (RATIONAL)

DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	AREA (MI2)	I.C. (SF)	I.C. (AC)	I.C. (%)	Tc (Min.)	C2	C10	C25	C100	I2	I10	I25	I100	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
PR ON 1 (IRRIGATION)	PR - POA	260,186	5.97	0.0093329	0	0.00	0.00%	19.6	0.33	0.38	0.42	0.49	3.76	5.67	6.98	9.14	7.40	12.88	17.52	26.75
PR 1A (1.1)	PR - POA	64,655	1.48	0.0023192	0	0.00	0.00%	13.8	0.33	0.38	0.42	0.49	4.42	6.69	8.21	10.72	2.17	3.77	5.12	7.80
PR 1B (1.1+1.2)	PR - POA	153,319	3.52	0.0054996	0	0.00	0.00%	18.0	0.33	0.38	0.42	0.49	3.91	5.90	7.26	9.50	4.54	7.90	10.73	16.38
PR 1C (1.3)	PR - POA	106,867	2.45	0.0038333	0	0.00	0.00%	17.0	0.33	0.38	0.42	0.49	4.02	6.08	7.47	9.77	3.26	5.67	7.70	11.74

IMPERVIOUS COVER TABLE

DRAINAGE AREA	SUB-BASIN (IF APPLICABLE)	AREA (SF)	AREA (AC)	PERVIOUS COVER (SF)	I.C. (SF)	I.C. (AC)	I.C. (%)	PERVIOUS COVER INPUTS	
PR ON 1 (IRRIGATION)	PR - POA	260,186	5.97	260,186	0	0.00	0.00%	260,186	
PR 1.1	PR - POA	64,655	1.48	64,655	0	0.00	0.00%	64,655	
PR 1.2	PR - POA	88,664	2.04	88,664	0	0.00	0.00%	88,664	
PR 1.3	PR - POA	106,867	2.45	106,867	0	0.00	0.00%	106,867	
PR 1A (1.1)	PR - POA	64,655	1.48	64,655	0	0.00	0.00%	64,655	
PR 1B (1.1+1.2)	PR - POA	153,319	3.52	153,319	0	0.00	0.00%	153,319	
PR 1C (1.3)	PR - POA	106,867	2.45	106,867	0	0.00	0.00%	106,867	



BYPASS CHANNEL SECTION
REFERENCE CHANNEL SECTION TABLE
N.T.S.

IRRIGATION BYPASS CHANNEL DESIGN

	SECTION	PR 1(A)		PR 1(B)		PR 1©	
DESIGN FLOWS	Q2 (cfs)	2.17		4.54		3.26	
	Q10 (cfs)	3.77		7.90		5.67	
	Q25 (cfs)	5.12		10.73		7.70	
	Q100 (cfs)	7.80		16.38		11.74	
CHANNEL DESIGN	*HYDRAFLOW INPUTS*	FLATTEST SECTION	STEEPEST SECTION	FLATTEST SECTION	STEEPEST SECTION	FLATTEST SECTION	STEEPEST SECTION
	HEIGHT (H) (ft)	1.00	1.00	1.00	1.00	1.00	1.00
	CHANNEL TOTAL WIDTH	7.00	7.00	10.50	10.50	9.00	9.00
	BOTTOM WIDTH (BW)	1.00	1.00	4.50	4.50	3.00	3.00
	MANNING'S N	0.040 (BERMUDA GRASS)	0.040 (BERMUDA GRASS)	0.040 (BERMUDA GRASS)	0.040 (BERMUDA GRASS)	0.040 (BERMUDA GRASS)	0.040 (BERMUDA GRASS)
	RSS/LSS	3:1/3:1	3:1/3:1	3:1/3:1	3:1/3:1	3:1/3:1	3:1/3:1
	CHANNEL SLOPE	1.00%	2.00%	1.00%	6.25%	1.00%	2.00%
CHANNEL FLOW CALCS	TOP WIDTH (MAX W_{100})	6.46	5.68	9.72	7.68	8.1	7.26
	$D_{100(MAX)}$	0.91	0.78	0.87	0.53	0.85	0.71
	V_{100} (ft/s)	2.3	2.99	2.65	5.07	2.49	3.22
	$V_{2(MIN)}$	1.68	2.13	1.82	3.31	1.72	2.22
	$V_{HEADS100}$ = Req. Freeboard	0.08	0.14	0.11	0.40	0.10	0.16
	Freeboard Provided	0.09	0.22	0.13	0.47	0.15	0.29

*CHANNEL DESIGNED USING HYDRAFLOW EXPRESS

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DRAWN BY: MW

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1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

IRRIGATION CHANNEL PLAN

STATE OF TEXAS
1-22-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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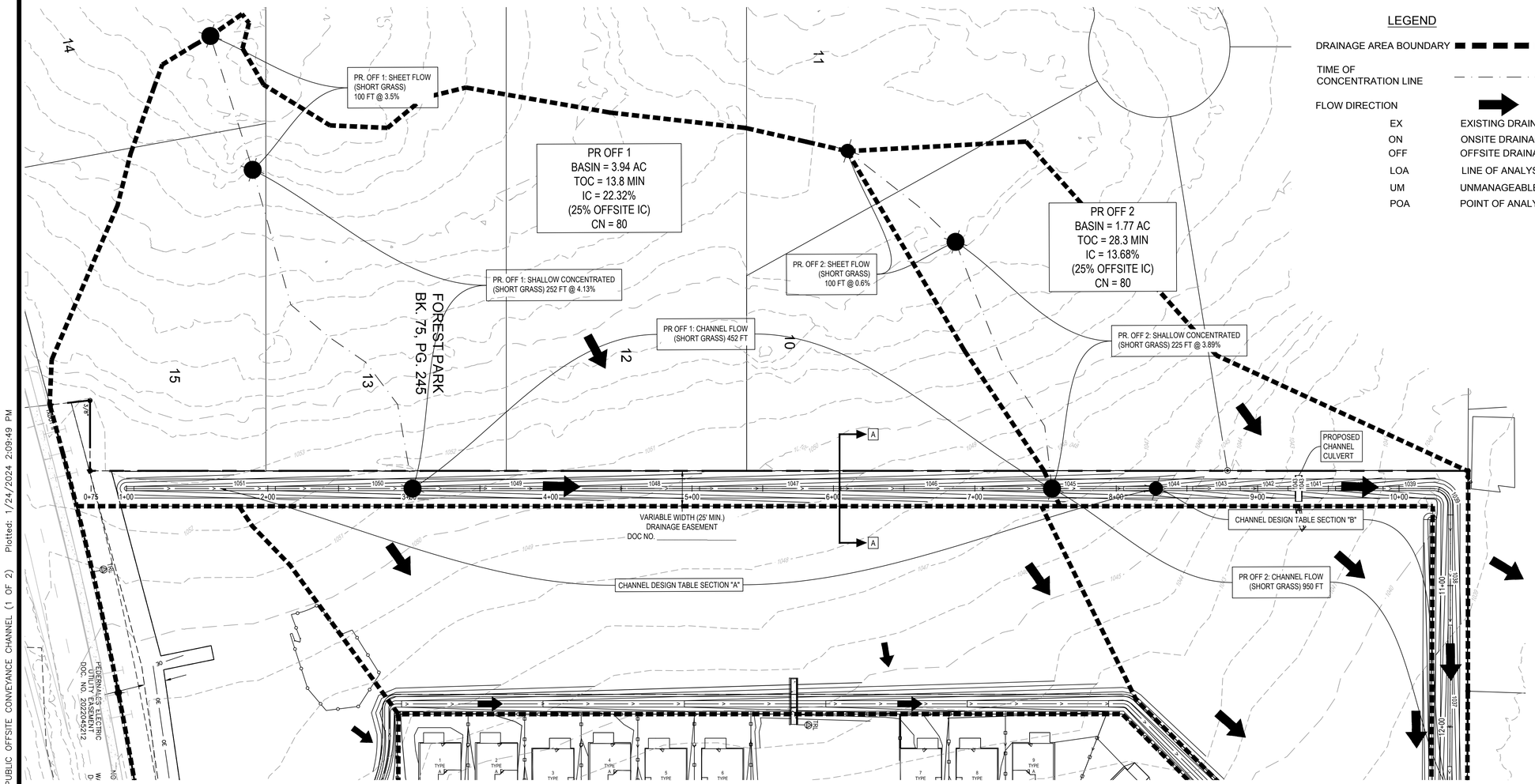

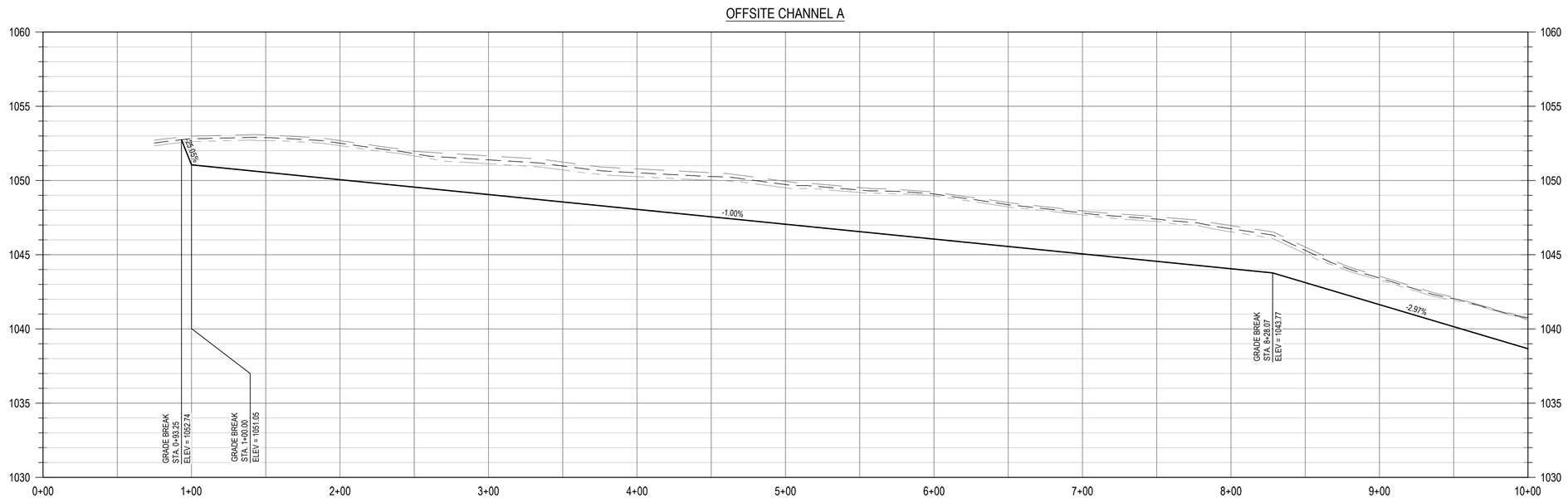

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0 20' 40' 80'
SCALE: 1" = 40'

								APR
								DATE
								DESCRIPTION
								REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
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1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

PUBLIC OFFSITE CONVEYANCE CHANNEL (1 OF 2)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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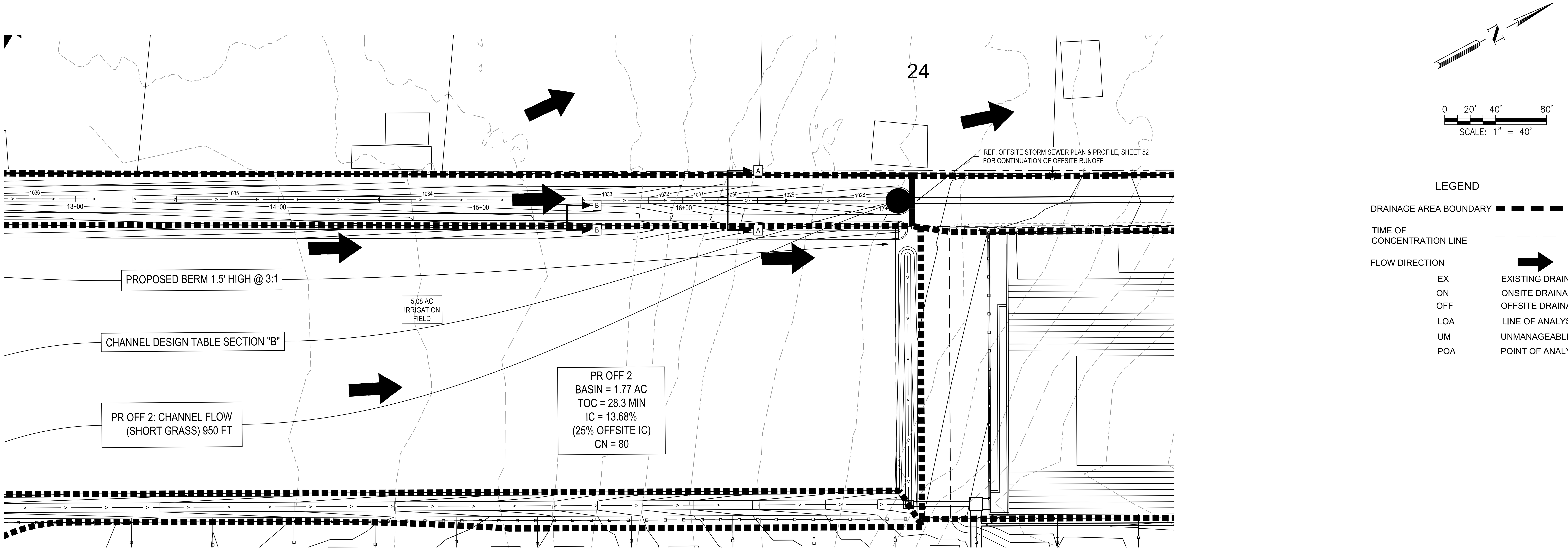
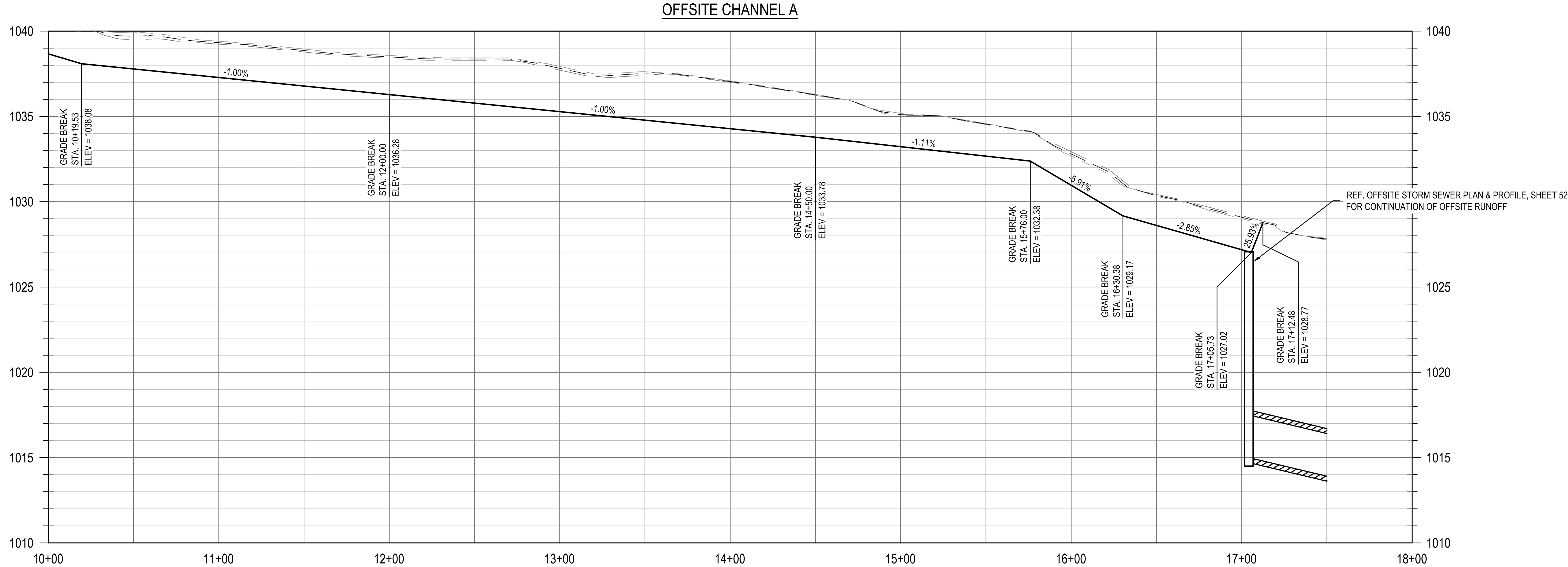


SCALE: 1" = 40'

LEGEND

DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION LINE	
FLOW DIRECTION	
EX	EXISTING DRAINAGE AREA
ON	ONSITE DRAINAGE AREA
OFF	OFFSITE DRAINAGE AREA
LOA	LINE OF ANALYSIS
UM	UNMANAGEABLE
POA	POINT OF ANALYSIS

OFFSITE CHANNEL A



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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
PUBLIC OFFSITE CONVEYANCE CHANNEL (2 OF 2)

STATE OF TEXAS
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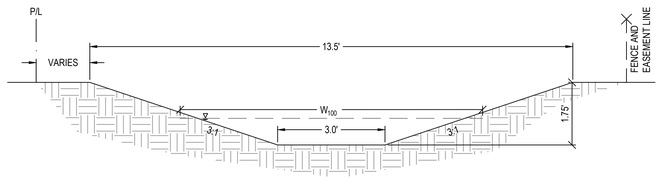
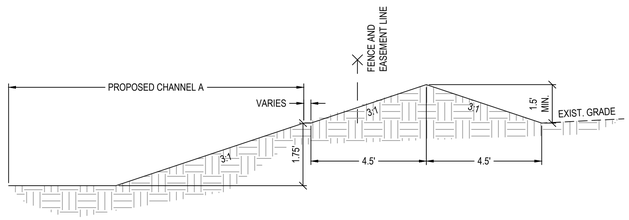
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C



CHANNEL: SECTION A-A
REFERENCE CHANNEL SECTION TABLE
N.T.S.



BERM: SECTION B-B
N.T.S.

Impervious Cover Determination

	Off-Site				On-Site				Total		
	Area	IC% (Zoning Controlled)	IC (sqft)	Pervious Input	Area	IC%	IC (sqft)	Pervious Input	Area	IC (sqft)	Pervious Input (sqft)
PR OFF 1 (BYPASS)	42,170	40%	16,868	25,302	30,140	0%	0.00	30,140	**72,311**	16,868	**55,443**
PR OFF 2 (BYPASS)	153,341	40%	61,336	92,005	11,504	0%	0.00	11,504	**164,845**	61,336	**103,508**
PR OFF 1+2 (BYPASS)	195,511	40%	78,204	117,307	41,644	0%	0.00	41,644	**237,155**	78,204	**158,951**

IMPERVIOUS COVER TABLE

DRAINAGE AREA	CHANNEL SECTION (IF APPLICABLE)	AREA (SF)	AREA (AC)	PERVIOUS COVER (SF)	I.C. (SF)	I.C. (AC)	I.C. (%)	PERVIOUS COVER INPUTS		
PR OFF 1 (BYPASS)	N/A	72,311	1.66	55,443	16868	0.39	23.33%	55,443		
PR OFF 2 (BYPASS)	SECTION A	164,845	3.78	103,508	61336	1.41	37.21%	103,508		
PR OFF 1+2 (BYPASS)	SECTION B	237,155	5.44	158,951	78204	1.80	32.98%	158,951		

TIME OF CONCENTRATION

CHANNEL SECTION (IF APPLICABLE)	*SHEET FLOW*						*SHALLOW CONCENTRATED FLOW*						*CHANNEL FLOW*			***TOTAL***
	Manning's n	L (ft)	P_2 (in)	Start Elev.	End Elev.	S (%)	T_t(min)	Paved/Unpaved	V (ft/s)	L (ft)	Start Elev.	End Elev.	S (%)	T_t(min)	L (ft)	V (ft/s)	T_t(min)	Tc(min)
N/A	0.15	100	4.14	1056.5	1055.9	0.6%	13.9	Unpaved	3.4	225	1055.9	1046.1	4.36	1.1	950.00	3	5.3	**20**
SECTION A	0.15	100	4.14	1065.7	1062.2	3.5%	6.9	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	452.00	3	2.5	**10.7**
SECTION B	0.15	100	4.14	1065.7	1062.2	3.5%	6.9	Unpaved	3.3	252	1062.2	1051.792	4.13	1.3	1402.00	3	7.8	**16**

FLOW CALCULATIONS

DRAINAGE AREA	**CHANNEL SECTION (IF APPLICABLE)**	**AREA (SF)**	**AREA (AC)**	**I.C. (SF)**	**I.C. (AC)**	**I.C. (%)**	**Tc (Min.)**	**C2**	**C10**	**C25**	**C100**	**I2**	**I10**	**I25**	**I100**	**Q2 (CFS)**	**Q10 (CFS)**	**Q25 (CFS)**	**Q100 (CFS)**
PR OFF 1 (BYPASS)	N/A	72,311	1.66	16,868	0.39	23.33%	21.8	0.42	0.48	0.52	0.60	3.56	5.37	6.61	8.67	2.50	4.28	5.74	8.60
PR OFF 2 (BYPASS)	SECTION A	164,845	3.78	61,336	1.41	37.21%	10.7	0.48	0.54	0.58	0.66	4.93	7.46	9.16	11.94	8.93	15.24	20.23	29.88
PR OFF 1+2 (BYPASS)	SECTION B	237,155	5.44	78,204	1.80	32.98%	17.4	0.46	0.52	0.57	0.64	3.98	6.01	7.39	9.66	10.00	17.07	22.73	33.75
TOTAL		**474,311**	**10.89**	**156,409**	**4**	33%													

IN SUMP GRATE INLETS (S-2)

Inlet ID	D.A. #	Inlet Operation	C_o/w	W (ft)	T (ft)	Clogging Factor (%)	P (ft)	P (ft)	Permieter Met?	D (ft)	D (ft)	Depth Met?	A (ft^2)	A_g (ft^2)	Q (cfs)	Q_w (cfs)	Q_o (cfs)	Design Met?
OFF 1	PR OFF 1+2	Weir	3	4	4	30%	16.00	13.7464	**TRUE**	0.875	0.79	**TRUE**	16	4.8	33.75	39.29	-	**TRUE**

BYPASS DRAINAGE CHANNEL - DESIGN TABLE (SECTION A; ±761 LF)

DESIGN FLOWS	**Q2 (cfs)**	8.93	
	Q10 (cfs)	15.24	
	Q25 (cfs)	20.23	
	Q100 (cfs)	29.88	
CHANNEL DESIGN	***HYDRAFLOW INPUTS***	FLATTEST SECTION	STEEPEST SECTION
	HEIGHT (H) (ft)	1.75	1.75
	CHANNEL TOTAL WIDTH	15.5	15.5
	BOTTOM WIDTH	3	3
	MANNING'S N	0.043 (BERMUDA GRASS)	0.043 (BERMUDA GRASS)
	RSS/LSS	3:1/3:1	3:1/3:1
	SLOPE	0.95%	1.50%
CHANNEL CALCS	**TOP WIDTH (MAX W_{100})**	11.1	10.26
	$D_{100(MAX)}$	1.35	1.21
	V_{100} (ft/s)	3.14	3.72
	$V_{2(MIN)}$	2.27	2.66
	$V_{HEAD(100)}$	0.15	0.21

*CHANNEL VALUES CALCULATED USING HYDRAFLOW EXPRESS

BYPASS DRAINAGE CHANNEL - DESIGN TABLE (SECTION B; ±641 LF)

DESIGN FLOWS	**Q2 (cfs)**	10.42	
	Q10 (cfs)	17.79	
	Q25 (cfs)	23.68	
	Q100 (cfs)	35.13	
CHANNEL DESIGN	***HYDRAFLOW INPUTS***	FLATTEST SECTION (LOWEST Q)	STEEPEST SECTION (HIGHEST Q)
	HEIGHT (H) (ft)	1.75	1.75
	CHANNEL TOTAL WIDTH	15.5	15.5
	BOTTOM WIDTH	3	3
	MANNING'S N	0.043 (BERMUDA GRASS)	0.043 (BERMUDA GRASS)
	RSS/LSS	3:1/3:1	3:1/3:1
	SLOPE	0.95%	4.68%
CHANNEL CALCS	**TOP WIDTH (MAX W_{100})**	12.49	9.51
	$D_{100(MAX)}$	1.5	1.03
	V_{100} (ft/s)	3.12	5.6
	$V_{2(MIN)}$	2.25	3.98
	$V_{HEAD(100)}$	0.15	0.49

*CHANNEL VALUES CALCULATED USING HYDRAFLOW EXPRESS

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APR
DATE
DESCRIPTION
REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

OFFSITE CHANNEL TABLE

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

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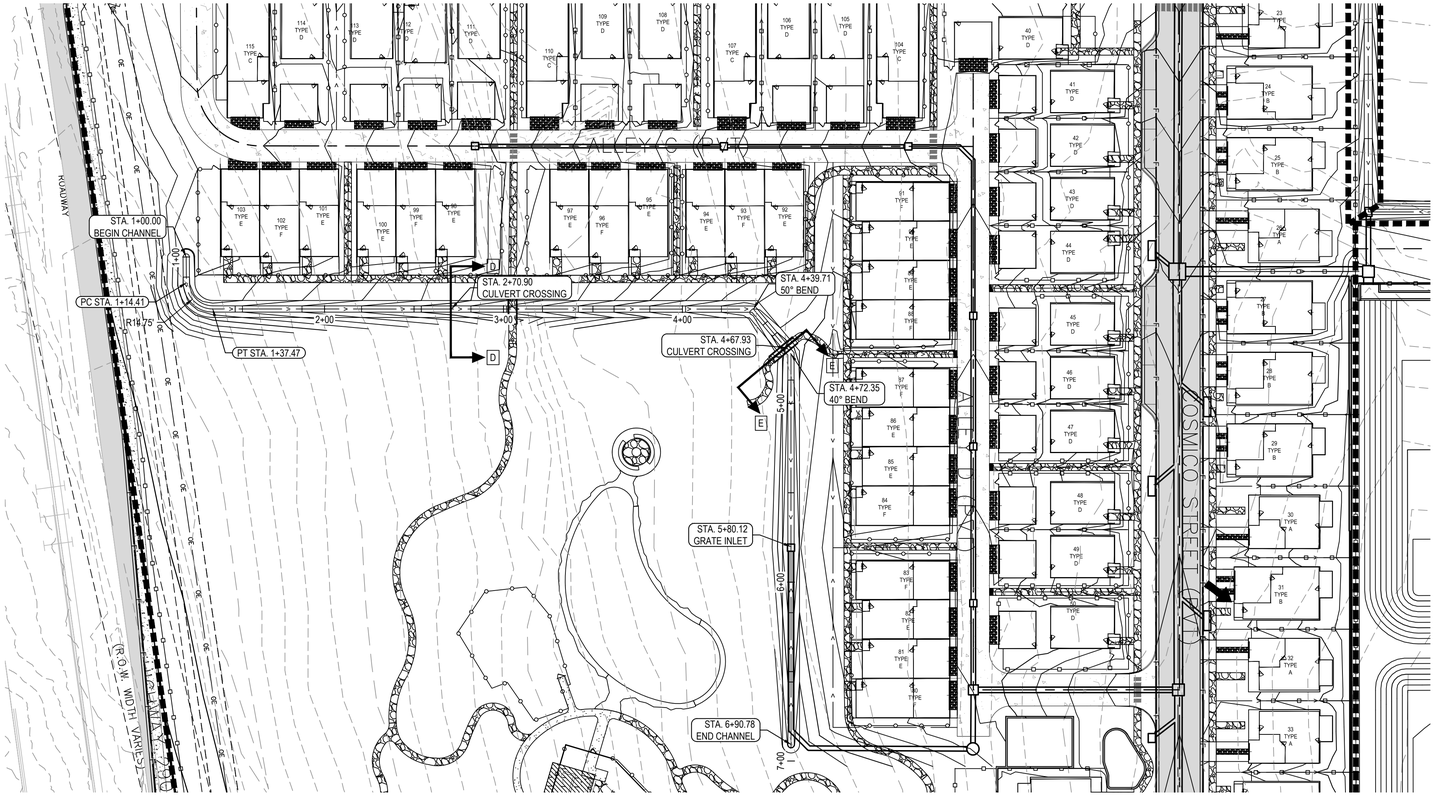

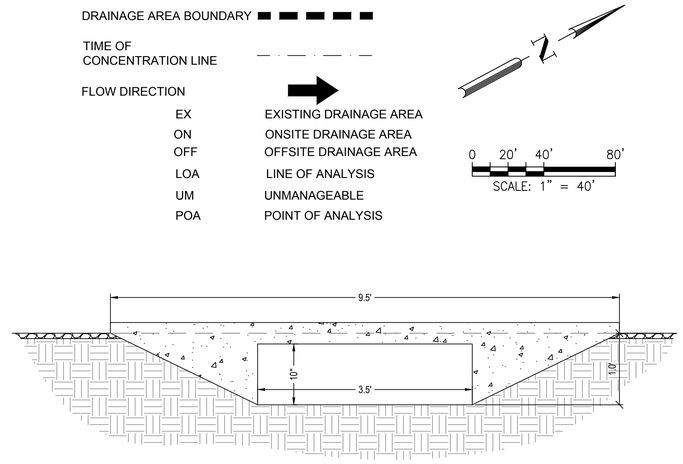

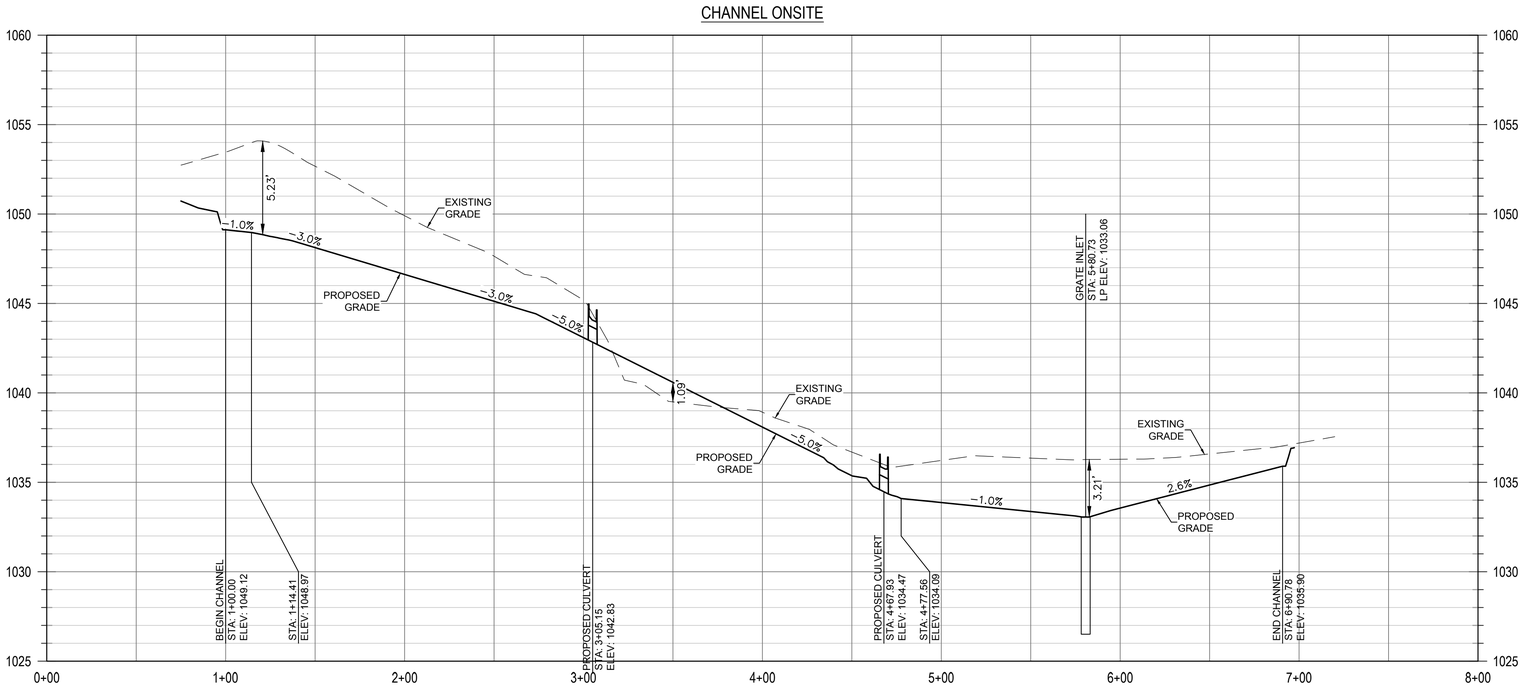

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

ONSITE CHANNEL PLAN AND PROFILE

STATE OF TEXAS
1-23-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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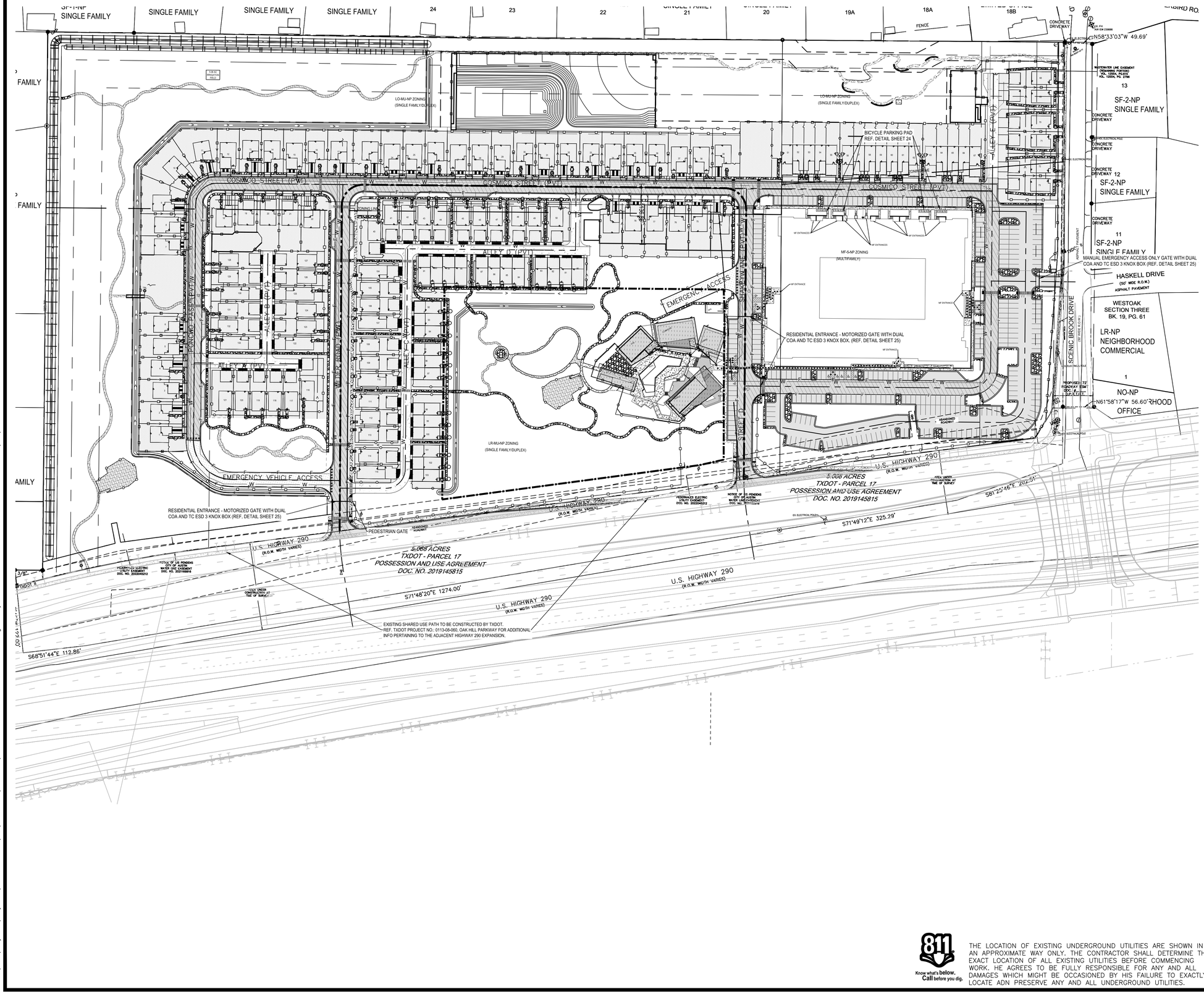

LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- F — FIRE LANE STRIPING
- ADA ACCESSIBILITY ROUTE
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- FRONT DOOR ACCESS

NOTES:

1. ALTERNATE STREET NAMES: TERLINGUA ROAD, SOTOL STREET, & CENIZO ROAD.

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REV	DESCRIPTION	DATE	APR
	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
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DRAWN BY: MW

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TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

SINGLE-FAMILY ADDRESSING

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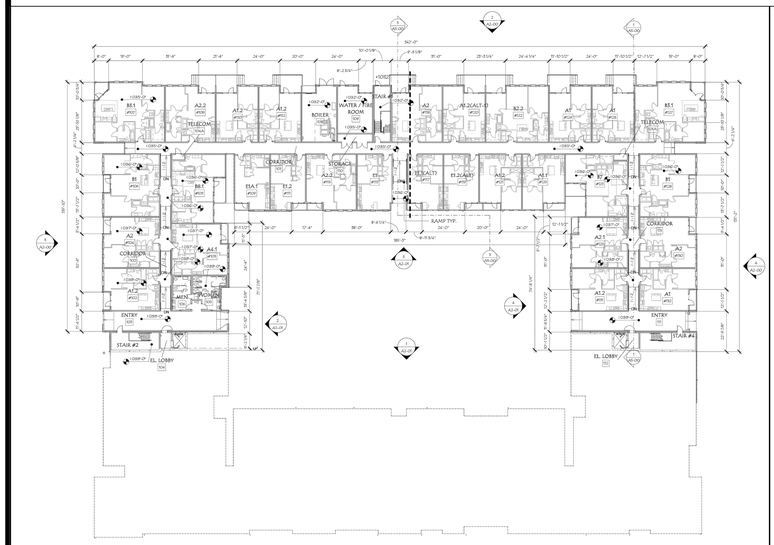
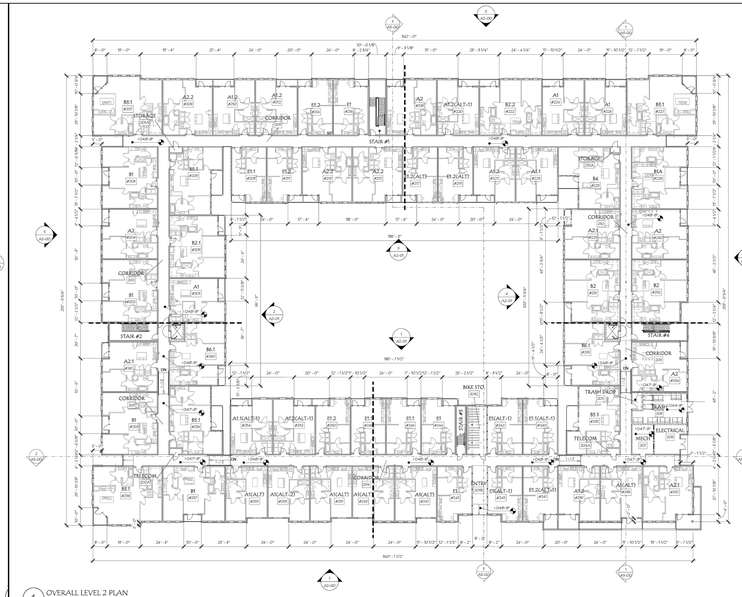


1 OVERALL LEVEL 1 PLAN
SCALE: 1/16" = 1'-0"



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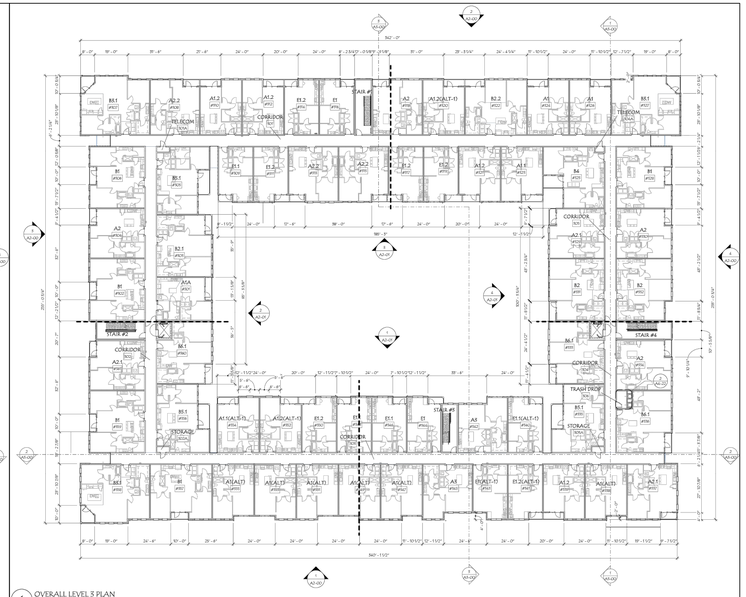

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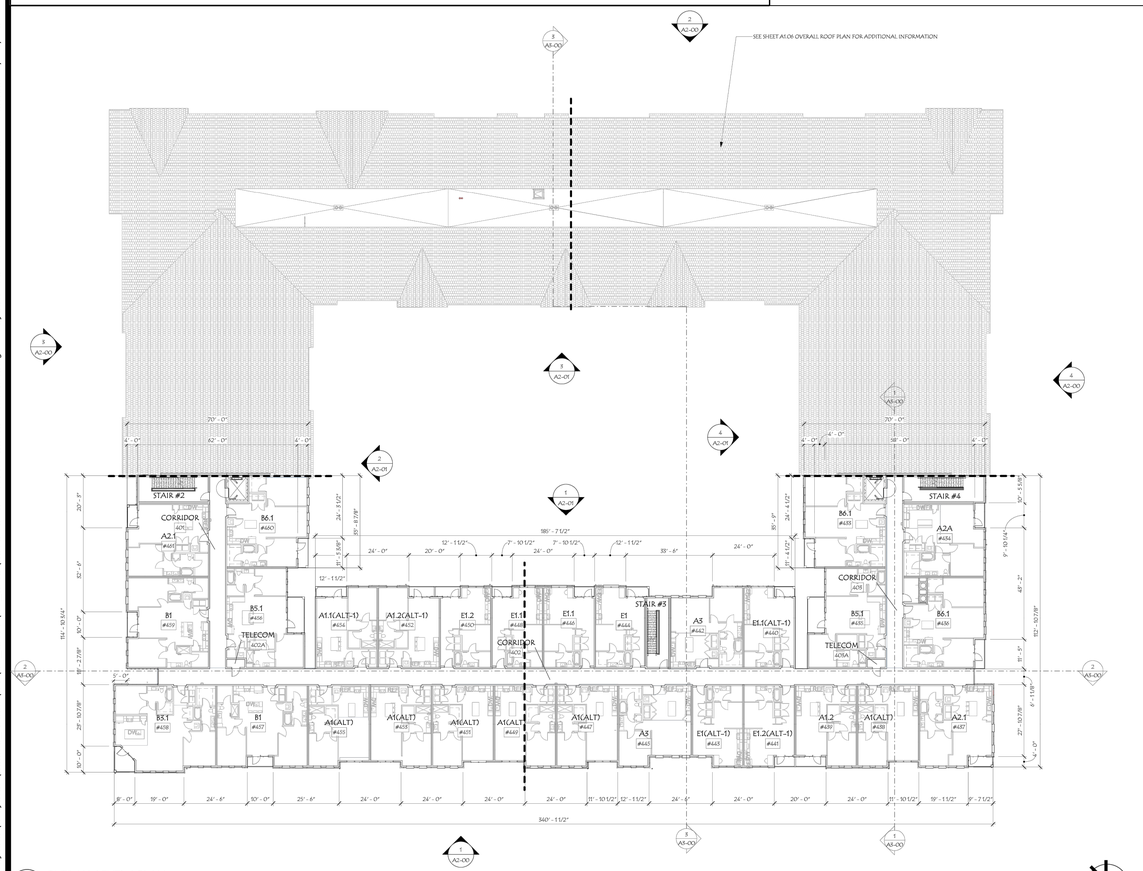
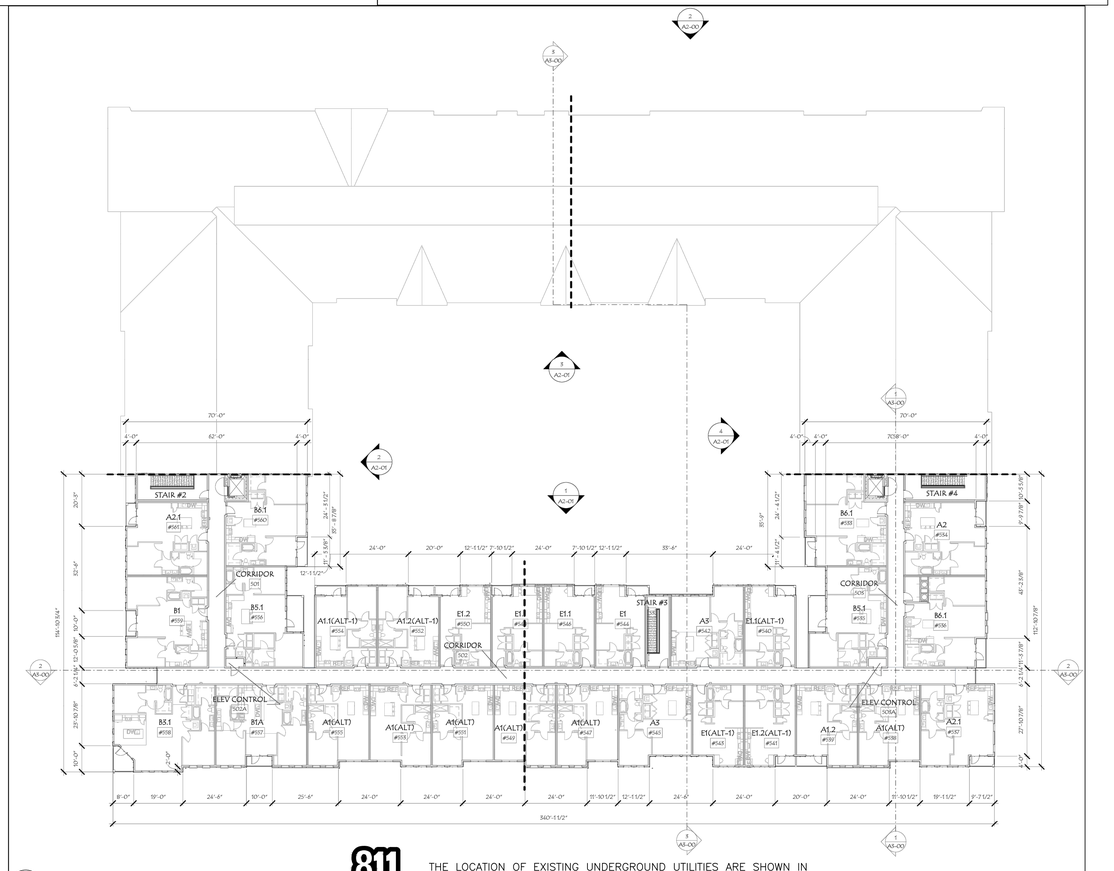


1 OVERALL LEVEL 4 PLAN
SCALE: 1/16" = 1'-0"



1 OVERALL LEVEL 5 PLAN
SCALE: 1/16" = 1'-0"

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	8350 W US 290 HIGHWAY		

DESIGNED BY: MW
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DRAWN BY: MW

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GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

MULTI-FAMILY ADDRESSING

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SP-2022-0579C

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Single Family Units

Single Family Units				Single Family Units				Single Family Units			
SITE ADDRESS	Physical Address			SITE ADDRESS	Physical Address			SITE ADDRESS	Physical Address		
UNIT ID	House #	Unit #	Street Name	UNIT ID	House #	Unit #	Street Name	UNIT ID	House #	Unit #	Street Name
1			Poncho Pass	46			Cosmico Street	91			Cosmico Street
2			Poncho Pass	47			Cosmico Street	92			Wilder Road
3			Poncho Pass	48			Cosmico Street	93			Wilder Road
4			Poncho Pass	49			Cosmico Street	94			Wilder Road
5			Poncho Pass	50			Cosmico Street	95			Wilder Road
6			Poncho Pass	51			Cosmico Street	96			Wilder Road
7			Poncho Pass	52			Cosmico Street	97			Wilder Road
8			Poncho Pass	53			Cosmico Street	98			Wilder Road
9			Poncho Pass	54			Cosmico Street	99			Wilder Road
10			Cosmico Street	55			Cosmico Street	100			Wilder Road
11			Cosmico Street	56			Cosmico Street	101			Wilder Road
12			Cosmico Street	57			Cosmico Street	102			Wilder Road
13			Cosmico Street	58			Cosmico Street	103			Wilder Road
14			Cosmico Street	59			Cosmico Street	104			Wilder Road
15			Cosmico Street	60			Cosmico Street	105			Wilder Road
16			Cosmico Street	61			Cosmico Street	106			Wilder Road
17			Cosmico Street	62			Cosmico Street	107			Wilder Road
18			Cosmico Street	63			Cosmico Street	108			Wilder Road
19			Cosmico Street	64			Cosmico Street	109			Wilder Road
20			Cosmico Street	65			Cosmico Street	110			Wilder Road
21			Cosmico Street	66			Cosmico Street	111			Wilder Road
22			Cosmico Street	67			Cosmico Street	112			Wilder Road
23			Cosmico Street	68			Scenic Brook	113			Wilder Road
24			Cosmico Street	69			Scenic Brook	114			Wilder Road
25			Cosmico Street	70			Scenic Brook	115			Wilder Road
26			Cosmico Street	71			Scenic Brook	116			Poncho Pass
27			Cosmico Street	72			Scenic Brook	117			Poncho Pass
28			Cosmico Street	73			Scenic Brook	118			Poncho Pass
29			Cosmico Street	74			Cosmico Street	119			Poncho Pass
30			Cosmico Street	75			Cosmico Street	120			Poncho Pass
31			Cosmico Street	76			Cosmico Street	121			Poncho Pass
32			Cosmico Street	77			Cosmico Street	122			Wilder Road
33			Cosmico Street	78			Cosmico Street	123			Wilder Road
34			Cosmico Street	79			Cosmico Street	124			Wilder Road
35			Cosmico Street	80			Cosmico Street	125			Wilder Road
36			Cosmico Street	81			Cosmico Street	126			Wilder Road
37			Cosmico Street	82			Cosmico Street	127			Wilder Road
38			Cosmico Street	83			Cosmico Street	128			Poncho Pass
39			Cosmico Street	84			Cosmico Street	129			Poncho Pass
40			Cosmico Street	85			Cosmico Street	130			Poncho Pass
41			Cosmico Street	86			Cosmico Street	131			Poncho Pass
42			Cosmico Street	87			Cosmico Street	132			Poncho Pass
43			Cosmico Street	88			Cosmico Street	133			Poncho Pass
44			Cosmico Street	89			Cosmico Street				
45			Cosmico Street	90			Cosmico Street				

Multi-Family Units

Multi-Family Units					Multi-Family Units				
Floor 1	Floor 2	Floor 3	Floor 4	Floor 5	Floor 1	Floor 2	Floor 3	Floor 4	Floor 5
Unit Number	Unit Number	Unit Number	Unit Number	Unit Number	Unit Number	Unit Number	Unit Number	Unit Number	Unit Number
	201	301				233	333	433	533
102	202	302				234	334	434	534
103	203	303				235	335	435	535
104	204	304					336	436	536
105	205	305				237	337	437	537
106	206	306				238	338	438	538
107	207	307				239	339	439	539
108	208	308				240	340	440	540
109	209	309				241	341	441	541
110	210	310				242	342	442	542
111	211	311				243	343	443	543
112	212	312				244	344	444	544
113	213	313				245	345	445	545
	214	314				246	346	446	546
115	215	315				247	347	447	547
	216	316				248	348	448	548
117	217	317				249	349	449	549
118	218	318				250	350	450	550
119	219	319				251	351	451	551
120	220	320				252	352	452	552
121	221	321				253	353	453	553
122	222	322				254	354	454	554
123	223	323				255	355	455	555
124	224	324				256	356	456	556
125	225	325				257	357	457	557
126	226	326				258	358	458	558
127	227	327				259	359	459	559
128	228	328				260	360	460	560
129	229	329				261	361	461	561
130	230	330							
131	231	331							
132	232	332							

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Know what's below. Call before you dig.

APR
DATE
DESCRIPTION
REV

8350 W US 290 HIGHWAY

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS

ADDRESSING TABLES

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SP-2022-0579C

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Attachment N - Inspection, Maintenance, Repair, and Retrofit Plan

The post-construction BMP's contain two sedimentation/biofiltration ponds and one irrigation field.

Partial sed/bio water quality pond with stacked detention:

- Inspect weekly and after rain events to ensure sedimentation filters, the underdrains, and cleanouts are not clogged
- Replace biofiltration media as necessary

Irrigation field

- Inspect weekly and after rain events to ensure healthy vegetation
- Routine maintenance such as mowing, fertilizing, irrigating, and weed and pest control

All inspection and maintenance activities should be recorded. An inspection and maintenance checklist, at a minimum should include the following:

- Date of inspection
- Condition of each of the BMP elements
- Any maintenance work that was performed (as well as who performed the work)
- Any issues noted for future maintenance (sediment accumulating, vegetation needing pruning or replacement, etc.)

Inspection and maintenance records should be kept in a log in a known set location. Any deficient BMP elements noted in the inspection should be corrected, repaired, or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the pollutant removal efficiency of the BMP.

Applicant Name: Nic Whittaker

Applicant Signature: _____ Date: 5-12-23

Engineer Name: Marissa Wyrick, P.E.

Engineer Signature: _____ Date: 11-27-23

Attachments O and P are not applicable to this application and have been excluded from this submittal.

Stormwater Pollution Prevention Plan
Greystar 290 Tract

Schmidt Investments LTD
5500 Preston Rd., STE 250
Dallas, TX 75605-2699

***Prepared By*:**

BGE, Inc.
1701 Directors Boulevard, Suite 1000
Austin, TX 78728

BGE PN: 12323-00

October 2023

Primary Operator Implementation Checklist

Item Number	Action	Completion Date
1.	Complete the contractor information of the Stormwater Pollution Prevention Plan (SWPPP).	
2.	Complete, post, and submit permit notice (See **Attachment 1** for applicable notice).	
2.1	Electronically sign and submit a completed Notice of Intent (NOI) on the TCEQ website prior to commencing construction activities. If NOI is mailed, submit seven (7) days before commencing construction activities.	
2.2	Post a copy of each signed NOI and a copy of each operator's signed construction site notice at the construction site in a location where it is readily available for viewing.	
2.3	Submit changes to the NOI to the TCEQ in a Notice of Change (NOC) letterwithin fourteen (14) days after discovery.	
2.4	Primary Operators must terminate coverage by submitting a completed andsigned Notice of Termination (NOT) to the TCEQ within thirty (30) days after final stabilization has been achieved or responsibility has been transferred to another operator (**Attachment 4**).	
3.	Complete and/or update the Construction Activity Schedule.	
4.	Verify the type(s) and location(s) of BMPs on the Project Vicinity Map, Erosion Control Plan, and Erosion Control Details (**Attachment 3**). Update the map as needed to reflect the type(s) and location(s) of BMPs.	
5.	Verify the type(s) of BMPs that will be utilized on the Construction Site SWPPP Inspection Form located in **Attachment 5**. Update the table asneeded.	
6.	Review and update the Roles and Responsibilities Checklist located in **Attachment 5**. Sign the checklist to identify agreed upon Operator roles andresponsibilities.	
7.	Record SWPPP revisions on the SWPPP Record of Revision page found in **Attachment 5**.	
8.	Review the Record of Temporary/Permanent Ceasing of ConstructionActivities table located in **Attachment 5**. Update the table as needed.	

Table of Contents

List of Tables

List of Attachments

- SWPPP Construction Site Inspection Form
- SWPPP Record of Revision
- Record of Permanent/Temporary Ceasing of Construction Activities

Section 1 Introduction

The goal of a site-specific Stormwater Pollution Prevention Plan (SWPPP) is to identify potential pollutant sources onsite which may contribute to contaminated stormwater discharges and to implement effective pollution prevention measures and Best Management Practices (BMPs) for reducing or eliminating those contamination sources. This SWPPP has been prepared in accordance with good engineering practices and the current Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) TXR150000. This plan is intended to comply with the TPDES CGP TXR150000 and was developed in accordance with the standards established in the United States Environmental Protection Agency (USEPA) Construction SWPPP Template.

Table 1. SWPPP Requirements and Associated Timeline

Frequency	Requirement	Compliance Date
Once	File NOI & Receive Certificate of Coverage	Prior to start of construction
	Post site notification	Prior to start of construction
	Employee Training	Prior to start of construction
Ongoing	Best Management Practice Implementation	Throughout construction
	Routine Inspection	Once every 14 calendar days and after every 0.5-inch rain event, or once every 7 calendar days
As Necessary	Best Management Control Maintenance	Sediment must be removed from BMPs prior to design capacity reaching 50%
	Employee Training	Prior to start of construction and as new employees are hired as part of project team
	Document change in inspection schedule	If inspection schedule is changed (may be changed no more than once per month)
	Document changes in SWPPP	If SWPPP is updated, document changes as soon as practicable, but within 7 calendar days of change
Project Completion	File NOT	When project complete and final stabilization achieved

Section 2 Certification Page

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 bestof 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 (30TAC §305.44(b)).

Sign as required by 30 TAC §305.128(c).

Signature	Date

Name: Bryan Freel

Title: Managing Director of Development

If plan is shared by more than one entity:

Signature	Date	TPDES Number
Name:		
Title:		

Signature	Date	TPDES Number
Name:		
Title:		

Signature	Date	TPDES Number
Name:		
Title:		

Primary Operators

Greystar

Section 3 Site Specifics

3.1 Site Location

Project Name:	Greystar 290 Tract
Project Location:	8350 W US HWY 290 Austin, Texas 78736
City:	Austin
State:	Texas
County:	Travis County
Site Coordinates:	Eastern extent: 30°14'03.1"N 97°54'02.3"W Western extent: 30°14'08.7"N 97°54'22.7"W
Federal Facility:	No

3.2 Contact Information and Responsible Parties

All identified operators, subcontractors, and emergency 24-Hour Contact respective party leads who will be engaged in construction activities at the project site are listed below. All respective party leads will be notified of requirement applicable to their work and subcontracts may be required to sign a Subcontractor Agreement and or participate in SWPPP training.

3.2.1 Owner's Information

Name:	Schmidt Investments LTD
Address:	5500 Preston Rd., STE 250 Dallas, TX 78605-2699
Representative:	Nic Whittaker
Title:	Managing Director of Development
Telephone:	512-762-2473
Email:	NA

3.2.2 Primary Operator(s) Information

Name:	Greystar
Address:	2500 Bee Cave Rd., Bldg. III, STE 500 Austin, TX 78746
Representative:	Nic Whittaker
Title:	Managing Director of Development
Telephone:	512-762-2473
Email:	NA

3.2.3 General Contractor's Information

Name:	TBD
Address:	
Representative:	
Title:	
Telephone:	
Email:	

3.2.4 Subcontractor(s)

The following subcontractor(s) performing on-site tasks associated with construction of the project understand their role in preventing stormwater pollution and have been approved to perform work on the Project site. All subcontractors should be familiarized with this SWPPP document before their respective notices to proceed.

Name:	TBD
Address:	
Representative:	
Title:	
Telephone:	
Email:	

3.3 Notice of Intent

All parties defined as owners or operators for construction sites of 5 acres or greater must submit a NOI with TCEQ and the relevant Municipal Separate Storm Sewer Systems (MS4s) operators prior to commencement of onsite construction activities. A complete NOI must be submitted to TCEQ electronically using the online e-Permits system on TCEQ's website. If the operator changes or an additional operator is added after the initial NOI is submitted, the new operator must submit an NOI before assuming operational control. A copy of the NOI must be posted in a location at the project site such that it is readily available for viewing both prior to commencing construction activities, as well as during construction activities.

For the purposes of this SWPPP, an operator is defined as the person or persons associated with a large construction activity that meets either of the following requirements:

- The person or persons having operational control over construction plans and specifications to the extent necessary to meet the requirements and conditions of the general permit.

- The person or persons having day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a SWPPP for the site or other permit conditions. For example, they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions.

3.4 Project Description and Nature of Construction Activity

The Greystar 290 Tract project along US 290 in the City of Austin, Travis County, Texas will consist of the new construction of a 341-unit multi-family residential subdivision. The new construction will subdivide the 40.63-acre site with associated parking, utility, and stormwater improvements, sidewalk reconstruction, and drainage updates with associated parking and utility improvements, as well as stormwater management and drainage easement BMPs. Erosion Control Measures must comply with the City of Austin Land Development Code (see **Attachment 3**).

Construction will include the development of the new units along with the associated paved parking areas, utilities, and stormwater management. This development will include the associated parking, utilities, storm water management, and a stormwater drainage easement. Initial sediment storage BMPs and perimeter-control BMPs, which will be installed prior to ground disturbance, consist primarily of inlet protection, mulch socks, silt fencing, rock berm, and tree protection fences.

Erosion/sedimentation controls will be installed prior to any site preparation work. The placement of erosion controls shall be in accordance with the City of Austin Land Development Code. The placement of tree protective fencing shall be in accordance with the City of Austin standard notes for tree and natural area protection and the approved grading/tree and natural area plan. Permanent BMPs, which will be installed during construction activities, consist of adding curb inlet protection.

Potential pollutant sources associated with the proposed project area include sediment; garbage; untreated sewage; and leaks, spills, or releases of petroleum compounds from vehicles and construction equipment (**Table 2**). Sediment (soil, clay, silt, sand, gravel, rocks) generated during earth-disturbing activities and subsequently entrained in stormwater is typically the primary pollutant source. Garbage produced by workers on the Project site can also be a source of pollution, as can untreated sewage spills from on-site sanitary facilities if not installed and/or maintained properly. Storage and operation of vehicles and

construction equipment can result in leaks, spills or releases of petroleum products (usually diesel, oil, hydraulic fluid, or grease). A list of potential pollutants with associated measures to minimize is provided in **Table 2**.

Table 2. List of Potential Pollutants Associated with the Project

Potential Pollutants	Source	Measures to Minimize
Sediment	Construction activities, including: • Clearing • Grading • Excavation • Backfilling • Restoration • Vehicle Tracking	Appropriate erosion and sediment controls, construction entrances/exits, and sediment removal on pavement.
Trash, Debris, Solid Waste	• Food Wrappers • Cups • Equipment/Supplies Packaging • Paving Operations • Concrete Washout	Designated trash receptacle, ongoing policing of site for trash and debris, ultimate disposal offsite in approved disposal area in accordance with BMP specs.
Petroleum compounds	• Fueling Activities • Minor Equipment Maintenance • Leaks, Spills or Releases	Fuel and maintain equipment offsite, do not store fuel and lubricants within the construction workspace.
Untreated Sewage	• Leaks, Spills, or Releases	Do not locate within 100 feet of a waterway or wetland, use a licensed sewage disposal facility.
Dust	• Equipment & Vehicles • Un-vegetated and/or Disturbed Soils	Water trucks for dust control.
Heavy Metals, Acids, and Bases	• Concrete Washout	Provide acceptable washout location, daily inspection, and proper disposal of byproducts.
Chemical, Paints, Solvents, and Fertilizers	• Hazardous Material Storage	Store in original containers, when possible, store containers

3.5 Sequence of Construction Activities

The construction activity schedule for this Project is still to be determined. Final site stabilization and removal of the erosion control measures may last beyond the construction completion date. Based on the sequence of construction, the operator must have, at all times, sufficient temporary erosion and sediment control measures in place to prevent sediment from impacting waters of the U.S. The contractor(s) will be responsible for preventing spills, responding to spills, and preventing offsite vehicle tracking (as practicable). The operator is responsible for selection, procurement, installation, and maintenance of all other temporary erosion and sediment control measures.

The anticipated sequence of construction activities, which will disturb significant amounts of soil, is provided in **Attachment 3** (General notes, extracted from plan set).

A blank table, provided in **Attachment 2**, can be used to update the schedule as necessary as the project progresses. The TCEQ 2023 TPDES General Permit No. TXR150000 for construction activities will expire on March 5, 2028.

3.6 Estimate of Total Construction Site Area and Disturbed Area

The project area will encompass a total of approximately 40.63 acres during construction, including workspaces and access routes. The entire project area will be subject to disturbance during construction.

3.7 Existing Site Conditions

The existing project area is approximately 40.63 acres of partially developed land. The project is located west of Scenic Brook Dr. and north of W US Hwy 290 in the City of Austin, Travis County, Texas. Wetland delineation data provided by the National Wetlands Inventory (NWI) indicates that no ponds or wetlands are present on the subject property. According to the National Hydrography Dataset (NHD) no streams are present on the subject property. Following the completion of construction, temporary work areas will be restored and stabilized, and allowed to revert to previous land uses or other uses intended by the landowner.

According to a topographic map of the area, the elevation across the project area ranges from approximately 926 to 990 feet above mean sea level. In general, the project area alignment is generally flat with slopes between 1 to 5 percent.

The climate of the project area is humid with long, hot summers and mild winters. The average total annual precipitation is approximately 32.91 inches (National Oceanic and Atmospheric Administration 2023), with May through October typically experiencing increased rainfall averages. Mean annual temperatures for the same period were 89°F, with mean temperatures exceeding 94°F from June through August. November through February are the coolest months in the region; however, the temperature rarely reaches below 38 °F and frosts are uncommon.

3.8 Estimate of Runoff Coefficients

A runoff coefficient is used in the estimation of the fraction of total rainfall that will appear as runoff. Of those land areas that could produce runoff, the project area is primarily comprised of undeveloped land. Due to the soil composition and vegetation, a low infiltration rate is expected with a high runoff rate.

3.9 Soils Data

The soil types identified in the project area footprint are Brackett-Rock outcrop complex and Purves clay (NRCS, 2023).

The soils within the project area are classified as belonging to Hydrologic Group D:

- Hydrologic Group D – characterized by having very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high-water table, soils with a claypan or clay layer at or near the surface and shallow soils over nearly impervious material.

3.10 Project Area Map

The project area is captured in the Project Vicinity Map shown in **Figure 1** of **Attachment 3.**

3.11 Construction and Waste Material Stored Onsite

The following construction materials may be staged or stored onsite at various points during development of the site (Note - the selected contractor or operator shall update this list prior to ground disturbance):

- Structural fill
- Construction fill storage and staging areas
- Road base
- Electric wire and cable
- Electric connectors, terminal boxes, controllers and appurtenances
- Electric transformers
- Construction planking (wood and metal)
- Hazardous material storage
- Paint lockers
- Material storage sheds

The following waste materials may be stored temporarily onsite prior to appropriate disposal:

- Broken waste cement construction material
- Excess/scrap wood
- Excess structural steel
- Packaging material
- Trash

Further, the following will be implemented:

- Hazardous materials, chemicals, fuels, or lubricating oils will not be stored, nor will concrete coating activities (excluding field joints) be performed, within 100 feet of a stream bank.
- Spoil placed up-gradient of stream banks will be contained with sediment control devices to prevent spoil materials from flowing into waterbodies or off the ROW.
- The primary operators will follow the spill prevention measures described in the required Hazardous Materials Management Plan and/or Hazardous Materials Spill and Prevention Program.

3.12 Receiving Waters

Stormwater from this site will be conveyed to the Colorado River by way of Williamson Creek, various other streams, impoundments, and localized low spots in the topography.

3.13 Floodplain

The eastern portion of the subject property is within the limits of a 100-year floodplain (Zone AE) which is defined as an area of defined as area with 1% annual chance of flooding per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 48453C0612K.

3.14 Wetlands

The NWI wetland delineation data indicates that no ponds or wetlands are located on the subject property. Wetlands are identified through hydrology, hydric soils, and hydric vegetation as prescribed in the U.S. Army Corps of Engineers (USACE) standard procedures to evaluate waters of the United States, including wetlands, subject to regulation under the Clean Water Act (CWA) (jurisdictional waters), as established in

the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement of the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2)* (USACE 2010).

3.15 Notice of Termination

Site compliance with the General Construction Permit remains the responsibility of all operators that have submitted an NOI until such time as they have submitted a NOT. The permittee's authorization to discharge under the General Construction Permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ if mailed. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ.

All permittees must submit a NOT to TCEQ and a copy of the NOT must be provided to the operator of any MS4 receiving the discharge (none identified for this project site), within thirty (30) days after:

- Final stabilization has been achieved on all portions of the site for which the permittee was responsible; or
- Another operator/permittee has assumed control over all areas of the site that have not been finally stabilized; and all silt fences, erosion control logs, and other temporary erosion controls have been removed, scheduled for removal as defined in the SWPPP, or transferred to a new operator if the new operatorhas sought permit coverage. Erosion controls that are designed to remain in place for an indefiniteperiod, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

Section 4 Best Management Practices

4.1 Performance Standards

To maintain compliance with Part IV.D.2.a of the EPA General Construction Permit, the following short and long-term goals and criteria must remain the focus of onsite construction activities. It is the EPA's intent that erosion and sediment controls should be designed to retain sediment onsite to the extent practicable. The TCEQ will, at a minimum, retain the same erosion and control standards required by the EPA.

All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, or has become inoperable, the permittee must replace or modify the control for site situations. If sediment escapes the construction site, offsite accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts.

4.2 Erosion and Sediment Controls

Erosion and sediment control practices can be divided into three broad categories: (1) soil stabilization, (2) structural controls, and (3) management practices. Each of these categories has temporary and permanent control measures to be considered. Soil stabilization and structural practices should be selected and designed in accordance with reputable standards (e.g., City Austin Environmental Criteria Manual).

4.2.1 Soil Stabilization

Where land disturbance is necessary, the method of soil stabilization may include the following:

- Temporary seeding/sodding
- Permanent seeding/sodding
- Sod stabilization

The TPDES CGP TXR150000 (**Attachment 4**) requires stabilization measures to be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased and must be initiated immediately after the construction activity in that portion of the site that has temporarily or permanently ceased.

- Construction Temporarily Ceased – "Immediately" means as soon as practicable, but no later than the end of the next workday, except as noted below.
    - Where temporary stabilization is infeasible, but temporary perimeter controls are utilized instead; the Operator must document why stabilization is infeasible and demonstrate that perimeter controls will retain sediment onsite.
- Construction Permanently Ceased – "Immediately" means as soon as practicable, but no more than 14 days after initiation, except as noted below.
    - Where the initiation of permanent stabilization measures is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
    - Where the initiation of permanent stabilization measures is precluded by drought in arid or semiarid locations, but non-vegetative controls are installed instead.

A Record of Temporary/Permanent Ceasing of Construction Activities is provided in **Attachment 5**.

4.2.2 Structural Controls

Erosion and sediment controls should be selected, designed, and constructed according to the erosion and sediment control and consistent with the Erosion Control Plan and Erosion Control Details (**Figures 2** & **3** of **Attachment 3**). The following is a list of the structural controls intended for use at the project area:

- Vegetation
- Silt Fence
- Mulch Sock
- Rock Berm
- Curb Inlet Protection
- Stone Outlet Structure
- Triangular Sediment Filter Dike
- Construction Matting
- Storm Drain Inlet Protection
- Tree Protection Fence
- Slope Protection and Tree Wells
- Diversion Dike
- Stabilized Construction Entrance/Exit
- Temporary Spoils and Storage Area
- Hydro Mulch Restoration Area
- Concrete Washout Area
- Debris and Trash Management
- Chemical Management
- Concrete Waste Management
- Sanitary Facilities
- Stormwater Drainage Basin
- Retaining Walls

As seen in **Attachment 3**, sediment controls such as silt fences, vegetated buffers, or rock berm detail will be used at the limits of construction in areas where the direction of flow is away from the construction workspace and the slope is such that runoff within the workspace could transport sediment offsite. Additional locations onsite include the following, if applicable:

- Inlet protection

4.2.3 Management Practices

The following are some management considerations that should be employed in conjunction with the erosion and sediment controls described previously:

- Sequence construction so that no area remains exposed for unnecessarily long periods of time.
- Anticipate the site conditions that will exist as the construction progresses toward the final product.
- Have materials on-hand to complete the work without delay.
- Apply temporary stabilization immediately after grading.
- Stage the construction, if possible, so that one area can be stabilized before another is disturbed.
- Install erosion and sediment controls immediately.
- Consider the time of year; be prepared for sudden thunderstorms.
- Use straw mulch for grass seed, especially during poor germination periods.
- Physically mark limits of disturbance on the site with tape, signs or other methods, so that workers can see areas to be protected.
- Carry out a regular maintenance schedule for erosion and sediment control practices.

- Designate one individual responsible for implementing the erosion and sedimentation control plan.
- Ensure that all staff members understand the provisions of the erosion and sedimentation control plan.
- Establish reporting procedures for problems identified by staff members

4.3 Other Controls

4.3.1 Solid Waste Disposal

Regular disposal for garbage, rubbish, and construction wastes will be maintained at all times during construction. No solid material, including building materials, is permitted to be discharged to surface waters or buried onsite. All solid waste materials, including disposable materials incidental to the construction activity, must be collected in containers or closed dumpsters. The collection containers must be emptied periodically, and the collected material hauled to a landfill permitted by the State and/or appropriate local municipality to accept the waste for disposal. A foreman or supervisor should be designated, in writing, to oversee, enforce, and instruct construction workers on proper solid waste procedures.

4.3.2 Dust Control/Offsite Vehicle Tracking

During construction, water trucks should be used, as needed, by the operator, contractor(s), or subcontractor(s) to reduce dust. In particular, gravel/dirt roads and construction entrances should be inspected for dust generation often. Water trucks or equivalent should be employed in these areas to limit the amount of dust created by construction traffic. Additionally, after construction, the site should be stabilized to reduce dust.

Construction traffic should enter and exit the site at a Construction Entrance/Exit with a rock pad or equivalent device. The purpose of the rock pad is to minimize the amount of soil and mud that is transported to and from the site. Due to the gravel/dirt roads, the recommended location for the rock pad or equivalent device is just off paved areas, separating the paved area from the gravel or dirt-lined area. Any offsite accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts. Further, following rain events, the operator or contractor(s) must sweep the paved area, either mechanically or manually, as frequently as is necessary to ensure there is no offsite accumulation of soil and mud.

4.3.3 Concrete Truck Washout

During concrete construction, concrete washout areas should be designated and clearly marked on the SWPPP. An acceptable washout location will have the following characteristics:

- Washout water cannot leave the location.
- Stormwater runoff will not wash away concrete washout.
- Washout will not impact future land uses.
- Permission to washout has been granted by the property owner.
- The location is readily accessible to concrete trucks.
- A Construction Entrance/Exit shall be used to access the washout area.

Washout water will be contained in either a prefabricated washout container or a self-constructed washout area (a pit lined with 10-milimeter plastic sheeting or an aboveground structure of straw bales or sandbags with a plastic liner). Daily inspection of the washout area and associated storage of wash water (specifically for leaks and tears in any plastic sheeting or remaining capacity) will occur. The preferred method for

disposal of wash water is for the water to evaporate and to recycle the hardened concrete. A stabilized Construction Entrance/Exit will be used to access the washout area.

4.3.4 Sanitary/Septic

Sanitary sewage facilities (portable chemical toilets) will be provided at designated locations and will not be located within 100 feet of a waterway or wetland. The operator, contractor(s), and subcontractor(s) must comply with all state and local sanitary sewer, portable toilet, or septic system regulations. Sanitary waste will be collected and removed for disposal at an appropriate licensed sewage disposal facility. No sewage will be buried, dumped, or discharged to waterway or wetlands. The operator of said facilities should indicate the location of any sanitary facilities within the SWPPP.

4.3.5 Water Source

Non-potable water may be used to establish and maintain grass, to control dust, and for other construction purposes that do not require the use of potable water. Potable water, if used, must originate from a public water supply or private well approved by the State or local health department. Potable water obtained from a municipality shall be metered and reported to the appropriate City representative.

4.3.6 Equipment Fueling, Storage, and Maintenance Areas

Equipment and vehicle fueling, and maintenance will occur offsite to the extent possible (and when the maintenance needed is significant). Equipment will not be refueled or lubricated within 100 feet of any waterway or wetland. Fuel and lubricants will be delivered via service trucks. Any onsite fueling and maintenance areas will be surrounded by a containment berm and will be clean and dry and contain a spill kit, of which employees are aware. Equipment wash down (except for wheel washes) should take place within an area surrounded by a berm, as well. The use of detergents is prohibited. If possible, these activities will occur in a covered area.

Employees will be trained in proper fueling procedures, and all equipment will be inspected daily for oil, fuel and lubricant leaks; damage; or other problems. Leaking equipment and maintenance fluids will be collected and not allowed to discharge onto soil where they may be washed away during a rain event. Drip pans, drip cloths, or absorbent pads will be used when replacing spent fluids, and all collected spent fluids will be stored in appropriately labeled containers in the proper storage areas. Necessary repairs will be made before returning equipment to service; no leaking equipment will be allowed on the construction site.

4.3.7 Hazardous Material Storage

Chemicals, paints, solvents, fertilizers and other toxic or hazardous materials should be stored in their original containers (if original container is not resealable, store the products in clearly labeled, waterproof containers). Except during application, the containers must be kept in trucks or in bermed areas within covered storage facilities. Runoff containing such materials shall be collected, removed from the site and disposed of in accordance with the federal, state and local regulations.

As may be required by federal, state or local regulations, the contractor(s) should have a Hazardous Materials Management Plan and/or Hazardous Materials Spill and Prevention Program in place. A foreman or supervisor should be designated, in writing, to oversee, enforce, and instruct construction workers on proper hazardous materials storage and handling procedures. The operator following onsite location of the storage areas should indicate the location of any hazardous material storage areas within the SWPPP.

4.3.8 Releases

Any releases of liquid or dry materials will be promptly cleaned. Releases of toxic or hazardous material will be reported to the appropriate state or local government agency. The Environmental Department should be notified immediately of all releases of product, raw materials, chemicals, or waste into the environment, including releases that occur inside of secondary containment. The Environmental Department, or its designee, is responsible for making initial notifications of Reportable Quantity (RQ) releases to applicable regulatory agencies.

SWPPP Inspector Information

Name: TBD
Title: TBD
Contact Number: TBD

Name: TBD
Title: TBD
Contact Number: TBD

Additional information regarding procedural requirements for when discharge of hazardous substances occur can be found in **Section 6.0**, Procedural Requirements.

Appropriate steps will be taken by the owner/operator in the event a previously unreported or unanticipated hazardous waste or contaminated site is discovered during construction.

Section 5 Approved State or Local Plans

The following local regulations and/or guidelines should be followed during the construction activities:

- TPDES CGP TXR150000 for Stormwater Discharges from Construction Activities (**Attachment 4**), as may be amended.
- City of Autin, Texas Land Development Code

Section 6 Inspection and Maintenance

6.1 Inspection Schedule and Reporting

All impacted areas, as well as all erosion and sediment control devices, shall be inspected:

- Every fourteen (14) calendar days and within 24 hours after a rainfall of 0.5 inch or greater; or
- Every seven (7) days on the same day of the week each week.

Where sites have been finally or temporarily stabilized, such inspections shall be conducted at least once every month.

Inspections shall be conducted, and a written report prepared, by a designated and qualified person familiar with the TPDES CGP TXR150000, this SWPPP, and the Project. The selected person will conduct the inspections and annotate the findings.

Although the EPA recommends that walk-throughs be conducted prior to anticipated storm events, inspection reports are not required for walk-throughs in anticipation of storm events.

Inspection reports shall include scope of the inspection, name(s) and qualifications of personnel making the inspection, the date of the inspection, observations relating to the implementation of the SWPPP, and any actions taken as a result of incidents of noncompliance noted during the inspection. The inspection report should state whether the site was *in compliance* and identify any incidents of noncompliance. **The contractor shall submit the inspection reports to the Environmental Inspector**. Samples of the various reports that should be maintained are provided in the following list and are included in **Attachment 5**. Inspection reports shall be kept in this SWPPP for at least three (3) years from the date the Project is completed.

- Inspector Qualifications
- Roles and Responsibilities Checklist
- SWPPP Construction Site Inspection Form
- SWPPP Record of Revision
- Record of Temporary/Permanent Ceasing of Construction, Soil Stabilization and Major Grading Activities

6.2 Construction Entrance and Exit

Locations where vehicles enter and exit the site shall be inspected for evidence of offsite sediment tracking. Each contractor and subcontractor shall be responsible for maintaining the Construction Entrance/Exit and other controls as described in this SWPPP.

6.3 Material Storage Inspections

Inspectors must evaluate areas used for storage of materials that are exposed to precipitation. The purpose is to ensure that materials are protected and/or impounded so that pollutants cannot discharge from storage areas. Offsite material storage areas used by the Contractor specifically for this project, and not considered the Contractor's normal storage site, are considered to be part of the project by the EPA and must be included in the erosion control plans and the site inspection reports.

6.4 Soil Stabilization Inspections

Seeded areas will be inspected to confirm that a healthy stand of vegetation is maintained. The site has achieved final stabilization once all areas are covered with pavement or have a stand of vegetation with at least 70 percent of the background vegetation density. The density of 70 percent or greater must be maintained to be considered as stabilized. The operator or their representative will water, fertilize and reseed disturbed areas as needed to achieve this goal.

6.5 Erosion and Sediment Control Inspections

All controls should be inspected as noted in **Section 5**. The EPA also recommends that walk-throughs be conducted prior to storm events. The following is a list of inspection/maintenance practices that will be used for specific controls:

- Silt Fences and Erosion Control Logs: Removal of built-up sediment will occur when the sediment reaches one half the height of the fence, log or bale.
- Vegetated Buffers: Ensure built up sediment is not visibly accumulating. If so, remove and dispose of sediment.
- New Vegetation: Protect newly seeded areas from excessive runoff and traffic until vegetation is established. Establish a watering and fertilizing schedule.
- Good Housekeeping: Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges through screening of outfalls and daily pickup of litter.

- In the event sediment escapes the construction site; offsite accumulations of sediment must be removed ata frequency sufficient to minimize adverse impacts. An example of this may be the situation where sedimenthas washed into the street and could be carried into the storm sewers by the next rainfall and/or pose a safety hazard to users of public streets.

6.6 Inspection Reports

A report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP must be made and retained as part of the SWPPP. Major observations should include: the locations of discharges of sediment or other pollutants from the Project Area; locations of BMPs maintained, locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed. Actions taken as a result of inspections must be described within and retained as a part of the SWPPP. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or project area is in compliance with the SWPPP and this permit.

6.7 Inspector Qualifications

Inspections will be conducted by qualified personnel that are familiar with this SWPPP, terms of the CGP TXR150000, and implementation of sediment and erosion control practices. Inspectors will have a minimum of one-year construction related experience as it relates to stormwater pollution prevention, have attended stormwater pollution prevention training, or have equivalent training/experience.

6.8 Modifications and Revisions to SWPPP

Based on inspection results, any necessary modification to this SWPPP shall be implemented within seven (7) calendar days of the inspection. A modification is necessary if a control measure or operational. procedure does not provide adequate pollutant control. All revisions shall be recorded on the Record of Revisions (included in **Attachment 5**) within seven (7) calendar days of the inspection.

It is the responsibility of the operator to maintain effective pollutant discharge controls. Physical site conditions and/or contractor/subcontractor practices could make it necessary to install more controls than were originally planned. For example, localized concentrations of surface runoff or unusually steep areas could require additional silt barrier(s) or other structural controls. Assessing the need for and installing additional controls will be a continuing operator, contractor/subcontractor, as well as Environmental Inspector, responsibility until final stabilization is achieved. The operator, contractor(s), and subcontractor(s) implementing this SWPPP must remain alert to the need to periodically refine and update this SWPPP to accomplish the intended goals.

6.9 Retention of Records

The Operator and/or Contractor must retain the following records for a minimum period of three (3) years from the date that the operator terminates coverage. Records include:

- A copy of the SWPPP;
- All reports and actions required by CGP TXR150000, including a copy of the construction site notice; and
- All records of submittal of forms submitted to the operator of any MS4 receiving the discharge, if applicable.

6.10 Flooding or Other Uncontrollable Situations

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

Section 7 Non-Stormwater Discharge

The following non-stormwater discharges are allowed as documented in this SWPPP:

- Vehicle wash-water if detergents are not used.
- Dust control runoff in accordance with permit conditions.
- Potable water sources.
- Uncontaminated ground water resulting from dewatering activities.
- Routine external building wash down that does not use detergents.
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used.
- Uncontaminated air conditioning condensate.
- Uncontaminated spring water.
- Uncontaminated ground water.
- Foundation or footer drain water where flows are not contaminated with process materials such as solvents.
- Trench/pit dewatering, once sediment has been removed.

A copy of the Construction Site SWPPP Inspection Form is available in **Attachment 5**.

Section 8 Procedural Requirements

During construction, the Contractors and Subcontractors must comply with the following requirements of the TPDES Stormwater General Permit:

- This SWPPP must be operator compliance certified as part of the NOI submission (see the NOI in **Attachment 1**).
- The NOI must be submitted along with the $225 application fee.
- If the Contractor becomes aware that they failed to submit any relevant facts, submitted incorrect information in a NOI, or relevant information provided in the NOI changes, the correct information must be provided to the TCEQ in a Notice of Change (NOC) submission within fourteen (14) days after discovery.
- NOIs and NOCs for inspectors and/or operators will be submitted to TCEQ, signed by anauthorized officer of each company and submitted electonically.

The State of Texas Environmental Electronic Reporting System (STEERS) can be found at https://www3.tceq.texas.gov/steers/index.cfm. The operator must obtain a username and password prior to submitting forms and fees. Additionally, the operator must have access to the Stormwater Program, which can be requested. See http://www.tceq.texas.gov/permitting/stormwater/WQ_electronic.html for more information.

The NOI, Construction Site Notice, and SWPPP must be conspicuously posted near the main entrance of the site(s). If displaying the documents near the main entrance is infeasible, they can be posted in a local public building such as the town hall or public library. The permit notice must include the project's permit number, the name and phone number of a local contact, a brief project description, and the location of the SWPPP if not kept onsite. The TCEQ recommends that the general public have access to the SWPPP at reasonable hours.

The operator is required to keep a signed copy of the SWPPP and supporting documents. In maintaining plans, all records and supporting documents should be compiled together in an orderly fashion. Federal regulations require permittee(s) to keep the SWPPP and all reports and documents for at last three (3) years after the project is complete (i.e., NOT is submitted). This provision ensures that all records are available in the event the documents need to be reviewed.

This SWPPP must be updated within seven (7) calendar days from the date of inspection each time there are significant modifications to construction activities, contractors/subcontractors, or pollutant control practices. The Record of Revision is in **Attachment 5**.

Discharge of hazardous substances or oil into stormwater is subject to reporting requirements. In the event of a spill of a hazardous substance, the operator is required to notify the National Response Center (1-800-424-8802) to properly report the spill. In addition, the operator shall submit a written description of the release at any time if it is found to inadequately address conditions of the TCEQ TPDES (including the type and amount of material released, the date of the release, the circumstances of the release, and the steps to be taken to prevent future spills) to the EPA regional office in Dallas, Texas. The SWPPP must be revised within fourteen (14) calendar days after the release to reflect the release, stating the information above, along with modifications to minimize the possibility of future occurrences. Each contractor and subcontractor is responsible for complying with these reporting requirements.

Upon completion of the construction activities and final stabilization of the site, the operator and/or

contractor must complete and submit a Notice of Termination (NOT) to TCEQ in one of the following ways by STEERS.

A copy of the General Construction Permit is included in **Attachment 4, TPDES General Permit No. TXR150000**. Questions regarding the TPDES program and this permit can be directed to TCEQ at (512) 239-4671.

The SWPPP is not submitted to the EPA, unless the Director specifically requests a copy for review. However, when the Director requests the SWPPP, the permittee(s) should submit it in a timely manner. In addition, when requested, the permittee(s) should submit the SWPPP to state or local sediment and erosion or stormwater management agencies, or to a municipal operator, where the site discharges through a TPDES stormwater permitted MS4.

References

Federal Emergency Management Agency (FEMA). 2023. Flood Map Service Center. Accessed October 2023. Available URL: http://msc.fema.gov/portal/advanceSearch

National Hydrography Dataset (NHD). 2023. National Map. United State Geological Survey (USGS). Accessed October 2023. Available URL: https://apps.nationalmap.gov/viewer/

National Oceanic and Atmospheric Administration. 2023. Normals, Records, and Rankings for Austin, Texas. Accessed October 2023. Available URL: https://www.weather.gov/crp/localclimate

National Wetlands Inventory (NWI). 2023. Wetlands Mapper. Accessed October 2023. Available URL: https://www.fws.gov/wetlands/data/mapper.html

NRCS. 2023. USDA Web Soil Survey. Accessed October 2023. Available URL: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Geological Survey. 2023. 7.5 Minute Topographic Quadrangles – maps for America. U.S. Department of the Interior, U.S. Geological Survey, Washington, D.C. Accessed October 2023. Available URL: http://nationalmap.gov/ustopo/index.html

List of Attachments

Attachment 1: TCEQ Large Construction Site Notice for Primary Operators

Attachment 2: Construction Activity Schedule

Attachment 3: Project Vicinity Map and Erosion Control Details

- Project Vicinity Map
- Overall Site Plan
- Erosion Control Plan & Erosion Control Details

Attachment 4: TPDES General Permit No. TXR150000

Attachment 5: Inspection and Maintenance Forms

- Inspector Qualifications Statement
- Roles & Responsibilities Checklist
- SWPPP Construction Site Inspection Form
- SWPPP Record of Revision
- Record of Temporary/Permanent Ceasing of Construction

Attachment 1

TCEQ Large Construction
Site Notice for
Primary Operators

Attachment 2

Construction Activity Schedule

Construction Activity Schedule

Item	Activity	Start Date	Finish Date
1.	Mobilization		
2.	Set up BMPs and erosion control features		
3.	Excavate trench/pits		
5.	Construction of infrastructure		
6.	Filling remaining trenches/pits		
7.	Achieve site stabilization		
8.	Remove BMPs erosion control measures		

Attachment 3

Project Vicinity Map,
Overall Site Plan,
Erosion Control Plan,
and Erosion Control Details
(Extracted from Plan Set)

TCEQ Large Construction Site Notice

Primary Operator

Large construction sites disturb more than five acres or are part of a larger common plan of development that disturbs more than five acres. Primary operators of large construction sites will fill out this notice. Primary operators will then post this notice at the construction site in a location where it is safely and readily available for viewing by the general public and local, state, and federal authorities. Additional information about the TCEQ Construction Stormwater General Permit may be found on TCEQ's webpage on Assistance Tools for Construction Stormwater General Permits.

Note: You must also develop a Stormwater Pollution Prevention Plan prior to the commencement of construction.

Site-Specific TPDES Authorization Number: TXR15_____

Primary Operator Name:_____

Contact Name and Phone Number: _____

_____

Project Description:

Physical

Location/Description_____

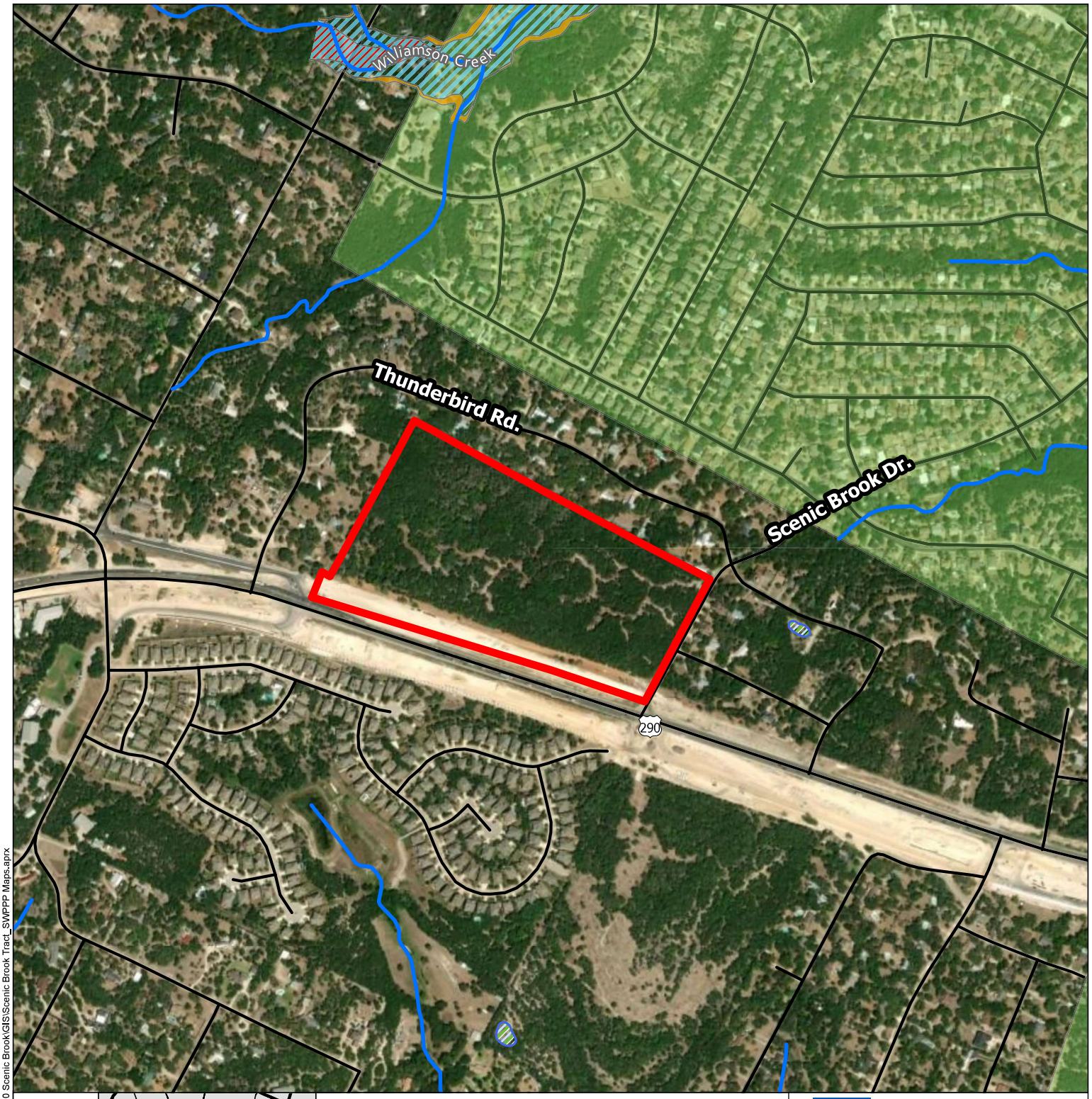
_____

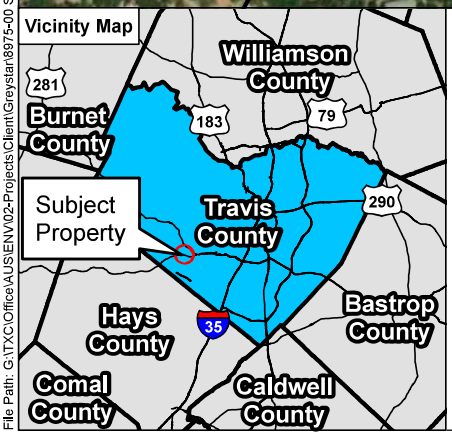
Estimated Start Date_____

Projected End Date or Date Disturbed Soils Will Be Stabilized_____

Location of Stormwater Pollution Prevention Plan (SWP3):_____

_____





Legend

- Subject Property
- Austin City Limits (TxDOT)
- Stream (NHD)
- Wetland (NWI)
- 100-year Floodplain (FEMA)
- 500-year Floodplain (FEMA)
- Floodway (FEMA)
- Roadway (TxDOT)

N

0 300 600

Feet

BGE, Inc.
101 West Louis Henna Blvd, Suite 400
Austin, TX 78728
Tel: 512-879-0400 Fax: 512-879-0499
www.bgeinc.com

Greystar 290 Tract

Project Vicinity Map

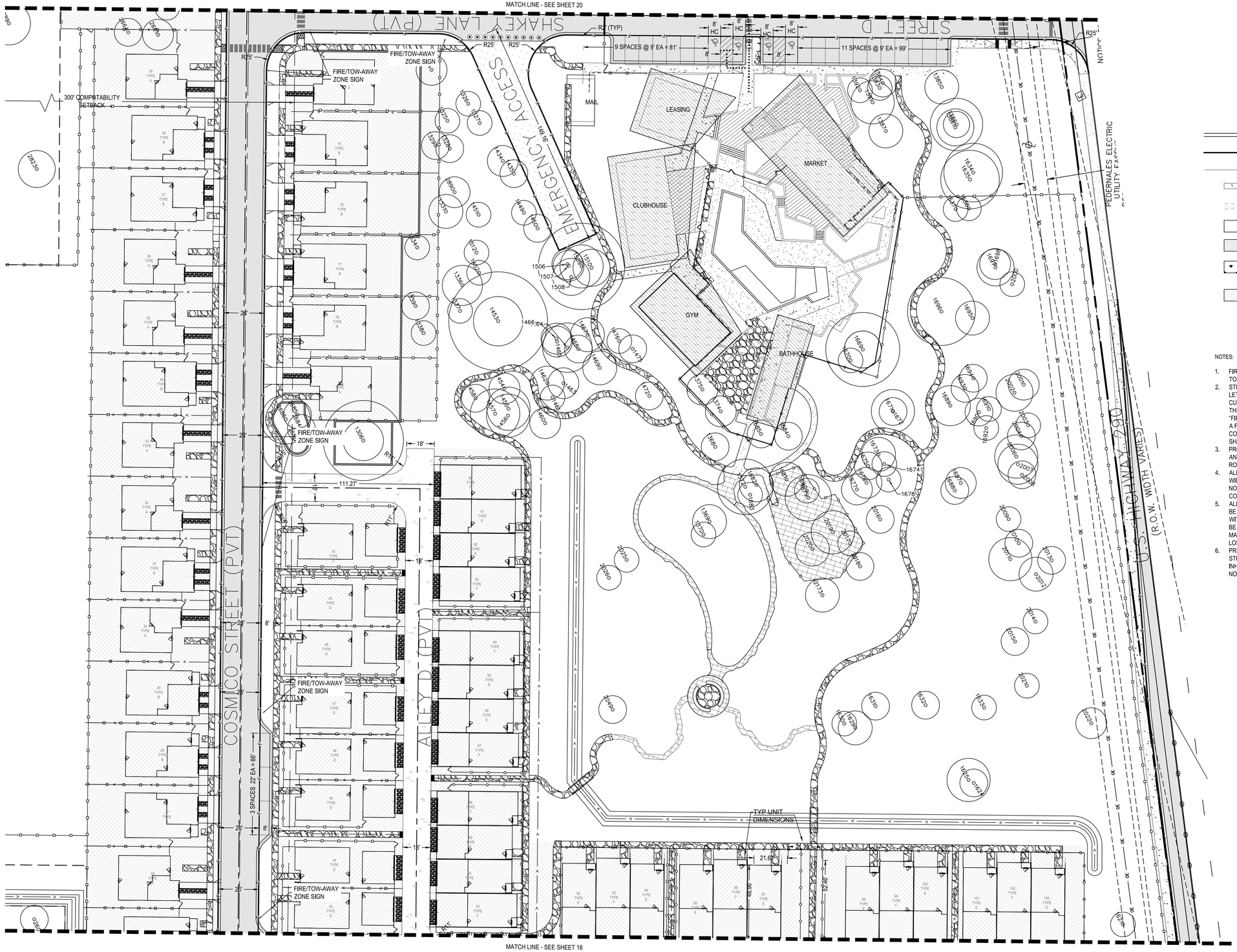
Travis County, TX

Date: October 2023 | Proj. No: 12328-00

File Path: G:\TX\Office\AUS\ENV\02-Projects\Client\Greystar\8975-00 Scenic Brook\GIS\Scenic Brook Tract_SWPPP Maps.aprx

GIS Analyst: afash

Data Source: TxDOT 2022



0 15' 30' 60'

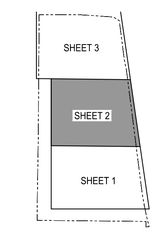
SCALE: 1" = 30'

LEGEND

- PROPERTY BOUNDARY
- ROAD CENTERLINE
- CONCRETE SIDEWALK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE
- PAVEMENT
- PERMEABLE PAVER (FOR FIRE ACCESS ONLY)
- AREA TO BE CONSTRUCTED BY OTHERS (HOMEBUILDER)

NOTES:

1. FIRE LANE DIMENSIONS ARE REQUIRED TO BE FROM FACE OF CURB TO FACE OF CURB.
2. STENCIL THE WORDS "FIRE ZONE/TOW-AWAY ZONE" IN WHITE LETTERS AT LEAST 3" HIGH AT 35FOOT INTERVALS ALONG THE CURB AND THE ENTIRE CURB SHALL BE PAINTED RED TO SERVE AS THE BACKGROUND FOR THE WHITE LETTERS." SIGNS STATING "FIRE ZONE/TOW-AWAY ZONE" SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE AND AT EACH ENTRY AND EXIT POINT WHICH CONSTITUTES A PORTION OF THE FIRE ZONE OR FIRE LANE. SIGNS SHALL COMPLY WITH STANDARD CITY OF AUSTIN DETAIL 901S-6.
3. PROVIDE A KNOX KEY SWITCH AT ALL POWER OPERATED GATES AND A KNOX BOX AT ALL MANUAL GATES ACROSS FIRE ACCESS ROADS FOR FIRE DEPARTMENT ACCESS.
4. ALL GATES ACROSS FIRE ACCESS ROADS SHALL OPEN THE FULL WIDTH OF THE FIRE ACCESS ROAD SO THE FIRE ACCESS ROAD IS NOT OBSTRUCTED IN ANYWAY BY THE GATE OR ANY OF THE GATE COMPONENTS.
5. ALL POWER OPERATED GATES ACROSS FIRE ACCESS ROADS SHALL BE EQUIPPED WITH GATE OPERATORS LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER ASTM F2200. A MANUAL MEANS OF OPENING THE GATE IN THE EVENT OF POWER LOSS IS REQUIRED.
6. PRIVACY FENCING SHALL ONLY RUN PARALLEL TO THE STRUCTURE/PERCEIVED LOT LINES, IT WILL NOT CUT OFF OR INHIBIT FIRE DEPARTMENT ACCESS. THE FOLLOWING UNITS SHALL NOT BE ENCLOSED WITH PRIVACY FENCING: ####.



KEY MAP
N.T.S

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

REV	DESCRIPTION	DATE	APR

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
DIMENSION CONTROL PLAN (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
12-17-2024

SP-2022-0579C

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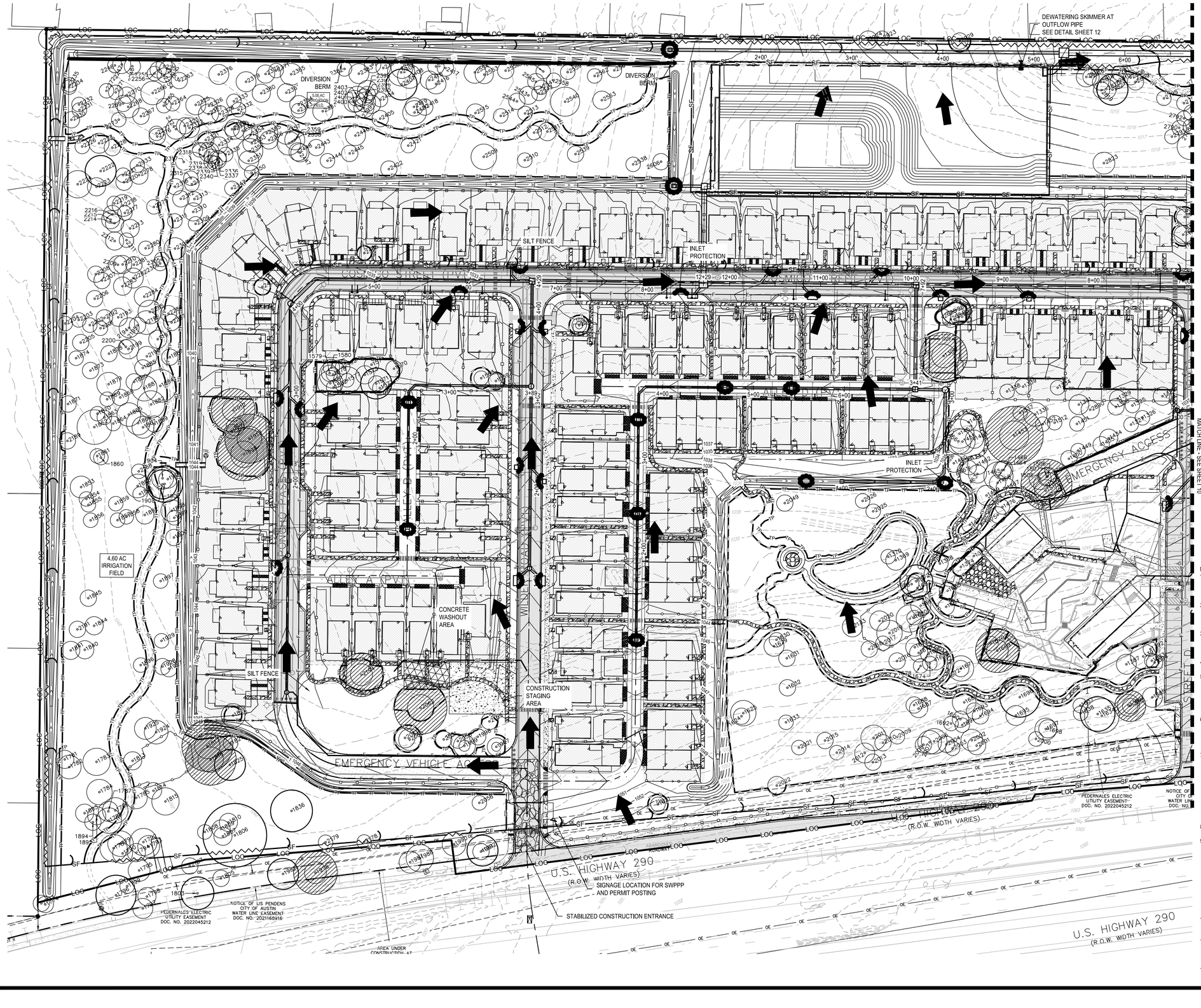

0 25' 50' 100'

SCALE: 1" = 50'

LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY
- EXISTING TOPO MINOR
- EXISTING TOPO MAJOR
- PROPOSED GRADING MINOR
- PROPOSED GRADING MAJOR
- LOC — LIMITS OF CONSTRUCTION
- SF — SILT FENCE
- TP — TREE PROTECTION FENCE
- DIVERSION BERM
- MULCH SOCK
- PERVIOUS GRAVEL SIDEWALK (TO BE BUILT BY OTHERS)
- CONCRETE SIDEWALK
- TREE TO REMAIN
- PROTECTED TREE TO REMAIN
- HERITAGE TREE TO REMAIN
- CONSTRUCTION ENTRANCE (SEE DETAIL SHEET C02.50)
- CONCRETE WASHOUT AREA (SEE DETAIL SHEET C02.50)
- CONSTRUCTION STAGING AREA
- FLOW ARROW
- ROCK BERM
- INLET PROTECTION

NOTES:

1. IF DISTURBED AREA IS NOT TO BE WORKED FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP, OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5.I]
2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS [LDC 25-8-182]
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
5. PER LDC 25-8-323(C), FOR AREAS ON THE SITE THAT ARE TO REMAIN PERVIOUS AFTER DEVELOPMENT, ANY SOILS THAT ARE COMPACTED DURING SITE GRADING AND CONSTRUCTION OPERATIONS MUST BE DECOMPACTED IN COMPLIANCE WITH THE ECM AND IN COMPLIANCE WITH SSM 661S.
6. FINISHED ELEVATION FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS MUST BE AT LEAST SIX (6) BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL [ECM 1.4.7].
7. PER LDC 25-8323(C), FOR AREAS ON THE SITE THAT ARE TO REMAIN PERVIOUS AFTER DEVELOPMENT, ANY SOILS THAT ARE COMPACTED DURING SITE GRADING AND CONSTRUCTION OPERATIONS MUST BE DECOMPACTED IN COMPLIANCE WITH THE ECM AND IN COMPLIANCE WITH SSM 661S. FINISHED ELEVATION FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS MUST BE AT LEAST (6) INCHES BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL [ECM 1.4.7].
8. WHEN PROTECTING TREE CRITICAL ROOT ZONES MULCH LOGS ARE TO BE USED INSTEAD OF SILT FENCE.
9. IF FENCING CANNOT BE INSTALLED AROUND THE FULL CRZ:
   - 9.1. PLACE THE FENCING AT THE HALF CRZ AND ADD 8" OF HARDWOOD MULCH FROM THE HALF CRZ TO THE FULL CRZ.
   - 9.2. 2X4X6 OR GREATER SIZE LUMBER SHALL BE STRAPPED VERTICALLY TO THE TREE AND 8" OF HARDWOOD MULCH SHALL BE APPLIED WITHIN THE FULL CRZ., PER STANDARD DETAIL 610S-4
   - 9.3. TREE PROTECTION FENCING OR USE OF LUMBER STRAPPED TO TREES APPLIES TO ROW TREES.
10. CLEARING AND GRUBBING SHALL NOT OCCUR IN PHASES LARGER THAN 25 ACRES WITHOUT STABILIZATION BEING COMPLETED.
11. THE 4' TRAIL WITHIN THE IRRIGATION FIELD WILL BE COMPOSED OF MULCH. THE 4' TRAIL IN ALL OTHER AREAS ON THE SITE WILL BE COMPOSED OF DECOMPOSED GRANITE UNLESS OTHERWISE NOTED.
12. CONCRETE SIDEWALK WILL BE USED IN SPECIFIC LOCATIONS THROUGHOUT THE SITE FOR ADA PURPOSES.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ADN PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

NO.	DESCRIPTION	DATE
A		

DESIGNED BY: MW

REVIEWED BY: BG

DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

EROSION CONTROL PLAN (SHEET 1 OF 2)

THIS DOCUMENT IS ISSUED FOR REVIEW

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024
E.

9 OF 121

SP-2022-0579C

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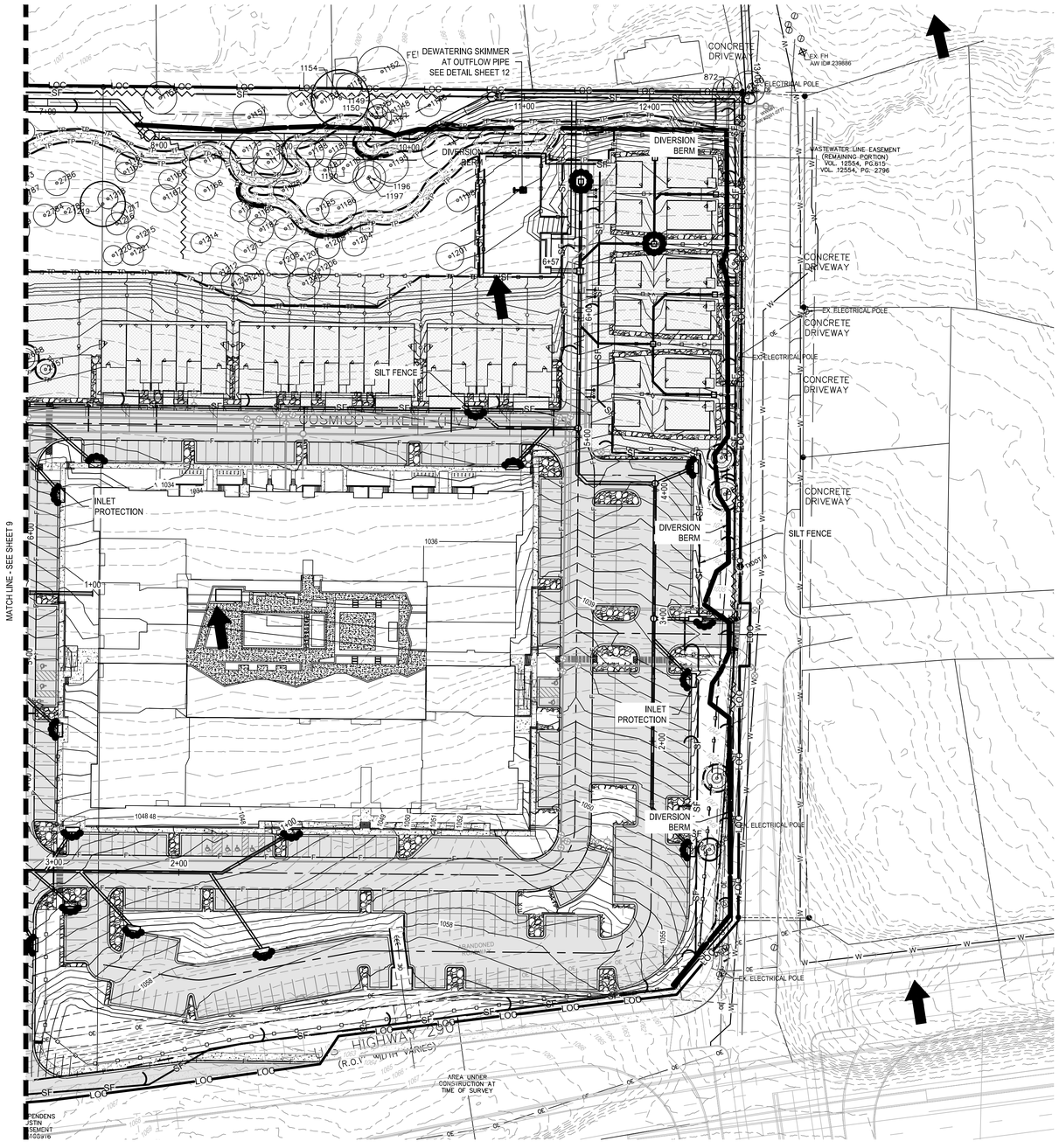
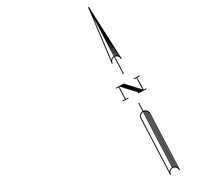


EROSION CONTROL			
ITEM	DESCRIPTION	QUATITY	UNIT
1	SILT FENCE	7,783	LF
2	STABILIZED CONSTRUCTION ENTRANCE	1	EA
3	REVEGITATION FOR EROSION CONTROL	171,330	SY
4	ON-SITE/OFF-SITE CLEAN UP	35.40	AC



LEGEND

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- PROPOSED GRADING MAJOR
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- DIVERSION BERM
- MULCH SOCK
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811 Know what's below. Call before you dig.

										APR
										DATE
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										REV

DESIGNED BY: MW

REVIEWED BY: BG

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BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL. 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290

8350 W US 290 HIGHWAY, AUSTIN, TEXAS

EROSION CONTROL PLAN (SHEET 2 OF 2)

STATE OF TEXAS
1-24-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

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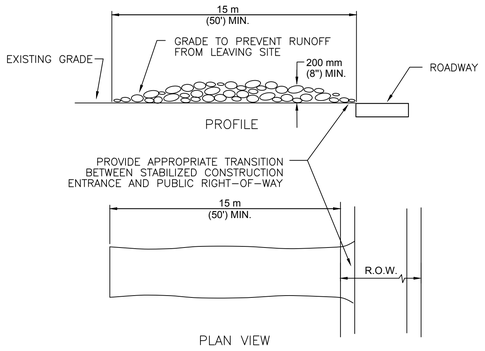
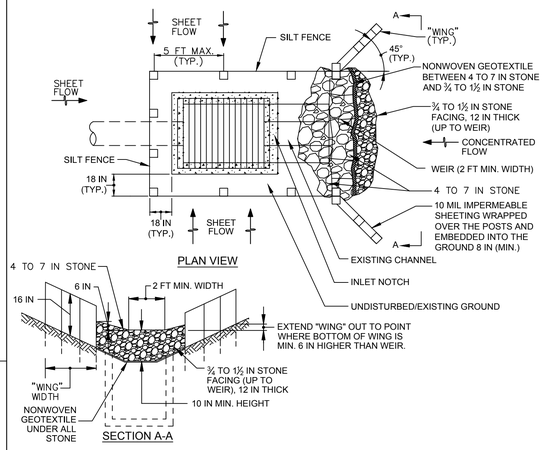


NOTES:

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.

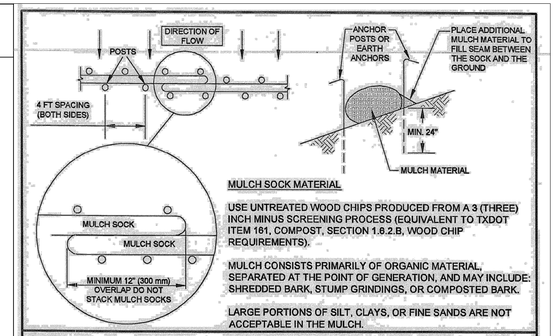
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1

INLET PROTECTION



CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN CITY OF AUSTIN SPECIFICATION 620S.
2. INSTALL SILT FENCE ON ALL SIDES OF INLET RECEIVING SHEET FLOW. FENCE IS TO BE INSTALLED IN ACCORDANCE WITH SILT FENCE DETAIL 642S.
3. INSTALL STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.



MULCH SOCK MATERIAL

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

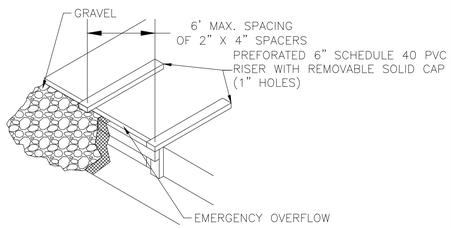
MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

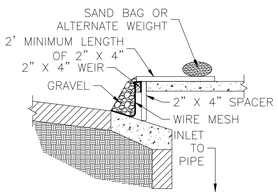
LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OFMULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	MULCH SOCK	
08/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 648S-1

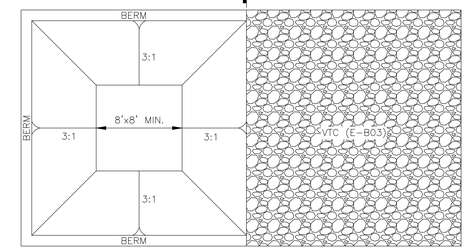




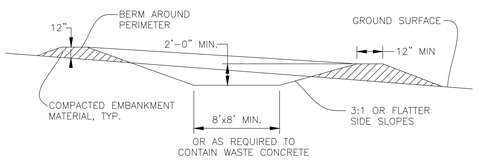
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

WOODEN WEIR CURB INLET PROTECTION DETAIL
N.T.S.



SECTION A
N.T.S



N.T.S.
SECTION B

CONCRETE WASHOUT AREA

CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SELECT A SUITABLE LOCATION FOR CONCRETE WASHOUT AREA(S). (TO BE PLACED A MINIMUM OF 100' FROM DRINAGEWAYS, BODIES OF WATER, AND INLETS.)
2. LOCATION FOR CONCRETE WASHOUT SHALL BE ADDED TO APPROVED SWP3 KEPT ON SITE.
3. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
4. VEHICLE TRACKING CONTROL (VTC E-B03) IS REQUIRED AT THE ACCESS POINT.
5. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
6. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

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

DATE	DESCRIPTION	REV
	8350 W US 290 HIGHWAY	APR

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE
BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.browngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 1 OF 3)

STATE OF TEXAS
8-24-2024
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER

SP-2022-0579C

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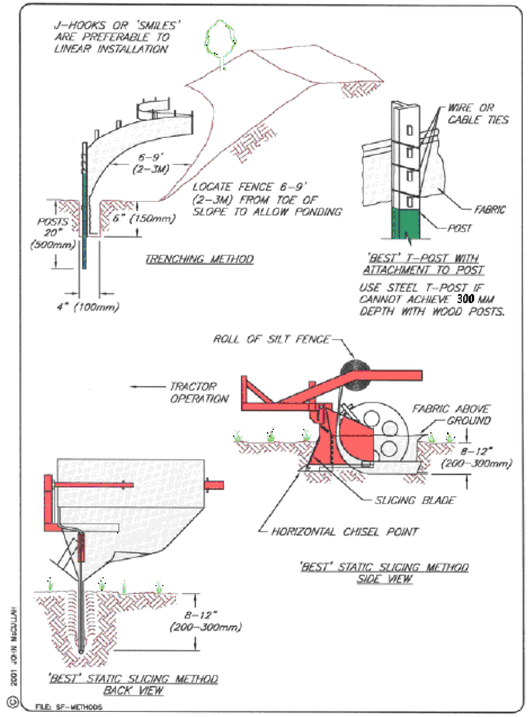


Figure 1.4-D Silt Fence Installation

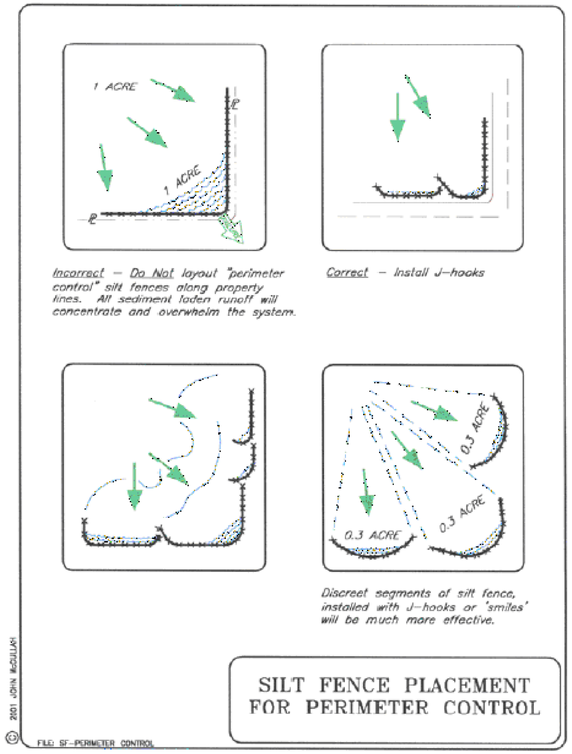
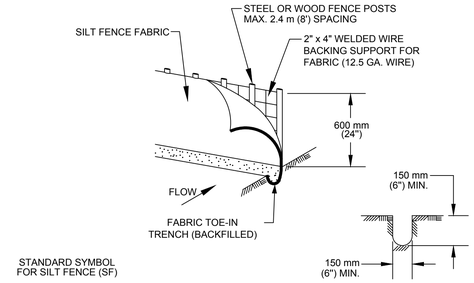


Figure 1.4-F Silt Fence Typical Placement – Two Slopes

SILT FENCE PLACEMENT FOR PERIMETER CONTROL



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

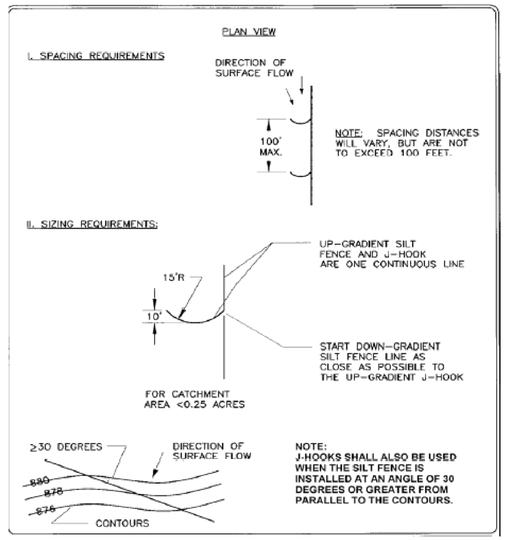


Figure 1.4-H Silt Fence J - Hook Detail (N.T.S.)

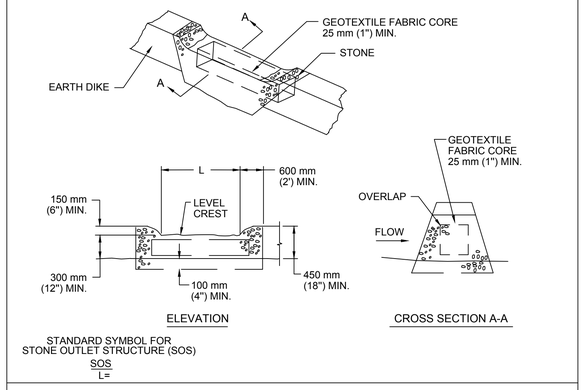


Figure 1.4-D Silt Fence Installation

NOTES:
1. THE STONE SHALL BE CRUSHED STONE. UNLESS OTHERWISE SPECIFIED, ALL AGGREGATE USED IN A STONE OUTLET STRUCTURE SHALL BE 75-125 mm (3-5") OPEN GRADED ROCK.
2. THE CREST OF THE STONE DIKE SHALL BE AT LEAST 150 mm (6") LOWER THAN THE LOWEST ELEVATION OF THE TOP OF THE EARTH DIKE AND SHALL BE LEVEL.
3. THE STONE OUTLET STRUCTURE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF 100 mm (4").
4. THE MINIMUM LENGTH OF THE CREST OF THE STONE OUTLET STRUCTURE SHALL BE EQUAL TO 6 TIMES THE NUMBER OF ACRES OF CONTRIBUTING DRAINAGE AREA.
5. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE STRUCTURE OR 150 mm (6"), WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION.
6. THE STONE OUTLET STRUCTURE SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY OR AFTER EACH RAIN, AND THE STONE SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE STONE, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
7. A GEOTEXTILE FABRIC CORE HAVING MINIMUM DIAMETER OF 300 mm (1') SHALL BE INCORPORATED IN THE STRUCTURE.
8. WHEN THE SITE IS COMPLETELY STABILIZED, THE STRUCTURE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STONE OUTLET STRUCTURE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	*5/23/00* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 643S-1

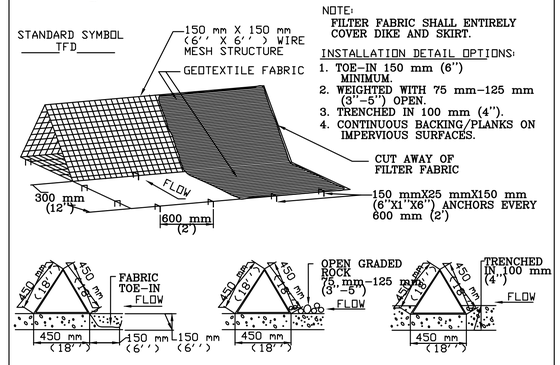


Figure 1.4-G Silt Fence Placement for Perimeter Control

GENERAL NOTES
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75-125 mm (3-5'') OPEN GRADED ROCK OR TOED-IN 150 mm (6'') WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4'').
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6'') WIRE STAPLES ON 600 mm (2') CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8 '') DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6'') TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE MW40-150 mmX150 mm (6 GA. 6''X6'') WIRE MESH, 450 mm (18'') ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6'') AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETLY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TRIANGULAR SEDIMENT FILTER DIKE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	*3/27/00* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 628S

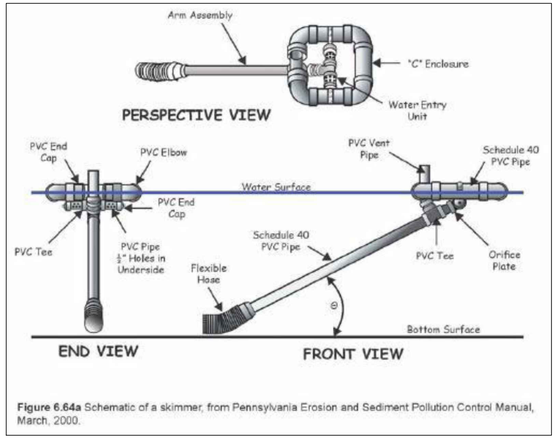
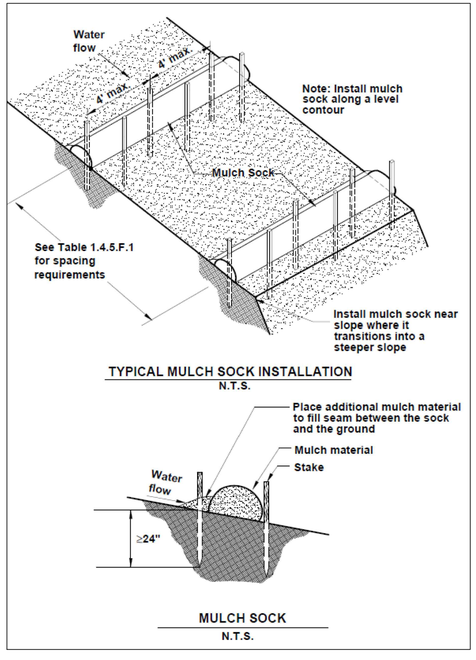


Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

DEWATERING SKIMMER
(NO SCALE)



							APR
							DATE
							DESCRIPTION
							REV

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL: 512-879-0400 www.brwngay.com

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 2 OF 3)

STATE OF TEXAS
MARISSA A. WYRICK
134601
LICENSED PROFESSIONAL ENGINEER
1-24-2024

SP-2022-0579C

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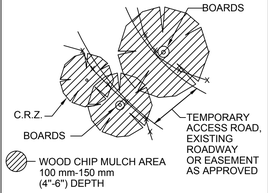
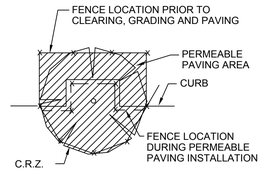
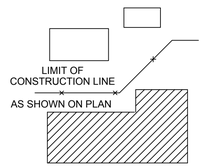


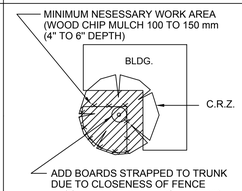
LINEAR CONSTRUCTION THROUGH TREES



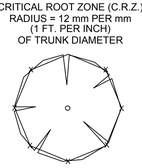
TREES IN PAVING AREA



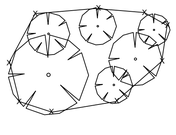
NATURAL AREAS



TREES NEAR CONSTRUCTION ACTIVITY

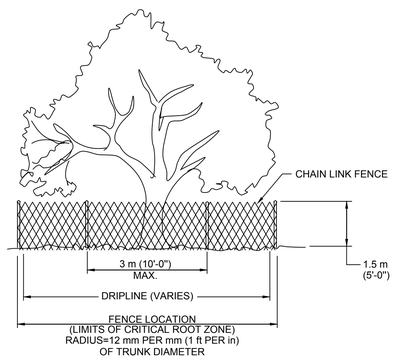


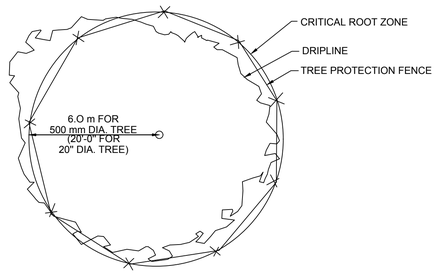
INDIVIDUAL TREE



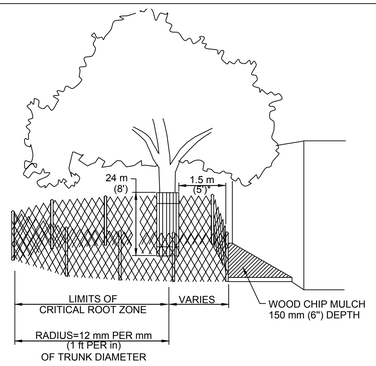
GROUP OF TREES

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

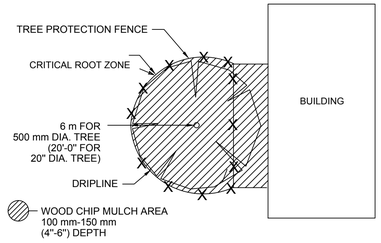




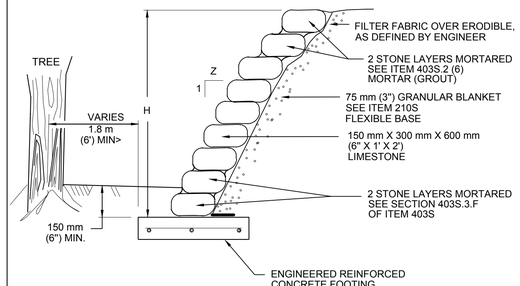
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROPTECTION FENCE TYPE A - CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2



*AS NEEDED TO PROVIDE MINIMUM NECESSARY WORK SPACE.
IF LESS THAN 1.5 m (5'), THEN ADD BOARDS STRAPPED TO TRUNK.



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE MODIFIED 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-4



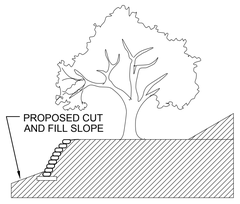
THIS STANDARD APPLIES ONLY UNDER THE FOLLOWING CONDITIONS:

A. H AND Z ARE SPECIFIED ON THE DRAWING.
B. GROUNDWATER IS NO HIGHER THAN THE BOTTOM OF THE FOOTING.
C. THE MATERIAL BELOW THE FOOTING IS FIRM AND STABLE.
D. THE MATERIAL BEHIND THE WALL HAS A LEVEL SURFACE.
E. THE MATERIAL IN FRONT OF THE WALL HAS A SLOPE NO STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL.
F. THE FACE OF THE WALL IS NO STEEPER THAN 1 HORIZONTAL TO 2 VERTICAL.
G. SURCHARGE LOADS BEHIND THE WALL ARE NO CLOSER THAN DISTANCE H FROM THE TOP OF WALL.

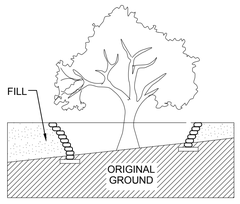
NOTES:

1. DESIGN AND CONSTRUCTION OF ROCK WALL SHALL CONFORM TO THE REQUIREMENTS OF CITY CODE 16-7-2, PLACEMENT OF FENCES IN STREET CORNER AREAS, AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL FOR MINIMIM SIGHT DISTANCE.
2. CONCRETE SHALL CONFORM TO ITEM 403S, "CONCRETE FOR STRUCTURES".

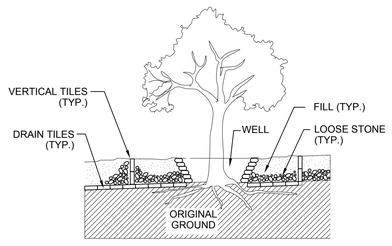
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	SLOPE PROTECTION AND TREE WELLS	
RECORD COPY SIGNED BY J. PATRICK MURPHY 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-6 1 OF 2

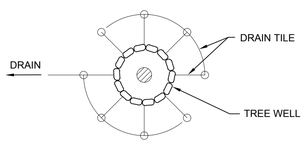


PERMANENT PROTECTIVE WALL

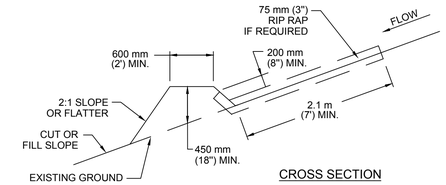


OPEN TREE WELL

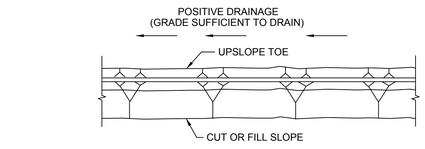




TREE WELL WITH RAISED GRADE



CROSS SECTION



PLAN VIEW

STANDARD SYMBOL
DD

GENERAL NOTES :

1. ALL DIKES SHALL BE MACHINE COMPACTED.
2. ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. a. DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO AN UNDISTURBED STABILIZED AREA OR INTO A LEVEL SPREADER OR GRADE STABILIZATION STRUCTURE.
   b. DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE, SUCH AS A ROCK BERM, BRUSH BERM, STONE OUTLET STRUCTURE, SEDIMENT TRAP OR SEDIMENT BASIN OR TO AN AREA PROTECTED BY ANY OF THESE PRACTICES.
4. UNLESS OTHERWISE SPECIFIED, EROSION STABILIZATION SHALL BE OPEN GRADED ROCK 75 TO 125 mm (3 TO 5 inches) IN DIAMETER EMBEDDED IN SOIL SURFACE.
5. INSPECTION SHALL BE CONDUCTED WEEKLY OR AFTER EACH RAINFALL EVENT.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	SLOPE PROTECTION AND TREE WELLS	
RECORD COPY SIGNED BY J. PATRICK MURPHY 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-6 2 OF 2

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	DIVERSION DIKE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 3/27/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 622S-1

REV	DESCRIPTION	DATE	APR

DESIGNED BY: MW
REVIEWED BY: BG
DRAWN BY: MW

BGE

BROWN & GAY ENGINEERS, INC.
1701 DIRECTORS BLVD, SUITE 1000
AUSTIN, TX 78731
TBPE Registration No. F-1046
TEL 512-879-0400 www.browngay.com

8350 W US 290 HIGHWAY

GREYSTAR 290
8350 W US 290 HIGHWAY, AUSTIN, TEXAS
EROSION & SEDIMENTATION CONTROLS
DETAILS (SHEET 3 OF 3)

STATE OF TEXAS
1-23-2024
MARISSA A. WYRICK
134601
LICENSED
PROFESSIONAL ENGINEER

SP-2022-0579C

G:\TXC\Projects\Greystar\Scenic_Brook\SD\01_CADD\01_Shts\8975-C-SP-DETL-EROS.dwg Layout: EROSION & SEDIMENTATION CONTROLS DETAILS (SHEET 3 OF 3) Plotted: 1/24/2024 1:49:29 PM

Attachment 4

TPDES General
Permit No. TXR150000

General Permit to Discharge Under the Texas Pollutant Discharge Elimination System

Stormwater Discharges Associated with Construction Activities TXR150000

Effective March 5, 2023

printed on recycled paper

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087

GENERAL PERMIT TO DISCHARGE UNDER THE

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces
TPDES General Permit No. TXR150000,
effective March 5, 2018, and amended January 28, 2022

Construction sites that discharge stormwater associated with construction activity located in the state of Texas may discharge to surface water in the state only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, on March 5, 2028.

EFFECTIVE DATE: March 5, 2023

ISSUED DATE: February 27, 2023

For the Commission

TPDES GENERAL PERMIT NUMBER TXR150000

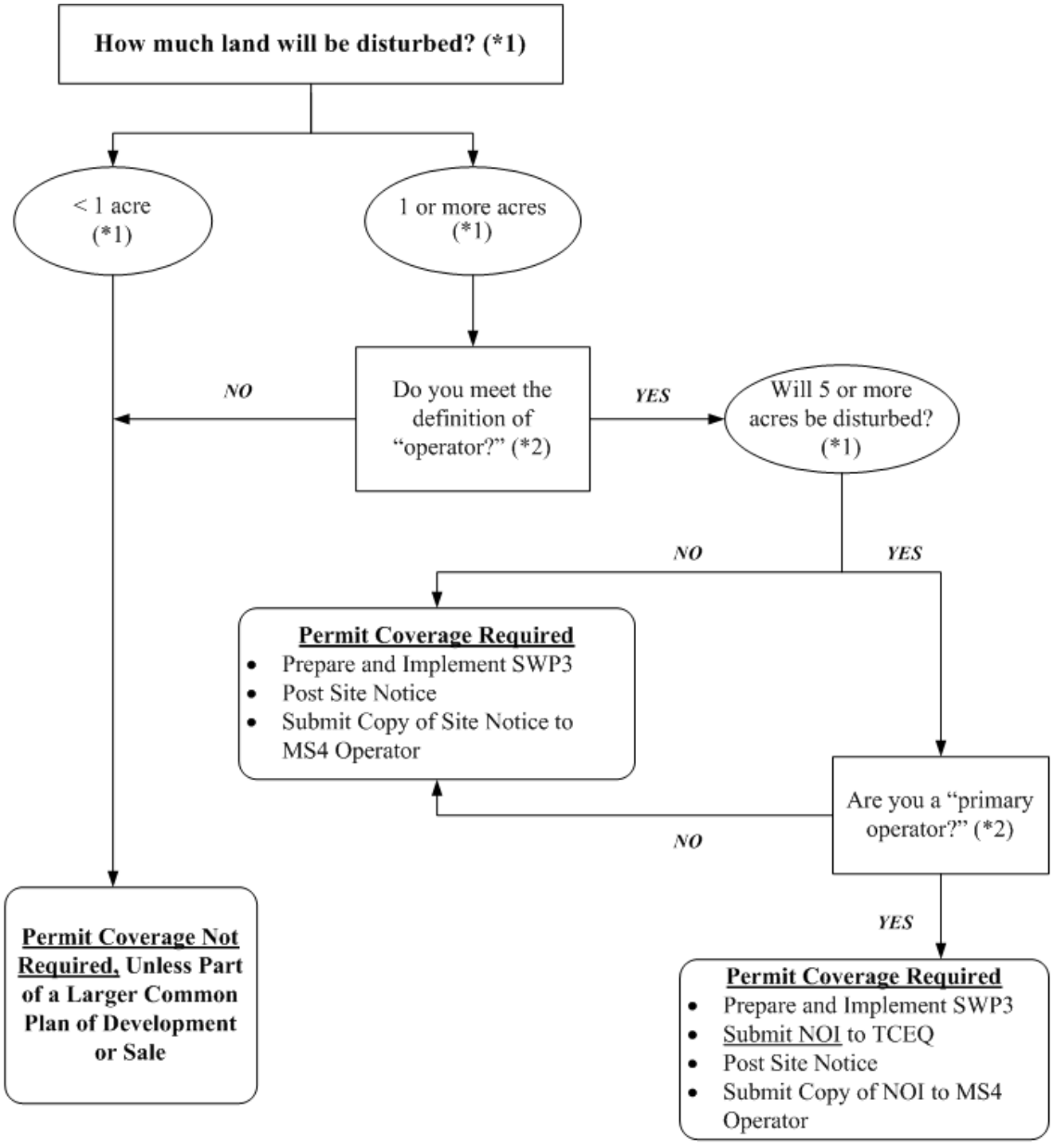
RELATING TO STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Table of Contents

Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required

When calculating the acreage of land area disturbed, include the disturbed land-area of all construction and construction support activities.



***(*1)** To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").*

***(*2)** Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.*

Section B. Definitions

Arid Areas – Areas with an average annual rainfall of zero (0) to ten (10) inches.

Best Management Practices (BMPs) – Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction – The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., demolition; grubbing; stockpiling of fill material; placement of raw materials at the site).

Common Plan of Development – A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located one quarter (¼) mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

Construction Activity – Includes soil disturbance activities, including clearing, grading, excavating, construction-related activity (e.g., stockpiling of fill material, demolition), and construction support activity. This does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing rights-of-way, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Construction Support Activity – A construction-related activity that specifically supports construction activity, which can involve earth disturbance or pollutant-generating activities of its own, and can include, but are not limited to, activities associated with concrete or asphalt batch plants, rock crushers, equipment staging or storage areas, chemical storage areas, material storage areas, material borrow areas, and excavated material disposal areas. Construction support activity must only directly support the construction activity authorized under this general permit.

Dewatering – The act of draining accumulated stormwater or groundwater from building foundations, vaults, trenches, and other similar points of accumulation.

Discharge – For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Drought-Stricken Area – For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html.

Edwards Aquifer – As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

Edwards Aquifer Recharge Zone – Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at https://www.tceq.texas.gov/gis/edwards-viewer.html

Edwards Aquifer Contributing Zone – The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at https://www.tceq.texas.gov/gis/edwards-viewer.html

Effluent Limitations Guideline (ELG) – Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

Facility or Activity – For the purpose of this permit, referring to a construction site, the location of construction activity, or a construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtenances used at a construction site or industrial site.

Final Stabilization – A construction site status where any of the following conditions are met:

(a) All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, or gabions) have been employed.

(b) For individual lots in a residential construction site by either:

(1) the homebuilder completing final stabilization as specified in condition (a) above; or

(2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization. Fulfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).

(c) For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

(d) In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:

(1) temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and

(2) the temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

High-Level Radioactive Waste – Meaning as assigned by 42 United States Code (U.S.C.) Section 10101 (12) and includes spent nuclear fuel as defined by 42 U.S.C. Section 10101 (23).

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Impaired Water – A surface water body that is identified as impaired on the latest approved CWA § 303(d) List or waters with an EPA-approved or established total maximum daily load (TMDL) that are found on the latest EPA approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

Indian Country Land – (1) All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. (40 CFR § 122.2)

Indian Tribe – Any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation (40 CFR § 122.2).

Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices. (40 CFR § 450.11(b)).

Large Construction Activity – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

Linear Project – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

Low Rainfall Erosivity Waiver (LREW) – A written submission to the executive director from an operator of a construction site that is considered as small construction activity under the permit, which qualifies for a waiver from the requirements for small construction activities, only during the period of time when the calculated rainfall erosivity factor is less than five (5).

Minimize – To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) – A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) – A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) – A written submission to the executive director from a discharger authorized under this general permit requesting termination of coverage.

Operator – The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – The person or persons associated with construction activity that meets either of the following two criteria:

(a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

(b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person or entity, often the property owner, whose operational control is limited to:

(a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or

(b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site, where they have control over the construction plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

Outfall – For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee – An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges from construction activity.

Point Source – Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff (40 CFR § 122.2).

Pollutant – Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term “pollutant” includes sediment.

Pollution – The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose (Texas Water Code (TWC) § 26.001(14)).

Rainfall Erosivity Factor (R factor) – The total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

Receiving Water – A "Water of the United States" as defined in 40 CFR § 122.2 or a surface water in the state into which the regulated stormwater discharges.

Semi-arid Areas – Areas with an average annual rainfall of 10 to 20 inches.

Separate Storm Sewer System – A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

Steep Slopes – Where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

Stormwater (or Stormwater Runoff) – Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity – Stormwater runoff, as defined above, from a construction activity.

Structural Control (or Practice) – A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State – Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHWM) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization – A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Thawing Conditions – For the purposes of this permit, thawing conditions are expected based on the historical likelihood of two (2) or more days with daytime temperatures greater than 32 degrees Fahrenheit (℉). This date can be determined by looking at historical weather data.

NOTE: The estimation of thawing conditions is for planning purposes only. During construction, the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

Total Maximum Daily Load (TMDL) – The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Turbidity – A condition of water quality characterized by the presence of suspended solids and/or organic material.

Waters of the United States – Waters of the United States or waters of the U.S. means the term as defined in 40 CFR § 122.2.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

   Discharges of stormwater runoff and certain non-stormwater discharges from small and large construction activities may be authorized under this general permit, except as described in Part II.C. of this permit.

2. Discharges of Stormwater Associated with Construction Support Activities

   Discharges of stormwater runoff and certain non-stormwater discharges from construction support activities as defined in Part I.B. of this general permit may be authorized, provided that the following conditions are met:

   (a) the construction support activities are located within one (1) mile from the boundary of the construction site where the construction activity authorized under the permit is being conducted that requires the support of these activities;

   (b) an SWP3 is developed and implemented for the permitted construction site according to the provisions in Part III.F. of this general permit, including appropriate controls and measures to reduce erosion and the discharge of pollutants in stormwater runoff according to the provisions in Part IV. of this general permit;

   (c) the activities are directly related to the construction site;

   (d) the activities are not a commercial operation, nor serve other unrelated construction projects; and

   (e) the activities do not continue to operate beyond the completion of the construction activity at the project it supports.

   Construction support activities that operate outside the terms provided in (a) through (e) above must obtain authorization under a separate Texas Pollutant Discharge Elimination System (TPDES) permit, which may include the TPDES Multi-Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), an alternative general permit (if available), or an individual water quality permit.

3. Non-Stormwater Discharges

   The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

(a) discharges from emergency fire-fighting activities (emergency fire-fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);

(b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);

(c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where solvents, detergents, and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

(d) uncontaminated water used to control dust;

(e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;

(f) uncontaminated air conditioning condensate;

(g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and

(h) lawn watering and similar irrigation drainage.

4. Other Permitted Discharges

   Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

Section B. Concrete Truck Wash Out

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part VI of this general permit.

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

   Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the Notice of Termination (NOT) or removal of the appropriate TCEQ site notice, as applicable, for the regulated construction activity.

2. Prohibition of Non-Stormwater Discharges

   Except as otherwise provided in Part II.A. of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

3. Compliance with Water Quality Standards

   Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses of surface water in the state are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2. and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.3. of this general permit.

4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

   The permittee shall determine whether the authorized discharge is to an impaired water body on the latest EPA-approved CWA § 303(d) List or waters with an EPA-approved or established TMDL that are found on the latest EPA-approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

   New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standard(s) and are listed as category 4 or 5 in the current version of the *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, and waterbodies listed on the CWA § 303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

   Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for coverage under this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

   Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (see definition for commencement of construction in Part I.B. above)) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

   (a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.

(b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule are in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.

(c) For discharges located within ten (10) stream miles upstream of the Edwards Aquifer recharge zone, applicants shall also submit a copy of the NOI to the appropriate TCEQ regional office.

Counties: Comal, Bexar, Medina, Uvalde, and Kinney

Contact: TCEQ Water Program Manager
San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
(210) 490-3096

Counties: Williamson, Travis, and Hays

Contact: TCEQ Water Program Manager
Austin Regional Office
12100 Park 35 Circle
Room 179, Building A
Austin, Texas 78753
(512) 339-2929

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Exempt Oil and Gas Activities

The CWA § 402(l)(2) provides that stormwater discharges from construction activities related to oil and gas exploration, production, processing, or treatment, or transmission facilities are exempt from regulation under this permit. The term “oil and gas exploration, production, processing, or treatment operations, or transmission facilities” is defined in 33 U.S.C. Annotated § 1362 (24).

The exemption in CWA § 402(l)(2) *includes* stormwater discharges from construction activities regardless of the amount of disturbed acreage, which are necessary to prepare a site for drilling and the movement and placement of drilling equipment, drilling waste management pits, in field treatment plants, and in field transportation infrastructure (e.g., crude oil pipelines, natural gas treatment plants, and both natural gas transmission pipeline compressor and crude oil pumping stations) necessary for the operation of most producing oil and gas fields. Construction activities are defined in 33 U.S. Code § 1362(24) and interpreted by EPA in the final rule. *See* June 12, 2006 Amendments to the NPDES Regulations for Storm Water Discharges Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities (71 FR 33628, Part V. Terminology).

The exemption *does not include* stormwater discharges from the construction of administrative buildings, parking lots, and roads servicing an administrative building at an oil and gas site, as these are considered traditional construction activities.

As described in 40 CFR § 122.26(c)(1)(iii) [*regulations prior to 2006*], discharges from oil and gas construction activities are waived from CWA § 402(l)(2) permit coverage *unless* the construction activity (or construction support activity) has had a discharge of stormwater resulting in the discharge of a reportable quantity of oil or hazardous substances or the discharge contributes to a violation of water quality standards.

Exempt oil and gas activities which have lost their exemption as a result of one of the above discharges, must obtain permit coverage under this general permit, an alternative general permit, or a TPDES individual permit prior to the next discharge.

10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

12. Storage of High-Level Radioactive Waste

Discharges of stormwater from construction activities associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 are not authorized by this general permit. Texas Health and Safety Code (THSC) § 401.0525 prohibits TCEQ from issuing any TPDES authorizations for the construction or operation of these facilities.

Discharges of stormwater from the construction activities associated with the construction of a facility located at the site of currently or formerly operating nuclear power reactors and currently or formerly operating nuclear research and test reactors operated by a university are not prohibited under THSC § 401.0525 and continue to be regulated under this general permit.

13. Other

    Nothing in Part II. of the general permit is intended to negate any person's ability to assert *force majeure* (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC § 70.7

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

   (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

   (b) Ongoing Construction – Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under the TPDES Construction General Permit (CGP) TXR150000 (effective on March 5, 2018, and amended on January 28, 2022), must submit an NOI to renew authorization or an NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim or grace period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

2. Small Construction Activities

   (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

   (b) Ongoing Construction – Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that do not meet the conditions to qualify for termination of this permit as described in Part II.F. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities with Low Potential for Erosion

   Operators of small construction activity, as defined in Part I.B. of this general permit, shall not submit an NOI for coverage, unless otherwise required by the executive director.

   Operators of small construction activities, which occur in certain counties and during periods of low potential for erosion that do not meet the conditions of the waiver described in Part II.G. of this general permit, may be automatically authorized under this general permit if all the following conditions are met prior to the commencement of construction.

   (a) The construction activity occurs in a county and during the corresponding date range(s) listed in Appendix A;

(b) The construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;

(c) All temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site; the permittee signs a completed TCEQ Small Construction Site Notice for low potential for erosion (Form TCEQ-20964), including the certification statement;

(d) A signed and certified copy of the TCEQ Small Construction Site Notice for low potential for erosion is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until final stabilization has been achieved;

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ site notice, with a viewable signature, located on-site and available for review by any applicable regulatory authority.

(e) A copy of the signed and certified TCEQ Small Construction Site Notice for low potential for erosion is provided to the operator of any MS4 receiving the discharge at least two (2) days prior to commencement of construction activities;

(f) Discharges of stormwater runoff or other non-stormwater discharges from any supporting concrete batch plant or asphalt batch plant is separately authorized under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and

(g) Any non-stormwater discharges are either authorized under a separate permit or authorization, are not considered by TCEQ to be a wastewater, or are captured and routed for disposal at a publicly operated treatment works or licensed waste disposal facility.

If all of the conditions in (a) – (h) above are met, then the operator(s) of small construction activities with low potential for erosion are not required to develop a SWP3.

If an operator is conducting small construction activities and any of the above conditions (a) – (h) are not met, the operator cannot declare coverage under the automatic authorization for small construction activities with low potential for erosion and must meet the requirements for automatic authorization (all other) small construction activities, described below in Part II.E.2.

For small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available, an operator may apply for and obtain a waiver from permitting (Low Rainfall Erosivity Waiver – LREW), as described in Part II.G. of this general permit. Waivers from coverage under the LREW do not allow for any discharges of non-stormwater and the operator must ensure that discharges on non-stormwater are either authorized under a separate permit or authorization.

2. Automatic Authorization for Small Construction Activities

Operators of small construction activities as defined in Part I.B. of this general permit shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, as defined in Part I.B. of this general permit or as defined but who do not meet in the conditions and requirements located in Part II.E.1 above, may be automatically authorized for small construction activities, provided that they meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement the SWP3 prior to commencing construction activities;

(b) all operators of regulated small construction activities must post a copy of a signed and certified TCEQ Small Construction Site Notice (Form TCEQ-20963), the notice must be posted at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, at least two (2) days prior to commencing construction activity , and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);

(c) operators must maintain a posted TCEQ Small Construction Site Notice on the approved TCEQ form at the construction site until final stabilization has been achieved; and

> NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Small Construction Site Notice, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

(d) provide a copy of the signed and certified TCEQ Small Construction Site Notice to the operator of any municipal separate storm sewer system (MS4) receiving the discharge at least two (2) days prior to commencement of construction activities.

(e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatory form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Operators for small construction activities must submit this form via mail following the instructions on the approved TCEQ paper form. A new Delegation of Signatory form must be submitted if the delegation changes to another individual or position.

As described in Part I.B of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land and must meet the requirements of Part II.E.3. below.

3. Authorization for Large Construction Activities

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site where the applicant is the operator. The SWP3 must be developed and implemented prior to obtaining coverage and prior to commencing construction activities;

(b) primary operators of large construction activities must submit an NOI prior to commencing construction activity at a construction site. A completed NOI must be submitted to TCEQ electronically using the online ePermits system on TCEQ's website.

Operators with an electronic reporting waiver must submit a completed paper NOI to TCEQ at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the NOI is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the NOI.

If an additional primary operator is added after the initial NOI is submitted, the additional primary operator must meet the same requirements for existing primary operator(s), as indicated above.

If the primary operator changes due to responsibility at the site being transferred from one primary operator to another after the initial NOI is submitted, the new primary operator must submit an electronic NOI, unless they request and obtain a waiver from electronic reporting, at least ten (10) days prior to assuming operational control of a construction site and commencing construction activity.

(c) all operators of large construction activities must post a TCEQ Large Construction Site Notice on the approved TCEQ form (Form TCEQ-20961) in accordance with Part III.D.2. of this permit. The TCEQ site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and must be maintained in that location until final stabilization has been achieved. For linear construction activities, e.g., pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public, local, state, and federal authorities;

(d) two days prior to commencing construction activities, all primary operators must:

i. provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and

ii. list in the SWP3 the names and addresses of all MS4 operators receiving a copy;

(e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatories form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Primary operators must submit this form electronically using the State of Texas Environmental Electronic Reporting System (STEERS), TCEQ's online permitting system, or by paper if the permittee requested and obtained an electronic reporting waiver. A new Delegation of Signatories form must be submitted, if the delegation changes to another individual or position;

(f) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or prior to commencement of construction activities, a primary operator is required to submit an NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

(g) all secondary operators of large construction activities must post a copy of the signed and certified TCEQ Large Construction Site Notice for Secondary Operators on the approved TCEQ form (Form TCEQ-20962) and provide a copy of the signed and certified TCEQ site notice to the operator of any MS4 receiving the discharge at least two (2) days prior to the commencement construction activities.

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Large Construction Site Notice for Secondary Operators, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

Applicants must submit an NOI using the online ePermits system (accessed using STEERS) available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Waivers for Small Construction Activities:

Operators of certain small construction activities may obtain a waiver from coverage under this general permit, if applicable. The requirements are outlined in Part II.G. below.

5. Effective Date of Coverage

(a) Operators of small construction activities as described in either Part II.E.1. or II.E.2. above are authorized immediately following compliance with the applicable conditions of Part II.E.1. or II.E.2. Secondary operators of large construction activities as described in Part II.E.3. above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(b) Primary operators of large construction activities as described in Part II.E.3. above that electronically submit an NOI are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

Operators with an electronic reporting waiver are provisionally authorized 48-hours from the date that a completed paper NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. An authorization is no longer provisional when the executive director finds the NOI is administratively complete and an authorization number is issued to the permittee for the construction site indicated on the NOI.

For construction activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction activities may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(c) Operators are not prohibited from submitting late NOIs or posting late site notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement action for any unpermitted activities that may have occurred between the time construction commenced and authorization under this general permit was obtained.

(d) If operators that submitted NOIs have active authorizations for construction activities that are ongoing when this general permit expires on March 5, 2028, and a new general permit is issued, a 90-day interim (grace) period is granted to provide coverage that is administratively continued until operators with active authorizations can obtain coverage under the newly issued CGP. The 90-day grace period starts on the effective date of the newly issued CGP.

6. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

(a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;

(b) the name, address, and telephone number of the operator filing the NOI for permit coverage;

(c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

(d) the number of acres that will be disturbed by the applicant;

(e) the estimated construction project start date and end date;

(f) confirmation that the project or site will not be located on Indian Country lands;

(g) confirmation if the construction activity is associated with an oil and gas exploration, production, processing, or treatment, or transmission facility (see Part II.C.9.)

(h) confirmation that the construction activities are not associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 (see Part II.C.12.);

(i) confirmation that a SWP3 has been developed in accordance with all conditions of this general permit, that it will be implemented prior to commencement of construction activities, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;

(j) name of the receiving water(s);

(k) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and

(l) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters or *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)* as not meeting applicable state water quality standards.

7. Notice of Change (NOC)

(a) If relevant information provided in the NOI changes, the operator that has submitted the NOI must submit an NOC to TCEQ at least fourteen (14) days before the change occurs. Where a 14-day advance notice is not possible, the operator must submit an NOC to TCEQ within fourteen (14) days of discovery of the change. If the operator becomes aware that it failed to submit any relevant facts or submitted

incorrect information in an NOI, the correct information must be submitted to TCEQ in an NOC within fourteen (14) days after discovery.

(b) Information on an NOC may include, but is not limited to, the following:

i. a change in the description of the construction project;

ii. an increase in the number of acres disturbed (for increases of one (1) or more acres);

iii. or the name of the operator (where the name of the operator has changed).

(c) Electronic NOC.

Applicants must submit an NOC using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. All waivers from electronic reporting are not transferrable. Electronic reporting waivers expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance. A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. Operators are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

(d) Paper NOC.

Applicants who request and obtain an electronic reporting waiver shall submit the NOC on a paper form provided by the executive director, or by letter if an NOC form is not available.

(e) A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. A list that includes the names and addresses of all MS4 operators receiving a copy of the NOC (or NOC letter) must be included in the SWP3. Information that may not be included on an NOC includes but is not limited to the following:

i. transfer of operational control from one operator to another, including a transfer of the ownership of a company. A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing or charter number that is on record with the Texas Secretary of State (SOS) must be changed.

ii. coverage under this general permit is not transferable from one operator to another. Instead, the new operator will need to submit an NOI or LREW, as applicable, and the previous operator will need to submit an NOT.

iii. a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

8. Signatory Requirement for NOI Forms, NOT Forms, NOC Forms, and Construction Site Notices

NOI forms, NOT forms, NOC forms, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

Section F. Terminating Coverage

1. Notice of Termination (NOT) Required

   Each operator that has submitted an NOI for authorization of large construction activities under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit.

   Authorization of large construction must be terminated by submitting an NOT electronically via the online ePermits system available through the TCEQ website, or on a paper NOT form to TCEQ supplied by the executive director with an approved waiver from electronic reporting. Authorization to discharge under this general permit terminates at midnight on the day a paper NOT is postmarked for delivery to the TCEQ or immediately following confirmation of the receipt of the NOT submitted electronically by the TCEQ.

   Applicants must submit an NOT using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

   The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

   (a) final stabilization has been achieved on all portions of the site that are the responsibility of the operator;

   (b) a transfer of operational control has occurred (See Section II.F.4. below); or

   (c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

   Compliance with the conditions and requirements of this permit is required until the NOT is submitted and approved by TCEQ.

2. Minimum Contents of the NOT

   The NOT form shall require, at a minimum, the following information:

   (a) if authorization for construction activity was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for a specific construction site;

   (b) an indication of whether final stabilization has been achieved at the site and a NOT has been submitted or if the permittee is simply no longer an operator at the site;

   (c) the name, address, and telephone number of the permittee submitting the NOT;

   (d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and

   (e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites

   (a) Each operator that has obtained automatic authorization for small construction or is a secondary operator for large construction must perform the following when terminating coverage under the permit:

      i. remove the TCEQ site notice;

      ii. complete the applicable portion of the TCEQ site notice related to removal of the TCEQ site notice; and

      iii. submit a copy of the completed TCEQ site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3).

   (b) The activities described in Part II.F.3.(a) above must be completed by the operator within 30 days of meeting any of the following conditions:

      i. final stabilization has been achieved on all portions of the site that are the responsibility of the operator;

      ii. a transfer of day-to-day operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions has occurred (See Section II.F.4. below); or

      iii. the operator has obtained alternative authorization under an individual or general TPDES permit.

   For Small Construction Sites and Secondary Operators at Large Construction Sites, authorization to discharge under this general permit terminates immediately upon removal of the applicable TCEQ construction site notice. Compliance with the conditions and requirements of this permit is required until the TCEQ construction site notice is removed. The construction site notice cannot be removed until final stabilization has been achieved.

4. Transfer of Day-to-Day Operational Control

   (a) When the primary operator of a large construction activity changes or operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions is transferred to another primary operator, the original operator must do the following:

      i. submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (c) below; and

      ii. submit a copy of the NOT from the primary operator terminating its coverage under the permit and its operational control of the construction site and submit a copy of the NOI from the new primary operator to the operator of any MS4 receiving the discharge in accordance with Part II.F.1. above.

   (b) For transfer of operational control, operators of small construction activities and secondary operators of large construction activities who are not required to submit an NOI must do the following:

      i. the existing operator must remove the original TCEQ construction site notice, and the new operator must post the required TCEQ construction site notice prior to the transfer of operational control, in accordance with the conditions in Part II.F.4.(c) i or ii below; and

ii. a copy of the TCEQ construction site notice, which must be completed and provided to the operator of any MS4 receiving the discharge, in accordance with Part II.F.3. above.

(c) Each operator is responsible for determining its role as an operator as defined in Part I.B. and obtaining authorization under the permit, as described above in Part II.E. 1. - 3. Where authorization has been obtained by submitting an NOI for coverage under this general permit, permit coverage is not transferable from one operator to another. A transfer of operational control can include changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State (SOS). A transfer of operational control can also occur when one of the following criteria is met, as applicable:

i. another operator has assumed control over all areas of the site that do not meet the definition for final stabilization;

ii. all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the original permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Records of this notification (or attempt at notification) shall be retained by the operator transferring operational control to another operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal; or

iii. a homebuilder has purchased one (1) or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements of this permit. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to the lot(s) it has operational control over in a larger common plan of development, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, when the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5).

The operator must submit a Low Rainfall Erosivity Waiver (LREW) certification form to the TCEQ electronically via the online ePermits system available through the TCEQ website. The LREW form is a certification by the operator that the small construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5).

Applicants who request and obtain an electronic reporting waiver shall submit the LREW on a paper form provided by the executive director at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the LREW is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the LREW. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

This LREW from coverage does not apply to any non-stormwater discharges, including what is allowed under this permit. The operator must ensure that all non-stormwater discharges are either authorized under a separate permit or authorization or are captured and routed to an authorized treatment facility for disposal.

2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

(a) estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.

(b) find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.

(c) find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.

(d) refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.

(e) multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than five (5), then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: https://lew.epa.gov/, or using another available resource.

A copy of the LREW certification form is not required to be posted at the small construction site.

3. Effective Date of an LREW

Unless otherwise notified by the executive director, operators of small construction activities seeking coverage under an LREW are provisionally waived from the otherwise applicable requirements of this general permit 48-hours from the date that a completed paper LREW certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, made via the online ePermits system available through the TCEQ website.

Applicants seeking coverage under an LREW must submit an application for an LREW using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Activities Extending Beyond the LREW Period

   If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

   (a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new LREW form at least two (2) days before the end of the original waiver period; or

   (b) obtain authorization under this general permit according to the requirements for automatic authorization for small construction activities in Part II.E.2. of this permit, prior to the end of the approved LREW period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

   Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC Chapter 305 (relating to Consolidated Permits). Applications for individual permit coverage must be submitted at least 330 days prior to commencement of construction activities to ensure timely authorization. Existing coverage under this general permit should not be terminated until an individual permit is issued and in effect.

2. General Permit Alternative

   Any discharges eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), as applicable.

3. Individual Permit Required

   The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

   (a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;

   (b) the activity being determined to cause, has a reasonable potential to cause, or contribute to a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state; and

   (c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC § 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.

      A discharger with a TCEQ compliance history rating of “unsatisfactory” is ineligible for coverage under this general permit. In that case, 30 TAC § 60.3 requires the executive director to deny or suspend an authorization to discharge under a general permit. However, per TWC § 26.040(h), a discharger is entitled to a hearing before the commission prior to having an authorization denied or suspended for having an “unsatisfactory” compliance history.

   Denial of authorization to discharge under this general permit or suspension of a permittee’s authorization under this general permit for reasons other than compliance history shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC § 205.3 (relating to Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit. All authorizations that are active at the time the permit term expires will be administratively continued as indicated in Part II.I.2. below and in Part II.D.1.(b) and D.2.(b) of this permit.
2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

Part III. Stormwater Pollution Prevention Plans (SWP3)

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2. and II.E.3. of this general permit that will reach waters of the U.S. This includes discharges to MS4s and privately owned separate storm sewer systems that drain into surface water in the state or waters of the U.S.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one (1) SWP3 for a site, operators must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

An SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3., in compliance with the terms and conditions of this permit.

An SWP3 must also identify any potential sources of pollution that have been determined to cause, have a reasonable potential to cause, or contribute to a violation of water quality standards or have been found to cause or contribute to the loss of a designated use of surface water in the state from discharges of stormwater from construction activities and construction support activities. Where potential sources of these pollutants are present at a construction site, the SWP3 must also contain a description of the management practices that will be used to prevent these pollutants from being discharged into surface water in the state or waters of the U.S.

> NOTE: Construction support activities can also include vehicle repair areas, fueling areas, etc. that are present at a construction site solely for the support construction activities and are only used by operators at the construction site.

The SWP3 is intended to serve as a road map for how the construction operator will comply with the effluent limits and other conditions of this permit. Additional portions of the effluent limits are established in Part IV. of the permit.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators of small and large construction activities must independently obtain authorization under this permit but may work together with other regulated operators at the construction site to prepare and implement a single, comprehensive SWP3, which can be shared by some or all operators, for the construction activities that each of the operators are performing at the entire construction site.

1. The SWP3 must include the following:
   (a) for small construction activities – the name of each operator that participates in the shared SWP3;
   (b) for large construction activities – the name of each operator that participates in the shared SWP3, the general permit authorization numbers of each operator (or the date that the NOI was submitted to TCEQ by each operator that has not received an authorization number for coverage under this permit); and
   (c) for large and small construction activities – the signature of each operator participating in the shared SWP3.
2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

Section B. Responsibilities of Operators

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

   All secondary operators and primary operators with control over construction plans and specifications shall:
   (a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;
   (b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;
   (c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMP s as necessary to remain compliant with the conditions of this general permit; and

(d) ensure that the SWP3 for portions of the project where each operator has control indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If a primary operator has not been authorized or has abandoned the site, the secondary operator is considered to be the responsible party and must obtain authorization as a primary operator under the permit, until the authority for day-to-day operational control is transferred to another primary operator. The new primary operator must update or develop a new SWP3 that will reflect the transfer of operational control and include any additional updates to the SWP3 to meet requirements of the permit.

2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

(a) meets the requirements of this general permit for those portions of the project where they are operators;

(b) identifies the parties responsible for implementation of BMPs described in the SWP3;

(c) indicates areas of the project where they have operational control over day-to-day activities; and

(d) the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications for areas where they have operational control over day-to-day activities.

Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.

   NOTE: The SWP3 may be prepared and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally valid with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

2. Operators with authorization for construction activity under this general permit must post a TCEQ site notice at the construction site at a place readily available for viewing by the general public, and local, state, and federal authorities.

(a) Primary and secondary operators of large construction activities must each post a TCEQ construction site notice, respective to their role as an operator at the construction site, as required above and according to requirements in Part II.E.3. of this general permit.

(b) Primary and secondary operators of small construction activities must post the TCEQ site notice as required in Part III.D.2.(a) above and for the specific type of small construction described in Part II.E.1. and 2. of the permit.

(c) If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. TCEQ construction site notices for small and large construction activities at these linear construction sites may be relocated, as necessary, along the length of the project, but must still be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:

i. the site-specific TPDES authorization number for the project if assigned;

ii. the operator name, contact name, and contact phone number;

iii. a brief description of the project; and

iv. the location of the SWP3.

3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Revisions and Updates to SWP3s

The permittee must revise or update the SWP3, including the site map, within seven (7) days of when any of the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by construction site personnel authorized by the permittee, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must be developed and implemented by primary operators of small and large construction activities and include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part IV. of the general permit.

1. A site or project description, which includes the following information:

(a) a description of the nature of the construction activity;

(b) a list of potential pollutants and their sources;

(c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;

(d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including areas where construction support activities (defined in Part I.B. of this general permit) occur;

(e) data describing the soil or the quality of any discharge from the site;

(f) a map showing the general location of the site (e.g., a portion of a city or county map);

(g) a detailed site map (or maps) indicating the following:

i. property boundary(ies);

ii. drainage patterns and approximate slopes anticipated before and after major grading activities;

iii. areas where soil disturbance will occur (note any phasing), including any demolition activities;

iv. locations of all controls and buffers, either planned or in place;

v. locations where temporary or permanent stabilization practices are expected to be used;

vi. locations of construction support activities, including those located off-site;

vii. surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicate whether those waters are impaired;

NOTE: Surface waters adjacent to or in close proximity to the site means any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s).

viii. locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;

ix. vehicle wash areas; and

x. designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).

Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.

(h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;

(i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;

(j) a copy of this TPDES general permit (an electronic copy of this TPDES general permit or a current link to this TPDES general permit on the TCEQ webpage is acceptable);

(k) the NOI and the acknowledgement of provisional and non-provisional authorization for primary operators of large construction sites, and the TCEQ site notice for small construction sites and for secondary operators of large construction sites;

(l) if signatory authority is delegated by an authorized representative, then a copy of the formal notification to TCEQ, as required by 30 TAC 305.128 relating to Signatories to Reports must be filed in the SWP3 and made available for review upon request by TCEQ or local MS4 Operator. For primary operators of large construction activities, the formal notification to TCEQ must be submitted either electronically through

STEERS, TCEQ's electronic reporting system, or, if qualifying for an electronic reporting waiver, by paper on a Delegation of Signatories form. For operators or small construction activities, the formal notification to TCEQ must be submitted by paper on a Delegation of Signatories form.

(m) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site where construction support activities will occur; and

(n) locations of all pollutant-generating activities at the construction site and where construction support activities will occur, such as the following: Paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.

2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for installation and implementation. At a minimum, the description must include the following components:

(a) General Requirements

i. Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.

ii. Control measures must be properly selected, installed, and maintained according to good engineering practices, and the manufacturer's or designer's specifications.

iii. Controls must be developed to minimize the offsite transport of litter, construction debris, construction materials, and other pollutants required of Part IV.D.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the construction site, where small or large construction activity will occur. The erosion control and stabilization practices selected by the permittee must be compliant with the requirements for sediment and erosion control, located in Part IV. of this permit. The description of the SWP3 must also include a schedule of when the practices will be implemented. Site plans must ensure that existing vegetation at the construction site is preserved where it is possible.

i. Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

ii. The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:

(A) the dates when major grading activities occur;

(B) the dates when construction activities temporarily or permanently cease on a portion of the site; and

(C) the dates when stabilization measures are initiated.

iii. Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding fourteen (14) calendar days. Stabilization

measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than fourteen (14) calendar days after the initiation of soil stabilization measures:

(A) where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased due to frozen conditions, non-vegetative controls must be implemented until thawing conditions (as defined in Part I.B. of this general permit) are present, and vegetative stabilization measures can be initiated as soon as practicable.

(B) in arid areas, semi-arid areas, or drought-stricken areas, as they are defined in Part I.B. of this general permit, where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, other types of erosion control and stabilization measures must be initiated at the site as soon as practicable. Where vegetative controls are infeasible due to arid conditions, and within fourteen (14) calendar days of a temporary or permanent cessation of construction activity in any portion of the site, the operator shall immediately install non-vegetative erosion controls in areas of the construction site where construction activity is complete or has ceased. If non-vegetative controls are infeasible, the operator shall install temporary sediment controls as required in Part III.F.2.(b)iii.(C) below.

(C) in areas where non-vegetative controls are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequencies established in Part III.F.8.(c) for unstabilized sites.

(D) the requirement for permittees to initiate stabilization is triggered as soon as it is known with reasonable certainty that construction activity at the site or in certain areas of the site will be stopped for 14 or more additional calendar days. If the initiation or completion of vegetative stabilization is prevented by circumstances beyond the control of the permittee, the permittee must employ and implement alternative stabilization measures immediately. When conditions at the site changes that would allow for vegetative stabilization, then the permittee must initiate or complete vegetative stabilization as soon as practicable.

iv. Final stabilization must be achieved prior to termination of permit coverage.

v. TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls. Controls selected by the permittee must be compliant with the requirements in Part IV. of this permit.

i. Sites With Drainage Areas of Ten (10) or More Acres

(A) Sedimentation Basin(s) or Impoundments

(1) A sedimentation basin or similar impoundment is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin or impoundment may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin or similar impoundment. Capacity calculations shall be included in the SWP3. Sedimentation basins must be designed for and appropriate for controlling runoff at the site and existing detention or retention ponds at the site may not be appropriate.

(2) Where rainfall data is not available, or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

(3) If a sedimentation basin or impoundment is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin or impoundment is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins or impoundments are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins or impoundments.

(4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

ii. Controls for Sites with Drainage Areas Less than Ten (10) Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

(C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part IV.F. of this general permit.

3. Description of Permanent Stormwater Controls

A description of any stormwater control measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are responsible for the installation and maintenance of stormwater management measures, as follows:

(a) permittees authorized under the permit for small construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site; or

(b) permittees authorized under the permit for large construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site and prior to submission of an NOT.

4. Other Required Controls and BMPs

(a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and dust. The SWP3 shall include a description of controls utilized to control the generation of pollutants that could be discharged in stormwater from the site.

(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

(c) The SWP3 must include a description of potential pollutant sources in discharges of stormwater from all areas of the construction site where construction activity, including construction support activities, will be located, and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

(e) Permittees shall design and utilize appropriate controls in accordance with Part IV. of this permit to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

(f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part IV. of this general permit.

(g) For demolition of any structure with at least 10,000 square feet of floor space that was built or renovated before January 1, 1980, and the receiving waterbody is impaired for polychlorinated biphenyls (PCBs):

i. implement controls to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures to precipitation and to stormwater; and

ii. ensure that disposal of such materials is performed in compliance with applicable state, federal, and local laws.

5. Documentation of Compliance with Approved State and Local Plans

   (a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.

   (b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.

   (c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.

6. Maintenance Requirements

   (a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, as soon as the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

   (b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.

   (c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

   (d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.

7. Observation and Evaluation of Dewatering Controls Pursuant to Part IV.C. of this General Permit

   (a) Personnel provided by the permittee must observe and evaluate dewatering controls at a minimum of once per day on the days where dewatering discharges from the construction site occur. Personnel conducting these evaluations must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site. Personnel conducting these evaluations are not required to have signatory authority for reports under 30 TAC § 305.128 (relating to Signatories to Reports).

(b) Requirements for Observations and Evaluations

i. A report summarizing the scope of any observation and evaluation must be completed within 24-hours following the evaluation. The report must also include, at a minimum, the following:

(A) date of the observations and evaluation;

(B) name(s) and title(s) of personnel making the observations and evaluation;

(C) approximate times that the dewatering discharge began and ended on the day of evaluation, or if the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous (this information can be reported by personnel initiating the dewatering discharge);

(D) estimates of the rate (in gallons per day) of discharge on the day of evaluation;

(E) whether or not any indications of pollutant discharge were observed at the point of discharge (e.g., foam, oil sheen, noticeable odor, floating solids, suspended sediments, or other obvious indicators of stormwater pollution); and

(F) major observations, including: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

ii. Actions taken as a result of evaluations, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

iii. The names and qualifications of personnel making the evaluations for the permittee may be documented once in the SWP3 rather than being included in each report.

8. Inspections of All Controls

(a) Personnel provided by the permittee must inspect disturbed areas (cleared, graded, or excavated) of the construction site that do not meet the requirements of final stabilization in this general permit, all locations where stabilization measures have been implemented, areas of construction support activity covered under this permit, stormwater controls (including pollution prevention controls) for evidence of, or the potential for, the discharge of pollutants, areas where stormwater typically flows within the construction site, and points of discharge from the construction site.

i. Personnel conducting these inspections must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site.

ii. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128 (relating to Signatories to Reports).

(b) Requirements for Inspections

i. Inspect all stormwater controls (including sediment and erosion control measures identified in the SWP3) to ensure that they are installed properly, appear to be operational, and minimizing pollutants in discharges, as intended.

ii. Identify locations on the construction site where new or modified stormwater controls are necessary.

iii. Check for signs of visible erosion and sedimentation that can be attributed to the points of discharge where discharges leave the construction site or discharge into any surface water in the state flowing within or adjacent to the construction site.

iv. Identify any incidents of noncompliance observed during the inspection.

v. Inspect locations where vehicles enter or exit the site for evidence of off-site sediment tracking.

vi. If an inspection is performed when discharges from the construction site are occurring: identify all discharge points at the site, and observe and document the visual quality of the discharge (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other such indicators of pollutants in stormwater).

vii. Complete any necessary maintenance needed, based on the results of the inspection and in accordance with the requirements listed in Part III.F.6. above.

(c) Inspection frequencies:

i. Inspections of construction sites must be conducted at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, unless as otherwise provided below in Part III.F.8.(c)ii. – v. below.

(A) If a storm event produces 0.5 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.5 inches but together produce 0.5 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.5 inches of rain or more has fallen. When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.

(B) If a storm event produces 0.5 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.5 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.5 inches or more of rain (i.e., only two (2) inspections would be required for such a storm event). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.

ii. Inspection frequencies must be conducted at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized.

iii. Inspection frequencies for construction sites, where runoff is unlikely due to the occurrence of frozen conditions at the site, must be conducted at least once every month until thawing conditions begin to occur (see definitions for thawing conditions in Part I.B.). The SWP3 must also contain a record of the approximate beginning and ending dates of when frozen conditions occurred at the site, which resulted in inspections being conducted monthly, while those

conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

iv. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of when drought conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

v. As an alternative to the inspection schedule in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

vi. The inspection procedures described in Part III.F.8.(c)i. – v above can be performed at the frequencies and under the applicable conditions indicated for each schedule option, provided that the SWP3 reflects the current schedule and that any changes to the schedule are made in accordance with the following provisions: the inspection frequency schedule can only be changed a maximum of once per calendar month and implemented within the first five (5) business days of a calendar month; and the reason for the schedule change documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

(d) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.8.(a) above.

i. Inspection of linear construction sites could require the use of vehicles that could compromise areas of temporary or permanent stabilization, cause additional disturbance of soils, and result in the increase the potential for erosion. In these circumstances, controls must be inspected at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed.

ii. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.8.(a) above. The conditions of the controls along each inspected 0.25-mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25-mile portion to either the end of the next 0.25-mile inspected portion, or to the end of the project, whichever occurs first.

As an alternative to the inspection schedule described in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

iii. the SWP3 for a linear construction site must reflect the current inspection schedule. Any changes to the inspection schedule must be made in accordance with the following provisions:

(A) the schedule may be changed a maximum of one time each month;

(B) the schedule change must be implemented at the beginning of a calendar month, and

(C) the reason for the schedule change must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

(e) Adverse Conditions.

Requirements for inspections may be temporarily suspended for adverse conditions. Adverse conditions are conditions that are either dangerous to personnel (e.g., high wind, excessive lightning) or conditions that prohibit access to the site (e.g., flooding, freezing conditions). Adverse conditions that result in the temporary suspension of a permit requirement to inspect must be documented and included as part of the SWP3. Documentation must include:

i. the date and time of the adverse condition,

ii. names of personnel that witnessed the adverse condition, and

iii. a narrative for the nature of the adverse condition.

(f) In the event of flooding or other adverse conditions which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable. Inspection Reports.

i. A report summarizing the scope of any inspection must be completed within 24-hours following the inspection. The report must also include the date(s) of the inspection and major observations relating to the implementation of the SWP3. Major observations in the report must include: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

ii. Actions taken as a result of inspections, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

iii. The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.

(g) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. If necessary, modify your site map to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.

9. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3. of this permit.

10. The SWP3 must include the information required in Part III.B. of this general permit.

11. The SWP3 must include pollution prevention procedures that comply with Part IV.D. of this general permit.

Part IV. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§ 125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT). The BPT are also required by and must satisfy the Effluent Limitations Guideline (ELG) permitting requirement for application of 40 CFR § 450.24 New Source Performance Standards (NSPS), 40 CFR § 450.22 Best Available Technology Economically Achievable (BAT), and 40 CFR § 450.23 Best Conventional Pollutant Control Technology (BCT).

Section A. Erosion and Sediment Controls

Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

1. control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges;
2. control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge point(s);
3. minimize the amount of soil exposed during construction activity;
4. minimize the disturbance of steep slopes;
5. minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
6. provide and maintain appropriate natural buffers around surface water in the state. Direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are infeasible and shall implement additional erosion and sediment controls to reduce sediment load;
7. preserve native topsoil at the site, unless the intended function of a specific area of the site dictates that the topsoil be disturbed or removed, or it is infeasible; and
8. minimize soil compaction. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:
   (a) restrict vehicle and equipment use to avoid soil compaction; or
   (b) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

   Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.
9. TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute “surface water” for the purposes of triggering the buffer requirement in Part IV.A.(6) above.

Section B. Soil Stabilization

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next workday, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary stabilization must be completed no more than fourteen (14) calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.

Section C. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls to address sediment and prevent erosion. Operators must observe and evaluate the dewatering controls once per day while the dewatering discharge occurs as described in Part III.F.7. of this general permit.

Section D. Pollution Prevention Measures

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

1. minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
2. minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;
3. minimize the exposure of waste materials by closing waste container lids at the end of the workday and during storm events. For waste containers that do not have lids, where the container itself is not sufficiently secure enough to prevent the discharge of pollutants absent a cover and could leak, the permittee must provide either a cover (e.g., a tarp, plastic sheeting, temporary roof) to minimize exposure of wastes to precipitation, stormwater, and wind, or a similarly effective means designed to minimize the discharge of pollutants (e.g., secondary containment). Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use);
4. minimize exposure of wastes by implementing good housekeeping measures. Wastes must be cleaned up and disposed of in designated waste containers on days of operation at the site. Wastes must be cleaned up immediately if containers overflow;

5. minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release; and
6. minimize exposure of sanitary waste by positioning portable toilets so that they are secure and will not be tipped or knocked over, and so that they are located away from surface water in the state and stormwater inlets or conveyances.

Section E. Prohibited Discharges

The following discharges are prohibited:

1. wastewater from wash out of concrete, unless managed by an appropriate control;
2. wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. soaps or solvents used in vehicle and equipment washing; and
5. toxic or hazardous substances from a spill or other release.

Section F. Surface Outlets

When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible. If infeasible, the permittee must provide documentation in the SWP3 to support the determination, including the specific conditions or time periods when this exception will apply.

Part V. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants present at regulated construction sites and operated as a construction support activity may be authorized under the provisions of this general permit, provided that the following requirements are met for concrete batch plant(s) authorized under this permit. Only the discharges of stormwater runoff and non-stormwater from concrete batch plants that meet the requirements of a construction support activity can be authorized under this permit (see the requirements for "Non-Stormwater Discharges" in Part II.A.3. and "Discharges of Stormwater Associated with Construction Support Activity" in Part II.A.2.).

If discharges of stormwater runoff or non-stormwater from concrete batch plants are not authorized under this general permit, then discharges must be authorized under an alternative general permit or individual permit [see the requirement in Part II.A.2.(c)].

This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease (*1)	15 mg/L	1/quarter (*2) (*3)	Grab (*4)
Total Suspended Solids (*1)	50 mg/L	1/quarter (*2) (*3)	Grab (*4)
pH	6.0 – 9.0 Standard Units	1/quarter (*2) (*3)	Grab (*4)
Total Iron (*1)	1.3 mg/L	1/quarter (*2) (*3)	Grab (*4)

(*1) All analytical results for these parameters must be obtained from a laboratory that is accredited based on rules located in 30 TAC § 25.4 (a) or through the National Environmental Laboratory Accreditation Program (NELAP). Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

(*2) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(*3) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

January through March
April through June
July through September
October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Part II.E.2., and prior to terminating coverage.

(*4) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

   The operator's investigation must identify the following:

   (a) any additional potential sources of pollution, such as spills that might have occurred;

   (b) necessary revisions to good housekeeping measures that are part of the SWP3;

   (c) additional BMPs, including a schedule to install or implement the BMPs; and

   (d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

   Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater run-on to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

Section B. Best Management Practices (BMPs) and SWP3 Requirements

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit, which include, but are not limited to the applicable requirements located in Part III.F.8. of this general permit, as follows:

1. Description of Potential Pollutant Sources – The SWP3 must provide a description of potential sources (activities and materials) that can cause, have a reasonable potential to cause or contribute to a violation of water quality standards or have been found to cause, or contribute to, the loss of a designated use of surface water in the state in stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater discharges associated with industrial activity and non-stormwater discharges (described in Part II.A.3. of this general permit), in compliance with the terms and conditions of this general permit, including the protection of water quality, and must ensure the implementation of these practices.

   The following must be developed, at a minimum, in support of developing this description:

   (a) Drainage – The site map must include the following information:

      i. the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;

      ii. a depiction of the drainage area and the direction of flow to the outfall(s);

      iii. structural controls used within the drainage area(s);

iv. the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

v. the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

(b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and precipitation and that have a potential to affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.

(c) Spills and Leaks – A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and precipitation and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.

(d) Sampling Data – A summary of existing stormwater discharge sampling data must be maintained, if available.

2. Measures and Controls – The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from Part V.B.1. of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:

(a) Good Housekeeping – Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.

i. Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.

ii. Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.

(b) Spill Prevention and Response Procedures – Areas where potential spills that can contribute pollutants to stormwater runoff and precipitation, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

(c) Inspections – Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128. Inspections of facilities in operation must be performed

once every seven (7) days. Inspections of facilities that are not in operation must be performed at a minimum of once per month. The current inspection frequency being implemented at the facility must be recorded in the SWP3. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

(d) Employee Training – An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, and at a minimum, must consist of one (1) training prior to the initiation of operation of the concrete batch plant.

(e) Record Keeping and Internal Reporting Procedures – A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(f) Management of Runoff – The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following:

(a) visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include, but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.

(b) based on the results of the evaluation, the following must be revised as appropriate within two (2) weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part V.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part V.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.

(c) the permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any

incidence(s), and the report must be signed according to 30 TAC § 305.128 (relating to Signatories to Reports).

(d) the Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part V.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part VI of this general permit.

Part VI. Concrete Truck Wash Out Requirements

This general permit authorizes the land disposal of wash out from concrete trucks at construction sites regulated under this general permit, provided the following requirements are met. Any discharge of concrete production wastewater to surface water in the state must be authorized under a separate TCEQ general permit or individual permit.

A. Discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.

B. Concrete truck wash out water shall be disposed in areas at the construction site where structural controls have been established to prevent discharge to surface water in the state, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent discharge to surface water in the state. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.

C. Wash out of concrete trucks during rainfall events shall be minimized. The discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.

D. The disposal of wash out water from concrete trucks, made under authorization of this general permit must not cause or contribute to groundwater contamination.

E. If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VII. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required in Part II.F.1. and 2. of this permit. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

A. a copy of the SWP3;

B. all reports and actions required by this permit, including a copy of the TCEQ construction site notice;

C. all data used to complete the NOI, if an NOI is required for coverage under this general permit; and

D. all records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VIII. Standard Permit Conditions

A. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued (CWA and TWC), and is grounds for enforcement action, for terminating, revoking and reissuance, or modification, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (a).

B. Authorization under this general permit may be modified, suspended, revoked and reissued, terminated or otherwise suspended for cause, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41(f). Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for modifying, revoking and reissuing, terminating or, otherwise suspending authorization under this permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (h). Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.

C. It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.

D. Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§ 361.032-361.033 and 361.037, and 40 CFR § 122.41(i). The statement in TWC § 26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.

E. The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:

1. negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA § 402, or any requirement imposed in a pretreatment program approved under CWA §§ 402(a)(3) or 402(b)(8);
2. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
3. knowingly violating CWA §303 and placing another person in imminent danger of death or serious bodily injury.

F. All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

G. Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.

H. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

I. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

J. The permittee shall comply with the monitoring and reporting requirements in 40 CFR § 122.41(j) and (l), as applicable.

K. Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

Part IX. Fees

A. A fee of must be submitted along with the NOI:

1. $225 if submitting an NOI electronically, or
2. $325 if submitting a paper NOI.

B. Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.

C. No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

Appendix A: Automatic Authorization

Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30

Archer: Dec. 15 - Feb. 14

Armstrong: Nov. 15 - Apr. 30

Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Baylor: Dec. 15 - Feb. 14

Borden: Nov. 15 - Apr. 30

Brewster: Nov. 15 - Apr. 30

Briscoe: Nov. 15 - Apr. 30

Brown: Dec. 15 - Feb. 14

Callahan: Dec. 15 - Feb. 14

Carson: Nov. 15 - Apr. 30

Castro: Nov. 15 - Apr. 30

Childress: Dec. 15 - Feb. 14

Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Coke: Dec. 15 - Feb. 14

Coleman: Dec. 15 - Feb. 14

Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Concho: Dec. 15 - Feb. 14

Cottle: Dec. 15 - Feb. 14

Crane: Nov. 15 - Apr. 30

Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Crosby: Nov. 15 - Apr. 30

Culberson: Nov. 1 - May 14

Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Dawson: Nov. 15 - Apr. 30

Deaf Smith: Nov. 15 - Apr. 30

Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Dimmit: Dec. 15 - Feb. 14

Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Eastland: Dec. 15 - Feb. 14

Ector: Nov. 15 - Apr. 30

Edwards: Dec. 15 - Feb. 14

El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14

Fisher: Dec. 15 - Feb. 14

Floyd: Nov. 15 - Apr. 30

Foard: Dec. 15 - Feb. 14

Gaines: Nov. 15 - Apr. 30

Garza: Nov. 15 - Apr. 30

Glasscock: Nov. 15 - Apr. 30

Hale: Nov. 15 - Apr. 30

Hall: Feb. 1 - Mar. 30

Hansford: Nov. 15 - Apr. 30

Hardeman: Dec. 15 - Feb. 14

Hartley: Nov. 15 - Apr. 30

Haskell: Dec. 15 - Feb. 14

Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Howard: Nov. 15 - Apr. 30

Hudspeth: Nov. 1 - May 14

Hutchinson: Nov. 15 - Apr. 30

Irion: Dec. 15 - Feb. 14

Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14

Jones: Dec. 15 - Feb. 14

Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30

Kerr: Dec. 15 - Feb. 14

Kimble: Dec. 15 - Feb. 14

King: Dec. 15 - Feb. 14

Kinney: Dec. 15 - Feb. 14

Knox: Dec. 15 - Feb. 14

Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Lubbock: Nov. 15 - Apr. 30

Lynn: Nov. 15 - Apr. 30

Martin: Nov. 15 - Apr. 30

Mason: Dec. 15 - Feb. 14

Maverick: Dec. 15 - Feb. 14

McCulloch: Dec. 15 - Feb. 14

Menard: Dec. 15 - Feb. 14

Midland: Nov. 15 - Apr. 30

Mitchell: Nov. 15 - Apr. 30

Moore: Nov. 15 - Apr. 30

Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Nolan: Dec. 15 - Feb. 14

Oldham: Nov. 15 - Apr. 30

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Pecos: Nov. 15 - Apr. 30
Potter: Nov. 15 - Apr. 30
Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Randall: Nov. 15 - Apr. 30
Reagan: Nov. 15 - Apr. 30
Real: Dec. 15 - Feb. 14
Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Runnels: Dec. 15 - Feb. 14
Schleicher: Dec. 15 - Feb. 14
Scurry: Nov. 15 - Apr. 30
Shackelford: Dec. 15 - Feb. 14
Sherman: Nov. 15 - Apr. 30
Stephens: Dec. 15 - Feb. 14
Sterling: Nov. 15 - Apr. 30
Stonewall: Dec. 15 - Feb. 14
Sutton: Dec. 15 - Feb. 14
Swisher: Nov. 15 - Apr. 30
Taylor: Dec. 15 - Feb. 14
Terrell: Nov. 15 - Apr. 30
Terry: Nov. 15 - Apr. 30
Throckmorton: Dec. 15 - Feb. 14
Tom Green: Dec. 15 - Feb. 14
Upton: Nov. 15 - Apr. 30
Uvalde: Dec. 15 - Feb. 14
Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30
Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Wichita: Dec. 15 - Feb. 14
Wilbarger: Dec. 15 - Feb. 14
Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Young: Dec. 15 - Feb. 14
Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28
Zavala: Dec. 15 - Feb. 14

Appendix B: Storm Erosivity (EI) Zones in Texas

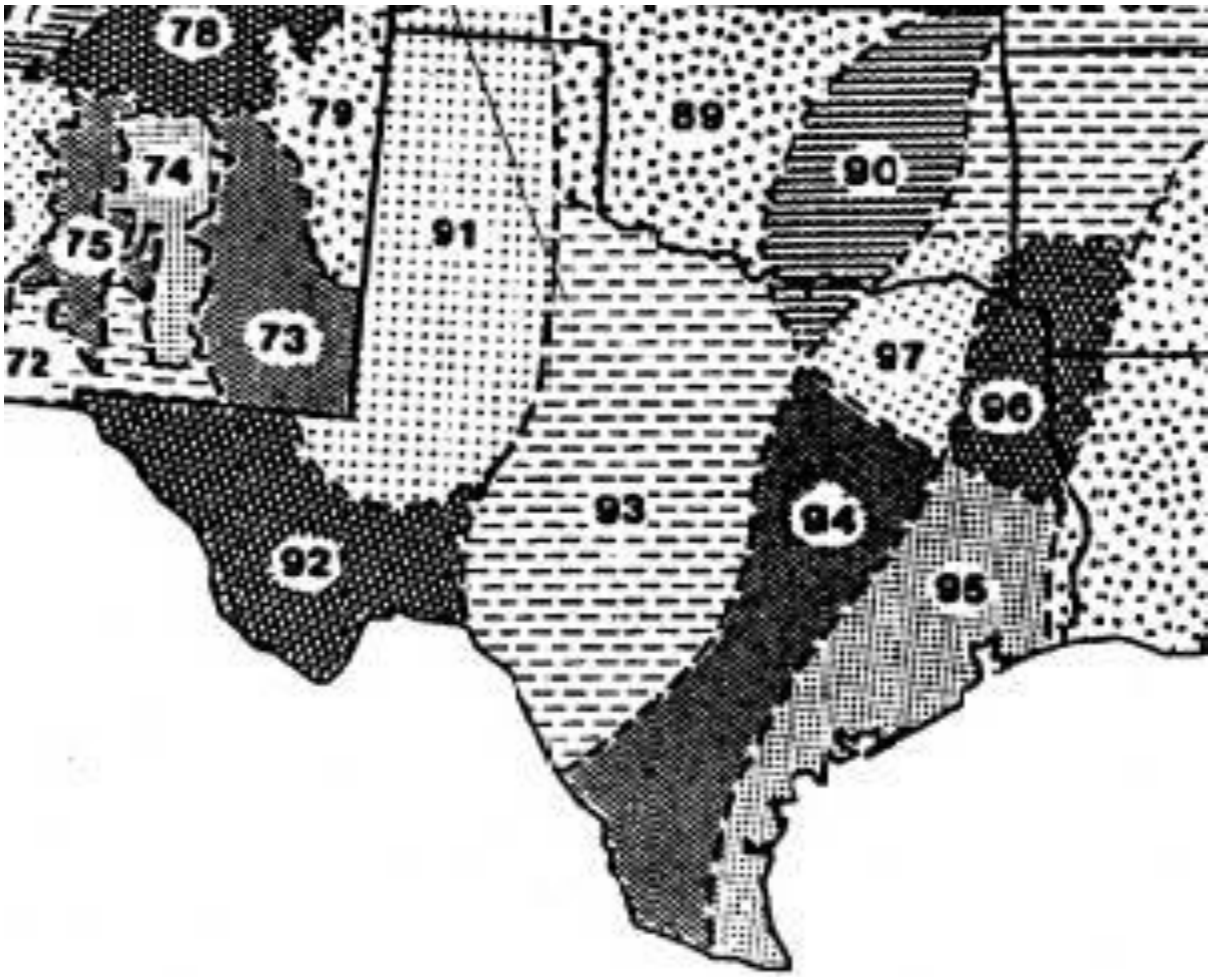


Figure B. EI Distribution Zones

Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map

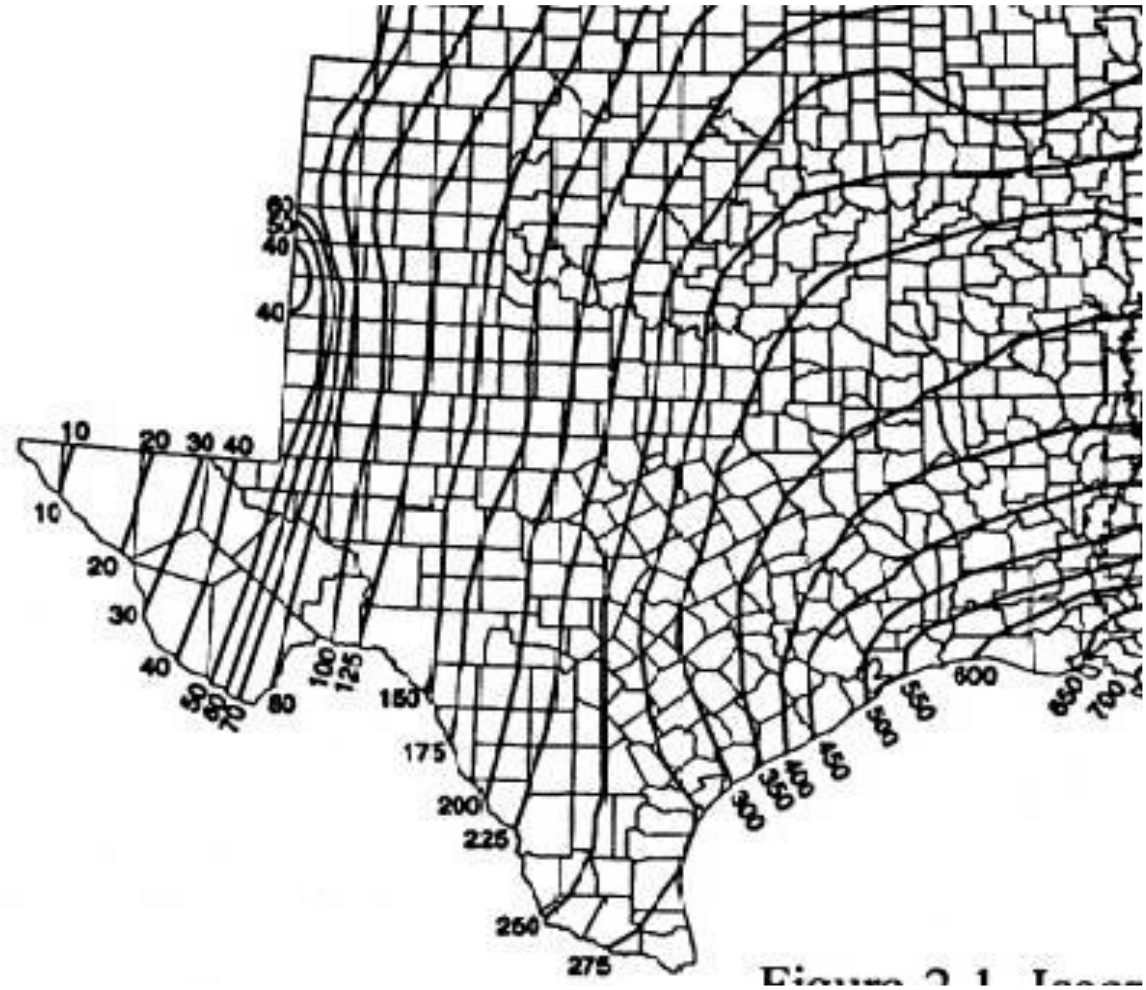


Figure C. Isoerodent Map of Texas. Units are hundreds ft*tonf*in(ac*h*yr)$^{-1}$

Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Table D. EI as percentage of average annual computed selected geographic areas (EI number) by date period (month/day).

Date Periods* (Month/Day)

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

*Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service.

Attachment 5

Inspection and Maintenance Forms

Inspector Qualifications Statement

I,_____, employee of_____, have read and understood TPDES General Permit TXR150000. I am familiar with the construction site and stormwater pollution prevention BMPs. By these credentials, I am a qualified inspector.

Roles and Responsibilities Checklist

Primary Operator - the person or persons associated with a large or small construction activity that meets either of the following two criteria: (a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a stormwater pollution prevention plan (SWP3) for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator - the person or entity, often the property owner, whose operational control is limited to: (a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or (b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site. Each contractor associated with the construction activity identified in this SWP3 that meets the definition of a primary operator must list their name and place a check mark next to those roles and responsibilities they are required to implement in accordance with the TPDES General Permit TXR150000.

Primary Operator Roles/Responsibilities		**Operator Name**	**Operator Name**	**Operator Name**
1.	Maintain SWP3 records for three (3) years in accordance with TPDES General permit.			
2.	Post signed construction site notice at project site through duration of project.			
3.	Maintain schedule of major construction activities, keep a copy with SWPPP, and retain a copy of the SWPPP at the construction site at all times.			
4.	Update SWPPP to reflect daily operations (e.g., revisions, installation dates, grading operation dates, BMP maintenance, and qualified inspector information).			
5.	Update SWPPP to reflect changes in the Contractor's contact information.			
6.	Determine and install appropriate controls and BMPs for project site to minimize discharge of pollutants from construction activity.			
7.	Maintain BMPs to minimize discharge of pollutants due to construction activities.			
8.	Perform SWPPP inspections in accordance with TPDES General Permit and keep inspection reports with SWPPP.			
9.	Based on inspection results, modify SWPPP and pollution prevention controls to minimize discharge of pollutants.			
10.	Establish permanent groundcover (pavement or at least 70% native background vegetation) on all disturbed areas related to construction (water, fertilization, and reseeding may be necessary).			

Primary Operator Roles/Responsibilities		Operator Name	Operator Name	Operator Name
11.	Provide a means for proper disposal of project-generated trash.			
12.	Discharges of hazardous substances or oil into stormwater are not authorized by this SWPPP. U.S. EPA requirements (including Title 40 Code of Federal Regulations Chapters 110.112. 117, and 302) remain applicable for discharges of oil or hazardous substances.			
13.	Comply with all State and local sanitary sewer or septic system regulations.			
14.	Provide copies of all SWPPP records to the Project owner (Secondary Operator).			
15.	Complete, sign and submit Construction Site Notice to the MS4 Operator(s) when the project has been completed and stabilized.			

Each operator engaged in activities that disturb surface soils must be identified and must sign the following certification statement.

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

Primary Operator
Name:_____
Title:_____
Company:_____

Signature:_____
Date:_____

Additional Operator (as appropriate)
Name:_____
Title:_____
Company:_____

Signature:_____
Date: _____

Additional Operator (as appropriate)
Name:_____
Title:_____
Company:_____
Signature:_____
Date:_____

Additional Operator (as appropriate)
Name:_____
Title:_____
Company:_____
Signature:_____
Date: _____

Construction Site Stormwater Pollution Prevention Plan (SWPP) Inspection Form

Status		
	☐ Complies	
	☐ Warning	No.
	☐ Project Shutdown	

SWPPP	On-Site		Up-to-date	
	Yes	No*	Yes	No*

General Information		
	Project:	Date:
	Address:	Inspector:
		Qualifications: see Attachment 5 of SWPPP
		Weather Conditions:
	Owner:	Site Conditions:
	Contractor:	____Biweekly_____Rain Event_____Other

BMP	BMP Used		Maintenance Required?		Comments
	Yes	No	Yes*	No	
Channel Protection					
Check Dam					
Chemical Management					
Concrete Saw cutting Waste Management					
Concrete Waste Management					
Debris and Trash Management					
Diversion Dike					
Dust Control					
Erosion Control Blankets					
Erosion Control Logs					
Inlet Protection					
Interceptor Swale					
Lime Stabilization Management					
Mulching					
Organic Filter Berm					
Pipe Slope Drain					
Sandblasting Waste Management					
Sanitary Facilities					
Sediment Basin					
Sediment Logs					
Silt Fence					
Stabilized Construction Exit					
Stone Outlet Sediment Trap					
Temporary Sediment Tank					
Triangular Sediment Filter Dike					
Vegetation					
Wheel Wash					
Other					
Other					
Other					

* Items marked in this column need to be addressed in the Record of Revision table.

SWPPP Record of Revision

Actions To Be Taken	Responsible Person(s)	Due Date	Date Completed	Initials

NOTE: These reports will be kept on file as part of the Stormwater Pollution Prevention Plan for at least three (3) years from the date that the site is finally stabilized. A copy of the SWP3 will be kept at the site at all times during construction.
CERTIFICATION STATEMENT: *"I certify under penalty of law that this document and any attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained herein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for attesting to false information, including the possibility of fine and imprisonment for knowing violations."*
Printed Name:
Address:
Telephone:
Site Location:
Inspector Signature: Date:

Record of Temporary/Permanent Ceasing of Construction Activities

Project Activity Area	Date Activities Ceased	Temporary or Permanent	Date Soil Stabilization Implemented	Date Activities Resumed

Agent Authorization Form

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

I Nic Whittaker, (Print Name)

Vice President, (Title - Owner/President/Other)

of Scenic Brook Owner, LP, (Corporation/Partnership/Entity Name)

have authorized Jugal Amodwala, Brent Johnson, Brian Grace, P.E., and Marissa Wyrick, P.E.
Print Name of Agent/Engineer

of BGE Inc.
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

Jan 17, 2024
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Nic Whittaker 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 17th day of Jan, 2024

NOTARY PUBLIC

CARMEN R. GARZA
MY COMMISSION EXPIRES
NOVEMBER 7, 2025
NOTARY ID: 12167175

Carmen R. Garza
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/7/2025

Owner Authorization Form

Texas Commission on Environmental Quality
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Robert Schmidt of SCHMIDT INVESTMENTS, LTD

Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

ABS 538 SUR 619 MASTON P ACR 8.6149; ABS 538 SUR 619 MASTON P ACR 27.0998 (8350 W US HWY 290)

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize Scenic Brook Owner, LP

Applicant Name (Legal Entity or Individual)

to conduct duties on behalf of the Owner as an Authorized Agent

Description of the proposed regulated activities

at 8350 W US HWY 290, Austin, TX 78736.

Precise location of the authorized regulated activities

Land Owner Acknowledgement

I understand that SCHMIDT INVESTMENTS, LTD

Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

Land Owner Signature

Jan. 18, 2024
Date

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared Robert M. Schmidt 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 18 day of January 2024

Courtney L Bootka
NOTARY PUBLIC

COURTNEY L BOOTKA
Notary ID #125992372
My Commission Expires
March 31, 2027

Courtney L Bootka
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: March 31, 2027

Attached: (Mark all that apply)

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

Applicant Acknowledgement

I, Nic Whittaker of Scenic Brook Owner LP
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that SCHMIDT INVESTMENTS, LTD
Land Owner Name (Legal Entity or Individual)

has provided Scenic Brook Owner, LP
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that Scenic Brook Owner, LP
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 2/20/24

THE STATE OF § Texas

County of § Travis

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

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

Carmen R. Garza
NOTARY PUBLIC

CARMEN R. GARZA
NOTARY PUBLIC STATE OF TEXAS
MY COMMISSION EXPIRES
NOVEMBER 7, 2025
NOTARY ID: 12167175

Carmen R. Garza
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/7/2025

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Greystar 290
Regulated Entity Location: 8350 W US 290 HWY, Austin, TX 78736
Name of Customer: Greystar Develeopment Central, LLC
Contact Person: Larson Mitchener Phone: 704.560.1613
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	35.57 Acres	$6,500
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 5.15.23

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

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

SECTION II: Customer Information

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

☒ 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:*

Scenic Brook Owner, LP

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0805286199	32092309908	93-4197917	

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

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

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

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	2500 Bee Cave Rd							
	Building III, Suite 500							
	City	Austin	**State**	TX	**ZIP**	78746	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	larson.mitchener@greystar.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(704) 560-1613		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Greystar 290

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	8350 W US 290 Highway							
	City	Austin	**State**	TX	**ZIP**	78736	**ZIP + 4**	
24. County	Travis County							

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

25. Description to Physical Location:	Site is located at the intersection of HWY 290 and Scenic Brook Dr in Austin, TX on the north side of the freeway. Property is a combination of two adjacent parcels directly to the west of Scenic Brook Dr at this intersection. Property is bordered by residential lots to the north and west.

26. Nearest City	State	Nearest ZIP Code

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

27. Latitude (N) In Decimal:	30.234467		28. Longitude (W) In Decimal:	97.903058	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	14'	4.08"	97	54'	11.01"

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)
6514	6513	531110	

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

Multifamily Residential

34. Mailing Address:	**8350 W US HWY 290**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78736**	**ZIP + 4**	
35. E-Mail Address:	**larson.mitchener@greystar.com**							

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

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

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

SECTION IV: Preparer Information

40. Name:	Marissa Wyrick, P.E.	**41. Title:**	Owners Agent

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 828-3629		**( ) -**	MWyrick@BGEinc.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Greystar	**Job Title:**	Managing Director
Name *(In Print):*	Nic Whittaker	**Phone:**	**(** 512 **)** 762- **2473**
Signature:	DocuSigned by: nic whittaker D4538F06909B40D...	**Date:**	January 17, 2024