LOST CREEK GAP APARTMENTS

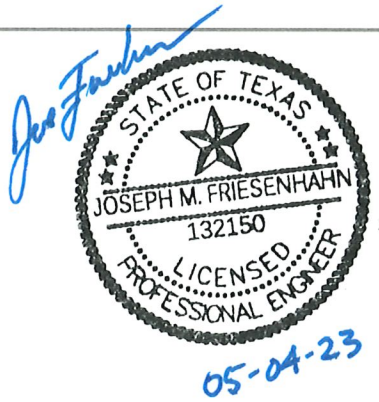
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CONTRIBUTING ZONE PLAN

May 4, 2023

MBC Job. No. 33170-0879

PREPARED BY:



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Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited.**
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Lost Creek Gap Apartments					**2. Regulated Entity No.:** N/A			
3. Customer Name: 7868 Lost Creek, LLC					**4. Customer No.:** N/A			
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):**		4.096	
9. Application Fee:	$4,000.00	**10. Permanent BMP(s):**			2			
11. SCS (Linear Ft.):	N/A	**12. AST/UST (No. Tanks):**			N/A			
13. County:	Bexar	**14. Watershed:**			Leon 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.)	**X**	___	___	___	___
Region (1 req.)	**X**	___	___	___	___
County(ies)	**X**	___	___	___	___
Groundwater Conservation District(s)	**X** Edwards Aquifer Authority **X** 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 **X** 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. **Joseph M. Friesenhahn, P.E./Macina, Bose Copeland & Associates**
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 05-04-23

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: Joseph Friesenhahn, P.E. / Macina, Bose Copeland & Associates

Date: 05/04/2023

Signature of Customer/Agent:

Regulated Entity Name: Lost Creek Gap Apartments

Project Information

1. County: Bexar
2. Stream Basin: Leon Creek
3. Groundwater Conservation District (if applicable): EAA & Trinity Glen Rose
4. Customer (Applicant):

   Contact Person: Juan M. Alvarado
   Entity: 7868 Lost Creek, LLC
   Mailing Address: 400 N Loop 1604 E, Ste 200
   City, State: San Antonio, Texas Zip: 78232
   Telephone: (210) 894-9192 Fax: N/A
   Email Address: juan@novoterracapital.com

5. Agent/Representative (If any):

Contact Person: Joseph M. Friesenhahn, P.E.
Entity: Macina, Bose, Copeland & Associates
Mailing Address: 1035 Central Parkway N.
City, State: San Antonio, Texas Zip: 78232
Telephone: 210.545.1122 Fax: 210.545.9302
Email Address: jfriesenhahn@mbcengineers.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 San Antonio.
☐ 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.

Southeast Corner of I.H 10 W. & Lost Creek Gap

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: 123
☒ Commercial
☐ Industrial
☐ Other: _____

13. Total project area (size of site): 4.10 Acres

Total disturbed area: 3.43 Acres

14. Estimated projected population: 123

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	34,902	÷ 43,560 =	0.80
Parking	63,719	÷ 43,560 =	1.46
Other paved surfaces	17,442	÷ 43,560 =	0.40
Total Impervious Cover	116,063	÷ 43,560 =	2.66

Total Impervious Cover 2.66 **÷ Total Acreage** 4.10 **X 100 =** 64.88**% 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 Leon Creek (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

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

Total x 1.5 = _____ Gallons

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

one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

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

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

Table 3 - Secondary Containment

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

Total: _____ Gallons

30. Piping:

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

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

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

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

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

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

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

Site Plan Requirements

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

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

    Site Plan Scale: 1" = 30'.

35. 100-year floodplain boundaries:

    ☒ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

    ☐ No part of the project site is located within the 100-year floodplain.

    The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____.

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.

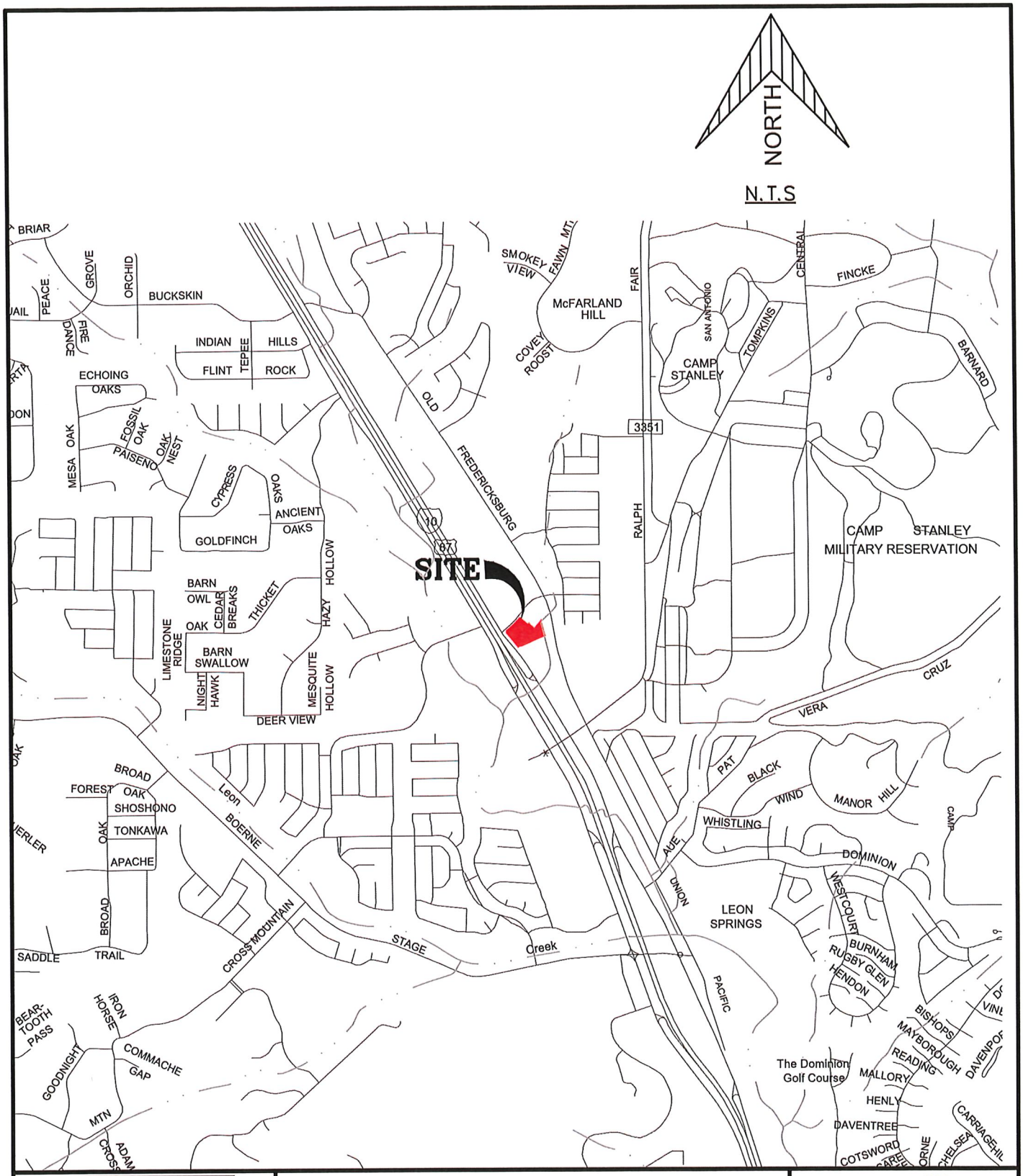
Administrative Information

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.



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FIRM REGISTRATION NUMBER:
T.B.P.E. F-784 & T.B.P.L.S. 10011700

LOST CREEK GAP APARTMENTS
SAN ANTONIO, TEXAS
LOCATION MAP

DESIGN	JMF
DRAWN	JMF
CHECKED	JMF
DATE	02-01-2023
JOB NO.	33170-0879
PAGE	1 OF 1

Date: Feb 01, 2023, 3:46pm User ID: jfriesenhahn Layout: Aerial
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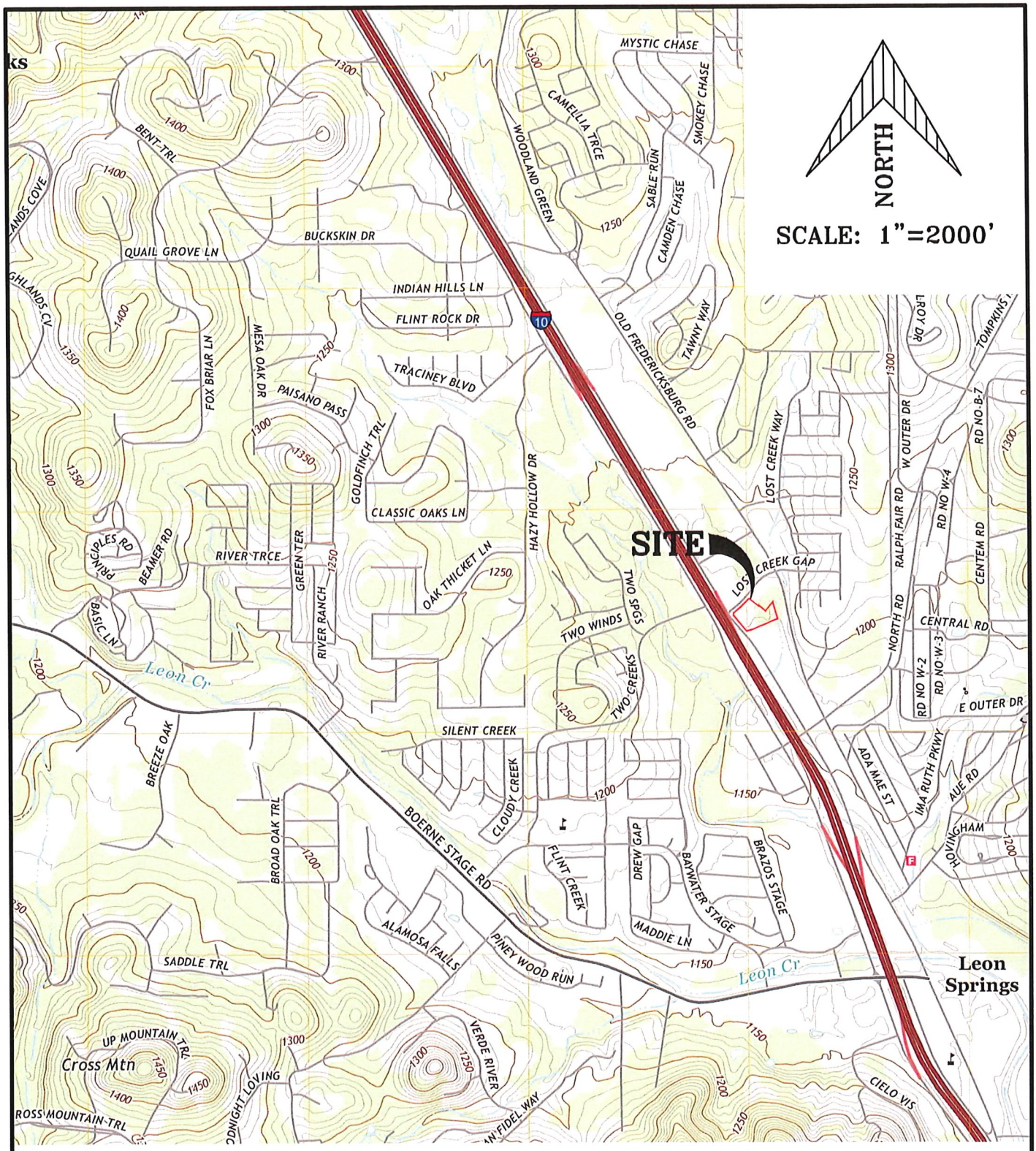


USGS QUAD: VAN RAUB

mbc ENGINEERS
1035 Central Parkway North
San Antonio, Texas 78232
(210) 545-1122 FAX (210) 545-9302
TEXAS REGISTERED ENGINEERING FIRM F-784

LOST CREEK GAP APARTMENTS
SAN ANTONIO, TEXAS
USGS EXHIBIT

DESIGN	JF
DRAWN	JF
CHECKED	JF
DATE	02-01-2023
JOB NO.	33170-0879

Date: Feb 01, 2023, 3:10pm User ID: jfriesenhahn Layout: Layout1
File: P:\0879\33170-Lost Creek Gap Apts\Design\Exhibit\Ex06-USGS Map-33170.dwg Layout name: Layout1

CONTRIBUTING ZONE PLAN APPLICATION

Lost Creek Gap Apartments

TCEQ Form-10257

Attachment "C" – Project Description

The project consists of development of a multi-family apartment complex on a 4.9-acre site, located at the southeast corner of IH 10 and Lost Creek Gap, within the City of San Antonio ETJ, Bexar County. The site is undeveloped, and contains areas of dense trees and underbrush. The property has relatively mild slopes averaging 1% to 3%, generally sloping from northwest to southeast. The site is located in the Edwards Aquifer Contributing Zone. The site will be developed into uses consistent with multi-family and commercial development. As part of this project, drive lanes, sidewalks, utility and drainage infrastructure will be constructed. Storm water detention for this development will be provided by proposed underground storage chambers located adjacent to the proposed BayFilter treatment devices. The limits of construction associated with the proposed project cover an area of approximately 3.43 acres and consist of 3.37 acres owned by 7868 Lost Creek, LLC, and the remaining consisting of street right of way.

The site contains two watersheds. The eastern watershed (DA-A) drains to the adjacent commercial development south of the site. The western watershed (DA-B), discharges to an existing bar ditch in the IH 10 right of way.

The site receives up-gradient runoff from approximately 4.2-acres of commercial development north of the site. The up-gradient runoff will be intercepted at northern property line and routed through a proposed underground storm drain, bypassing the proposed detention and water quality treatment facilities.

The proposed multi-family apartment project will have an increase in impervious area of approximately 2.66 acres. The proposed impervious surfaces will include the pavement, curbs, sidewalks, rooftops, driveways, dumpster pads, and pool areas. Two (2) BayFilter water quality treatment systems with Equalization Storage will be constructed as part of this project. These systems have been designed to remove 80% of the increase of total suspended solids (TSS) resulting from the proposed development. Over treatment for un-captured drainage areas is being provided by the proposed BayFilter devices.

Attachment "D" – Factors Affecting Surface Water Quality

The major factors which may affect the water quality is oil and grease from the parking facilities. There is also the possibility for fertilizer runoff and litter. This is to be dealt with by the installation of the two (2) proposed Bayfilter Systems as outlined in this contributing zone plan.

Attachment "E" – Volume and Character of Stormwater

The volume of storm water runoff is a function of rainfall rate, runoff rate, and the duration of time measurement. Storm water runoff generated from the site will come from roof tops, streets, sidewalks, parking areas, and from grassy areas and landscaping. Runoff will be treated by two sand/sedimentation filter basins. No unusual contaminants other than oil and grease from streets and parking areas are expected.

The permanent BMP's design allows for large events to bypass the system without causing a backwater effect. Bypass for both BMP's will discharge to the

See the attached drainage area map.

Attachment "F" – Sustainability Letter From Authorized Agent

Not applicable.

CONTRIBUTING ZONE PLAN APPLICATION

Lost Creek Gap Apartments

TCEQ Form-10257

Attachment "I" – 20% or Less Impervious Cover Waiver

Not applicable.

Attachment "J" – BMP for Upgradient Storm Water

The site receives up-gradient runoff from approximately 4.2-acres of north of the site consisting primarily of commercial development and street right-of-way. Up-gradient runoff will be intercepted with a proposed underground storm and routed around the site, by, passing the proposed BMPs and discharge to the existing natural low.

Attachment "K" – BMP for On-Site Storm Water

This site will have two permanent BMP's consisting of the Bay Filter System. The Bay Filter Systems have been designed to serve as Permanent Best Management Practice (BMP) for the proposed development. The basin has been designed in accordance with the TCEQ Technical Guidance Manual RG-348 (2005) to remove 80% of the increased Total Suspended Solids (TSS) for the proposed improvements. The latest TCEQ calculation sheet was used for the design of this BMP and is included at the end of this attachment.

Attachment "L" – BMP for Surface Streams

Not applicable.

Attachment "M" –Construction Plans

See attached construction plans.

Attachment "N" –Inspection, Maintenance, Repair and Retrofit Plan

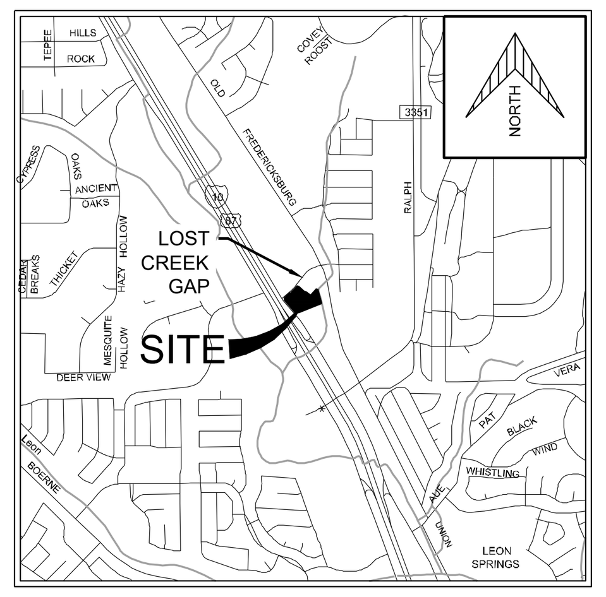
See attached maintenance plan.

Attachment "O" – Pilot-Scale Field Testing Plan

Not applicable.

Attachment "P" – Measure for Minimizing Surface Stream Contamination

The eastern Bay Filter System (B) will drain out to the existing bar ditch in the TXDOT ROW and the southern Bay Filter System (A) will discharge to the natural low along the southern boundary line. In order to minimize erosion, energy dissipaters will be provided to reduce the velocity of the runoff at the outfall below 6 feet per second.



LOCATION MAP
NOT TO SCALE

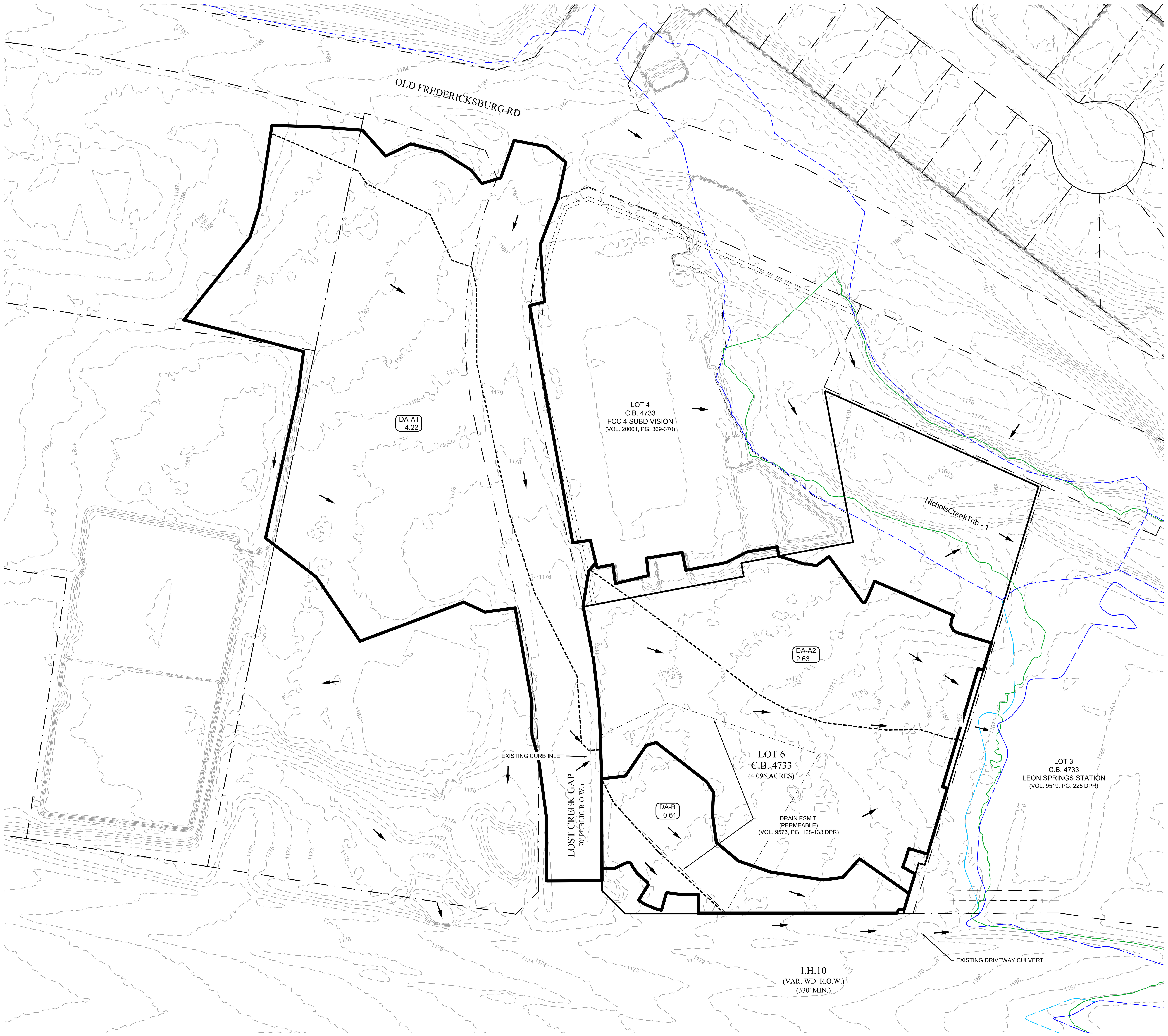
HYDROLOGY CALCULATIONS

Contributing Areas	Area	C_w	Overland Flow (*Equation 3-3, TR-55*)						Shallow Concentrated Flow (*Figure 3-1, TR-55*)				Channel Flow			Total Time of Conc.	I_5	I_{25}	I_{100}	Q_5	Q_{25}	Q_{100}
			Surface Condition	n	P_2	L	S	T_t	Surface	L	S	T_{sc}	L	V	T_{ch}	T_c						
	(acres)				(in)	*(ft)*	*(ft/ft)*	*(min)*		*(ft)*	*(ft/ft)*	*(min)*	*(ft)*	*(ft/s)*	*(min)*	*(min)*	*(in/hr)*	*(in/hr)*	*(in/hr)*	*(cfs)*	*(cfs)*	*(cfs)*
Existing Conditions																	PA-2 (Atlas 14)					
A1	4.22	0.96	Dense Grasses	0.24	4.04	100	0.036	10.0	Unpaved	176	0.019	1.3	567	6	1.6	13	5.71	7.96	10.02	23.13	32.25	40.59
A2	2.63	0.39	Dense Grasses	0.24	4.04	100	0.017	13.6	Unpaved	167	0.02	1.2	194	2.5	1.3	16	5.14	7.14	8.94	5.27	7.32	9.17
B	0.61	0.39	Dense Grasses	0.24	4.04	100	0.02	12.7	Unpaved	101	0.01	1.0	0	2.5	0.0	14	5.51	7.67	9.64	1.31	1.82	2.29

NORTH

SCALE: 1" = 60'
60 0 30 60 120

LEGEND
- 780 EXISTING CONTOUR
- DRAINAGE FLOW
- DRAINAGE AREA
- TOC FLOW PATH
- DA ACRES — DRAINAGE AREA
- EFFECTIVE 100 YR FEMA FLOODPLAIN
- EFFECTIVE 100 YR ULT. FEMA FLOODPLAIN
- CORRECTIVE EFFECTIVE 100 YR FLOODPLAIN
- CORRECTIVE EFFECTIVE 100 YR ULT. FLOODPLAIN



PRIMARY CONTACT:
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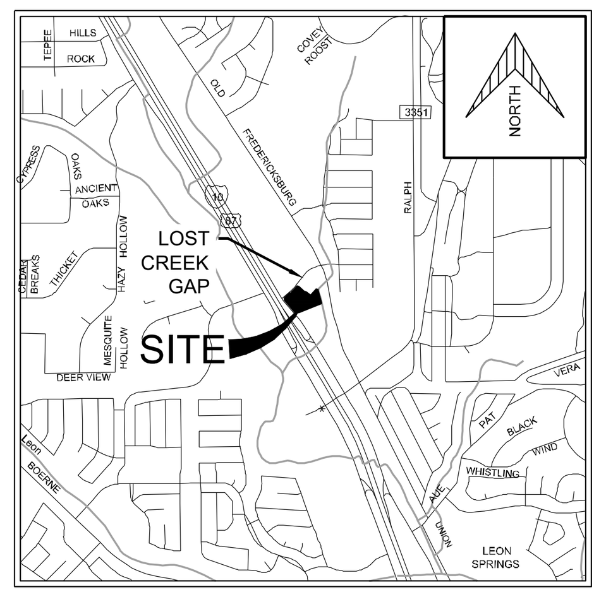
mbc ENGINEERS

LOST CREEK GAP APARTMENTS
CITY OF SAN ANTONIO ETJ, BEXAR COUNTY, TX
EXISTING CONDITIONS DRAINAGE AREA MAP

REVISIONS: DATE	No.	DESCRIPTION	BY

PLAT ID# 22-11800631
A/P# .
DESIGN JMF
DRAWN JMF
CHECKED JMF
DATE 01-10-2023
JOB NO. 33170-0879
SHT. 1 OF 1

Date: Apr 28, 2023, 1:18pm User ID: jfreisenhahn Layout: Layout1
File: P:\68\79\33170-Lost Creek Gap Apts\Design\Exhibit\Ex02-DAM-33170.dwg Layout name: Layout1

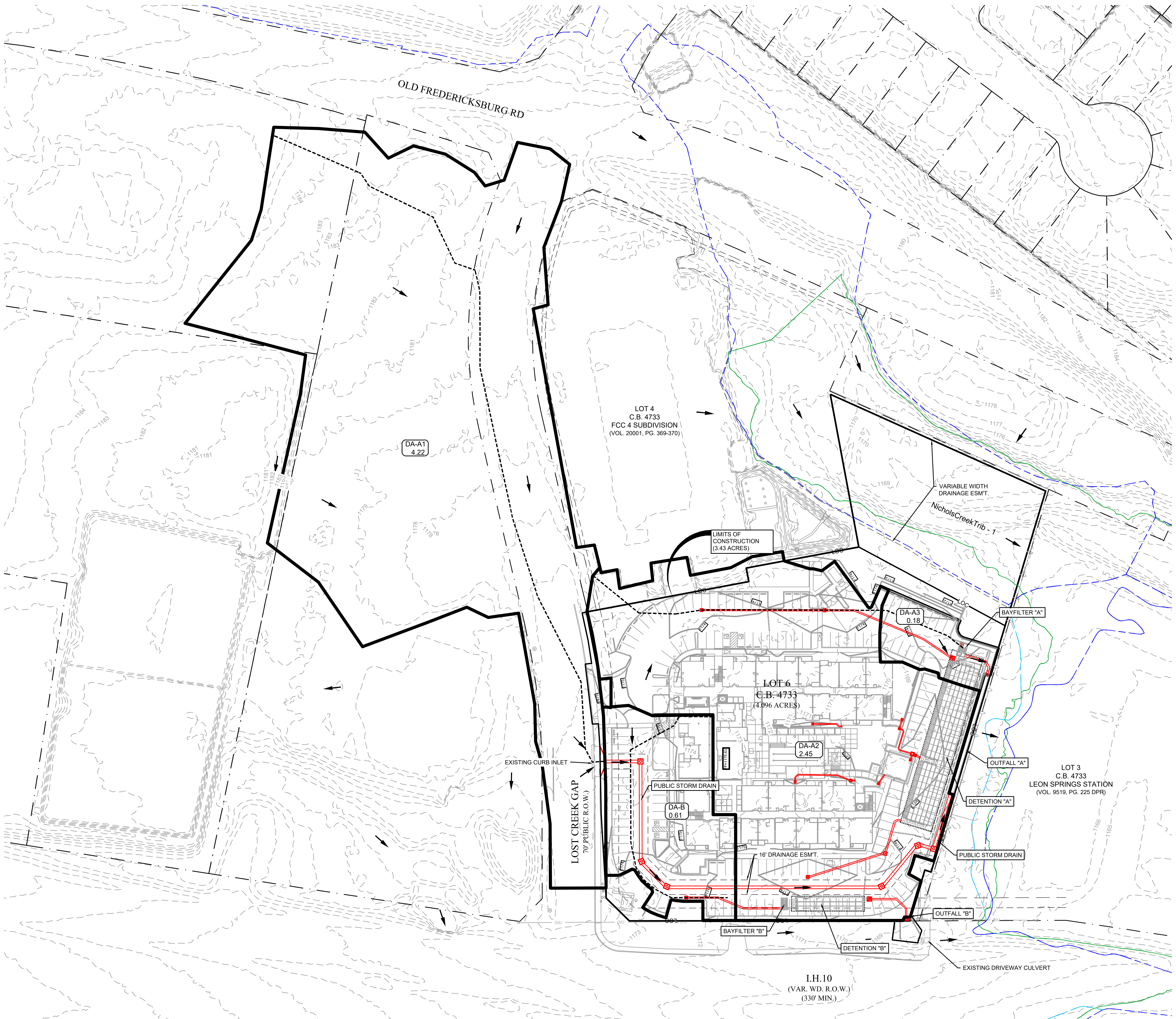


LOCATION MAP
NOT TO SCALE

HYDROLOGY CALCULATIONS

Contributing Areas	Area (acres)	Cw	Overland Flow (*Equation 3-3, TR-55*) Surface Condition	n	P2 (in)	L (ft)	S (ft/ft)	Tt (min)	Shallow Concentrated Flow (*Figure 3-1, TR-55*) Surface	L (ft)	S (ft/ft)	Tsc (min)	Channel Flow L (ft)	V (ft/s)	Tch (min)	Total Time of Conc. Tc (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q25 (cfs)	Q100 (cfs)
Proposed Conditions																	PA-2 (Atlas 14)					
A1	4.22	0.96	Dense Grasses	0.24	4.04	100	0.036	10.0	Unpaved	176	0.019	1.3	567	6	1.6	13	5.71	7.96	10.02	23.13	32.25	40.59
A2 (Pond Inflow)	2.45	0.77	Dense Grasses	0.24	4.04	64	0.023	8.4	Paved	40	0.02	0.2	325	6	0.9	10	6.36	8.88	11.23	12.00	16.75	21.19
A2 (Pond Outflow)*																				3.61	5.46	6.82
A3 (Detention Bypass)	0.18	0.77	Smooth Surface	0.011	4.04	50	0.015	5.0	Paved	50	0.015	0.3	0	6	0.0	5	7.94	11.14	14.01	1.10	1.54	1.94
A2*+A3	2.63																			4.71	7.00	8.76
B (Pond Inflow)	0.61	0.77	Smooth Surface	0.011	4.04	38	0.05	5.0	Paved	66	0.01	0.5	243	6	0.7	6	7.52	10.53	13.30	3.53	4.95	6.25
B (Pond Outflow)*																				1.14	1.39	2.22
Ultimate Conditions																						
A1	4.22	0.96	Dense Grasses	0.24	4.04	100	0.036	10.0	Unpaved	176	0.019	1.3	567	6	1.6	13	5.71	7.96	10.02	23.13	32.25	40.59
A2 (Pond Inflow)	2.45	0.77	Dense Grasses	0.24	4.04	64	0.023	8.4	Paved	40	0.02	0.2	478	6	1.3	10	6.36	8.88	11.23	12.00	16.75	21.19
A2 (Pond Outflow)*																				3.61	5.46	6.82
A3 (Detention Bypass)	0.18	0.77	Smooth Surface	0.011	4.04	50	0.015	5.0	Paved	50	0.015	0.3	0	6	0.0	5	7.94	11.14	14.01	1.10	1.54	1.94
A2*+A3	2.63																			4.71	7.00	8.76
B (Pond Inflow)	0.61	0.77	Smooth Surface	0.011	4.04	38	0.05	5.0	Paved	66	0.01	0.5	161	6	0.4	6	7.52	10.53	13.30	3.53	4.95	6.25
B (Pond Outflow)*																				1.14	1.39	2.22

**Outflow Results from Pond Pack Model*



NORTH

SCALE: 1" = 60'

60 0 30 60 120

LEGEND

— 780 —	EXISTING CONTOUR
100	PROPOSED CONTOUR
→	DRAINAGE FLOW
▬	DRAINAGE AREA
- - -	TOC FLOW PATH
▬	PROPOSED STORM DRAIN
DA ACRES	DRAINAGE AREA
— —	EFFECTIVE 100 YR FEMA FLOODPLAIN
— —	EFFECTIVE 100 YR ULT. FEMA FLOODPLAIN
——	CORRECTIVE EFFECTIVE 100 YR FLOODPLAIN
——	CORRECTIVE EFFECTIVE 100 YR ULT. FLOODPLAIN
— LOC —	LIMITS OF CONSTRUCTION

SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURES:

1.) TEMPORARY BMP'S WILL BE MAINTAINED UNTIL THE RESPECTIVE WATERSHED HAS BEEN STABILIZED.

2.) ALL AREAS OF DISTURBED SOIL WHICH WILL NOT OTHERWISE BE STABILIZED SHALL BE REVEGETATED TO STABILIZE SOIL USING SOLID BLOCK SOD IN A STAGGERED PATTERN. FOR AREAS OUTSIDE THE BASINS, THE CONTRACTOR MAY SUBSTITUTE SEED-IMPREGNATED EROSION CONTROL MATS OR HYDRAULIC MULCHING AND WATERING UNTIL VEGETATION IS ESTABLISHED. SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER.

3.) PERMANENT BMP'S FOR THIS SITE INCLUDE SEDIMENTATION/FILTRATION PONDS "A" AND "B." THESE PERMANENT BMP'S HAVE BEEN DESIGNED TO REMOVE 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FOR DRAINAGE AREAS "A" AND "B" IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL RG 348 (2005).

4.) ENERGY DISSIPATERS (TO HELP REDUCE EROSION) WILL BE PROVIDED AT POINTS OF CONCENTRATED DISCHARGE WHERE EXCESSIVE VELOCITIES MAY BE ENCOUNTERED.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14^{TH} DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21^{ST} DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14^{TH} DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR

    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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

PRIMARY CONTACT:
TONY OLFERS

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FIRM REGISTRATION NUMBER: T.B.P.E. F-784 & T.B.P.L.S. 10011700

mbc ENGINEERS

LOST CREEK GAP APARTMENTS
CITY OF SAN ANTONIO ETJ, BEXAR COUNTY, TX
PROPOSED CONDITIONS DRAINAGE AREA MAP
PERMANENT POLLUTION ABATEMENT PLAN

REVISIONS: No.	DATE	DESCRIPTION	BY

PLAT ID#	22-11800631
A/P#	-
DESIGN	JMF
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SHT.	1 OF 1

Date: Apr 28, 2023, 11:19am User ID: jfriesenhahn Layout: Layout1
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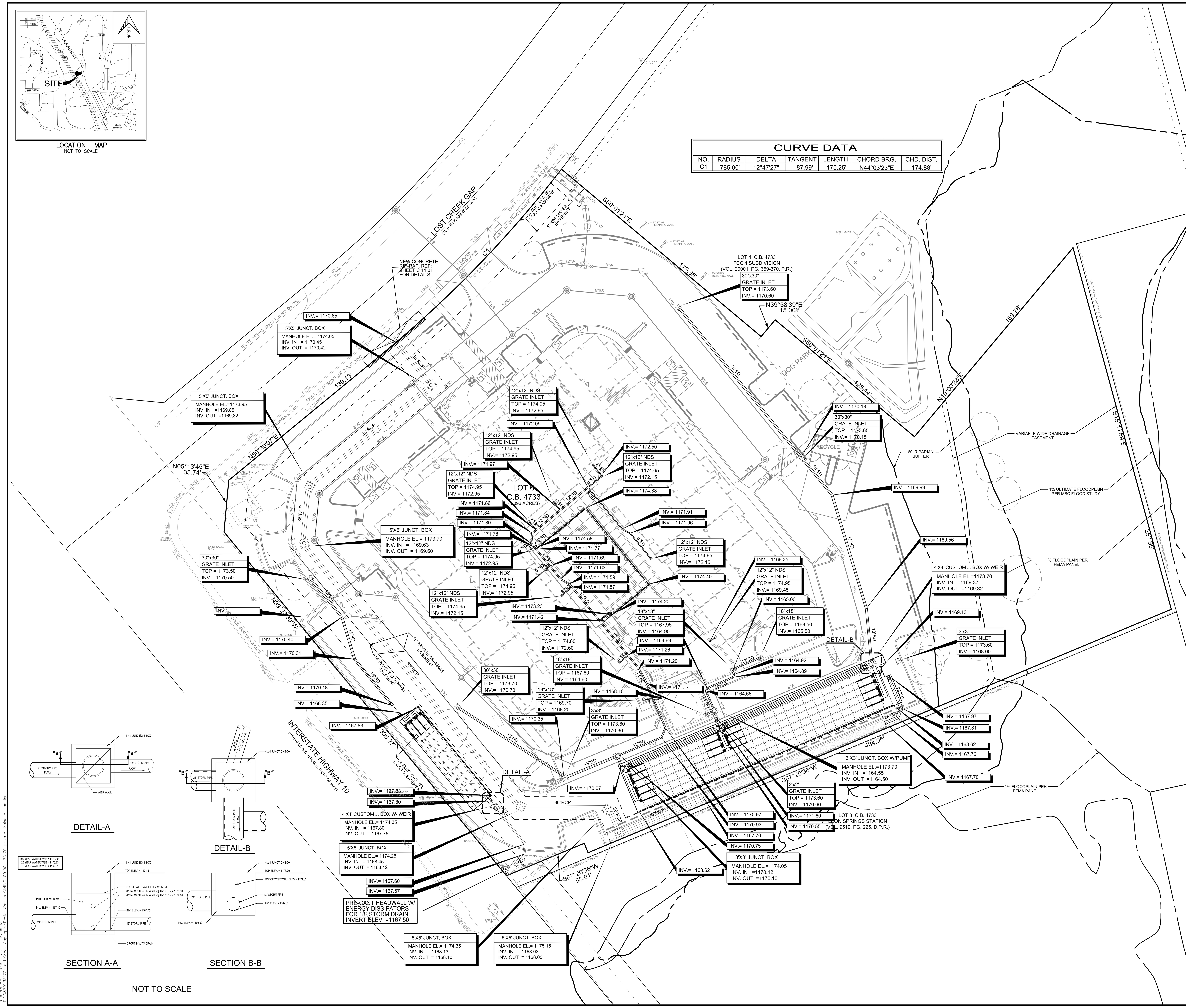

CURVE DATA						
NO.	RADIUS	DELTA	TANGENT	LENGTH	CHORD BRG.	CHD. DIST.
C1	785.00'	12°47'27"	87.99'	175.25'	N44°03'23"E	174.88'

NORTH

SCALE: 1" = 30'

0' 15' 30' 60' 90'

LEGEND

- EXISTING TOP OF CURB AND GUTTER ELEVATIONS
- EXISTING SPOT ELEVATION
- PROPOSED RETAINING WALL
- PROPOSED CONTOUR (REPRESENT FINISHED TOP OF PAVEMENT OR TOPSOIL)
- EXISTING CONTOUR
- PROPOSED SPOT ELEVATION (REPRESENT FINISHED TOP OF PAVEMENT OR TOPSOIL)
- PROPOSED RIDGE
- DEFINED SWALE
- PROPOSED FIN. FLOOR ELEVATION
- PROPOSED FOUNDATION BREAKS
- OVERLAND FLOW DIRECTION
- BENCHMARK
- GRATE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED TOP AND BOTTOM OF RETAINING WALL
- PROPOSED TOP OF CURB AND GUTTER ELEVATIONS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

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   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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

05/16/23
STATE OF TEXAS
ROBERT A. COPELAND JR.
70868
LICENSED PROFESSIONAL ENGINEER

PRIMARY CONTACT:
Tony Olfers

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700
mbc ENGINEERS

Lost Creek Gap Apartments
7868 Lost Creek Gap, Boerne, Tx. 78006
PRIVATE DRAINAGE PLAN

REVISIONS: DATE	NO.	DESCRIPTION	BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 12-29-22
JOB NO. 33170-0879
SHT. C09.00

6:06:48 PM 5/16/2023 FGomez
P:\0879\33170-Lost Creek Gap Apts\Design\Design Civil\C 09.00 33170 private drainage plan.dgn

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	ROSS CORDER 830-388-9788 ROSS.CORDER@ADSPIPE.COM
ADS SALES REP:	BLAKE WHITE 830-331-0640 BLAKE.WHITE@ADSPIPE.COM
PROJECT NO:	S332677

Advanced Drainage Systems, Inc.

SiteAssist™
FOR STORMTECH
INSTALLATION INSTRUCTIONS
VISIT OUR APP

LOST GAP CREEK APARTMENTS

SAN ANTONIO, TX

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

Project: REV2 Lost Gap Creek - Bed A

ADS StormTech

Chamber Model -	SC-740	
Units -	Imperial	
Number of Chambers -	171	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	1168.62	ft
Amount of Stone Above Chambers -	6	in
Amount of Stone Below Chambers -	6	in
Area of system -	6930	sf Min. Area - 5781 sf min. area

☑ Include Perimeter Stone in Calculations
☐ Click for Stage Area Data
☐ Click to Invert Stage Area Data
Click Here for Metric

StormTech SC-740 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
42	0.00	0.00	231.00	231.00	14416.56	1172.12
41	0.00	0.00	231.00	231.00	14185.56	1172.04
40	0.00	0.00	231.00	231.00	13954.56	1171.95
39	0.00	0.00	231.00	231.00	13723.56	1171.87
38	0.00	0.00	231.00	231.00	13492.56	1171.79
37	0.00	0.00	231.00	231.00	13261.56	1171.70
36	0.05	9.40	227.24	236.64	13030.56	1171.62
35	0.16	27.86	219.86	247.72	12793.91	1171.54
34	0.28	48.21	211.72	259.93	12546.20	1171.45
33	0.60	103.28	189.69	292.97	12286.27	1171.37
32	0.80	137.09	176.16	313.26	11993.30	1171.29
31	0.95	162.56	165.97	328.54	11680.05	1171.20
30	1.07	183.74	157.50	341.25	11351.51	1171.12
29	1.18	201.86	150.25	352.12	11010.26	1171.04
28	1.27	216.43	144.43	360.86	10658.15	1170.95
27	1.36	231.71	138.32	370.02	10297.29	1170.87
26	1.45	248.65	131.54	380.19	9927.27	1170.79
25	1.52	260.73	126.71	387.44	9547.07	1170.70
24	1.58	270.58	122.77	393.35	9159.64	1170.62
23	1.64	280.83	118.67	399.50	8766.29	1170.54
22	1.70	290.62	114.75	405.37	8366.79	1170.45
21	1.75	299.75	111.10	410.85	7961.42	1170.37
20	1.80	308.28	107.69	415.97	7550.57	1170.29
19	1.85	317.20	104.12	421.32	7134.60	1170.20
18	1.89	323.72	101.51	425.23	6713.28	1170.12
17	1.93	330.71	98.71	429.43	6288.05	1170.04
16	1.97	337.72	95.91	433.63	5858.62	1169.95
15	2.01	343.70	93.52	437.22	5424.99	1169.87
14	2.04	349.69	91.12	440.82	4987.77	1169.79
13	2.07	354.82	89.07	443.89	4546.95	1169.70
12	2.10	359.94	87.02	446.96	4103.06	1169.62
11	2.13	364.54	85.19	449.72	3656.10	1169.54
10	2.15	368.31	83.68	451.99	3206.37	1169.45
9	2.18	372.28	82.09	454.37	2754.39	1169.37
8	2.20	375.92	80.63	456.55	2300.02	1169.29
7	2.21	377.45	80.02	457.47	1843.47	1169.20
6	0.00	0.00	231.00	231.00	1386.00	1169.12
5	0.00	0.00	231.00	231.00	1155.00	1169.04
4	0.00	0.00	231.00	231.00	924.00	1168.95
3	0.00	0.00	231.00	231.00	693.00	1168.87
2	0.00	0.00	231.00	231.00	462.00	1168.79
1	0.00	0.00	231.00	231.00	231.00	1168.70

WQv = 3640cf

WQv achieved at elevation 1169.54

Project: Rev0 Lost Gap Creek Apt, TX (Bed-B)

ADS StormTech

Chamber Model -	SC-740	
Units -	Imperial	
Number of Chambers -	30	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	1167.80	ft
Amount of Stone Above Chambers -	6	in
Amount of Stone Below Chambers -	6	in
Area of system -	1305	sf Min. Area - 1014 sf min. area

☑ Include Perimeter Stone in Calculations
☐ Click for Stage Area Data
☐ Click to Invert Stage Area Data
Click Here for Metric

StormTech SC-740 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
42	0.00	0.00	43.50	43.50	2654.12	1171.30
41	0.00	0.00	43.50	43.50	2610.62	1171.22
40	0.00	0.00	43.50	43.50	2567.12	1171.13
39	0.00	0.00	43.50	43.50	2523.62	1171.05
38	0.00	0.00	43.50	43.50	2480.12	1170.97
37	0.00	0.00	43.50	43.50	2436.62	1170.88
36	0.05	1.65	42.84	44.49	2393.12	1170.80
35	0.16	4.89	41.54	46.43	2348.63	1170.72
34	0.28	8.46	40.12	48.57	2302.19	1170.63
33	0.60	18.12	36.25	54.37	2253.62	1170.55
32	0.80	24.05	33.88	57.93	2199.25	1170.47
31	0.95	28.52	32.09	60.61	2141.32	1170.38
30	1.07	32.24	30.61	62.84	2080.70	1170.30
29	1.18	35.41	29.33	64.75	2017.86	1170.22
28	1.27	37.97	28.31	66.28	1953.11	1170.13
27	1.36	40.65	27.24	67.89	1886.83	1170.05
26	1.45	43.62	26.05	69.67	1818.94	1169.97
25	1.52	45.74	25.20	70.95	1749.27	1169.88
24	1.58	47.47	24.51	71.98	1678.32	1169.80
23	1.64	49.27	23.79	73.06	1606.34	1169.72
22	1.70	50.99	23.11	74.09	1533.28	1169.63
21	1.75	52.59	22.46	75.05	1459.19	1169.55
20	1.80	54.08	21.87	75.95	1384.14	1169.47
19	1.85	55.65	21.24	76.89	1308.18	1169.38
18	1.89	56.79	20.78	77.58	1231.29	1169.30
17	1.93	58.02	20.29	78.31	1153.72	1169.22
16	1.97	59.25	19.80	79.05	1075.41	1169.13
15	2.01	60.30	19.38	79.68	996.36	1169.05
14	2.04	61.35	18.96	80.31	916.68	1168.97
13	2.07	62.25	18.60	80.85	836.37	1168.88
12	2.10	63.15	18.24	81.39	755.52	1168.80
11	2.13	63.95	17.92	81.87	674.13	1168.72
10	2.15	64.62	17.65	82.27	592.26	1168.63
9	2.18	65.31	17.38	82.69	509.99	1168.55
8	2.20	65.95	17.12	83.07	427.30	1168.47
7	2.21	66.22	17.01	83.23	344.23	1168.38
6	0.00	0.00	43.50	43.50	261.00	1168.30
5	0.00	0.00	43.50	43.50	217.50	1168.22
4	0.00	0.00	43.50	43.50	174.00	1168.13
3	0.00	0.00	43.50	43.50	130.50	1168.05
2	0.00	0.00	43.50	43.50	87.00	1167.97
1	0.00	0.00	43.50	43.50	43.50	1167.88

BAYSAVER BAYFILTER SPECIFICATIONS

PRODUCTS

A. INTERNAL COMPONENTS: ALL COMPONENTS INCLUDING CONCRETE STRUCTURE(S), PVC MANIFOLD PIPING AND FILTER CARTRIDGES, SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES LLC, 1030 DEER HOLLOW DRIVE, MOUNT AIRY, MD (800.229.7283).

B. PVC MANIFOLD PIPING: ALL INTERNAL PVC PIPE AND FITTINGS SHALL MEET ASTM D1785. MANIFOLD PIPING SHALL BE PROVIDED TO THE CONTRACTOR PARTIALLY PRE-CUT AND PRE-ASSEMBLED.

C. FILTER CARTRIDGES: EXTERNAL SHELL OF THE FILTER CARTRIDGES SHALL BE SUBSTANTIALLY CONSTRUCTED OF POLYETHYLENE OR EQUIVALENT MATERIAL ACCEPTABLE TO THE MANUFACTURER. FILTRATION MEDIA SHALL BE ARRANGED IN A SPIRAL LAYERED FASHION TO MAXIMIZE AVAILABLE FILTRATION AREA. AN ORIFICE PLATE SHALL BE SUPPLIED WITH EACH CARTRIDGE TO RESTRICT THE FLOW RATE TO A MAXIMUM OF 45 GPM.

D. FILTER MEDIA: FILTER MEDIA SHALL BE BY BAYSAVER TECHNOLOGIES LLC AND SHALL CONSIST OF THE FOLLOWING MIX: A BLEND OF ZEOLITE, PERLITE AND ACTIVATED ALUMINA.

E. PRECAST CONCRETE VAULT: CONCRETE STRUCTURES SHALL BE PROVIDED ACCORDING TO ASTM C. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C478, C857 AND C858. PRECAST CONCRETE SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES, LLC.

PERFORMANCE

A. THE STORMWATER FILTER SYSTEM SHALL BE AN OFFLINE DESIGN CAPABLE OF TREATING 100% OF THE REQUIRED TREATMENT FLOW AT FULL SEDIMENT LOAD CONDITIONS.
B. THE STORMWATER FILTER SYSTEM'S CARTRIDGES SHALL HAVE NO MOVING PARTS.
C. THE STORMWATER TREATMENT UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 87% OF SUSPENDED SOLIDS (TCEQ REGULATORY GUIDANCE 348). TOTAL PHOSPHORUS, TURBIDITY, TOTAL COPPER, AND ZINC BASED UPON LOCAL APPROVALS AND INDEPENDENT TESTING.
D. THE STORMWATER FILTRATION CARTRIDGE SHALL BE EQUIPPED WITH A HYDRODYNAMIC BACKWASH MECHANISM TO EXTEND THE FILTER'S LIFE AND OPTIMIZE ITS PERFORMANCE.
E. THE STORMWATER FILTRATION SYSTEM'S CARTRIDGES SHALL HAVE A TREATED SEDIMENT CAPACITY FOR 87% TSS REMOVAL OF 262 LBS FOR 545 AND 530 CARTRIDGES, AND 131 LBS FOR 522 CARTRIDGE.

BAYFILTER MAINTENANCE

THE BAYFILTER SYSTEM REQUIRES PERIODIC MAINTENANCE TO CONTINUE OPERATING AT ITS PEAK EFFICIENCY DESIGN. THE MAINTENANCE PROCESS COMPRISES THE REMOVAL AND REPLACEMENT OF EACH BAYFILTER CARTRIDGE AND THE CLEANING OF THE VAULT OR MANHOLE WITH A VACUUM TRUCK. FOR BEST RESULTS, BAYFILTER MAINTENANCE SHOULD BE PERFORMED BY A CERTIFIED MAINTENANCE CONTRACTOR. A QUICK CALL TO AN ADS ENGINEER OR CUSTOMER SERVICE REPRESENTATIVE WILL PROVIDE YOU WITH A LIST OF RELIABLE CONTRACTORS IN YOUR AREA.

WHEN BAYFILTER IS INITIALLY INSTALLED, WE RECOMMEND THAT AN INSPECTION BE PERFORMED ON THE SYSTEM IN THE FIRST SIX (6) MONTHS. AFTER THAT, THE INSPECTION CYCLE TYPICALLY FALLS INTO A BIANNUAL PATTERN GIVEN NORMAL STORM OCCURRENCE AND ACTUAL SOLIDS LOADS.

WHEN BAYFILTER EXHIBITS FLOWS BELOW DESIGN LEVELS, THE SYSTEM SHOULD BE INSPECTED AND MAINTAINED AS SOON AS PRACTICAL. REPLACING A BAYFILTER CARTRIDGE SHOULD BE CONSIDERED AT OR ABOVE THE LEVEL OF THE MANIFOLD.

MAINTENANCE PROCEDURES

1. REMOVE THE MANHOLE COVERS AND OPEN ALL ACCESS HATCHES.
2. BEFORE ENTERING THE SYSTEM MAKE SURE THE AIR IS SAFE PER OSHA STANDARDS OR USE A BREATHING APPARATUS. USE LOW O2, HIGH CO, OR OTHER APPLICABLE WARNING DEVICES PER REGULATORY REQUIREMENTS.
3. USING A VACUUM TRUCK, REMOVE ANY LIQUID AND SEDIMENTS THAT CAN BE REMOVED PRIOR TO ENTRY.
4. USING A SMALL LIFT OR THE BOOM OF THE VACUUM TRUCK, REMOVE THE USED CARTRIDGES BY LIFTING THEM OUT.
5. ANY CARTRIDGES THAT CANNOT BE READILY LIFTED CAN BE EASILY SLID ALONG THE FLOOR TO A LOCATION THEY CAN BE LIFTED VIA A BOOM LIFT.
6. WHEN ALL THE CARTRIDGES HAVE BEEN REMOVED, IT IS NOW PRACTICAL TO REMOVE THE BALANCE OF THE SOLIDS AND WATER. LOOSEN THE STAINLESS CLAMPS ON THE FERNCO COUPLINGS FOR THE MANIFOLD AND REMOVE THE DRAINPIPES AS WELL. CAREFULLY CAP THE MANIFOLD AND THE FERNCO'S AND RINSE THE FLOOR, WASHING AWAY THE BALANCE OF ANY REMAINING COLLECTED SOLIDS.
7. CLEAN THE MANIFOLD PIPES, INSPECT, AND REINSTALL.
8. INSTALL THE EXCHANGE CARTRIDGES AND CLOSE ALL COVERS.
9. THE USED CARTRIDGES MUST BE SENT BACK TO ADS FOR EXCHANGE/RECYCLING AND CREDIT ON UNDAMAGED UNITS.

BAYFILTER INSTALLATION NOTES

1. CONTACT UTILITY LOCATOR TO MARK ANY NEARBY UNDERGROUND UTILITIES AND MAKE SURE IT IS SAFE TO EXCAVATE.
2. REFERENCE THE SITE PLAN AND STAKE OUT THE LOCATION OF THE BAYFILTER VAULT.
3. EXCAVATE THE HOLE, PROVIDING ANY SHEETING AND SHORING NECESSARY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS.
4. LEVEL THE SUB–GRADE TO THE PROPER ELEVATION. VERIFY THE ELEVATION AGAINST THE MANHOLE DIMENSIONS, THE INVERT ELEVATIONS, AND THE SITE PLANS. ADJUST THE BASE AGGREGATE, IF NECESSARY.
5. HAVE THE SOIL BEARING CAPACITY VERIFIED BY A LICENSED/ENGINEER FOR THE REQUIRED LOAD BEARING CAPACITY. ON SOLID SUB–GRADE, SET THE FIRST SECTION OF THE BAYFILTER PRE–CAST VAULT.
6. CHECK THE LEVEL AND ELEVATION OF THE FIRST SECTION TO ENSURE IT IS CORRECT BEFORE ADDING ANY RISER SECTIONS.
7. IF ADDITIONAL SECTION(S) ARE REQUIRED, ADD A WATERTIGHT SEAL TO THE FIRST SECTION OF THE BAYFILTER VAULT. SET ADDITIONAL SECTION(S) OF THE VAULT, ADDING A WATERTIGHT SEAL TO EACH JOINT.
8. INSTALL THE PVC OUTLET MANIFOLD.
9. INSTALL THE PVC OUTLET PIPE IN BAYFILTER VAULT.
10. INSTALL THE INLET PIPE TO THE BAYFILTER VAULT.
11. AFTER THE SITE IS STABILIZED, REMOVE ANY ACCUMULATED SEDIMENT OR DEBRIS FROM THE VAULT AND INSTALL THE FLOW DISKS, DRAINDOWN MODULES (IF APPLICABLE), AND THE BAYFILTER CARTRIDGES.
12. PLACE FULL SET OF HOLD DOWN BARS AND BRACKETS INTO PLACE.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION

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

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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

05/16/23
STATE OF TEXAS
ROBERT A. COPELAND JR.
70868
LICENSED PROFESSIONAL ENGINEER

PRIMARY CONTACT:
Tony Olfers

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

mbc ENGINEERS

Lost Creek Gap Apartments
7868 Lost Creek Gap, Boerne, Tx. 78006
DETENTION AND WATER QUALITY NOTES

REVISIONS: DATE	NO.	DESCRIPTION	BY

PLAT ID#	22-11800631
DESIGN	TOO
DRAWN	FGG
CHECKED	
DATE	03-16-23
JOB NO.	33170-0879
SHT.	C09.01

6:07:14 PM 5/16/2023 FGomez
P:\0879\33170-Lost Creek Gap Apts\Design\Design Civil\C 09.01 33170 private drainage details.dgn

PROPOSED LAYOUT (BED A)

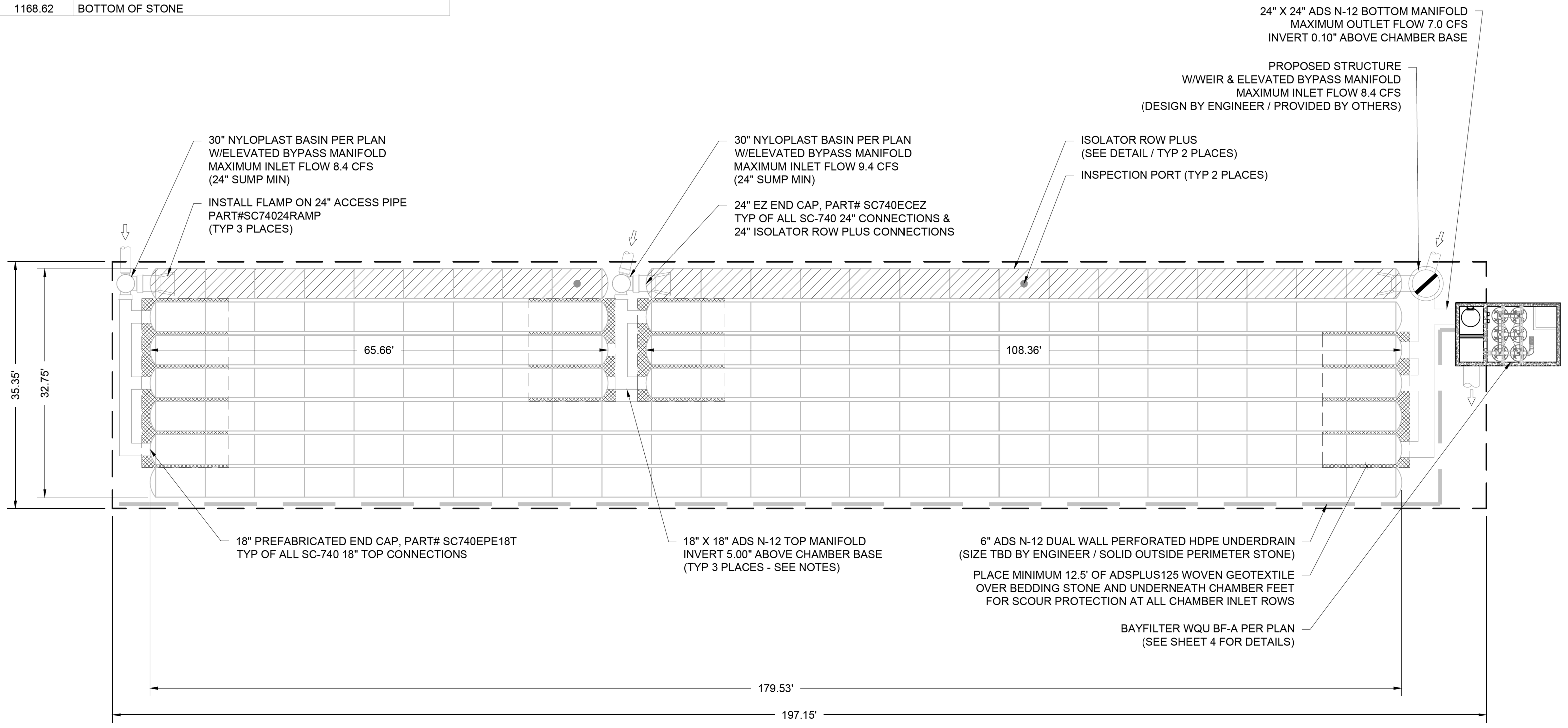
171	STORMTECH SC-740 CHAMBERS
22	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
14,416	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
6930	SYSTEM AREA (ft²)
474	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS (BED A)

1179.62	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
1173.62	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
1173.12	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
1173.12	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
1173.12	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
1172.12	TOP OF STONE
1171.62	TOP OF SC-740 CHAMBER
1169.54	18" TOP MANIFOLD INVERT
1169.13	24" BOTTOM MANIFOLD INVERT
1169.13	24" ISOLATOR ROW PLUS CONNECTION INVERT
1169.12	BOTTOM OF SC-740 CHAMBER
1168.62	UNDERDRAIN INVERT
1168.62	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



LOST GAP CREEK APARTMENTS
SAN ANTONIO, TX

DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

DATE	DRWN	CHKD	DESCRIPTION
05/12/23	JLM	CJD	REV BF-A PER ENGINEER
04/14/23	JDL	CJD	ADDED EOR CONTROL WEIR DATA SECT A-A

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ADS
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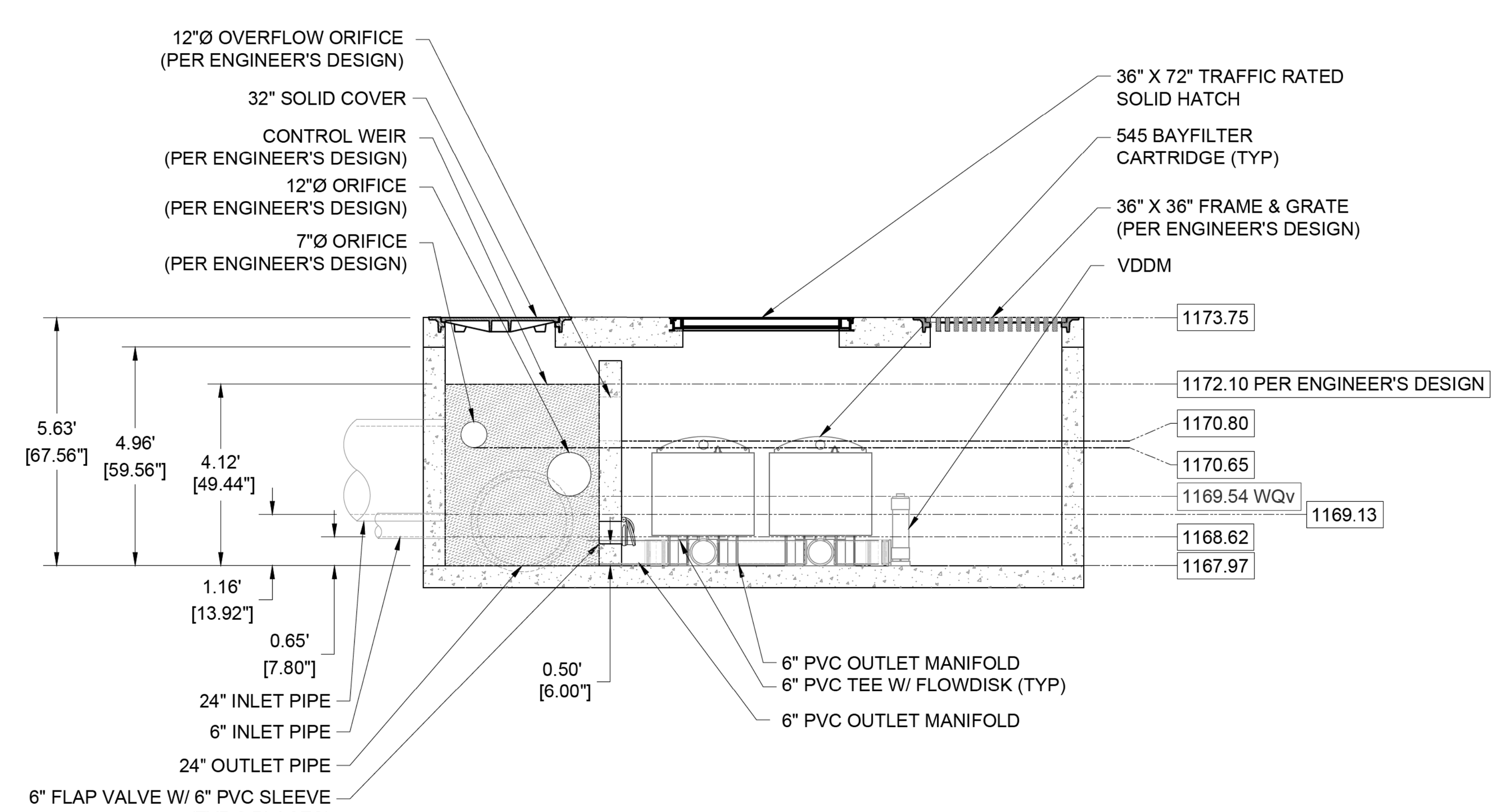
HILLIARD, OH 43026

0 15' 30'

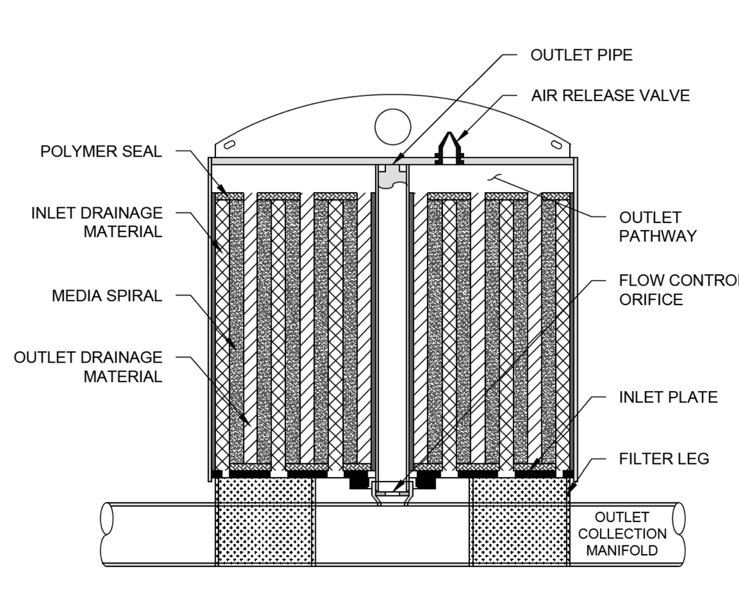
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

SHEET 3 OF 10



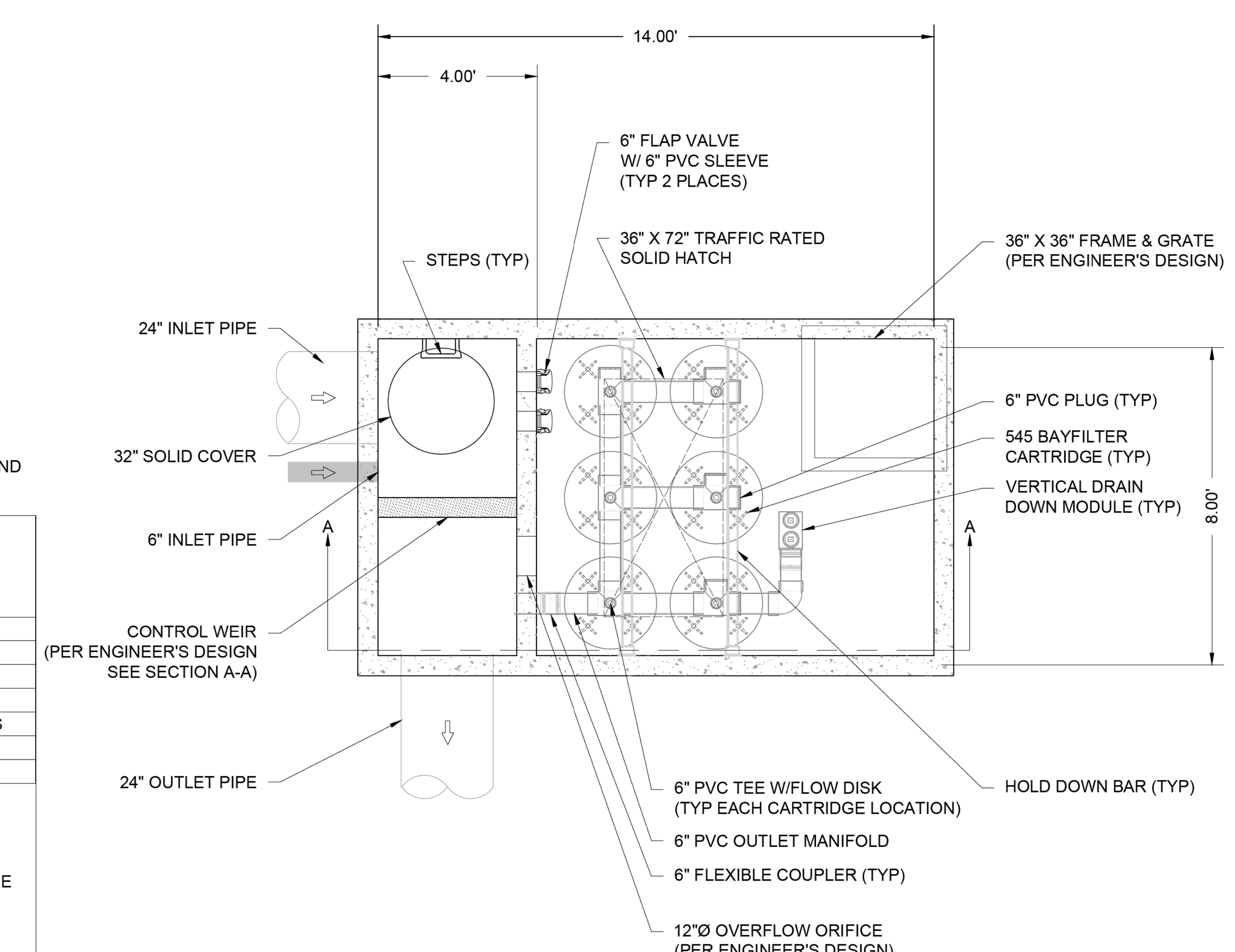
SECTION A-A
SCALE : 1/4" = 1'

NOTE: THIS DETAIL SHOWS A FUNCTIONAL FILTER DESIGN PER SITE SPECIFIC INFORMATION PROVIDED. THE FINAL APPROVED PRECAST DRAWINGS WILL DETERMINE THE FINAL SIZE, INCLUDING BUT NOT LIMITED TO; OVERALL DIMENSIONS, RISER SIZE, RISER TYPE & HEIGHT AND FRAMES & COVERS BEING PROVIDED.



545 BAYFILTER 8-14-6	BF-A
WATER QUALITY VOLUME	3,640 CF
DRAINAGE AREA	2.63 AC
CARTRIDGE DESIGN FLOW RATE	45 GPM
# BAYFILTER CARTRIDGES	6
TREATED SEDIMENT CAPACITY*	1,713 LBS
WQv PROVIDED IN VAULT	213 CF
WQv PROVIDED IN CHAMBERS	3,309 CF

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 45 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN EXTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION. *TREATED SEDIMENT CAPACITY IS CALCULATED IN ACCORDANCE WITH TCEQ REGULATOR GUIDANCE 348.



PLAN VIEW
SCALE : 1/4" = 1'

LOST GAP CREEK APARTMENTS
SAN ANTONIO, TX

DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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ADS
4640 TRUEMAN BLVD
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AS NOTED

SHEET 4 OF 10

ROBERT A. COPELAND JR.
70868
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
05/16/23

PRIMARY CONTACT:
Tony Olfers

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FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

mbc ENGINEERS

Lost Creek Gap Apartments

7868 Lost Creek Gap, Boerne, Tx. 78006

DETENTION AND WATER QUALITY "A"

REVISIONS: NO. DATE DESCRIPTION BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 03-16-23
JOB NO. 33170-0879
SHT. C09.02

PROPOSED LAYOUT (BED B)

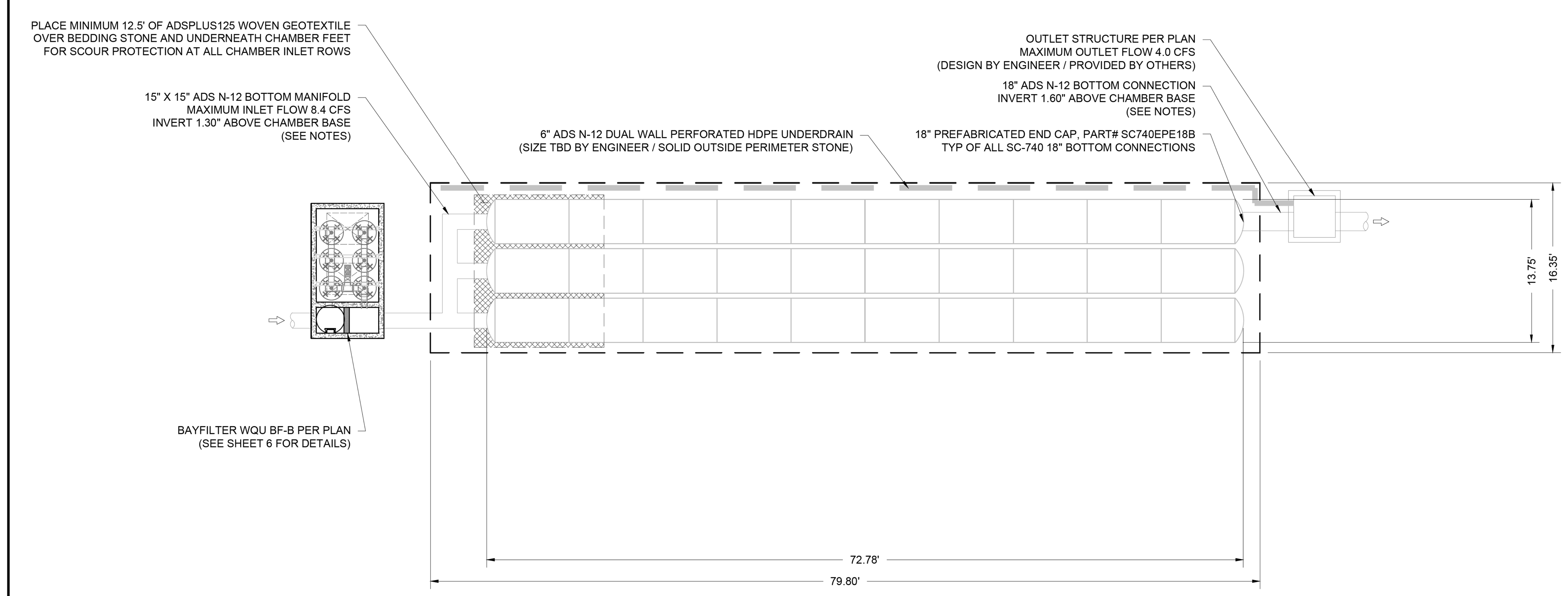
30	STORMTECH SC-740 CHAMBERS
6	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
2,654	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1305	SYSTEM AREA (ft²)
192	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS (BED B)

1178.80	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
1172.80	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
1172.30	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
1172.30	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
1172.30	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
1171.30	TOP OF STONE
1170.80	TOP OF SC-740 CHAMBER
1168.43	18" BOTTOM CONNECTION INVERT
1168.41	15" BOTTOM MANIFOLD INVERT
1168.30	BOTTOM OF SC-740 CHAMBER
1167.80	UNDERDRAIN INVERT
1167.80	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



LOST GAP CREEK APARTMENTS SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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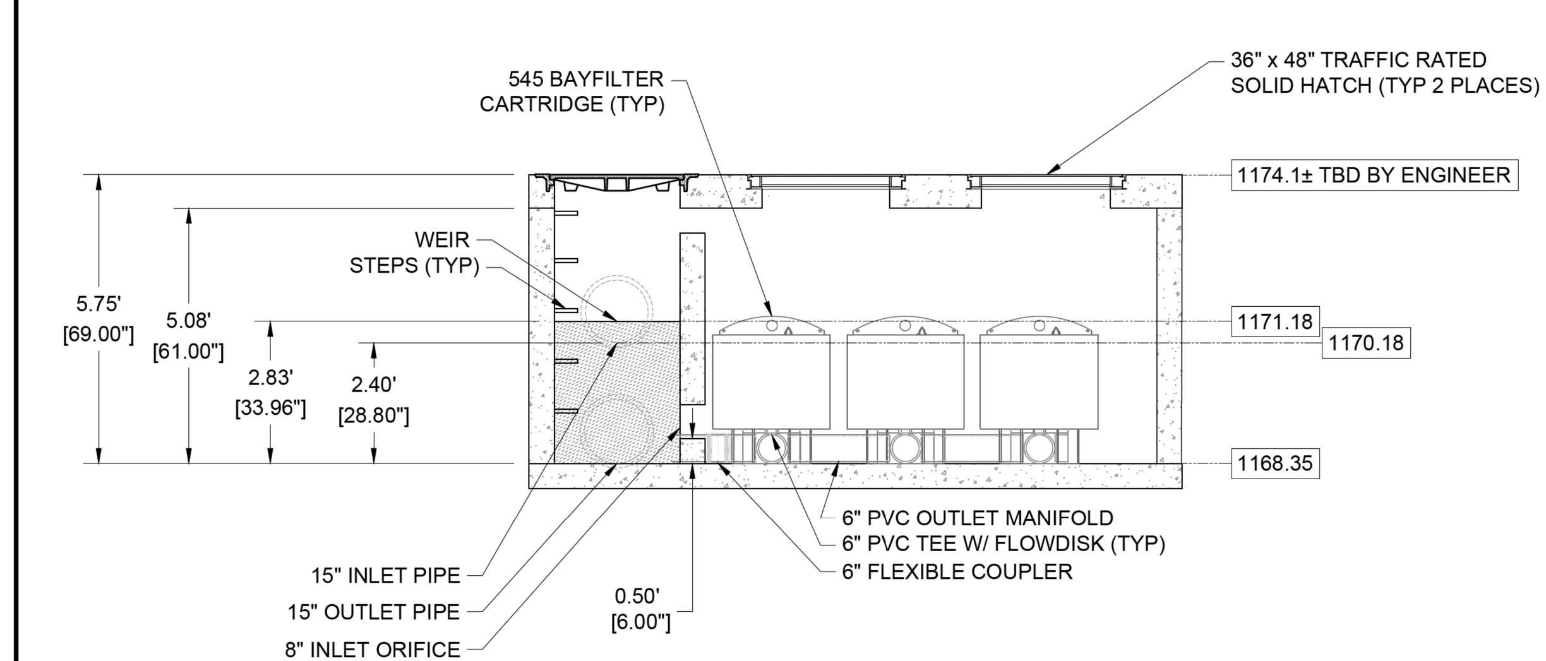
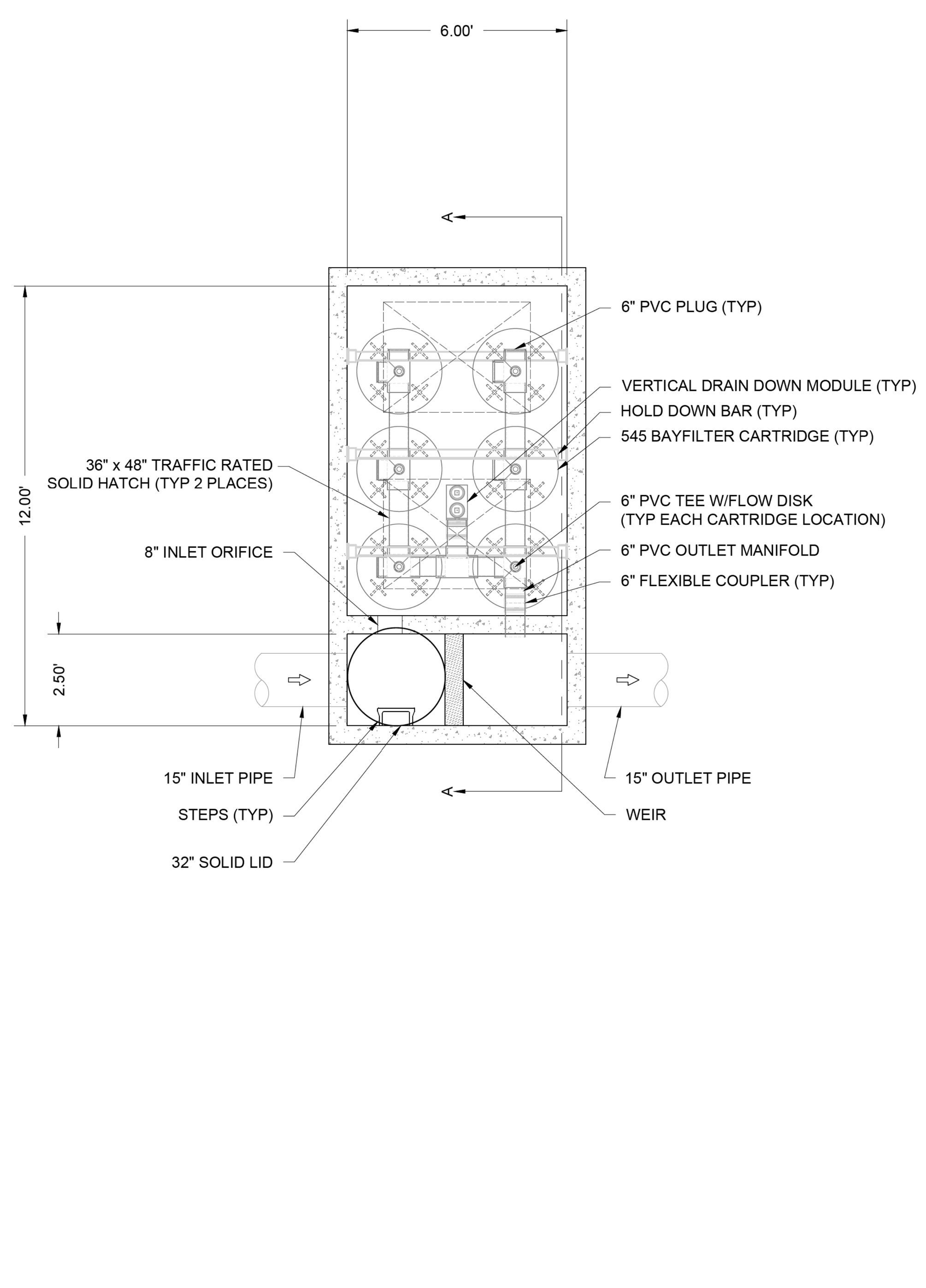
ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026

0 10' 20'

SHEET 5 OF 10



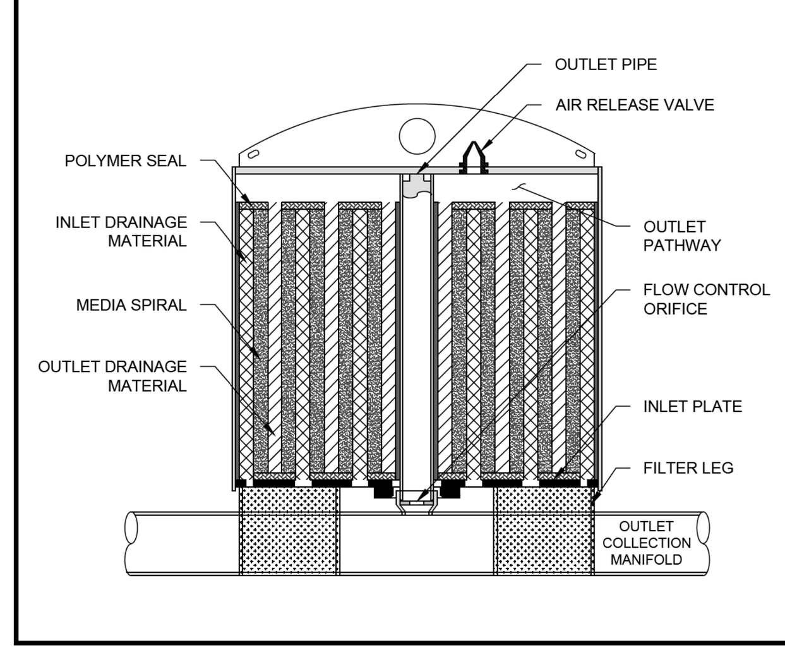
SECTION A-A
SCALE : 1/4" = 1'



PLAN VIEW
SCALE : 1/4" = 1'

NOTE: THIS DETAIL SHOWS A FUNCTIONAL FILTER DESIGN PER SITE SPECIFIC INFORMATION PROVIDED. THE FINAL APPROVED PRECAST DRAWINGS WILL DETERMINE THE FINAL SIZE, INCLUDING BUT NOT LIMITED TO; OVERALL DIMENSIONS, RISER SIZE, RISER TYPE & HEIGHT AND FRAMES & COVERS BEING PROVIDED.

WQv: 120 CF



545 BAYFILTER 6-12-6	BF-B
WATER QUALITY FLOW RATE	0.60 CFS
DRAINAGE AREA	0.61 AC
CARTRIDGE DESIGN FLOW RATE	45 GPM
# BAYFILTER CARTRIDGES	6
TREATED SEDIMENT CAPACITY*	428 LBS

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 90 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS INLINE WITH AN INTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE CARTRIDGES. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.
*TREATED SEDIMENT CAPACITY IS CALCULATED IN ACCORDANCE WITH TCEQ REGULATOR GUIDANCE 348.

LOST GAP CREEK APARTMENTS SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026

AS NOTED

SHEET 6 OF 10

ROBERT A. COPELAND JR. 70868 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

PRIMARY CONTACT: Tony Olfers

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(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

Lost Creek Gap Apartments
7868 Lost Creek Gap, Boerne, Tx. 78006
DETENTION AND WATER QUALITY "B"

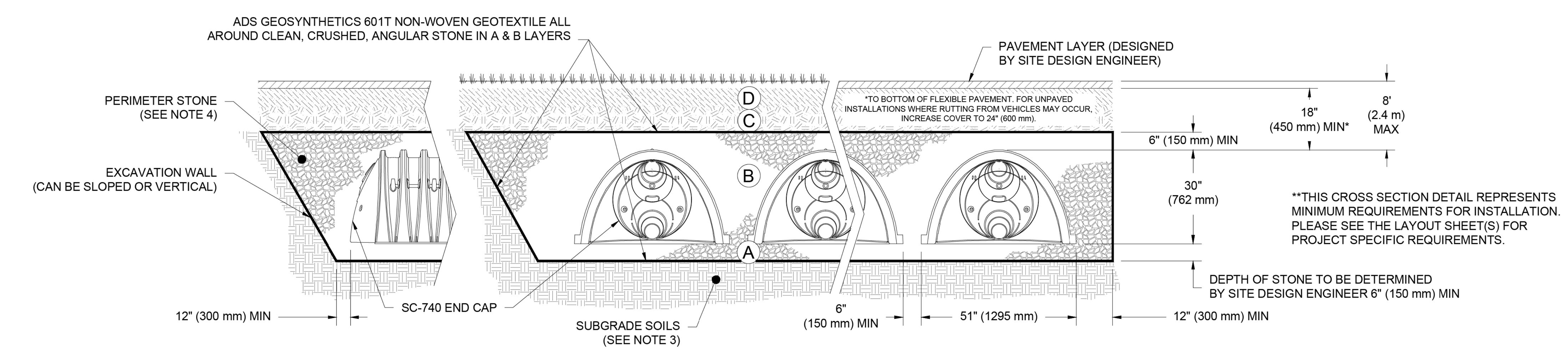
REVISIONS: NO. | DATE | DESCRIPTION | BY

PLAT ID#	22-11800631
DESIGN	TOO
DRAWN	FGG
CHECKED	
DATE	03-16-23
JOB NO.	33170-0879
SHT.	C09.03

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

LOST GAP CREEK APARTMENTS SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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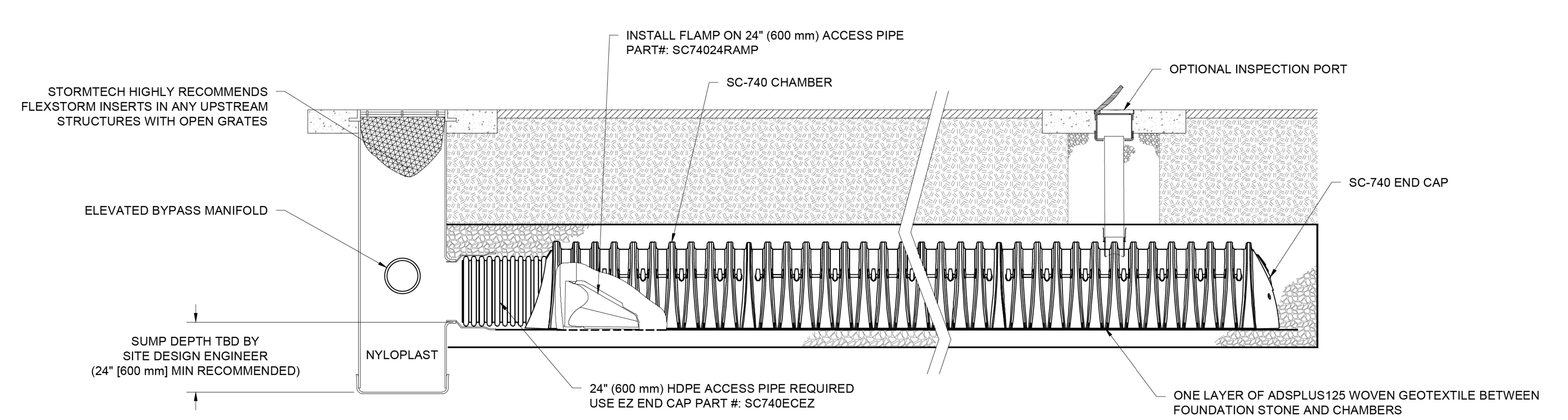
ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026

SHEET 7 OF 10



SC-740 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

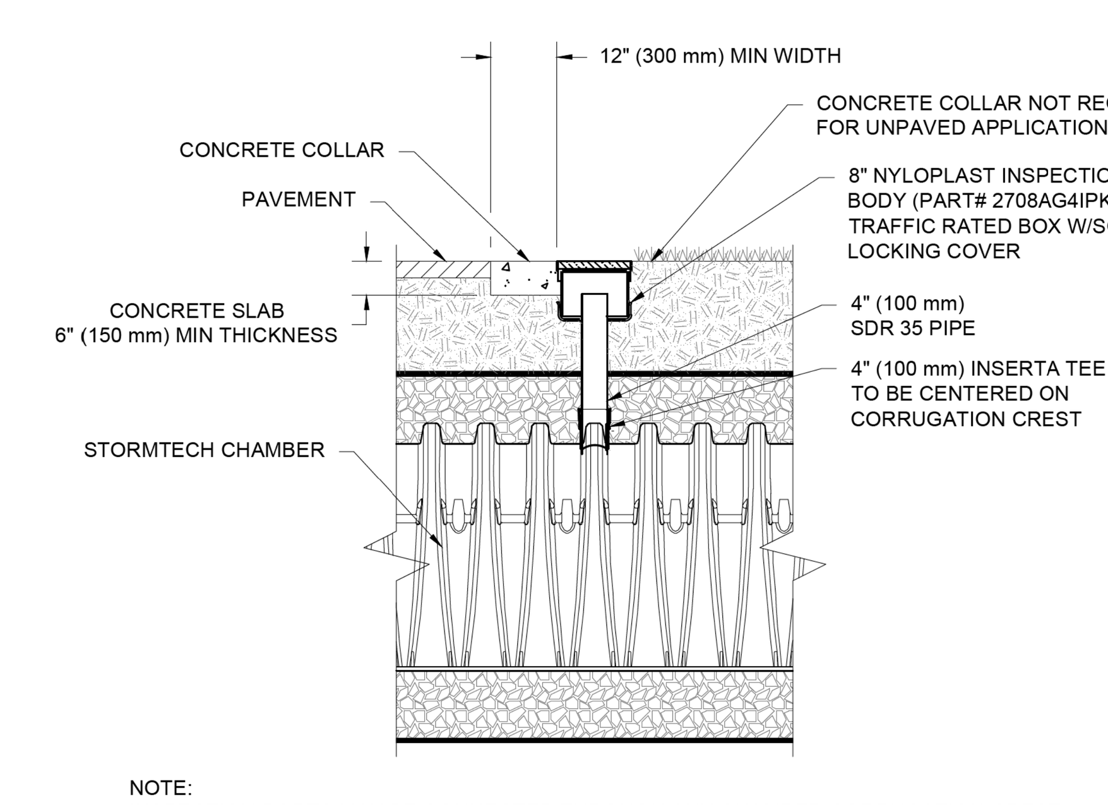
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)
NTS

LOST GAP CREEK APARTMENTS SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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SHEET 8 OF 10

ROBERT A. COPELAND JR. 70868 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — 05/18/23
PRIMARY CONTACT: Tony Olfers
MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700
mbc ENGINEERS

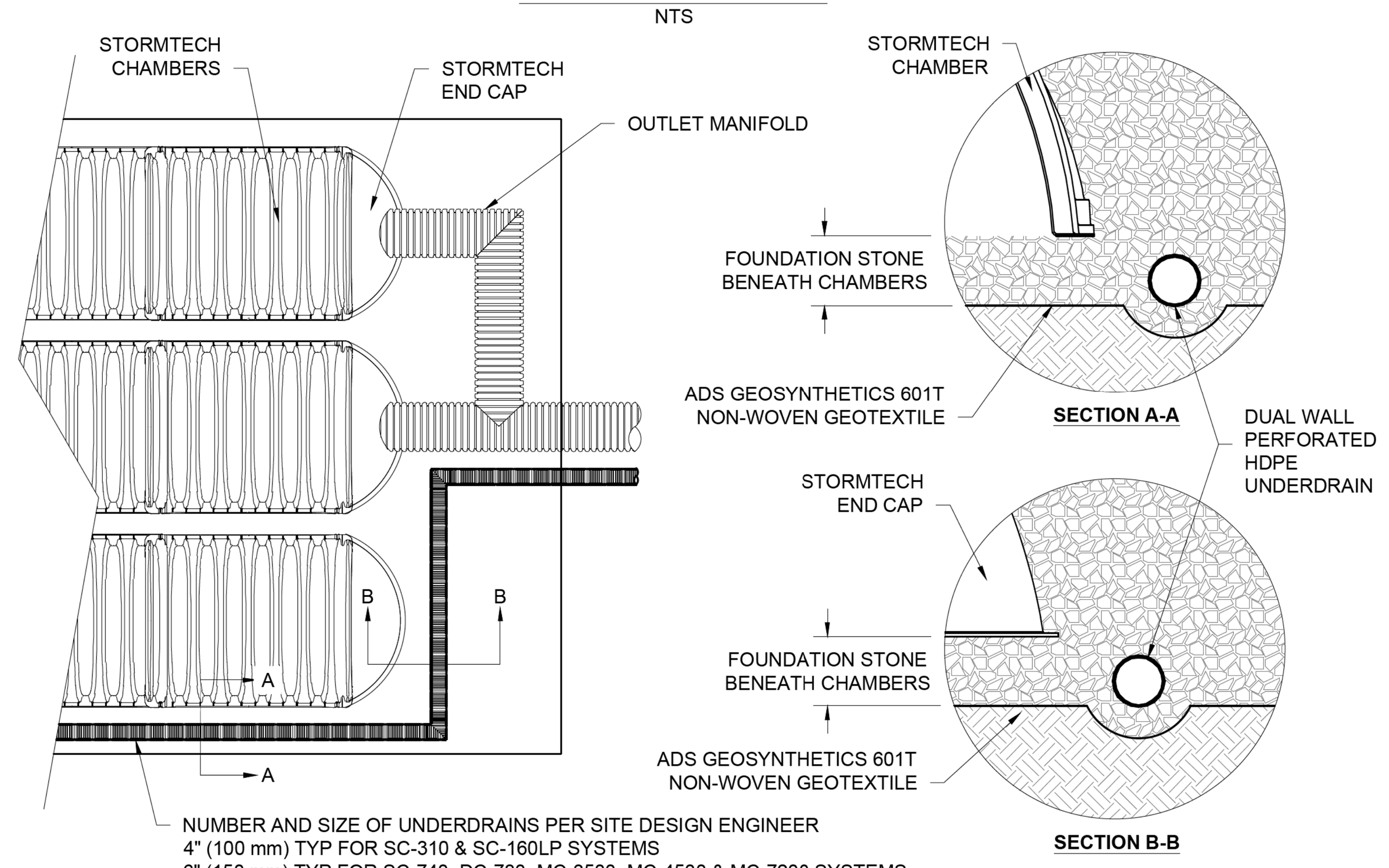
Lost Creek Gap Apartments
7868 Lost Creek Gap, Boerne, Tx. 78006
DETENTION DETAILS

REVISIONS: NO.	DATE	DESCRIPTION	BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 03-16-23
JOB NO. 33170-0879
SHT. C09.04

UNDERDRAIN DETAIL

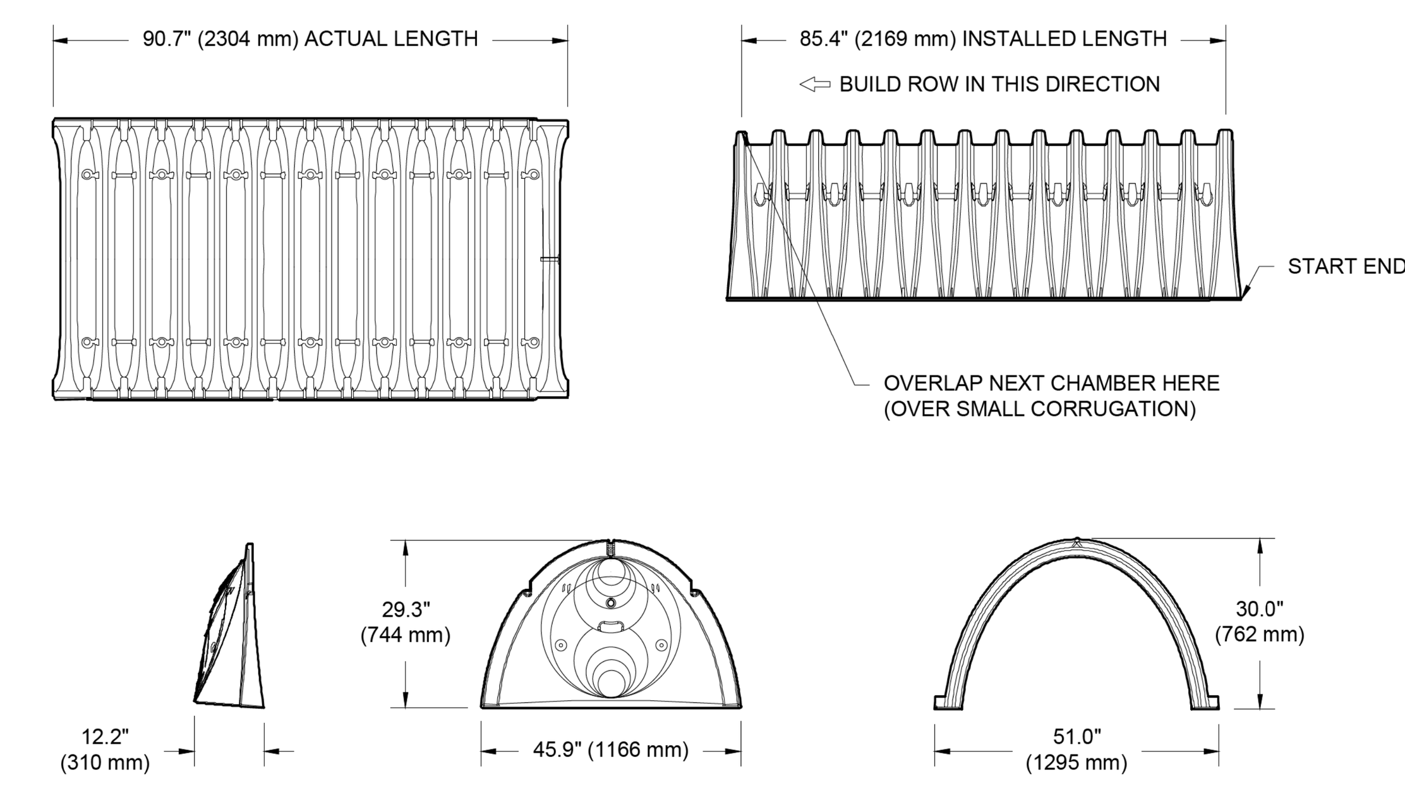
NTS



NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER
4" (100 mm) TYP FOR SC-310 & SC-160LP SYSTEMS
6" (150 mm) TYP FOR SC-740, DC-780, MC-3500, MC-4500 & MC-7200 SYSTEMS

SC-740 TECHNICAL SPECIFICATION

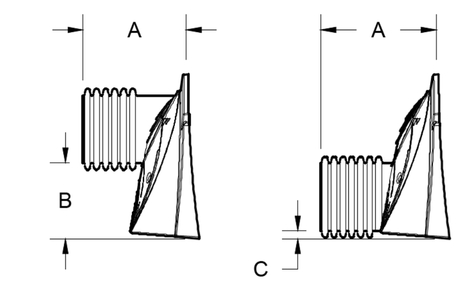
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	($1.30 m^3$)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	($2.12 m^3$)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740ECEZ*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740ECEZ THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

LOST GAP CREEK APARTMENTS
SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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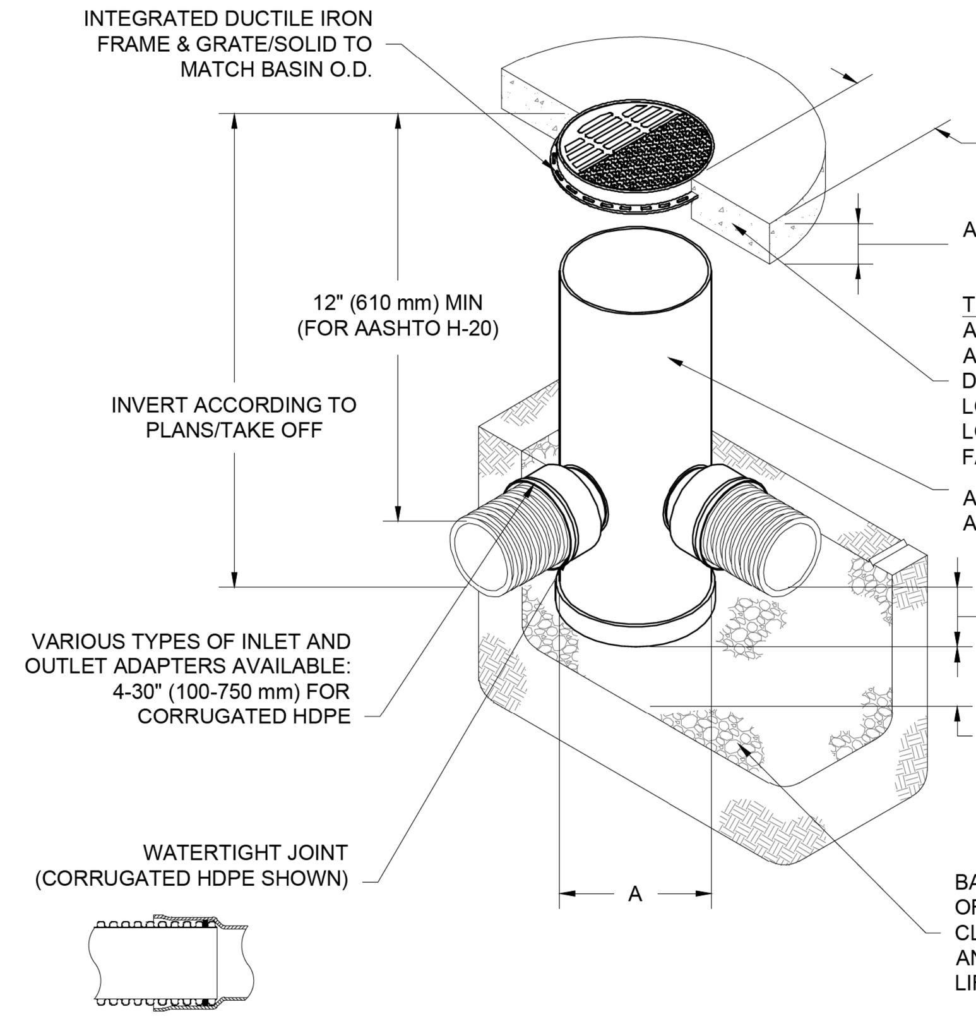
SHEET 9 OF 10

NYLOPLAST DRAIN BASIN

NTS



NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

LOST GAP CREEK APARTMENTS
SAN ANTONIO, TX
DATE: 03/01/23 DRAWN: JDL
PROJECT #: S332677 CHECKED: KLJ

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ADS
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SHEET 10 OF 10

05/16/23 STATE OF TEXAS
ROBERT A. COPELAND JR.
70868
LICENSED PROFESSIONAL ENGINEER

PRIMARY CONTACT:
Tony Olfers

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
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FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

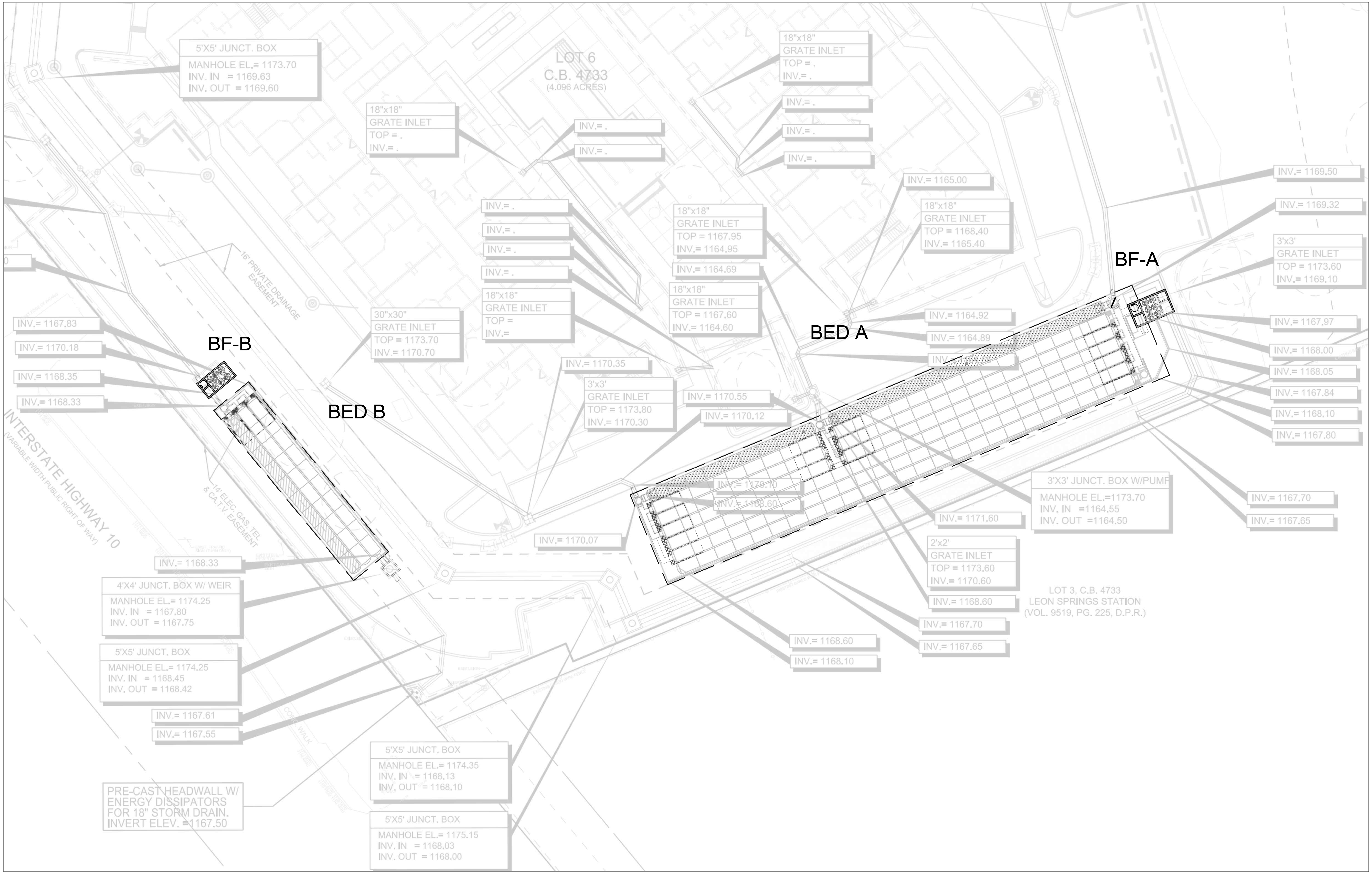
Lost Creek Gap Apartments

7868 Lost Creek Gap, Boerne, Tx. 78006

DETENTION DETAILS

REVISIONS: DATE NO. DESCRIPTION BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 03-16-23
JOB NO. 33170-0879
SHT. C09.05



05/18/23
STATE OF TEXAS
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Lost Creek Gap Apartments

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DETENTION AND WATER QUALITY LAYOUT

REVISIONS: DATE	NO.	DESCRIPTION	BY

PLAT ID#	22-11800631
DESIGN	TOO
DRAWN	FGG
CHECKED	
DATE	03-16-23
JOB NO.	33170-0879
SHT.	C09.06

LOST CREEK GAP APARTMENTS

TSS REMOVAL SUMMARY

	Area (acres)	Proposed Impervious Cover (acres)	Increase in Impervious Cover (acres)	Treatment Device	Required TSS Removal (lbs)	TSS Removal Provided (lbs)
Drainage Area A	2.63	2.11	2.11	BayFilter	1722	1743
Drainage Area B	0.61	0.50	0.50	BayFilter	408	428
Uncaptured Area C	0.19	0.04	0.04	Overtreatment provided by BayFilters "A" & "B"	41	0
Total	3.43	2.65	2.65		2171	2171

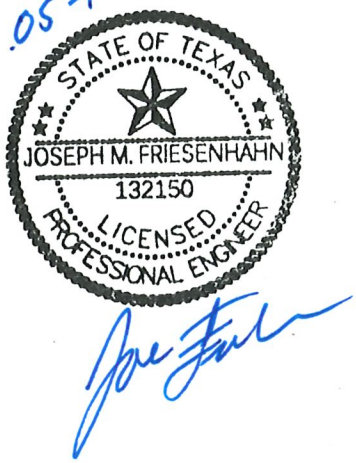
05-17-23

STATE OF TEXAS
JOSEPH M. FRIESENHAHN
132150
LICENSED
PROFESSIONAL ENGINEER

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Lost Creek Gap Apartments - San Antonio, TX
Date Prepared: 5/10/2023

05-17-23



1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 — Pages 3-27 to 3-30

Equation 3.3: $L_M = 27.2(A_N \times P)$

L_M = 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 =	Bexar	
Total project area included in plan * =	3.430	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	2.660	acres
Total post-development impervious cover fraction * =	0.78	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	2171	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	3	

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

Drainage Basin/Outfall Area No. =	**A**	
Total drainage basin/outfall area =	2.630	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	2.110	acres
Post-development impervious fraction within drainage basin/outfall area =	0.80	
$L_{M\ THIS\ BASIN}$ =	1722	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	2.630	acres
A_I =	2.110	acres
A_P =	0.520	acres
L_R =	1913	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	1743	lbs.
F =	0.91	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	1.80	inches
Rainfall Intensity =	1.15	inches per hour
Post Development Runoff Coefficent =	0.63	
Effective Area =	1.91	acres
Peak Flow =	2.20	cubic feet per second
On-site Water Quality Volume =	10776	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	12931	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF545	
Cartridge Surface Loading Rate =	0.5	GPM per ft²
Cartridge Capacity =	45.00	GPM
Cartridge head =	30.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	6.00	inches

Option 1. Volume Design

Number of Cartridges for Volume-Based Configuration =	5	
Storage Volume for Volume-Based Configuration =	12931	cubic feet

Option 2. Flow Through Design

Flow Rate for Flow-Through Configuration =	2.20	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	22	
Volume for Flow-Through Configuration =	0	cubic feet

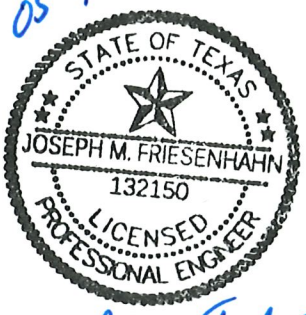
Option 3. BayFilter w/Equalization Design

Minimum number of Cartridges Required =	5	
Flow Rate for Flow-Through Configuration w/ Equalization =	0.60	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	6	
Minimum Required Equalization Storage (Calculated Volume +20%) =	3640	cubic feet

Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: Lost Creek Gap Apartments - San Antonio, TX
Date Prepared: 5/10/2023

05-17-23



Joe Friesenhahn

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 — Pages 3-27 to 3-30
Equation 3.3: $L_M = 27.2(A_N \times P)$

L_M = 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 =	Bexar	
Total project area included in plan * =	3.430	acres
Predevelopment impervious area within the limits of the plan * =	0.000	acres
Total post-development impervious area within the limits of the plan* =	2.660	acres
Total post-development impervious cover fraction * =	0.78	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	2171	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	3	

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

Drainage Basin/Outfall Area No. =	**B**	
Total drainage basin/outfall area =	0.610	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	0.500	acres
Post-development impervious fraction within drainage basin/outfall area =	0.82	
$L_{M\ THIS\ BASIN}$ =	408	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	BayFilter	
Removal efficiency =	87	percent

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

RG-348 Page 3-33 Equation 3.7:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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 =	0.610	acres
A_I =	0.500	acres
A_P =	0.110	acres
L_R =	453	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	428	lbs.
F =	0.94	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348 Pages Section 3.4.14

Offsite area draining to BMP =	0.000	acres
Offsite impervious cover draining to BMP =	0.000	acres
Impervious fraction of off-site area =	0.00	
Off-site Runoff Coefficient =	0.00	
Rainfall Depth =	2.40	inches
Rainfall Intensity =	1.50	inches per hour
Post Development Runoff Coefficent =	0.65	
Effective Area =	0.45	acres
Peak Flow =	0.68	cubic feet per second
On-site Water Quality Volume =	3466	cubic feet
Off-site Water Quality Volume =	0	cubic feet
Total Water Quality Volume (Calculated + 20%)	4159	

7. BayFilter

Designed as Required in RG-348 Section 3.4.14

Cartridge model =	BF545	
Cartridge Surface Loading Rate =	0.5	GPM per ft²
Cartridge Capacity =	45.00	GPM
Cartridge head =	30.00	inches
Cartridge diameter =	30.00	inches
Manifold diameter =	6.00	inches

Option 1. Volume Design

Number of Cartridges for Volume-Based Configuration =	1	
Storage Volume for Volume-Based Configuration =	4159	cubic feet

Option 2. Flow Through Design

Flow Rate for Flow-Through Configuration =	0.68	cubic feet per second
Number of Cartridges for Flow-Through Configuration =	7	
Volume for Flow-Through Configuration =	0	cubic feet

Option 3. BayFilter w/Equalization Design

Minimum number of Cartridges Required =	1	
Flow Rate for Flow-Through Configuration w/ Equalization =	0.60	cubic feet per second
Number of Cartridges for Flow-Through Configuration w/ Equalization =	6	
Minimum Required Equalization Storage (Calculated Volume +20%) =	62	cubic feet

05-17-23

STATE OF TEXAS
JOSEPH M. FRIESENHAHN
132150
LICENSED
PROFESSIONAL ENGINEER

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

LOST CREEK GAP APARTMENTS 5/10/2023

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

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

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Bexar	
Total project area included in plan * =	3.43	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	2.66	acres
Total post-development impervious cover fraction * =	0.78	
P =	30	inches
$L_{M\ TOTAL\ PROJECT}$ =	2171	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 3

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

Drainage Basin/Outfall Area No. = C (Uncapt)

Total drainage basin/outfall area =	0.19	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.05	acres
Post-development impervious fraction within drainage basin/outfall area =	0.26	
$L_{M\ THIS\ BASIN}$ =	41	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = N/A
Removal efficiency =

ATTACHMENT "N"

MAINTENANCE PLAN AND SCHEDULE FOR BAYSAVER BAYFILTER AND STORAGE SYSTEM

PROJECT NAME *Lost Creek Gap Apartments*

ADDRESS *7868 Lost Creek Gap*

CITY, STATE ZIP *Boerne, TX 78006*

MAINTENANCE ON BAYSAVER BAYFILTER

Due to the high level of pollutant variation and specifically sediment loading, the unit shall be inspected at least every other month during the first year of operation to determine loading and required maintenance intervals. This information can be used to establish an appropriate maintenance schedule for subsequent years. If soil disturbing activities are being conducted within the unit's drainage area, inspection frequencies must be increased to once each month and after rain events of 0.5" and larger. The maintenance cycle of the BayFilter system will be driven mostly by the actual solids load on the filter. The system should be periodically monitored to be certain it is operating correctly.

Indications of the need for maintenance:

- Effluent flow decreasing to below the design flow rate or decrease in treatment below required levels (e.g., greater than 24hr drain down for a volume-based system, or the detention drain down time- whichever is greater).
- Filter cartridge replacement should also be considered when sediment levels are at or above the level of the manifold system which is 6 inches and 3 inches for a BayFilter 545 and 522, respectively.
- Bypass occurs during storm events
- If excessive floatables (trash and debris) are present (but no standing water or excessive sedimentation), perform a minor maintenance consisting of gross solids removal, not filter media replacement.
- If standing water above the bottom of the filter cartridge is present in the vault 96 hours after a 2 year rainfall event.
- Removal of trash and silt from the pretreatment chamber

MAINTENANCE & INSPECTION PROCEDURE

- Remove the manhole covers and open all access hatches.
- Before entering the system make sure the air is safe per OSHA Standards or use a breathing apparatus. Use low O2, high CO, or other applicable warning devices per regulatory requirements.

- Using a vacuum truck remove any liquid and sediments that can be removed prior to entry.
- Using a small lift or the boom of the vacuum truck, remove the used cartridges by lifting them out.
- Any BayFilters that cannot be readily lifted directly out of the vault should be removed from their location and carried to the lifting point using the Trolley system installed in the vault (if applicable).
- When all BayFilters are removed, remove the balance of the solids and water; then loosen the stainless clamps on the Fernco couplings in the pipe manifold; remove the drain pipes as well. Carefully cap the manifold and the Ferncos and rinse the floor removing the balance of the collected solids.
- Clean the manifold pipes, inspect, and reinstall.
- Install the exchange BayFilters and close all covers.
- BaySaver Technologies, LLC. states that used BayFilter cartridges may be sent back to them for exchange/recycling and credit on undamaged units. Contact BaySaver Technologies at 1.800.229.7283 for more information.
- According to 30 TAC 330 or 30 TAC 335, identify any special disposal requirements associated with spent media, absorbents, or other material to be generated during routine cleaning/maintenance operations.
- Removed media will be disposed of according to local and state regulations.

MAINTENANCE ON STORAGE SYSTEM

Underground detention vaults are similar in function as open detention basins. They have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and non-routine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

Inspections. Storage vaults should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the vault is meeting the target detention times. In particular, the vault's flow control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately.

Debris and Litter Removal. Debris and litter will accumulate near the vault's flow control device. Particular attention should be paid to floating debris that can eventually clog the control device or riser or orifice.

Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, etc.) should be identified and repaired immediately.

Nuisance Control. Standing water within the bottom of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, and litter are all occasionally perceived to be

problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed.

Sediment Removal. When properly designed, storage vaults will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in vaults for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the vault. Second sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be re-suspended if allowed to accumulate over time. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the vault or at least every 10 years.

MANUFACTURER CONTACT INFORMATION:

ADS/BaySaver Technologies Engineering Department
Email: info@baysaver.com
Phone: 1.800.229.7283
Website: http://www.baysaver.com/

Mail or other: 1030 Deer Hollow Drive
Mount Airy, MD 21771

"Proper" disposal of accumulated silt shall be accomplished following Texas Commission on Environmental Quality specifications. BMP maintenance frequently requires the disposal of accumulated sediment and other material. These materials are normally classified as special wastes when disposed of in municipal landfills. A Type 1 Municipal Solid Waste (MSW) landfill can accept household waste; anything else is a special waste as defined in 30TAC 330.2 (137). Special waste is a waste that requires special handling at a Type 1 MSW landfill. Labeling a filter media or sediment as a waste is not a waste characterization. The process to obtain authorization to dispose of a special waste begins with a request for approval called the "Request for Authorization for Disposal Waste, TCEQ Form 0152." The request is completed by the generator and submitted to the MSW permits section of the TCEQ for Executive Director review/approval. The MSW permits section performs the review described in 30 TAC 330.136.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

After all inspections results shall be written and records maintained and made available on request by TCEQ officials.

Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the basin maintenance. TCEQ must be notified and receive the form "TCEQ - 10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

[Signatures on following page]

Responsible Party for Maintenance: 7868 Lost Creek, LLC

Address: 400 N Loop 1604 Suite 200

City, State Zip: *San Antonio, TX 78232*

Telephone Number: (210) 894-9192

Signature of Responsible Party:

Print name of Responsible Party: Juan M. Alvarado

SAMPLE MAINTENANCE TABLE

ITEM #	DATE	DESCRIPTION OF ACTION(S) TAKEN	INITIALS

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

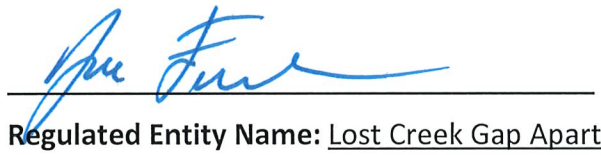
Signature

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

Print Name of Customer/Agent: Joseph Friesenhahn, P.E. / Macina, Bose Copeland & Associates

Date: 05/04/23

Signature of Customer/Agent:



Regulated Entity Name: Lost Creek Gap Apartments

Project Information

Potential Sources of Contamination

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

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

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

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

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

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

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

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

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

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

Sequence of Construction

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

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

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

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

FORM 0602 ATTACHMENTS

ATTACHMENT "A" - SPILL RESPONSE

In the event of a spill involving hydrocarbons or other hazardous substances, the contractor will immediately notify TCEQ (at 210-490-3096) and the engineer (210 545-1122) explaining the type and nature of the spill. The contractor shall be required to maintain a sufficient stockpile of sand material in the staging area. This sand material shall be used to immediately isolate and provide containment of the spill by constructing dikes. Furthermore, this sand material shall act as an absorbent material that can be disposed of offsite and out of the Recharge Zone during cleanup operations. All contaminated soils resulting from an accidental release will be required to be removed and disposed of in accordance with all local, state, and federal regulations.

The objective of this attachment is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees. The following steps will help reduce the storm water impacts of leaks and spills:

Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information is available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

(3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

(4) Establish a continuing education program to indoctrinate new employees.

(5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

(2) Store hazardous materials and wastes in covered containers and protect from vandalism.

(3) Place a stockpile of spill cleanup materials where it will be readily accessible.

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from storm-water runoff during rainfall to the extent that it doesn't compromise clean-up activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM.

After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site. (2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

(3) Notification should first be made by telephone and followed up with a written report.

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.
More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of storm-water and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately

(3) Check incoming vehicles and equipment (including delivery trucks, employee, and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute storm-water. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non- leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the run-on of storm-water and the runoff of spills.

(2) Discourage "topping off" of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

ATTACHMENT "B" – POTENTIAL SOURCES OF CONTAMINATION

Other potential sources are:

1. Oil and gasoline leaks from construction equipment.
2. Vehicles tracking in and out of the project.
3. Asphaltic paving and associated materials.
4. Minor leakage or spillage of paints, lacquers, solvents, etc, used in conjunctions with building construction which may occur simultaneously with infrastructure construction.
5. Leakage from self contained portable toilet facilities.

ATTACHMENT "C" – SEQUENCE OF MAJOR ACTIVITIES

1. Install all Temporary BMP's (rock berms and silt fencing), construction entrance, and tree protection for on-site construction. (0.20 acre)
2. Clear site & prepare area for construction (3.43 acres)
3. Excavate and fill site as dictated by the grading plan (3.43 acres)
4. Cut road to grade (29.83 acres)
5. Install utilities; sewer mains and laterals, water mains and services, underground storm drains, and underground electric (3.43 acres)
6. Construct roads (3.43 acres)
7. Construct building pads (3.43 acres)
8. Install inlet protection on all curb and grate inlets (3.43 acres)
9. Fine grade site (29.83 acres)
10. Construct paved surfaces; concrete parking areas & sidewalks (3.43 acres)
11. Clean site (3.43 acres)
12. Remove temporary BMPs (0.20 acres)

ATTACHMENT "D" - Temporary Best Management Practices

A) The erosion control barriers will be placed down gradient of the proposed disturbed area as shown on the site plan. These barriers will in turn filter the up gradient water preventing pollution.

B) All contractors, subcontractors, and builders shall endeavor to avoid the pollution of runoff water by using "best management practices" and reasonable foresight to avoid contact between runoff water and polluting materials.

Some best management practices to which all parties are expected to conform are as follows:

1. Prior to the beginning of the work listed in "Attachment C", the contractor will install the sediment control barriers as specified on the separate "Temporary Pollution Abatement Plan" which is attached at the end of this section. These barriers (silt fences, etc.) will be maintained during the entire time construction is in progress. Thus erodible material and pollution that might be generated during construction will be intercepted by these same barriers.
2. The silt fences specified on the "Temporary Pollution Abatement Plan" were positioned to be down-gradient of all construction zones. Thus, with proper installation and maintenance these barriers shall be effective in preventing potentially contaminated runoff from leaving the site.
3. The general contractor shall develop a written plan to control the generation of dust during construction phase and submit it to the developer.
4. Builders and their contractors shall clean equipment only onto areas protected by their silt fences or dikes. Set forth in the TBMP's plan is a location where a "Concrete Truck Washout Pit" will be constructed. The builder shall inform his concrete supplier that this Washout Pit is the only point in the project where washout and waste concrete mix may be discharged.
5. Stockpiles of erodible material (topsoil, sand, etc.) shall be placed in areas only protected by silt fences or other erosion barriers.
6. All contractors shall provide self-contained toilet facilities for their employees.
7. Chemicals, solvents, paints, and other potentially toxic materials must be stored in such a manner that they are protected from rainfall and surface runoff water.
8. All contractors shall provide waste receptacles at locations convenient to their construction area; to protect from leaching by rainfall; and provide regular collection.

C) Once site grading has commenced, swales will be constructed (shaped and sloped as depicted by the grading plan) to direct storm-water run-off to the various inlets located throughout the project. These swales will be used on a temporary and permanent basis. The location of theses swales once constructed will be permanent.

D) The proposed silt fences and rock berms should be adequate measures to maintain flow to any naturally occurring sensitive features downstream.

ATTACHMENT "E" – Request to Temporarily Seal a Feature

Not Applicable

ATTACHMENT "F" – Structural Practices

The proposed silt fences, rock berms, swales, and multiple inlet protection locations on-site should be adequate structural practices for this project.

ATTACHMENT "G" – Drainage Area Map

Please reference the attached drawing illustrating the proposed drainage areas and sub-areas.

ATTACHMENT "H"- Temporary Sediment Pond Plans and Calculations

N/A

ATTACHMENT "I" – Inspection and Maintenance

All TBMP'S shall be inspected by the contractor on a weekly basis and after all substantial rain events. The contractor shall keep records of all inspections that were made. Also the contractor shall repair or replace any damaged or dysfunctional TBMP's. The contactor shall insure that all TBMP's are maintained and inspected according to TCEQ's Technical Guidance Manual.

Inspection and Maintenance shall include but is not limited to:

For the Construction Entrance:

- The contractor shall maintain the entrance in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
- The contractor shall immediately remove any and all sediment spilled, dropped, washed or tracked onto public rights-of-way.
- When necessary, the contractor shall clean wheels to remove sediment prior to entrance onto public rights-of-way.
- When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
- The contractor shall prevent all sediment from entering any storm drain, ditch, or water course by using approved methods.
- Records will be kept with the construction site Superintendent of all inspection and maintenance actions. See maintenance record chart.

For Silt Fencing:

- The contractor shall inspect all silt fencing weekly and after any rainfall for sediment accumulation, torn fabric and crushed or collapsed sections throughout the duration of construction.
- Sediment shall be removed when sediment buildup reaches 6 inches, or a second line of fencing shall be installed parallel to the original fence.
- Torn fabric shall be replaced by the contractor; a second line of fencing shall be erected parallel to the torn section if replacement is not feasible.
- Contractor shall replace or repair any fence sections crushed or collapsed during the course of construction. Silt fence may be relocated by the contractor to a location where it will provide equal protection should the original/planned installation obstruct vehicular access to the site.
- When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be re-vegetated. The fence itself should be disposed of in an approved landfill.
- Records will be kept with the construction site Superintendent of all inspection and maintenance actions. See maintenance record chart.

For Rock Berms:

- The contractor shall inspect all rock berms weekly and after any rainfall for sediment accumulation, debris building up, or damage throughout the duration of construction.
- Sediment and other debris shall be removed when sediment buildup reaches 6 inches. The accumulated silt and debris shall be disposed in an approved manner that will not cause any additional siltation.
- The contractor to repair any loose wire sheathing.
- The contractor shall reshape the berm as needed during inspection throughout the duration of construction.
- The contractor shall replace the berm when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
- The rock berm shall remain in place until all upstream areas are stabilized and accumulated silt removed.
- Records will be kept with the construction site Superintendent of all inspection and maintenance actions. See maintenance record chart next.

For Grate and Curb Inlet Protection:

- The contractor shall inspect all inlet protection weekly and after any rainfall for sediment accumulation, debris building up, or damage throughout the duration of construction. Repair or replacement should be made promptly as needed by the contractor.
- Sediment and other debris shall be removed when sediment buildup reaches 3 inches. The removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

- The contractor shall check placement of inlet protection measures to prevent gaps between these measures and the curb.
- The contractor shall inspect the filter fabric and patch or replace if torn or missing.
- Records will be kept with the construction site Superintendent of all inspection and maintenance actions. See maintenance record chart next on the next page.

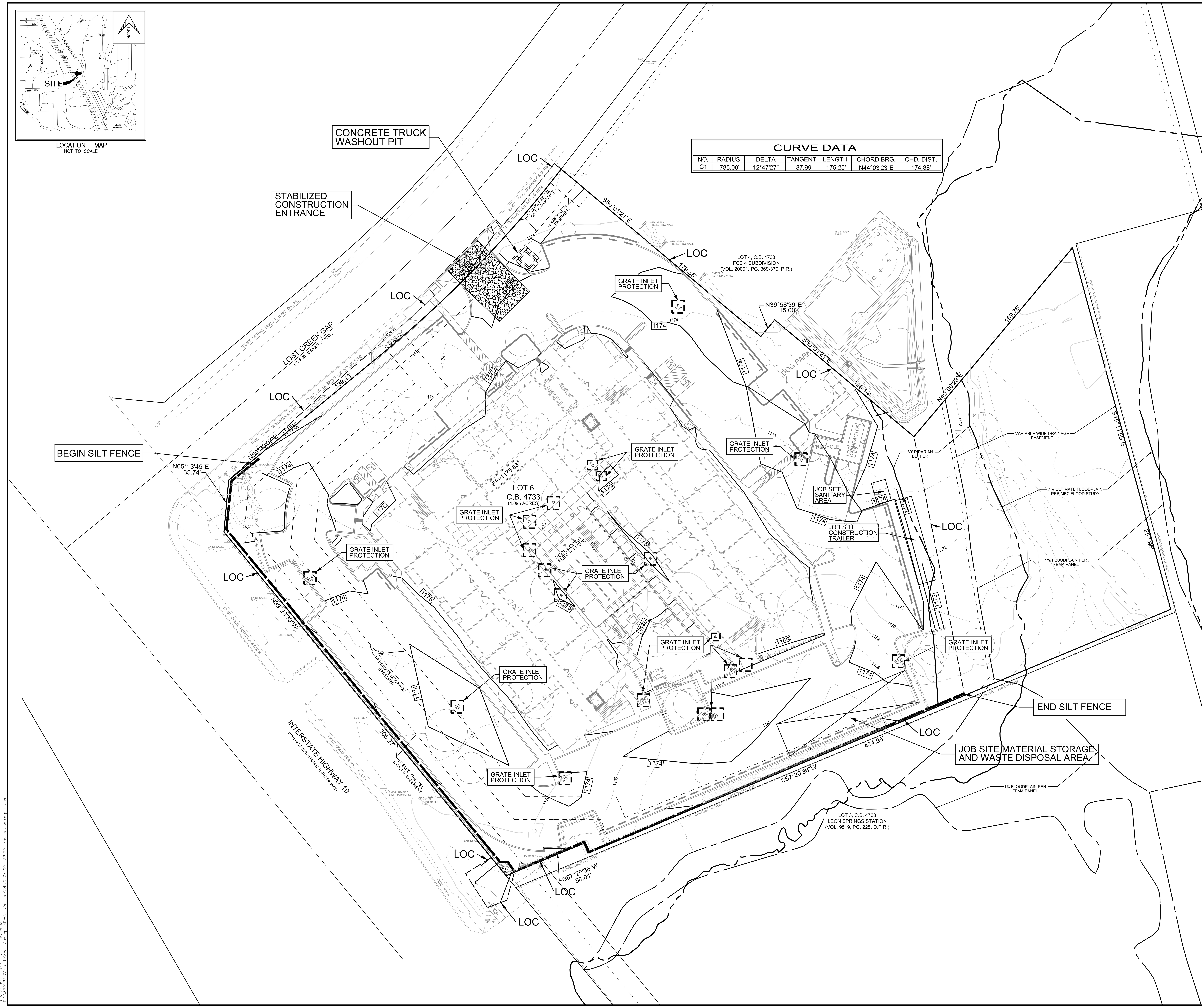
Temporary Stormwater Section Attachment "I" continued

ITEM #	DATE	DESCRIPTION OF ACTION(S) TAKEN	INITIALS

ATTACHMENT "J" – Interim and Permanent Soil Stabilization

All disturbed permeable areas shall be stabilized. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is prevented by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of a site is temporarily ceased, and the earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of the site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after the construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Examples of acceptable temporary and permanent soil stabilization measures are establishment of temporary vegetation, establishment of permanent vegetation, mulching, geo-textiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation. The soil stabilization method used in this project **SHALL** be an approved method within the TCEQ Technical Guidance Manuel and **MUST** be approved by MBC Engineers before it is implemented in the project. The method of soil stabilization approved for this project will be a combination of sod stabilization around the buildings and parking areas, tree protection, and hydro-mulching those areas disturbed away from the buildings which will not be landscaped.



CURVE DATA

NO.	RADIUS	DELTA	TANGENT	LENGTH	CHORD BRG.	CHD. DIST.
C1	785.00'	12°47'27"	87.99'	175.25'	N44°03'23"E	174.88'

NORTH

SCALE: 1" = 30'

0' 15' 30' 60' 90'

LEGEND

- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE TRUCK WASHOUT PIT
- GRATE & CURB INLET PROTECTION
- FIBER ROLL BERM
- ROCK BERM
- 780 EXISTING CONTOUR
- 100 PROPOSED CONTOUR (REPRESENT FINISHED TOP OF PAVEMENT OR TOPSOIL)
- DEFINED SWALE
- PROPOSED RETAINING WALL
- PROPOSED RIDGE
- FF= PROPOSED FIN. FLOOR ELEVATION
- PROPOSED FOUNDATION BREAKS
- OVERLAND FLOW DIRECTION
- GRATE
- LIMITS OF CONSTRUCTION (LOC)

THIS SHEET TO BE USED FOR EROSION CONTROL PURPOSES ONLY.

Acknowledged by: ________ OWNER

________ CONTRACTOR

________ ENGINEER

05/16/23 STATE OF TEXAS ROBERT A. COPELAND JR. 70868 LICENSED PROFESSIONAL ENGINEER

PRIMARY CONTACT: Tony Olfers

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

mbc ENGINEERS

Lost Creek Gap Apartments

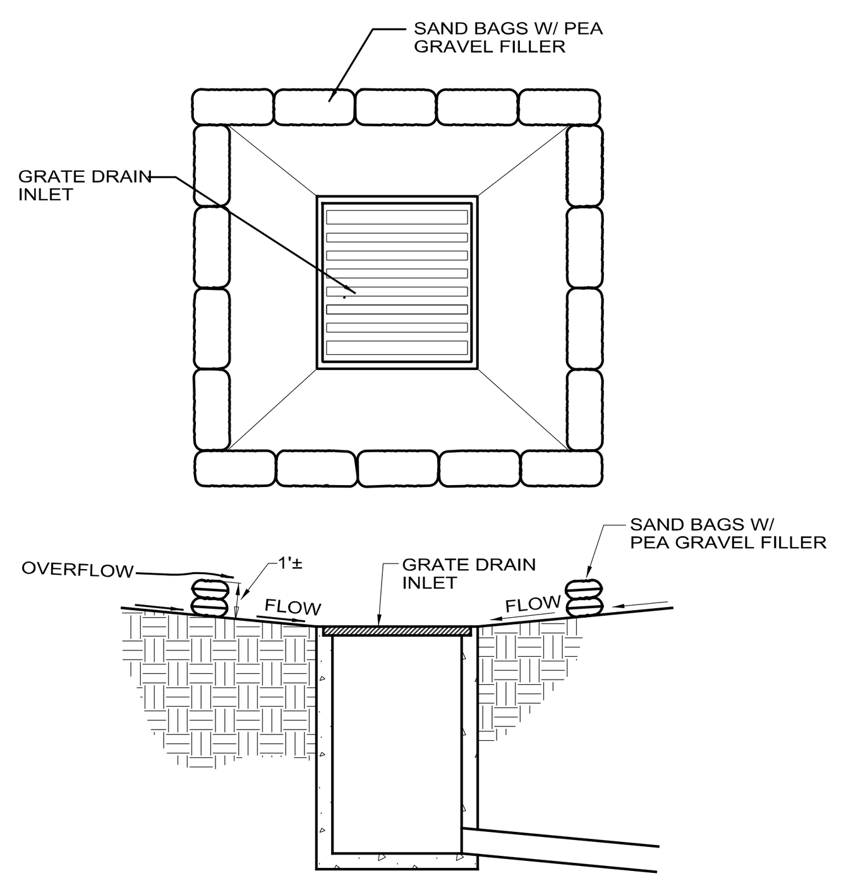
7868 Lost Creek Gap, Boerne, Tx. 78006

EROSION CONTROL PLAN

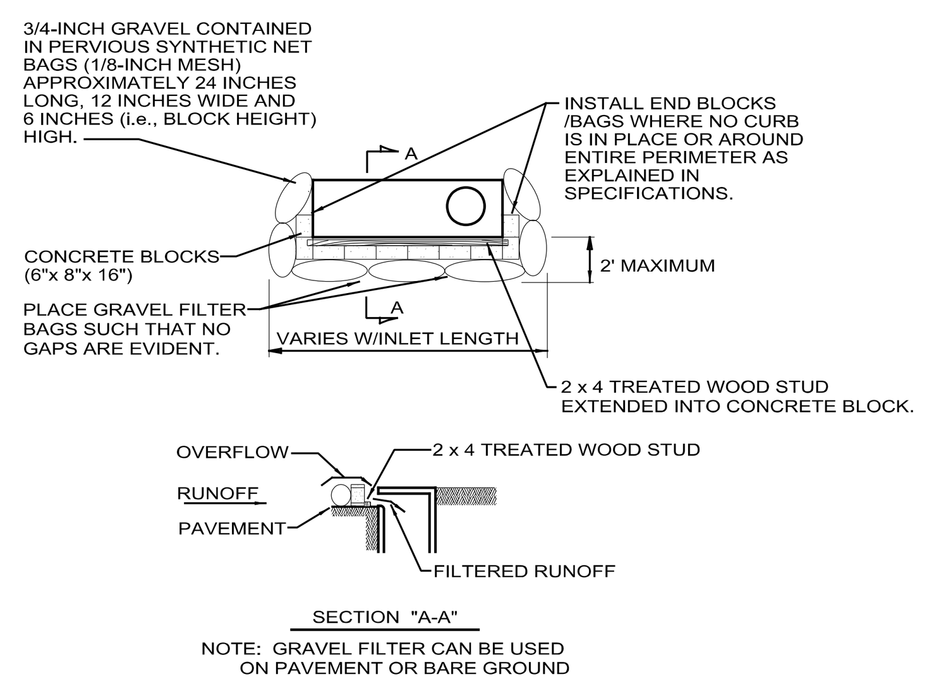
REVISIONS: DATE	NO.	DESCRIPTION	BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 12-29-22
JOB NO. 33170-0879
SHT. C04.00

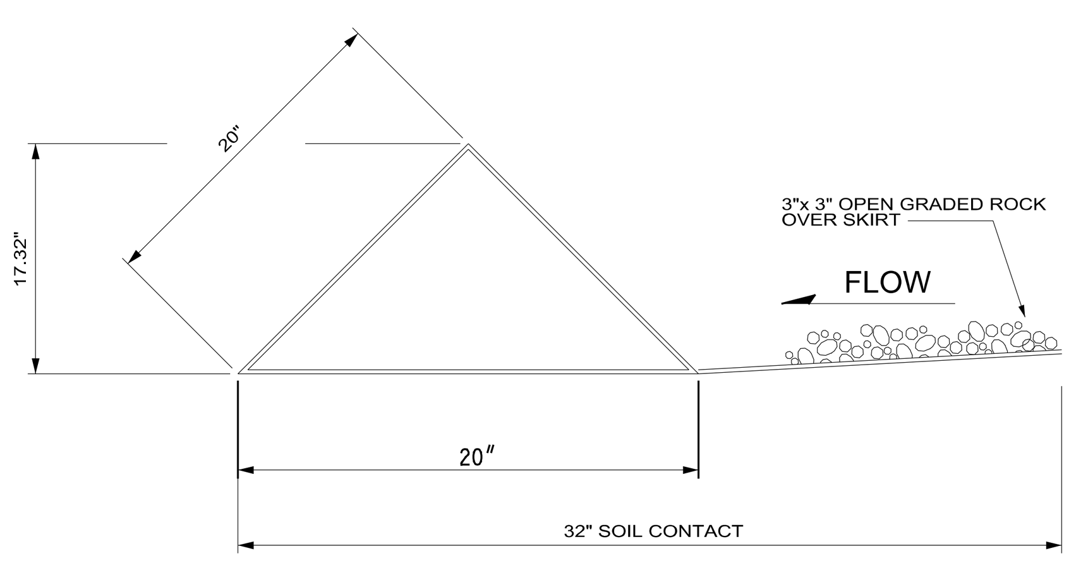
6:03:24 PM 5/16/2023 FGomez
P:\0879\33170-Lost Creek Gap Apts\Design\Design Civil\C 04.00 33170 erosion control plan.dgn



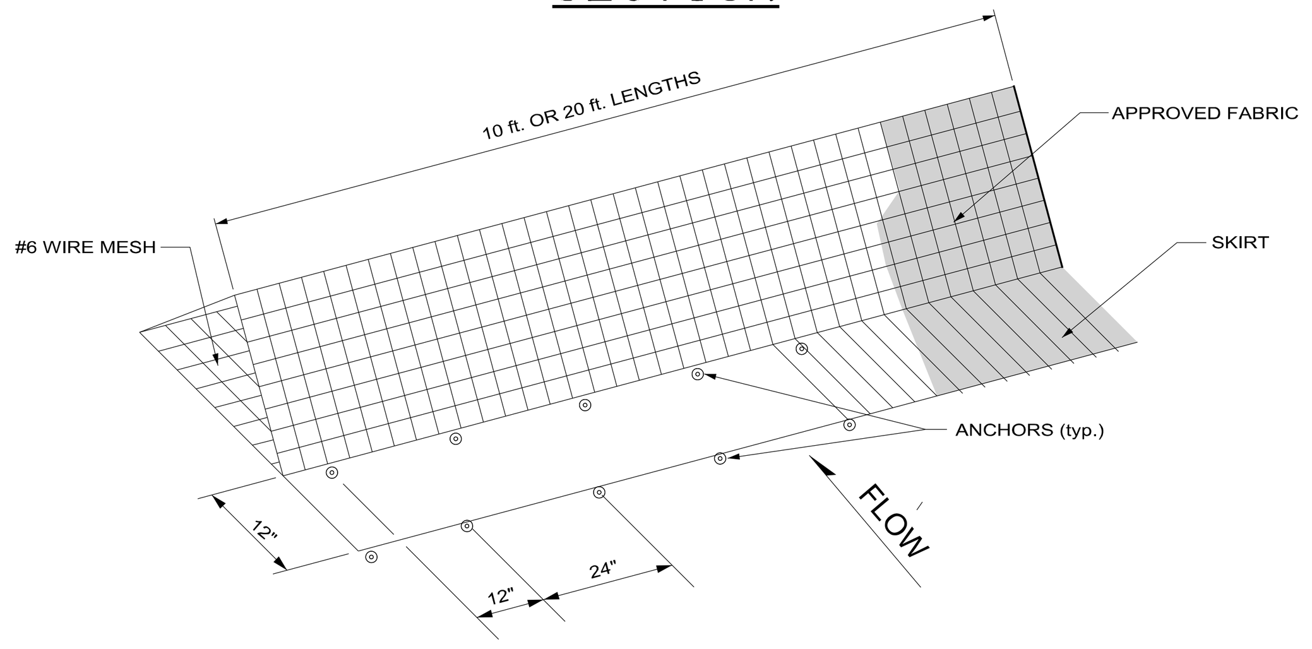
GRATE INLET PROTECTION DTL.
NOT TO SCALE



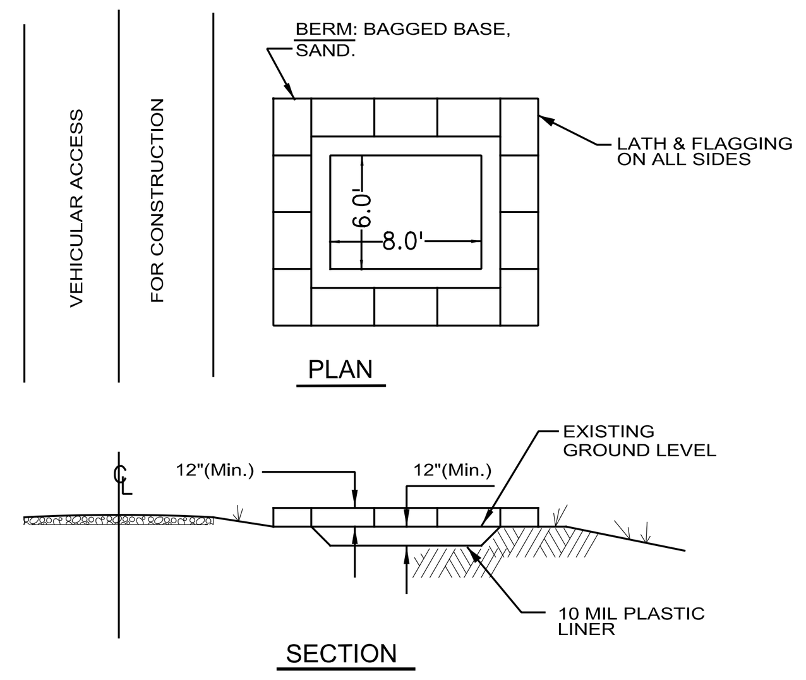
CURB INLET GRAVEL FILTER
NOT TO SCALE



SECTION



REMOVABLE TRIANGULAR FILTER DIKE
NOT TO SCALE



CONCRETE TRUCK WASHOUT PIT
NOT TO SCALE

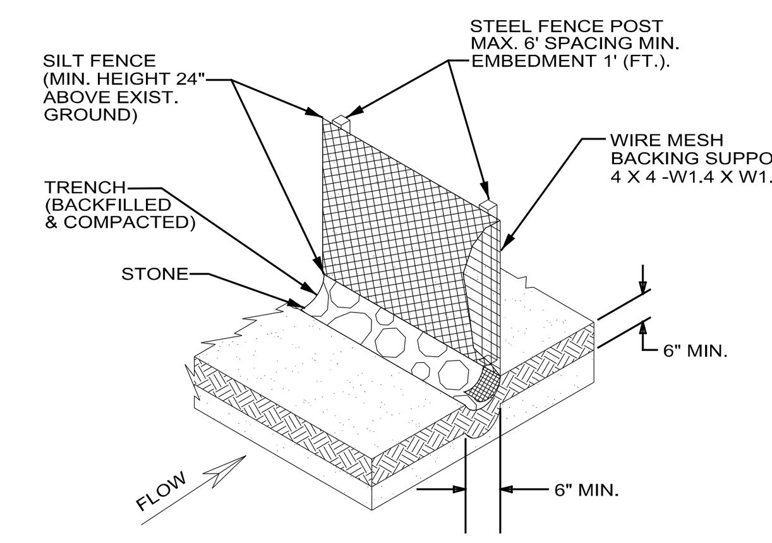
WASHOUT PIT GENERAL NOTES:

DETAILS ILLUSTRATE MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

WASHOUT PIT SHALL NOT BE LOCATED IN AREA SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

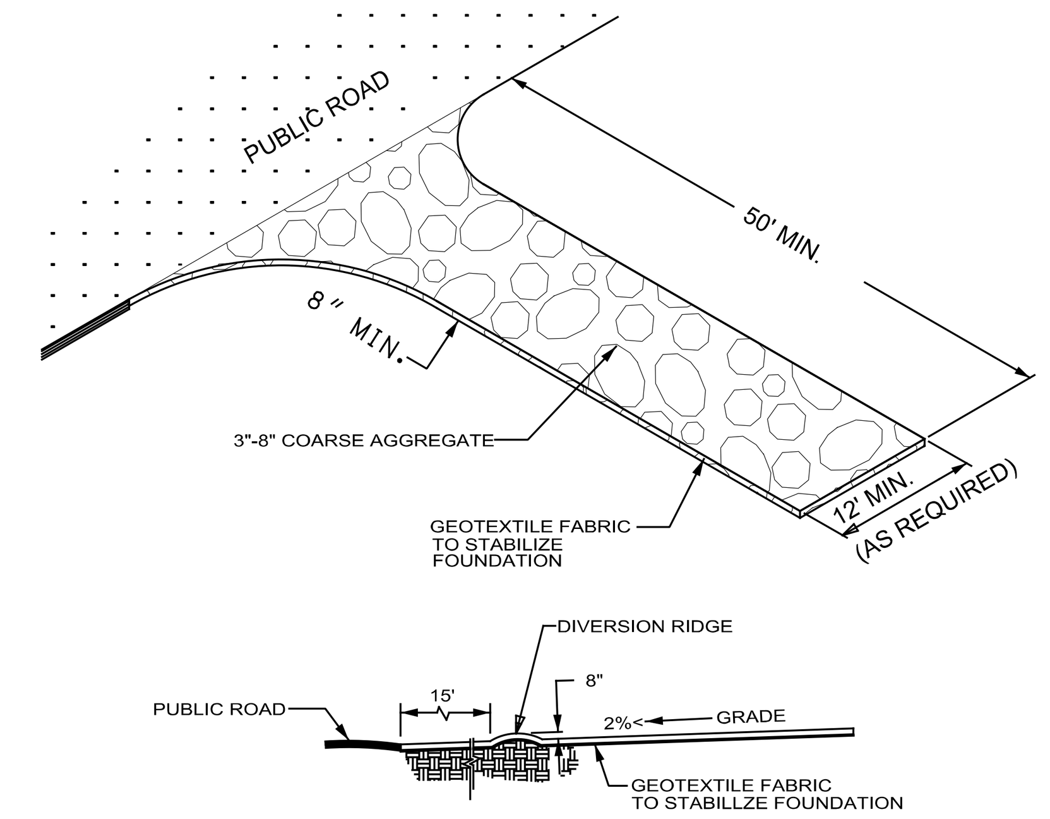
PIT SHALL NOT BE LOCATED OVER OR IN THE IMMEDIATE VICINITY OF A FEATURE OF GROUNDWATER RECHARGE.



TYPICAL SILT FENCE DETAIL
NOT TO SCALE

SILT FENCE NOTES:

1.) STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP.
2.) LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS¼ ACRE/ 100 FEET OF FENCE.
3.) THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
4.) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5.) SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6.) INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED.
7.) ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8.) REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION 6.
9.) REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.
10.) WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN A APPROVED LANDFILL.
11.) DESIGNATED SILT FENCE CONSIST OF THE FOLLOWING: GEOTECHNICAL FILTER FABRIC, STRETCHED AND SECURED TO THREE FOOT HIGH WIRE FENCING AND SUPPORTED BY STEEL POSTS AT A MAXIMUM SPACING OF 6 FEET. THE BOTTOM 6 INCHES OF FABRIC SHALL BE BURRIED.
12.) MAINTENANCE AND INSPECTIONS SHALL BE AS DESIGNATED IN THE STORM WATER POLLUTION PREVENTION PLAN.



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE (S. C. E.)
INSTALLATION of CONSTRUCTION ENTRANCE:

1. CLEAR THE AREA OF DEBRIS, ROCKS, OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
2. GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE S.C.E. ONTO A PUBLIC STREET WILL NOT BE ACCEPTED.
3. PLACE ROCK AS REQUIRED. (3"-5" OPEN GRADED CLEAN CRUSHED STONE)
4. SIDE CONTAINMENT, AT THE CONTRACTOR'S DISCRETION, IS SUGGESTED. THE SPECIFIED 8" THICKNESS OF CRUSHED STONE MUST BE MAINTAINED AT ALL TIMES.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

THE FOLLOWING/LISTED “CONSTRUCTION NOTES” ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED “CONSTRUCTION NOTES” RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING “CONSTRUCTION NOTES” IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY “CONSTRUCTION NOTES,” IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED “CONSTRUCTION NOTES” IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

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

4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

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

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

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

9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

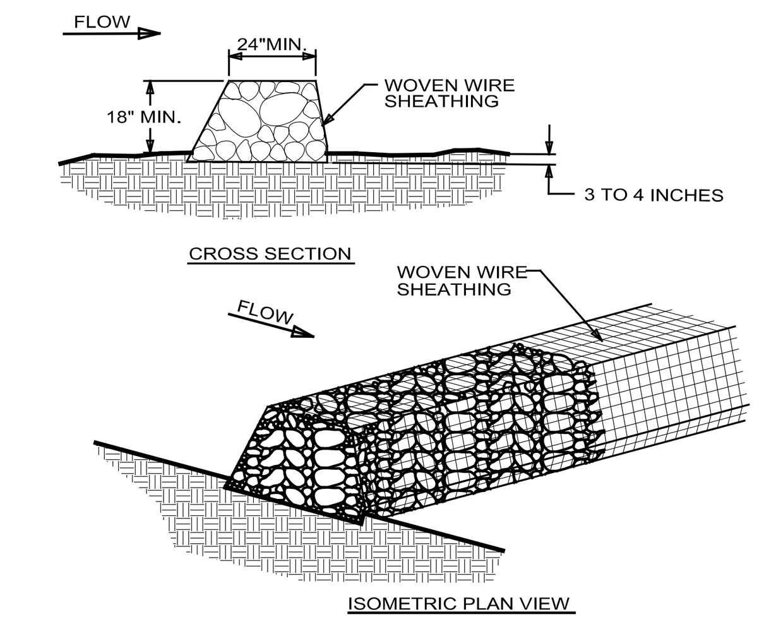
    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR

    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

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



ROCK BERM
NOT TO SCALE

ROCK BERM NOTES

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3 TO 5 INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5 TO 8 INCH DIAMETER ROCKS MAY BE USED.

3. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER. HEIGHT OF ROCK BERM SHALL NOT BE LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.

6. BERM SHALL BE INSTALLED PERPENDICULAR TO DIRECTION OF FLOW.

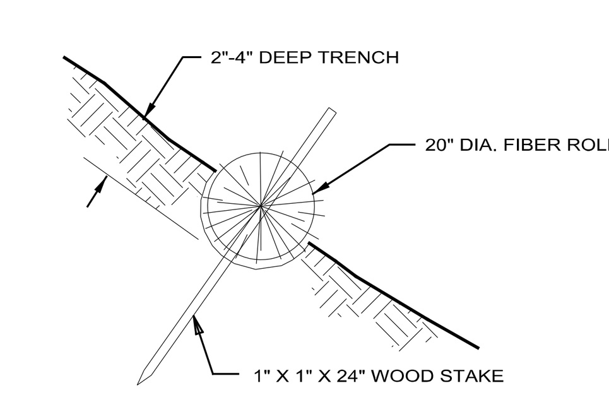
7. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

8. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES. DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

9. THE BERM SHOULD BE RESHAPED AND REPAIRED AS NEEDED DURING INSPECTION.

10. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

11. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SITE REMOVED.



FIBER ROLL DETAIL
NOT TO SCALE

FIBER ROLL NOTES:

1. CORE MATERIAL WILL BE BIODEGRADABLE. ACCEPTABLE MATERIALS ARE AGRICULTURAL RICE, WHEAT STRAW, OR COCONUT FIBER.

2. CONTAINMENT MESH WILL BE BIODEGRADABLE OR RECYCLABLE SUCH AS BURLAP, TWINE, OR UV PHOTO DEGRADABLE PLASTIC.

3. DRIVE STAKES AT EACH END OF FIBER ROLL AND SPACE 4FT MAXIMUM ON CENTER.

4. FIBER ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED.

GENERAL EROSION CONTROL NOTES

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS: AS DICTATED BY THE T.C.E.Q. WHILE CONSTRUCTION IS IN PROGRESS, THE CONTRACTOR SHALL ENDEAVOR TO IMPEDE THE TRANSMISSION OFF THE CONSTRUCTION SITE OF ERODED TOPSOIL AND SHALL AVOID POLLUTION OF TOPSOIL/RUNOFF DUE TO FUELING OR SERVICING OF EQUIPMENT OR IMPROPER MATERIALS.

2. EXCAVATED MATERIAL NOT USED FOR STREET FILL ON-SITE SHALL NOT BE STOCKPILED INDEFINITELY ON-SITE, BUT SHALL BE PROMPTLY TRANSPORTED OFF THE SITE. A SILT FENCE SHALL BE INSTALLED DOWN-SLOPE OF ANY PLACED FILL TO INHIBIT EROSION OF THE FILL MATERIAL.

3. THE DEVELOPER WILL SEED CLEARED STREET PARKWAYS WITH BERMUDA GRASS OR SOME OTHER FORM OF HARDY GRASS/PLANTS AS SOON AS POSSIBLE AFTER STREET AND UTILITY CONSTRUCTION IS COMPLETED.

4. THE SILT FENCING AND ROCK BERM SHOWN HERE-ON IS DESIGNED TO INTERCEPT SILT-CARRYING RUNOFF ON A UNIT-BY-UNIT BASIS AND INHIBIT ITS BEING CARRIED OUTSIDE THE BOUNDARIES OF THE UNIT AND THE DEVELOPMENT TO DOWNGRADE FEATURES. IT IS OUT INTENTION AND ANY CONTRACTOR'S DIRECTION TO INSTALL SILT FENCES AND ROCK BERM AS SHOWN PRIOR TO ANY EXCAVATION OR TRENCHING WITHIN A DELINEATED UNIT.

5. REFERENCE POLLUTION PREVENTION PLAN AND WATER POLLUTION ABATEMENT PLAN FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

6. LOCATION OF SILT FENCE AND ROCK BERM IS APPROXIMATE. CONTRACTOR TO DETERMINE EXACT LOCATION BASED ON WORK TO BE PERFORMED UNDER THIS CONTRACT AND WORK TO BE PERFORMED BY VARIOUS AGENCIES INVOLVED WITH THIS PROJECT.

7. THIS SHEET IS TO BE USED FOR EROSION CONTROL PURPOSES ONLY.

8. LOCATION OF STABILIZED CONSTRUCTION ENTRANCE IS TO BE AS SHOWN ON THIS PLAN UNLESS CONTRACTOR RECEIVES PRIOR WRITTEN APPROVAL FROM THE ENGINEER.

9. CONTRACTOR TO INSTALL ROCK GABION IN LOCATIONS WHERE SIGNIFICANT CONCENTRATED STORM WATER DISCHARGE OCCURS TOWARDS AN ERODABLE AREA.

THIS SHEET TO BE USED FOR EROSION CONTROL PURPOSES ONLY.

Acknowledged by:
OWNER
CONTRACTOR
ENGINEER

05/16/23 STATE OF TEXAS
ROBERT A. COPELAND JR.
70868
LICENSED PROFESSIONAL ENGINEER

PRIMARY CONTACT:
Tony Olfers

MACINA • BOSE • COPELAND & ASSOC., INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
1035 Central Parkway North, San Antonio, Texas 78232
(210) 545-1122 Fax (210) 545-9302 www.mbcengineers.com
FIRM REGISTRATION T.B.P.E. F-784, T.B.P.L.S. 10011700

Lost Creek Gap Apartments
7868 Lost Creek Gap, Boerne, Tx. 78006
EROSION CONTROL DETAILS

REVISIONS:

DATE	NO.	DESCRIPTION	BY

PLAT ID# 22-11800631
DESIGN TOO
DRAWN FGG
CHECKED
DATE 12-29-22
JOB NO. 33170-0879
SHT. C04.01

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Lost Creek Gap Apartments
Regulated Entity Location: Southeast Corner of I.H 10 W. & Lost Creek Gap
Name of Customer: 7868 Lost Creek, LLC
Contact Person: Juan M. Alvarado Phone: _____
Customer Reference Number (if issued):CN N/A
Regulated Entity Reference Number (if issued):RN N/A

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	4.096 Acres	$ 4,000.00
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: 05/04/23

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

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

I Juan M. Alvarado,
Print Name

Manager,
Title - Owner/President/Other

of 7868 Lost Creek, LLC
Corporation/Partnership/Entity Name

have authorized Macina, Bose, Copeland & Associates
Print Name of Agent/Engineer

of Macina, Bose, Copeland & Associates
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

5/3/23
Date

THE STATE OF Texas §

County of Bexar. §

BEFORE ME, the undersigned authority, on this day personally appeared Juan M. Alvarado. known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 3rd day of May, 2023.

NOTARY PUBLIC

JESSE H. VALDEZ JR
Notary Public, State of Texas
Comm. Expires 08-19-2024
NOTARY ID#: 772822-0

Jesse H. Valdez, Jr.
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08/19/2024.

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

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

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	05/04/2023

☒ 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:*
7868 Lost Creek, LLC	

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0804942026	32088571149	92-2680023	

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

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

13. Independently Owned and Operated?
☒ Yes ☐ No

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:	400 N Loop 1604 E Ste 200						
	City	San Antonio	State	TX	ZIP	78232	ZIP + 4

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(210) 894-9192		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Lost Creek Gap Apartments

23. Street Address of the Regulated Entity: *(No PO Boxes)*	7868 Lost Creek Gap							
	City	Boerne	State	TX	ZIP	78006	ZIP + 4	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Southeast Corner of I.H 10 W. & Lost Creek Gap				
26. Nearest City			State	Nearest ZIP Code	
San Antonio			TX	78006	
27. Latitude (N) In Decimal:	29.68122		28. Longitude (W) In Decimal:	98.63807	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	40	52.54	98	38	17.23

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)
6552		237210	

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

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

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

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

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

SECTION IV: Preparer Information

40. Name:	Joseph M. Friesenhahn	41. Title:	Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 545-1122		(210) 545-9302	jfriesenhahn@mbcengineers.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:	MACINA, BOSE, COPELAND & ASSOCIATES	Job Title:	ENGINEER
Name *(In Print)*:	JOSEPH M. FRIESENHAHN	Phone:	(210) 545- 1122

Signature:		Date:	05-04-23