CONTRIBUTING ZONE PLAN
FOR
ARKA MONTESSORI ACADEMY

PREPARED FOR

ARKA LEANDER INVESTMENTS, LLC.

Site Development Permit No. 24-XXXX

Job No. 23-00436

JULY 2024

CONTRIBUTING ZONE PLAN

FOR

ARKA MONTESSORI ACADEMY

PREPARED FOR

ARKA LEANDER INVESTMENTS, LLC.

Prepared By:

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Site Development Permit No. 24-XXXX

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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: Arka Leander Investments, LLC					**2. Regulated Entity No.:**				
3. Customer Name: Arka Leander Investments, LLC					**4. Customer No.:**				
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			1.698
9. Application Fee:	$4,000		**10. Permanent BMP(s):**					Water Quality Inlets & Underground Storage	
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**					N/A	
13. County:	Williamson		**14. Watershed:**					Brushy Creek	

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	_X_
Region (1 req.)	___	___	_X_
County(ies)	___	___	_X_
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell X Leander ___Liberty Hill ___Pflugerville ___Round Rock

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Ravindra Maddi, Arka Leander Investments LLC
Print Name of Customer/Authorized Agent Ravindra Maddi 7/26/2024 Signature of Customer/Authorized Agent Date

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

Contributing Zone Plan Application

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: Ravindra Maddi

Date: 7/19/2024

Signature of Customer/Agent:

Regulated Entity Name: Arka Leander Investments, LLC

Project Information

1. County: Williamson County
2. Stream Basin: Brushy Creek
3. Groundwater Conservation District (if applicable): N/A
4. Customer (Applicant):

   Contact Person: Ravindra Maddi
   Entity: Arka Leander Investments, LLC
   Mailing Address: 2309 Palmetto Way
   City, State: Southlake, Texas Zip: 76902
   Telephone: _____ Fax: _____
   Email Address: ravidra.maddi@gmail.com

5. Agent/Representative (If any):

   Contact Person: Ariella Meadows
   Entity: ESP Associates, INC
   Mailing Address: 12940 County Parkway
   City, State: San Antonio, Texas Zip: 78216
   Telephone: 210-349-3271 Fax: 210-349-2561
   Email Address: ameadows@espassiociates.com

6. Project Location:

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

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

   Turn right on to Park 35 Circle, turn right onto S I-35 Frontage Road, take the ramp on the left onto I-35 S, merge onto I-35 S for 2.9 miles. Take the exit toward US-183 N, Take the ramp to US 183 N/Lampasas. Merge onto US-183 N, take US-183 N for 11.6 and continue onto Route 183A, stay on Route 183A for 9.5 miles and take exit from San Gabriel Pkwy. Turn left onto San Gabriel Pkwy, continue on San Gabriel Pkwy for 1.5 miles. The destination will be on right.

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

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

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

10. ☒ **Attachment C - Project Narrative**. A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

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

11. Existing project site conditions are noted below:

- ☐ Existing commercial site
- ☐ Existing industrial site
- ☐ Existing residential site
- ☐ Existing paved and/or unpaved roads
- ☐ Undeveloped (Cleared)
- ☒ Undeveloped (Undisturbed/Not cleared)
- ☐ Other: _____

12. The type of project is:

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

13. Total project area (size of site): 1.698 Acres

    Total disturbed area: 1.821 Acres

14. Estimated projected population: 0

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	13907.34	÷ 43,560 =	0.319
Parking	23125.72	÷ 43,560 =	0.531
Other paved surfaces	10283.55	÷ 43,560 =	0.236
Total Impervious Cover	47,316.61	÷ 43,560 =	1.086

Total Impervious Cover 1.086 **÷ Total Acreage** 1.698 **X 100 =** 0.64**% 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 Leander (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			

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
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" = 20'.

35. 100-year floodplain boundaries:

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

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

    The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Maps 48491C0435F & 48491C0455F effective 12/20/2019.

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.

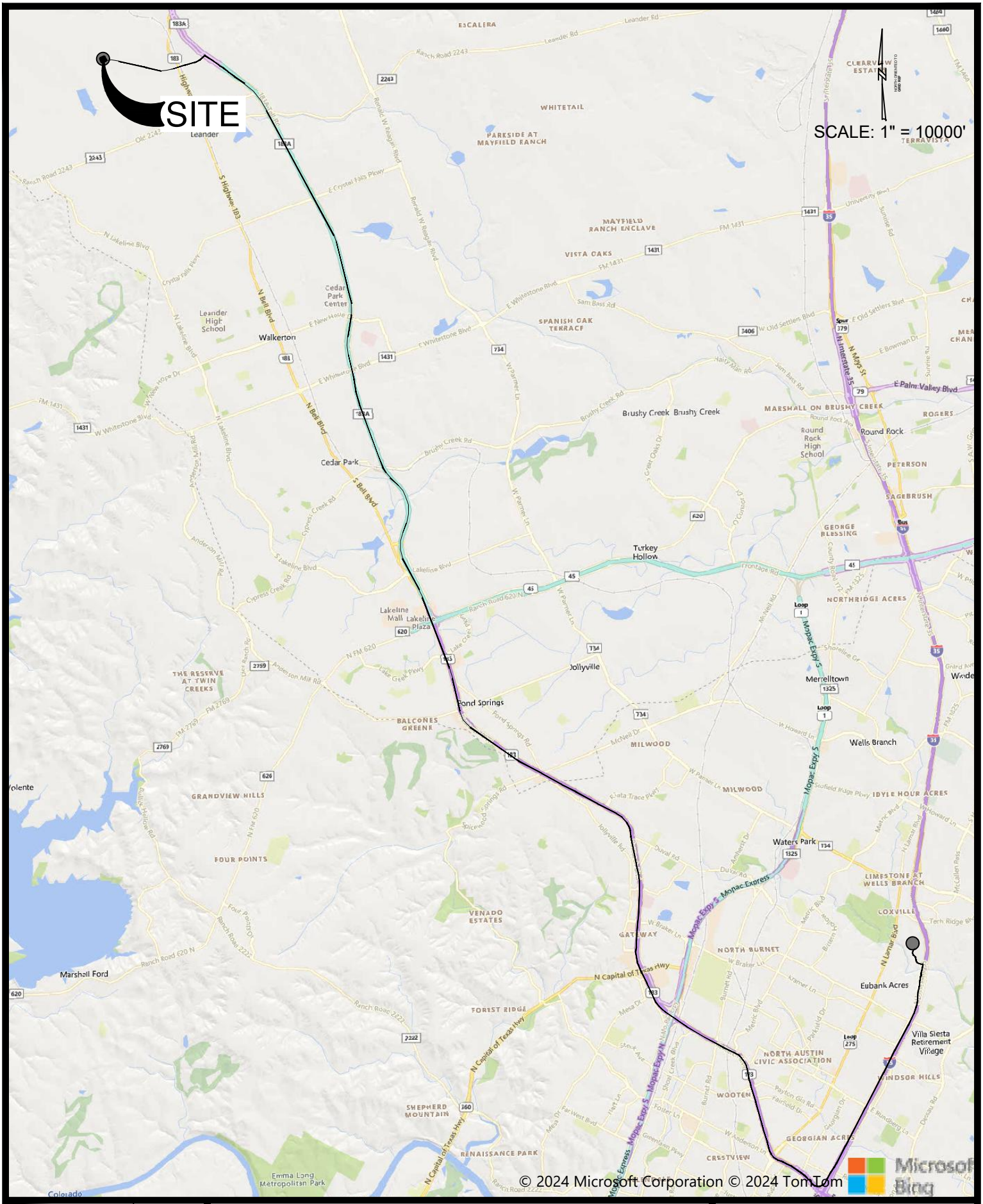
Administrative Information

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.



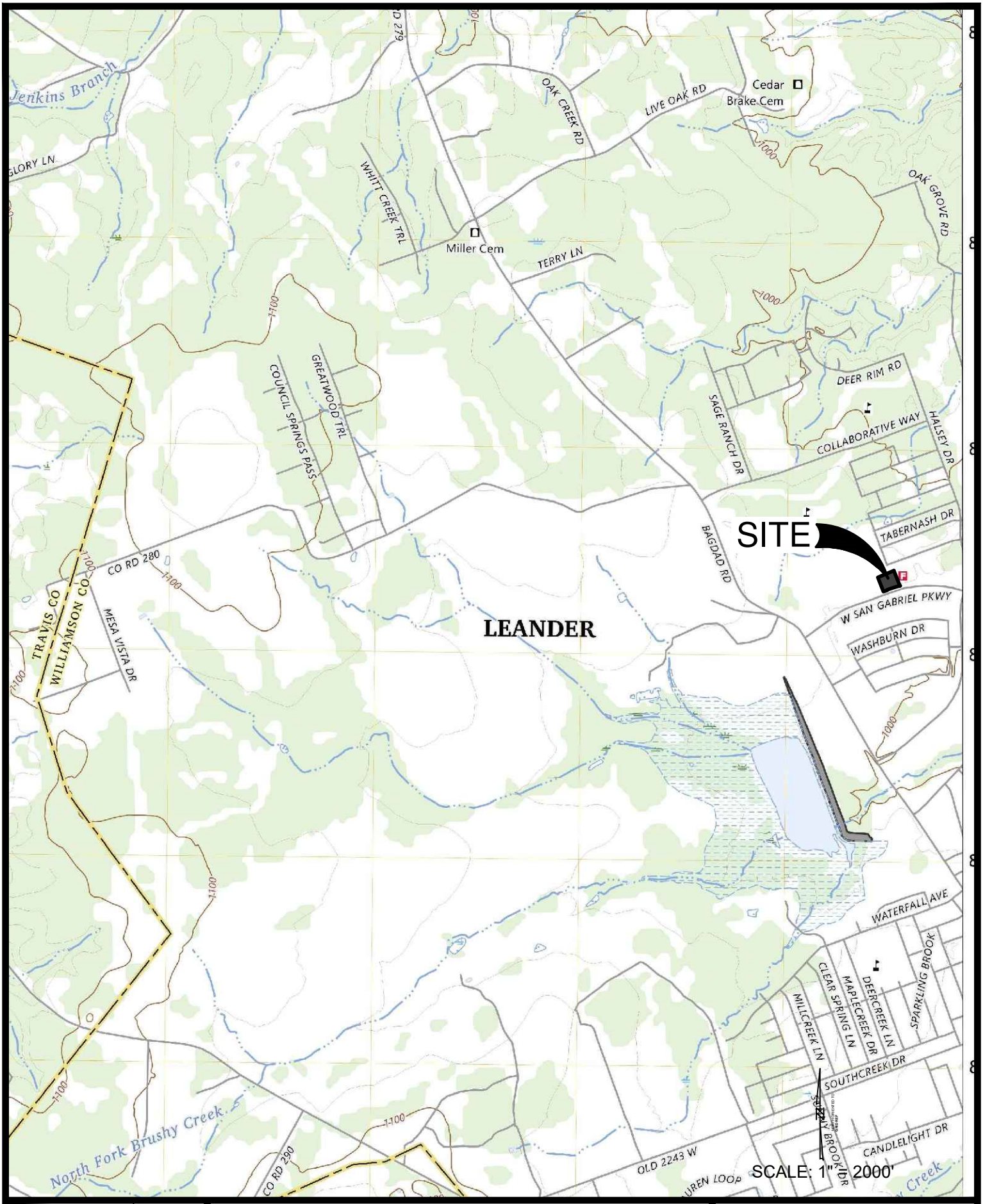
CHECKED BY:	AM
DRAWN BY:	CR
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	7/29/2024
EXHIBIT:	A

ROAD MAP

ARKA MONTESSORI ACADEMY

ARKA LEANDER INVESTMENTS, LLC — LEANDER, TX

ESP Associates. Inc.
12940 COUNTRY PKWY
SAN ANTONIO, TX 78216
210-349-3271
www.espassociates.com



CHECKED BY:	AM
DRAWN BY:	CR
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	7/29/2024
EXHIBIT:	B

USGS MAP

ARKA MONTESSORI ACADEMY

ARKA LEANDER INVESTMENTS, LLC — LEANDER, TX

ESP Associates. Inc.
12940 COUNTRY PKWY
SAN ANTONIO, TX 78216
210-349-3271
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ATTACHMENT C

PROJECT DESCRIPTION

The Arka Montessori Academy site is a proposed daycare facility located along San Gabriel Parkway in Leander, Texas. Zoned LC (Local Commercial), this commercial development spans a 1.698-acre tract, which will be transformed into an 11,988-square-foot daycare center. The site, which is not within the floodplain, features minimal trees, moderate grass, and slopes ranging from 1% to 10%. It drains from the northeast into an existing drainage channel along the eastern and southern borders, ultimately flowing into Brushy Creek.

The project is bordered by an access road for Glenn High School to the west, a single-family subdivision to the north, undeveloped land to the east, and San Gabriel Parkway to the south. ESP Associates, Inc. provided civil design services for this development, which includes an 11,988-square-foot building, parking areas, playground structures, an underground detention pond with water quality treatment, and a concrete drainage channel along the eastern and southern property lines.

The final construction documents comprise an existing conditions plan, erosion control plans for various construction phases, offsite and onsite drainage area maps for existing and proposed conditions, grading plan, storm drainage plan, underground detention plan, channel plan, site plan, address plan, utility plan, and fire protection plan.

Of the 1.698 acres, 1.086 acres will be impervious cover. To manage the changes in water flow due to construction, both temporary and permanent best management practices (BMPs) will be implemented to ensure no adverse impacts on neighbors or water quality. Temporary BMPs during construction include a construction entrance/exit, silt fencing along the southern and eastern property lines and the proposed concrete drainage channel, inlet protection at all storm drain inlets, and a concrete washout pit. Permanent BMPs post-construction include Jellyfish® inlets and underground storage provided by ConTech Engineering Solutions to treat storm runoff and discharge at pre-development flows into the new concrete drainage channel. Storm drainage inlets and networks will convey the water to the Jellyfish® treatment inlets, which will then discharge the water into the underground storage facility before releasing it into the proposed concrete drainage channel.

ATTACHMENT D

FACTORS AFFECTING SURFACE WATER QUALITY

Akra Montessori Academy will not have any factors that negatively impact surface water quality once construction is complete. However, during the construction phase, there is a possibility of oil, grease, and silt accumulation on the project site due to the equipment used for building the pavement, parking lot, sidewalks, drainage channel, and the structure itself. Potential contaminants include fluid leaks from construction vehicles, hydrocarbons from asphalt paving, and washout from concrete trucks. Additionally, improperly disposed construction trash and debris could pose a contamination risk. Grading of rock and soil on the site will generate silt.

To address water quality concerns during construction, both temporary and permanent best management practices (BMPs) will be implemented to prevent adverse impacts on neighbors and water quality. Temporary BMPs include:

- Construction entrance/exit
- Silt fencing along the southern and eastern property lines and the proposed concrete drainage channel
- Inlet protection at all storm drain inlets
- Concrete washout pit

Permanent BMPs post-construction include:

- Jellyfish® inlets and underground storage provided by ConTech Engineering Solutions to treat storm runoff
- Discharge of treated water at pre-development into the new concrete drainage channel

Storm drainage inlets and networks will convey water to the Jelly Fish treatment inlets. This water will then be stored in the underground facility before being released into the proposed concrete drainage channel.

ATTACHMENT E

VOLUME AND CHARACTER OF STORMWATER

The project site currently has one drainage area, labeled DA-1-EX Onsite, which covers the entire site. This area drains into a channel located at the southern property line and ultimately flows into Brushy Creek. DA-1-EX Onsite encompasses 1.89 acres of undeveloped natural land with grass coverage and gentle slopes ranging from 1% to 5%. Using the Rational Method and the guidelines from table 2-3 in the Austin Drainage Criteria Manual, the existing peak flow rates were calculated. The peak flows for DA-1-EX Onsite are 2.06 cfs, 3.65 cfs, 5.14 cfs, and 8.32 cfs for the 2-year, 10-year, 25-year, and 100-year storm events, respectively.

Under the proposed conditions, the site remains as one drainage area, now designated as Proposed Drainage Area 1 (DA-1). DA-1 Onsite will cover 1.89 acres and will drain into a storm drainage system equipped with a Jellyfish filter inlet to treat stormwater before it infiltrates into an underground detention system. Using the Rational Method, the calculated peak flow rates for DA-1 are 5.98 cfs, 10.15 cfs, 13.44 cfs, and 20.08 cfs for the 2-year, 10-year, 25-year, and 100-year storm events, respectively. The treated flows from DA-1 will eventually be discharged into the improved drainage channel along the southern border of the property.

ATTACHMENT F

SUITABILITY LETTER FROM AUTHORITY AGENT

No on-site sewage facility will be used for wastewater treatment and disposal. This proposed development will be connected to the existing city-operated sanitary sewer network.

ATTACHMENT G

ALTERNATIVE SECONDARY CONTAINMENT METHODS

No above ground storage will be used during construction or post development of this site. No alternative secondary containment methods needed.

ATTACHMENT H

AST CONTAINMENT STRUCTURE DRAWINGS

No above ground storage will be used during construction or post development of this site. No above ground storage tank structure drawings needed.

ATTACHMENT I

20% OR LESS IMPERVIOUS COVER WAIVER

The site will be used for a school but will have more than 20% impervious cover.

ATTACHMENT J

BMPs FOR UPGRADIENT STORMWATER

The proposed site is bordered on its east and southern sides by a private road for Glenn High School and San Gabriel Parkway. To the north and west, it is bordered by residential lots and undeveloped land. None of these adjacent properties drain onto the proposed site.

ATTACHMENT K

BMPS FOR ON-SITE STORMWATER

Akra Montessori Academy will have permanent best management practices (BMPs) will be implemented to prevent adverse impacts on neighbors and water quality. Temporary BMPs include:

- Jellyfish® inlets and underground storage provided by ConTech Engineering Solutions to treat storm runoff

Storm drainage inlets and networks will convey water to the Jellyfish® treatment inlets. This water will then be stored in the underground facility before being released into the proposed concrete drainage channel. The Jellyfish® system designed by ConTech Engineering Solutions is an TCEQ certified BMP used to treat stormwater. Stormwater from the proposed site will flow into the Jellyfish® inlets by surface drain or by pipe networks.

ATTACHMENT M

CONSTRUCTION PLANS

ARKA MONTESSORI SCHOOL

SITE DEVELOPMENT PLANS

PROJECT NUMBER: SD-24-0219

1201 W SAN GABRIEL PKWY

OWNER

ARKA CHILDCARE MANAGEMENT SERVICES, LLC
1019 THORNCLIFF TRL.
IRVING, TX 75063

PHONE: (972) 971-8857
CONTACT: RAVI MADDI
EMAIL: RAVINDRA.MADDI@GMAIL.COM

ENGINEER:

ESP ASSOCIATES, INC.

ADDRESS: 12940 COUNTRY PKWY
SAN ANTONIO, TX 78216
PHONE: (210) 349-3271
CONTACT: ARIELLA MEADOWS
EMAIL: AMEADOWS@VICKREYLLC.COM

SURVEYOR:

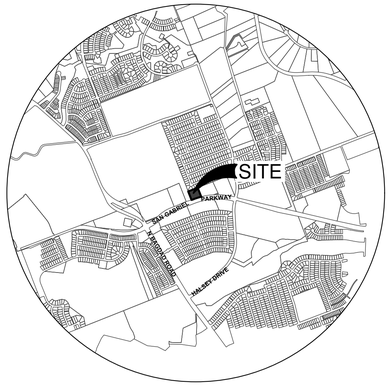
SHERWOOD SURVEYING & S.U.E.

ADDRESS: 6477 FM311
SPRING BRANCH, TX 78070
PHONE: (830) 228-5788
CONTACT: RICHARD A. GOODWIN

SUBMITTAL DATE:
05/15/2024

SITE INFORMATION:

ZONING:	**LC-2-B LOCAL COMMERCIAL**
	LOT 2 HOPE ALLIANCE MINOR PUD
PROPOSED USE:	**DAY CARE CENTER**
ACREAGE:	**1.70 ACRES**
LOC ACREAGE:	**1.77 ACRES**
TOTAL IMPERVIOUS COVER:	**47,316.61 SF**
BUILDING IMPERVIOUS COVER:	**11,987.77 SF**
LEGAL DESCRIPTION:	**1.699 ACRES HOPE ALLIANCE CRISIS CENTER SUBDIVISION LOT 1 WILLIAMSON COUNTY, TEXAS**
FUTURE LAND USE:	**MULTI-USE CORRIDOR**
EXISTING EASEMENTS:	**DRAINAGE EASEMENT, DOC. 2011046338 OPRWCT**



LOCATION MAP
1"=2000'
1 MILE RADIUS

NORTH ORIENTED TO GRID REF.

GRAPHIC SCALE

2000' 0 1000' 2000' 4000' 8000'

(IN FEET)
1 INCH = 2000' FT.

SHEET LIST TABLE	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL NOTES
3	FINAL PLAT
4	FINAL PLAT
5	FINAL PLAT
6	EXISTING CONDITIONS PLAN
7	EROSION & SEDIMENTATION CONTROL PLAN PHASE 1
8	EROSION & SEDIMENTATION CONTROL PLAN PHASE 2
9	OFFSITE EXISTING DRAINAGE AREA MAP
10	OFFSITE PROPOSED DRAINAGE AREA MAP
11	ONSITE EXISTING DRAINAGE AREA MAP
12	ONSITE PROPOSED DRAINAGE AREA MAP
13	CHANNEL DRAINAGE AREA MAP
14	GRADING PLAN
15	STORM DRAIN PLAN
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21	FIRE PROTECTION PLAN
22	EROSION & SEDIMENTATION CONTROL DETAILS
23	STORM DRAIN DETAILS
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25	SITE DETAILS
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28	SITE DETAILS
29	UTILITY DETAILS
30	UTILITY DETAILS 2
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L1	OVERALL PLANTING PLAN
L2	PLANTING PLAN
L3	PLANTING PLAN
L4	PLANTING DETAILS & CODE
L5	GENERAL NOTES

REVISION #	DESCRIPTION	APPROVAL

APPROVED BY

ROBIN M. GRIFFIN, AICP, EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES	**DATE**
EMILY TRUMAN, P.E., CFM, CITY ENGINEER	**DATE**
MARK TUMMONS, CPRP, DIRECTOR OF PARKS AND RECREATION	**DATE**
CHIEF JOSHUA DAVIS, FIRE MARSHAL	**DATE**

NOTE:
THE ENGINEER-OF-RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND/OR SPECIFICATIONS WHETHER THE PLANS AND/OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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

ESP Associates, Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
09/07/2024

BY | REVISION | DATE | NO.

COVER SHEET

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 1 OF 31

ADA NOTES:

1. THE MINIMUM CLEAR WIDTH OF AN ACCESSIBLE ROUTE IS 36 IN. IF THE ACCESSIBLE ROUTE IS LESS THAN 60 IN. WIDE AND LONGER THAN 200 FT., PASSING SPACES AT LEAST 60 IN. MUST BE LOCATED EVERY 200 FT.
2. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 (5.0%) UNLESS DESIGNED AS A RAMP.
3. ACCESSIBLE PARKING SPACES MUST BE LOCATED ON A SURFACE WITH A SLOPE NOT EXCEEDING 1:50 (2.0%) IN ALL DIRECTIONS.
4. ACCESSIBLE ROUTES MUST HAVE A CROSS SLOPE NO GREATER THAN 1:50 (2.0%).

SITE NOTES:

1. ALL DIMENSIONS TO CURBS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE RELEASED SITE PLAN. ANY ADDITIONAL IMPROVEMENTS WILL REQUIRES SITE PLAN AMENDMENT AND APPROVAL OF THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT.
3. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRICAL SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RILES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT.
4. CONTRACTOR TO ADJUST CASTINGS, MANHOLE LIDS AND OTHER APPLICABLE APPURTENANCES ON EXISTING UTILITIES WITHIN THE PROPOSED DRIVEWAY AND SIDEWALK RECONSTRUCTION LIMITS.
5. SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR EQUAL QUALITY TO, PRINCIPLE BUILDING MATERIALS.
6. EACH PARKING SPACE MUST HAVE A VERTICAL CLEARANCE AS SPECIFIED IN THE BUILDING CODE(MINIMUM OF 7.0 FEET).
7. A MINIMUM OF VERTICAL CLEARANCE OF 114" MUST BE PROVIDED AT ACCESSIBLE PASSENGER LOADING ZONES ALONG VEHICLE ROUTES TO SUCH AREAS FROM SITE ENTRANCES. A MINIMUM VERTICAL CLEARANCE OF 98" MUST BE PROVIDED FOR VAN-ACCESSIBLE PARKING SPACES AND ALONG VEHICULAR ROUTE THERETO.
8. EXISTING STRUCTURES SHOWN TO BE REMOVED WILL REQUIRE A DEMOLITION PLAN FROM THE CITY OF AUSTIN PLANNING AND DEVELOPMENT REVIEW DEPARTMENT.
9. ALL SITE DRIVEWAYS SHALL MAINTAIN A VERTICAL CLEARANCE OF 14'-0" FOR FIRE DEPARTMENT ACCESS. TRESS SHALL BE PRUNED APPROPRIATELY PER STANDARDS SET BY THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.
10. APPROVAL OF THIS SITE PLAN DOES NOT INCLUDE BUILDING AND FIRE CODE APPROVAL NOR BUILDING PERMIT APPROVAL.
11. ADDITIONAL ELECTRIC EASEMENTS MAY BE REQUIRED AT A LATER DATE.

CONSTRUCTION SEQUENCING NOTES:

1. CALL CITY OF LEANDER CONSTRUCTION INSPECTION, (512) 528-2766 AT LEAST 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT (800) 545-6005 AND THE TEXAS UNDERGROUND FACILITY NOTIFICATION CORPORATION FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN THE RIGHT-OF-WAY.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING. NOTIFY THE CITY OF LEANDER WHEN INSTALLED, AND SCHEDULE A PRE-CONSTRUCTION MEETING.
3. BEGIN CLEARING AND GRUBBING.
4. ROUGH GRADE ALL STORM WATER BASINS AND STREETS, PONDS, INCLUDING INTERIM DRAINAGE CONVEYANCES TO THE PONDS, PRIOR TO ROUGH GRADING OF DRIVEWAY AND PARKING LOT. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME.
5. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
6. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, REVEGETATE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS. REVIEW ADJUST TEMPORARY EROSION CONTROL LOCATIONS AS NECESSARY.
7. REGRADE DRIVEWAY AND PARKING LOT TO SUBGRADE.
8. ENSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED ON ALL DRIVEWAY AND PARKING LOT AREAS.
9. INSTALL INLET PROTECTION SEDIMENT CONTROLS WHEN STORM SEWER INLETS AND PIPING BECOME FUNCTIONAL.
10. INSTALL GABION BASKETS BEFORE STORM SEWER OUTFALL DISCHARGE IS PUT ON-LINE.
11. COMPLETE CONSTRUCTION, AND FINAL STABILIZATION OF EXTENDED DETENTION PONDS.
12. INSTALL CURB AND GUTTER.
13. LAY CONCRETE
14. INSTALL ALL STRIPING, AND PAVEMENT MARKERS.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITHIN THE RIGHT-OF-WAY.
16. COMPLETE FINAL GRADING AND RESTORATION OF EXTENDED DETENTION PONDS.
17. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.
18. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS AND ACCUMULATED SEDIMENT AFTER APPROVAL OF CITY OF LEANDER INSPECTOR.
19. COMPLETE ANY NECESSARY FINAL DRESS-UP OF AREAS DISTURBED BY ITEM 18.

GENERAL NOTES FOR SUBDIVISIONS AND SITE DEVELOPMENT PLANS

REVISED March 27, 2023

CITY CONTACTS:

ENGINEERING MAIN LINE:	512-528-2721
PLANNING DEPARTMENT:	512-528-2750
PUBLIC WORKS MAIN LINE:	512-259-2640
STORMWATER INSPECTIONS:	512-285-0055
UTILITIES MAIN LINE:	512-259-1142
UTILITIES ON-CALL:	512-690-4760

GENERAL:

1. CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS ON SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUANCE OF WORK STOPPAGE.
2. CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.
   a. **REFRESH ALL LOCATES *BEFORE* 14 DAYS –** LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.
   b. **REPORT PIPELINE DAMAGE IMMEDIATELY** – IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-259-2640.
3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:
   a. BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.
   b. ANY TESTING. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION.
   c. PROOF ROLLING SUB-GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN-PLACE DENSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE.
   d. CONNECTING TO THE EXISTING WATER LINES.
   e. THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S ROW MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
4. ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
5. **EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY OF LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.**
6. BURNING IS PROHIBITED.
7. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OR WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.
8. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK FOR APPROVAL TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
9. NO BLASTING IS ALLOWED.
10. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLIGHT ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS AND NUMBERS SHALL BE USED TO MARK REVISIONS. ALL CLOUDS AND TRIANGLE MARKERS FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.
11. THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEANDER ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION. THESE "RECORD DRAWINGS" SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE.
12. THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRED AS A RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT OR PUBLIC RIGHT-OF-WAY, REGARDLESS OF THESE PLANS.
13. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER OF RECORD AND CITY.
14. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.
15. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752-3832.
16. ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTED TO FINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCTION INSPECTOR INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH CLASS A CONCRETE.
17. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.
18. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
20. THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACENT TO AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NOT REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WATER. ONLY SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE SITE AREA CLEAN AND MAINTAINED AT ALL TIMES, TO THE SATISFACTION OF THE CITY. THE SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED) UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.
22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CONSTRUCTION SEQUENCE NOTES

NOTE: BELOW IS GENERAL SEQUENCE OF CONSTRUCTION. THE ENGINEER OF RECORD SHALL UPDATE BELOW WITH NOTES SPECIFIC TO THE PROJECT.

1. REACH OUT TO THE CITY FOR PRE-CONSTRUCTION MEETING AND CONSTRUCTION PERMIT.
2. SET-UP E/S CONTROLS AND TREE PROTECTION AND REACH OUT TO CITY FOR INSPECTION.
3. SET UP TEMPORARY TRAFFIC CONTROLS.
4. CONSTRUCT THE DRAINAGE PONDS AND STORM WATER FEATURES.
5. START UTILITY, ROAD, GRADING, FRANCHISE UTILITY AND ALL NECESSARY INFRASTRUCTURE CONSTRUCTION. [NOTE: PLEASE UPDATE AS PER THE PROJECT]
6. REQUEST FINAL WALKTHROUGH AND CONDUCT WALKTHROUGH WITH ENGINEER OF RECORD AND CITY DEPARTMENT.
7. ENGINEER OF RECORD IS RESPONSIBLE TO PREPARE AND SUBMIT CLOSEOUT DOCUMENTS FOR PROJECT CLOSEOUT.

EROSION CONTROL NOTES

1. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES AND SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
2. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
3. ANY ON-SITE SPOILS DISPOSAL SHALL BE REMOVED PRIOR TO ACCEPTANCE UNLESS SPECIFICALLY SHOWN ON THE PLANS. THE DEPTH OF SPOIL SHALL NOT EXCEED 10 FEET IN ANY AREA.
4. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SINGLE FAMILY LOTS MAY BE INSTALLED WITH HOME CONSTRUCTION. THE TOPSOIL AND COMPOST BLEND SHALL CONSIST OF 75% TOPSOIL AND 25% COMPOST.
5. SEEDING FOR REESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC 164--WC001 SEEDING FOR EROSION CONTROL). RESEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
6. STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONSTRUCTION PROJECTS MAY REQUIRE SPECIAL CONSIDERATION. ROADWAYS SHALL REMAIN CLEAR OF SILT AND MUD.
7. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
8. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

WATER AND WASTEWATER NOTES

WATER AND WASTEWATER GENERAL NOTES

1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.
2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:

WATER SERVICE	"W" ON TOP OF CURB
WASTEWATER SERVICE	"S" ON TOP OF CURB
VALVE	"V" ON TOP OF CURB

3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS.
4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.
5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

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

6. DENSITY TESTING FOR TRENCH BACKFILL SHALL BE DONE IN MAXIMUM 12" LIFTS.

WATER

1. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTORS' REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LEANDER NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY.
2. CITY PERSONNEL WILL OPERATE OR AUTHORIZE THE CONTRACTOR TO OPERATE ALL WATER VALVES THAT WILL PASS THROUGH THE CITY'S POTABLE WATER. THE CONTRACTOR MAY BE FINED $500 OR MORE, INCLUDING ADDITIONAL THEFT OF WATER FINES, IF A WATER VALVE IS OPERATED IN AN UNAUTHORIZED MANNER, REGARDLESS OF WHO OPERATED THE VALVE.
3. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM AFTER COORDINATING WITH CITY CONSTRUCTION INSPECTORS AND INFORMING AFFECTED PROPERTIES.
4. PRESSURE TAPS OR HOT TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF LEANDER INSPECTOR MUST BE PRESENT WHEN THE CONTRACTOR MAKES A TAP, AND/OR ASSOCIATED TESTS. A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED. "SIZE ON SIZE" TAPS SHALL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL-CIRCLE GASKETED TAPPING SLEEVE. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. THRUST BLOCKS SHALL BE INSPECTED PRIOR TO BACKFILL.
5. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.
6. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.
7. ALL DEAD END WATER MAINS SHALL HAVE "FIRE HYDRANT ASSEMBLY" OR "BLOW-OFF VALVE AND THRUST BLOCK" OR "BLOW-OFF VALVE AND THRUST RESTRAINTS". THRUST RESTRAINTS SHALL BE INSTALLED ON THE MINIMUM LAST THREE PIPE LENGTHS (STANDARD 20' LAYING LENGTH). ADDITIONALL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURERS RECOMMENDATION AND/OR ENGINEER'S DESIGN.
8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900-DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR-(9)). COPPER PIPES AND FITTINGS ARE NOT ALLOWED IN THE PUBLIC RIGHT OF WAY. ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW).
9. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).
10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE.
11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
12. ALL WATER METER BOXES SHALL BE:

a.	SINGLE, 1" METER AND BELOW	DFW37F-12-1CA, OR EQUAL
b.	DUAL, 1" METERS AND BELOW	DFW39F-12-1CA, OR EQUAL
c.	1.5" SINGLE METER	DFW65C-14-1CA, OR EQUAL
d.	2" SINGLE METER	DFW1730F-12-1CA, OR EQUAL

13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER

1. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.
2. MANDREL TESTING SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
3. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW-511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5.
4. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.
5. FORCE MAIN PIPES NEED TO HAVE SWEEPING WYES FOR JOINTS.

STREET AND DRAINAGE NOTES

1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (TAS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT-OF-WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
5. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED.
6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING.
8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I THERMOPLASTIC.
9. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.
12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY GEOSCIENCE ENGINEERS, LLC. DATED APRIL 2024, PROJECT NUMBER: 24-DG2697. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:
   a)

	Minimum Thickness (inches)
Parking	
Portland Cement Concrete	5
Lime Stabilized Soils	6
Compacted subgrade	6
****Fire Lane/Driveways**	
Portland Cement Concrete	6
Lime Stabilized Soils	6
Compacted Subgrade Soils	6
Dumpster/Approach	
Portland Cement Concrete	7
Lime Stabilized Soils	6
Compacted Subgrade Soils	6

**capable of carrying the fire apparatus load of 85000 lbs

   b) FOR FULL REPORT REFERENCE GEOTECHNICAL INVESTIGATION REPORT #24-DG2697 PROVIDED BY GEOSCIENCE ENGINEERS, LLC. DATED APRIL 2024

13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL.
16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.
18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRVIEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE.
22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN-OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY.
26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S "TRENCH SAFETY SYSTEMS" OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

GRADING NOTES

1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

BENCHMARK NOTES

1. CP#1 IRON ROD W/CAP
   N:10189137.91
   E:3069858.19
   Z:1016.33
2. CP#2 IRON ROD W/CAP
   N:10188863.72
   E:3068745.23
   Z:1018.92

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

Know what's below. Call before you dig

ESP Associates. Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

08/07/2024
ARIELLA D. MEADOWS
141035

Ariella D. Meadows

NO.	DATE	REVISION	BY

GENERAL NOTES

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 2 OF 31

DOC#2024004509

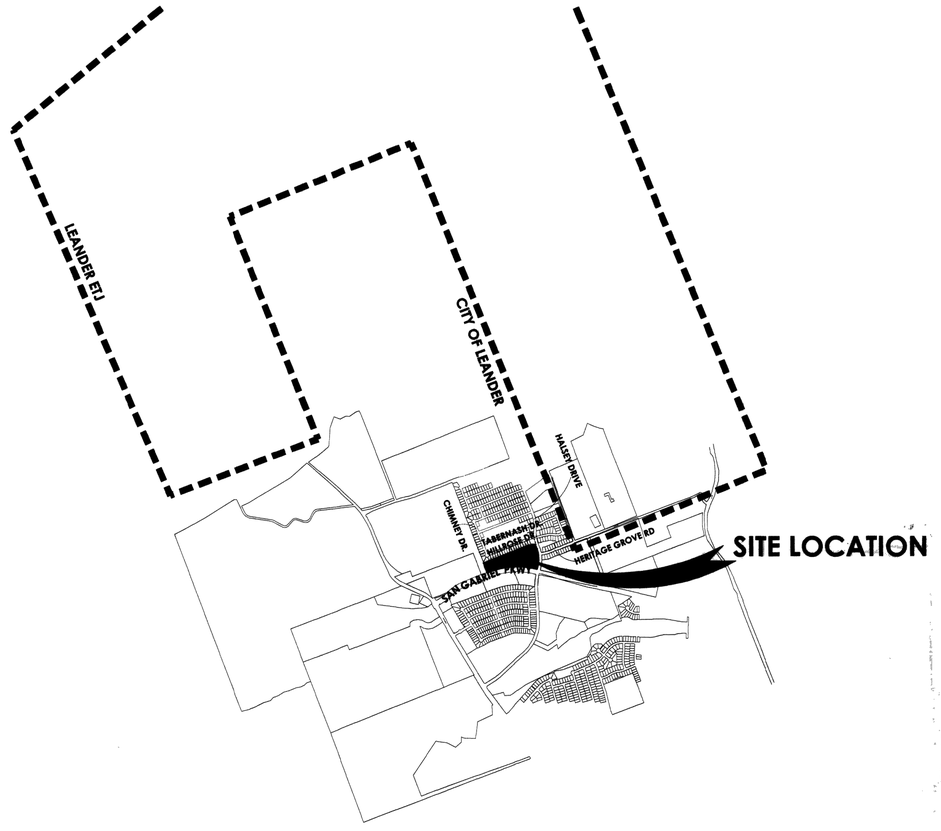
HOPE ALLIANCE CRISIS CENTER SUBDIVISION
SHORT FORM FINAL PLAT

OWNER/DEVELOPER:
WILLIAMSON COUNTY CRISIS CENTER
A.K.A - HOPE ALLIANCE
1011 GATTIS SCHOOL RD # 110
ROUND ROCK, TX 78664

ENGINEER:
EDDIE BOGARD, PE
VICKREY & ASSOCIATES, LLC - FIRM #159
3600 W. PARMER LN, STE 175
AUSTIN, TX 78727
512.904.2523

SURVEYOR:
RICHARD A. GOODWIN, RPLS
6477 FM 311
SPRING BRANCH, TX 78070
830.228.4163

AGENT/APPLICANT:
HEATHER L. STEED
6477 FM 311
SPRING BRANCH, TX 78070
830.228.4163



LOCATION MAP
SCALE: 1"=2000'

LEGEND

●	1/2" IRON ROD FOUND (UNLESS NOTED)
ROW	RIGHT OF WAY

NUMBER OF LOTS: 3
ACREAGE: 11.527
PROPOSED USE: COMMERCIAL
RESERVATIONS: NONE
STREETS: ZERO

SHEET INDEX:
SHEET 1 = COVER PAGE
SHEET 2 = EXHIBIT
SHEET 3 = EASEMENT/NOTES & SIGNATURES

SHEET 1 OF 3

COVER PAGE

SHERWOOD SURVEYING & S.U.E.
UTILITIES | RESIDENTIAL | COMMERCIAL | INDUSTRIAL
6477 FM 311, P.O. BOX 992 TBPLS FIRM#10044200
SPRING BRANCH, TEXAS 78070
PHONE (830) 228-5788 FAX (830) 885-2170

JOB #21HAI001

OWNER/DEVELOPER:
WILLIAMSON COUNTY CRISIS CENTER
A.K.A - HOPE ALLIANCE
1011 GATTIS SCHOOL RD # 110
ROUND ROCK, TX 78664

FILING DATE: NOVEMBER 8, 2022

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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San Antonio, TX 78216
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09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

FINAL PLAT

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 3 OF 31

DOC #2024024599

HOPE ALLIANCE CRISIS CENTER SUBDIVISION
SHORT FORM FINAL PLAT

NUMBER OF LOTS: 3
ACREAGE: 11.527
PROPOSED USE: COMMERCIAL

SHERWOOD SURVEYING & S.U.E.
UTILITIES | RESIDENTIAL | COMMERCIAL | INDUSTRIAL
8477 FM 311, P.O. BOX 992 TBPLS FIRM#10044200
SPRING BRANCH, TEXAS 78070
PHONE (830) 228-5788 FAX (830) 885-2170

BEING 11.527 ACRES OF LAND SITUATED IN THE CHARLES COCHRAN SURVEY, ABSTRACT 134, WILLIAMSON COUNTY, TEXAS, BEING THE SAME 11.527 ACRE TRACT, CONVEYED TO WILLIAMSON COUNTY CRISIS CENTER, RECORDED IN DOCUMENT NUMBER 2021133652 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SAID 11.527 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING, AT A FOUND 1/2" IRON ROD WITH A CAP STAMPED "RJ SURVEYING" (GRID COORDINATES N:10189532.64 E:3069912.55), BEING THE NORTHWESTERLY CORNER OF A 0.013 ACRE TRACT, CONVEYED TO JSL COMMERCIAL INVESTMENTS, LLC. RECORDED IN DOCUMENT NUMBER 2015001314, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS, SAME BEING THE NORTHEASTERLY CORNER OF SAID 11.527 ACRE TRACT, AND THE NORTHEASTERLY CORNER HEREOF;

THENCE, WITH THE EASTERLY LINE OF SAID 11.527 ACRE TRACT, AND CONTINUING WITH THE WESTERLY LINE OF HALSEY DRIVE, THE FOLLOWING COURSES AND DISTANCES:

S 21° 03' 25" E, A DISTANCE OF 110.75 FEET TO A FOUND 1/2" IRON ROD WITH A CAP STAMPED "IZWA" MARKING THE BEGINNING OF A CURVE TO THE RIGHT;

ALONG SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 680.00 FEET, AN ARC LENGTH OF 406.18 FEET, A CENTRAL ANGLE OF 34° 13' 28", A CHORD BEARING OF S 03° 54' 34" E, A DISTANCE OF 400.17 FEET TO A FOUND 1/2" IRON ROD WITH A CAP STAMPED "IZWA" MARKING THE END OF SAID CURVE;

S 13°13'04" W, A DISTANCE OF 90.92 FEET TO A SET 1/2" IRON ROD WITH A CAP STAMPED "SHERWOOD SURVEYING" MARKING THE BEGINNING OF A CURVE TO THE RIGHT;

ALONG SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 15.00 FEET, AN ARC LENGTH OF 22.28 FEET, A CENTRAL ANGLE OF 85° 05' 43", A CHORD BEARING OF S 54° 35' 21" W, A DISTANCE OF 20.29 FEET TO A SET 1/2" IRON ROD WITH A CAP STAMPED "SHERWOOD SURVEYING" MARKING THE INTERSECTION OF THE NORTHERLY RIGHT-OF-WAY LINE OF SAN GABRIEL PARKWAY (C.R. 274), AND THE WESTERLY RIGHT-OF-WAY LINE OF HALSEY DRIVE, COMMON WITH THE SOUTHERLY LINE OF SAID 11.527 ACRE TRACT, BEING THE SOUTHEASTERLY CORNER HEREOF;

THENCE, ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAN GABRIEL PARKWAY (C.R. 274), COMMON WITH THE SOUTHERLY LINE OF SAID 11.527 ACRE TRACT, THE FOLLOWING COURSES AND DISTANCES:

N 76° 47' 26" W, A DISTANCE OF 45.70 FEET TO A SET 1/2" IRON ROD WITH A CAP STAMPED "SHERWOOD SURVEYING" MARKING THE BEGINNING OF A CURVE TO THE LEFT;

ALONG SAID CURVE TO THE LEFT, HAVING A RADIUS OF 1860.00 FEET, AN ARC LENGTH OF 1110.04 FEET, A CENTRAL ANGLE OF 34° 11' 38", A CHORD BEARING OF S 86° 06' 45" W, A DISTANCE OF 1093.64 FEET TO A FOUND 1/2" IRON ROD WITH A CAP STAMPED "IZWA" MARKING THE END OF SAID CURVE;

S 69° 06' 35" W, A DISTANCE OF 58.78 FEET TO A FOUND 1/2" IRON ROD, FOR A SOUTHEASTERLY CORNER OF LOT 1, BLOCK A, LISD BENBROOK RANCH SUBDIVISION RECORDED IN DOCUMENT NUMBER 2015075203 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SAME BEING THE SOUTHWESTERLY CORNER OF SAID 11.527 ACRE TRACT, AND SOUTHWESTERLY CORNER HEREOF;

THENCE, N 21° 24' 30" W, LEAVING THE NORTHERLY RIGHT-OF-WAY LINE OF SAN GABRIEL PARKWAY (C.R. 274), AND CONTINUING ALONG THE WESTERLY LINE OF SAID 11.527 ACRE TRACT, COMMON WITH A INTERIOR LINE OF SAID LOT 1, BLOCK A, A DISTANCE OF 255.73 FEET TO A SET 1/2" IRON ROD STAMPED "SHERWOOD SURVEYING" MARKING THE SOUTHWESTERLY CORNER OF SAVANNA RANCH, SECTION FOUR, RECORDED IN DOCUMENT NUMBER 2016025900, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SAME BEING THE NORTHWESTERLY CORNER OF SAID 11.527 ACRE TRACT, AND NORTHWESTERLY CORNER HEREOF;

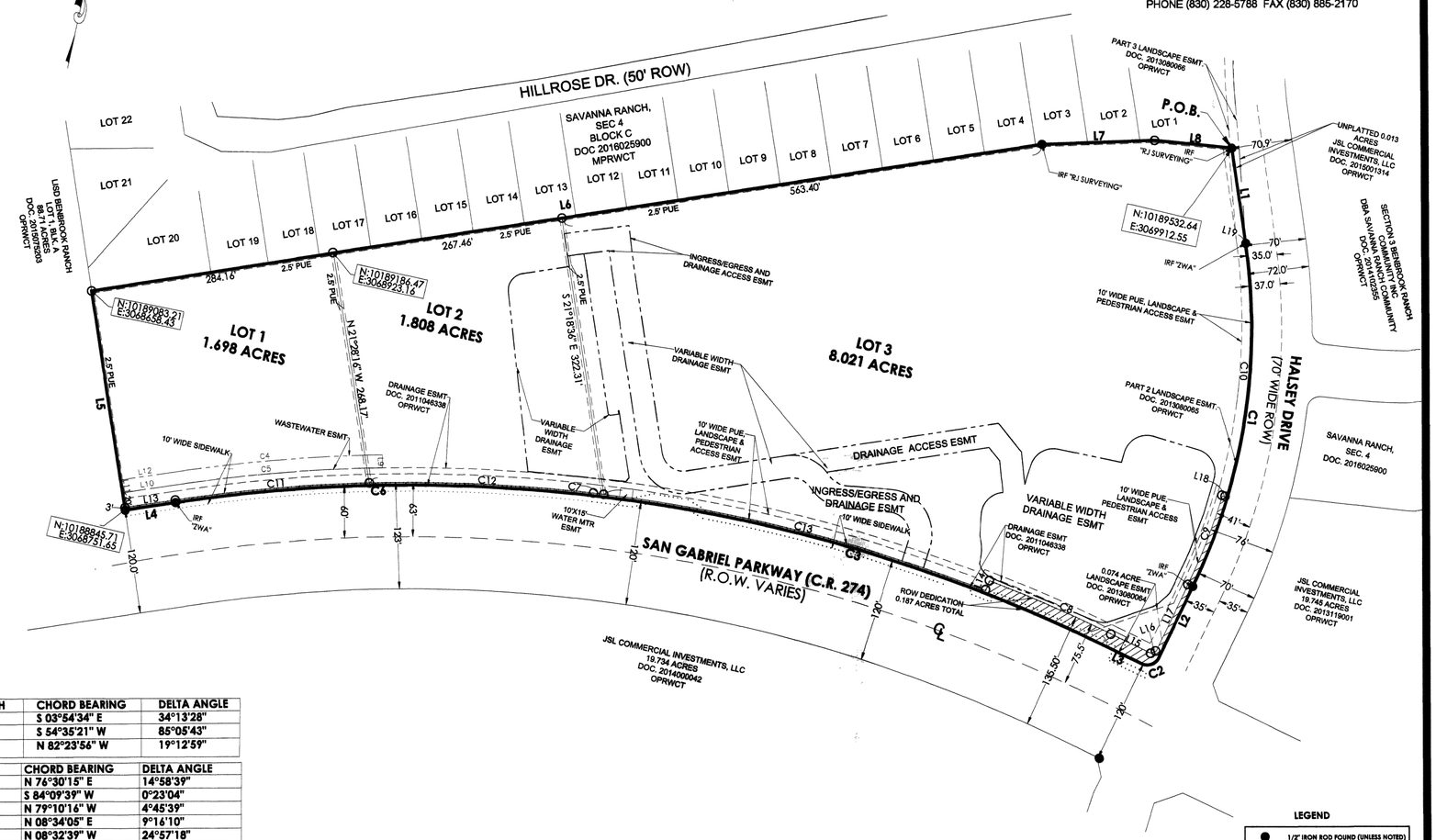
THENCE, ALONG THE SOUTHERLY LINE OF SAID SAVANNA RANCH, SECTION FOUR, COMMON WITH THE NORTHERLY LINE OF SAID 11.527 ACRE TRACT THE FOLLOWING COURSES AND DISTANCES:

N 68° 41' 24" E, A DISTANCE OF 1115.02 FEET TO A FOUND 1/2" IRON ROD WITH A CAP STAMPED "RJ SURVEYING";

N 75° 15' 06" E, A DISTANCE OF 130.20 FEET TO A SET 1/2" IRON WITH A CAP STAMPED "SHERWOOD SURVEYING;

THENCE, N 82° 56' 28" E, A DISTANCE OF 90.11 FEET TO THE **POINT OF BEGINNING**, CONTAINING AN AREA OF 11.527 ACRES OF LAND, MORE OR LESS.

0 40 80 160
SCALE (1" = 80')



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	680.00'	406.18'	400.17'	S 03°54'34" E	34°13'28"
C2	15.00'	22.28'	20.29'	S 54°35'21" W	85°05'43"
C3	1860.00'	623.82'	620.90'	N 82°23'56" W	19°12'59"

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C6	1860.00'	486.22'	484.84'	N 76°30'15" E	14°58'39"
C7	1863.00'	12.49'	12.49'	S 84°09'39" W	0°23'04"
C8	1875.50'	155.84'	155.79'	N 79°10'16" W	4°45'39"
C9	673.99'	109.04'	108.92'	N 08°34'05" E	9°16'10"
C10	677.99'	295.30'	292.97'	N 08°32'39" W	24°57'18"

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C11	1862.99'	220.20'	220.07'	N 72°30'06" E	6°46'20"
C12	1862.99'	259.89'	259.68'	N 79°58'20" E	7°59'34"
C13	1863.00'	458.32'	457.17'	S 88°35'57" E	14°05'44"

WASTEWATER EASEMENT

LINE	BEARING	DISTANCE
L9	N 14°26'19" W	15.00'
L10	N 69°01'26" E	59.01'
L11	S 21°35'57" E	15.00'
L12	N 69°01'26" E	59.18'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C4	1895.00'	246.08'	245.90'	S 72°44'48" W	7°26'25"
C5	1880.00'	244.13'	243.96'	S 72°44'49" W	7°26'25"

LINE	BEARING	DISTANCE
L1	S 21°03'25" E	110.75'
L2	S 13°13'04" W	90.92'
L3	N 76°47'26" W	45.70'
L4	S 69°06'35" W	58.78'
L5	N 21°24'30" W	255.73'
L6	N 68°41'24" E	1115.02'
L7	N 75°15'06" E	130.20'
L8	N 82°56'28" E	90.11'

LINE	BEARING	DISTANCE
L13	S 69°06'35" W	64.92'
L14	N 08°26'55" E	12.50'
L15	S 76°47'26" E	48.11'
L16	N 58°12'49" E	7.07'
L17	N 13°13'04" E	85.64'
L18	S 86°04'00" E	4.00'
L19	N 68°56'35" E	2.00'

LEGEND

●	1/2" IRON ROD FOUND (UNLESS NOTED)
○	1/2" IRON ROD SET
ROW	RIGHT OF WAY
OPRWCT	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS
MPRWCT	MAP AND PLAT RECORDS WILLIAMSON COUNTY, TEXAS
C.R.	COUNTY ROAD
℄	CENTERLINE
ESMT	EASEMENT
·····	SIDEWALK

JOB #21HAI001

SHEET 2 OF 3

EXHIBIT

ESP Associates, Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED PROFESSIONAL ENGINEER
09/07/2024

NO.	DATE	REVISION	BY

FINAL PLAT

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 4 OF 31

Doc # 2024004509

HOPE ALLIANCE CRISIS CENTER SUBDIVISION
SHORT FORM FINAL PLAT

SHERWOOD SURVEYING & S.U.E.
UTILITIES | RESIDENTIAL | COMMERCIAL | INDUSTRIAL
6477 FM 311, P.O. BOX 992 TBPLS FIRM#10044200
SPRING BRANCH, TEXAS 78070
PHONE (830) 228-5788 FAX (830) 885-2170

GENERAL PLAT NOTES:

1. THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES.
3. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.
4. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
5. PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.
6. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
7. IN ADDITION TO THE EASEMENTS SHOWN HEREON, A TEN (10') FOOT WIDE PUBLIC UTILITY EASEMENT, A PEDESTRIAN ACCESS EASEMENT AND A LANDSCAPE EASEMENT ARE DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY, AND A TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.
8. NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0435F FOR WILLIAMSON COUNTY, EFFECTIVE 12/20/2019.
9. BUILDING SETBACKS NOT SHOWN HEREON SHALL COMPLY WITH THE MOST CURRENT ZONING ORDINANCE OF THE CITY OF LEANDER. ADDITIONAL RESIDENTIAL GARAGE SETBACKS MAY BE REQUIRED AS LISTED IN THE CURRENT ZONING ORDINANCE.
10. SIDEWALKS SHALL BE INSTALLED ON THE SUBDIVISION SIDE OF SAN GABRIEL PARKWAY, AND WILL TIE INTO THE EXISTING SIDEWALK ON HALSEY DR. THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF ITS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED, SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS CONSTRUCTED.
11. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.
12. APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.
13. ALL DRIVE LANES, FIRE LANES, AND DRIVEWAYS WITHIN THIS SUBDIVISION SHALL PROVIDE FOR RECIPROCAL ACCESS FOR INGRESS AND EGRESS TO ALL OTHER LOTS WITHIN THE SUBDIVISION AND TO ADJACENT PROPERTIES.
14. AT THE TIME OF SITE DEVELOPMENT PERMIT, THE APPLICANT WILL PROVIDE A PAYMENT TO THE CITY IN LIEU OF A TRAFFIC IMPACT ANALYSIS (TIA), UNLESS A TIA FOR THE ENTIRE DEVELOPMENT INDICATES THAT AVERAGE DAILY TRIPS ARE ESTIMATED BELOW 2,000.

THE STATE OF TEXAS §
COUNTY OF COMAL §

THAT I, RICHARD A. GOODWIN, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICY ISSUED BY TITLE RESOURCES GUARANTY COMPANY ISSUED SEPTEMBER 14, 2021, AND NOTHING FURTHER STATEMENT ISSUED THROUGH OCTOBER 4, 2022, HAVE BEEN SHOWN OR NOTED HEREON.

RAGoodwin 12/7/23
RICHARD A. GOODWIN, RPLS DATE

STATE OF TEXAS · REGISTERED · RICHARD A. GOODWIN · 4069 · PROFESSIONAL LAND SURVEYOR

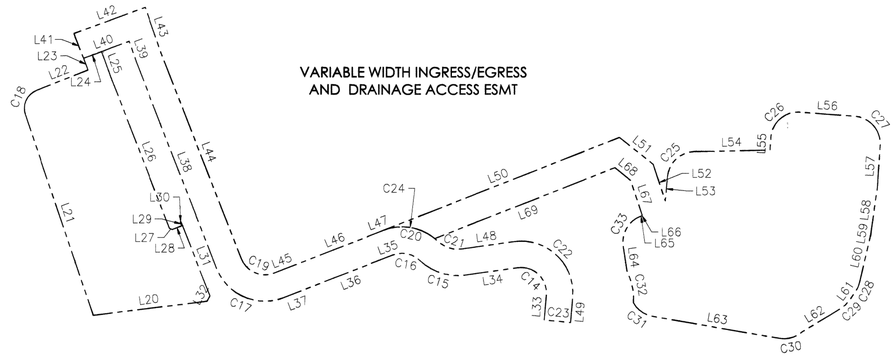
THE STATE OF TEXAS §
COUNTY OF TRAVIS §

THAT I, EDDIE BOGARD, PE AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

12/11/23
EDDIE BOGARD, PE Date

STATE OF TEXAS · EDDIE BOGARD · 99349 · LICENSED · PROFESSIONAL ENGINEER

JOB #21HAI001



LINE	BEARING	DISTANCE
L20	S 83°16'02" W	113.97'
L21	N 18°49'46" W	208.05'
L22	N 68°41'22" E	54.88'
L23	N 21°19'18" W	12.40'
L24	N 70°15'34" E	18.97'
L25	S 21°19'18" E	31.47'
L26	S 21°19'12" E	155.19'
L27	S 66°18'38" E	2.83'
L28	N 68°41'22" E	10.10'
L29	N 22°44'36" W	4.00'
L30	N 68°41'22" E	1.00'
L31	S 21°18'38" E	78.38'
L32	S 28°26'20" W	5.98'
L33	N 04°39'08" E	24.81'
L34	S 81°57'16" W	52.02'
L35	S 69°45'31" W	4.24'
L36	S 68°39'31" W	88.27'
L37	S 68°41'24" W	23.50'
L38	N 21°18'36" W	218.13'
L39	N 19°29'48" W	21.58'
L40	S 70°15'34" W	48.70'
L41	N 21°18'36" W	26.01'
L42	N 70°15'34" E	75.68'
L43	S 19°17'46" E	46.87'
L44	S 21°18'36" E	218.13'

LINE	BEARING	DISTANCE
L45	N 68°41'24" E	23.50'
L46	N 68°42'25" E	88.28'
L47	N 68°44'58" E	4.26'
L48	N 81°57'16" E	51.91'
L49	S 04°39'08" W	25.27'
L50	N 68°40'59" E	250.30'
L51	S 51°21'40" E	42.44'
L52	S 18°29'59" E	37.71'
L53	N 05°15'54" E	23.81'
L54	N 88°55'35" E	75.13'
L55	N 03°30'25" E	12.12'
L56	S 86°08'56" E	54.58'
L57	S 03°54'54" W	42.15'
L58	S 08°11'37" W	45.56'
L59	S 10°39'11" W	1.89'
L60	S 13°06'45" W	46.72'
L61	S 35°40'38" W	10.67'
L62	S 58°13'09" W	49.70'
L63	N 80°14'54" W	127.31'
L64	N 08°37'08" W	25.39'
L65	N 68°41'24" E	1.78'
L66	N 38°57'29" E	0.51'
L67	N 18°29'59" W	36.29'
L68	N 51°21'40" W	19.78'
L69	S 68°41'24" W	190.87'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C14	25.00'	44.81'	39.05'	N 46°41'51" W	102°41'58"
C15	55.00'	49.16'	47.54'	N 72°01'00" W	51°12'59"
C16	25.00'	28.29'	26.81'	N 78°49'44" W	64°50'29"
C17	51.00'	80.11'	72.12'	N 66°18'36" W	90°00'00"
C18	19.00'	29.33'	26.50'	N 24°27'59" E	88°26'46"
C19	25.00'	39.27'	35.36'	S 66°18'36" E	90°00'00"
C20	51.00'	57.72'	54.69'	S 78°49'45" E	64°50'29"
C21	29.00'	25.84'	25.00'	S 71°56'14" E	51°03'28"
C22	51.00'	91.41'	79.66'	S 46°41'50" E	102°41'58"
C23	1863.00'	26.00'	26.00'	N 84°19'11" W	0°47'59"
C24	51.00'	53.95'	51.47'	S 81°00'24" E	60°36'24"
C25	27.00'	39.42'	36.01'	N 47°05'44" E	83°39'40"
C26	27.00'	42.57'	38.30'	N 48°40'45" E	90°20'38"
C27	27.00'	42.42'	38.19'	S 41°08'37" E	90°00'39"
C28	27.00'	10.63'	10.56'	S 24°23'42" W	22°33'53"
C29	27.00'	10.62'	10.55'	S 46°56'54" W	22°32'31"
C30	27.00'	19.55'	19.12'	S 78°57'30" W	41°28'42"
C31	27.00'	24.04'	23.26'	N 54°44'08" W	51°01'33"
C32	55.05'	31.83'	31.39'	N 11°46'22" W	33°07'39"
C33	27.00'	36.43'	33.73'	N 30°02'08" E	77°18'31"

THE STATE OF TEXAS §
COUNTY OF Williamson

THAT WILLIAMSON COUNTY CRISIS CENTER, a A.K.A. Hope Alliance Renee A. Petsche AS THE OWNER OF THAT CERTAIN 11.527 ACRE TRACT OF LAND RECORDED IN DOCUMENT #2021153652, OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS HOPE ALLIANCE ~~SUBDIVISION~~ Crisis Center Subdivision.

WILLIAMSON COUNTY CRISIS CENTER A.K.A. Hope Alliance

Renee A. Petsche, Board President
AUTHORIZED SIGNATURE

Renee A Petsche
THE STATE OF TEXAS §
COUNTY OF Williamson

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE ON THIS THE 8th DAY OF December, 2023 personally appeared, Renee A. Petsche as Board President OF WILLIAMSON COUNTY CRISIS CENTER, a _____, ON BEHALF OF SAID COMPANY, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE 8th DAY OF December 2023.

NOTARY PUBLIC STATE OF TX

PRINTED NAME: Vicki D. Jones
MY COMMISSION EXPIRES: 6-15-27

VICKI D. JONES · My Notary ID # 134407989 · Expires June 15, 2027

0 40 80 160
SCALE (1" = 80')

NUMBER OF LOTS: 3
ACREAGE: 11.527
PROPOSED USE: COMMERCIAL
RESERVATIONS: NONE
STREETS: ZERO

FILING DATE: NOVEMBER 8, 2022

APPROVED THIS THE 28 DAY OF December, 2023 A.D. AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS, AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF WILLIAMSON COUNTY.

~~BONNIE MAHAN, CHAIRMAN~~
PLANNING AND ZONING COMMISSION
CITY OF LEANDER, TEXAS
Laura Landrop, Chair

ATTEST: Ellen Coufal
ELLEN COUFAL, SECRETARY
PLANNING AND ZONING COMMISSION
CITY OF LEANDER, TEXAS

STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON §

I, **NANCY RISTER**, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE 9th DAY OF January, 2024 AD, AT 10 O'CLOCK P M, AND DULY RECORDED THIS THE 9th DAY OF January, 2024 AD, AT 10:20 O'CLOCK P M, IN THE PLAT RECORDS OF SAID COUNTY IN INSTRUMENT NO. 2024004509.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

NANCY RISTER, CLERK COUNTY COURT OF WILLIAMSON COUNTY, TEXAS
BY: _____, DEPUTY

COUNTY COURT · WILLIAMSON COUNTY, TEXAS

SHEET 3 OF 3
EASEMENT/NOTES & SIGNATURES

ESP Associates, Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-0271
www.espassociates.com

STATE OF TEXAS · ARIELLA D. MEADOWS · 141035 · LICENSED · PROFESSIONAL ENGINEER · 09/07/2024

NO. | DATE | REVISION | BY

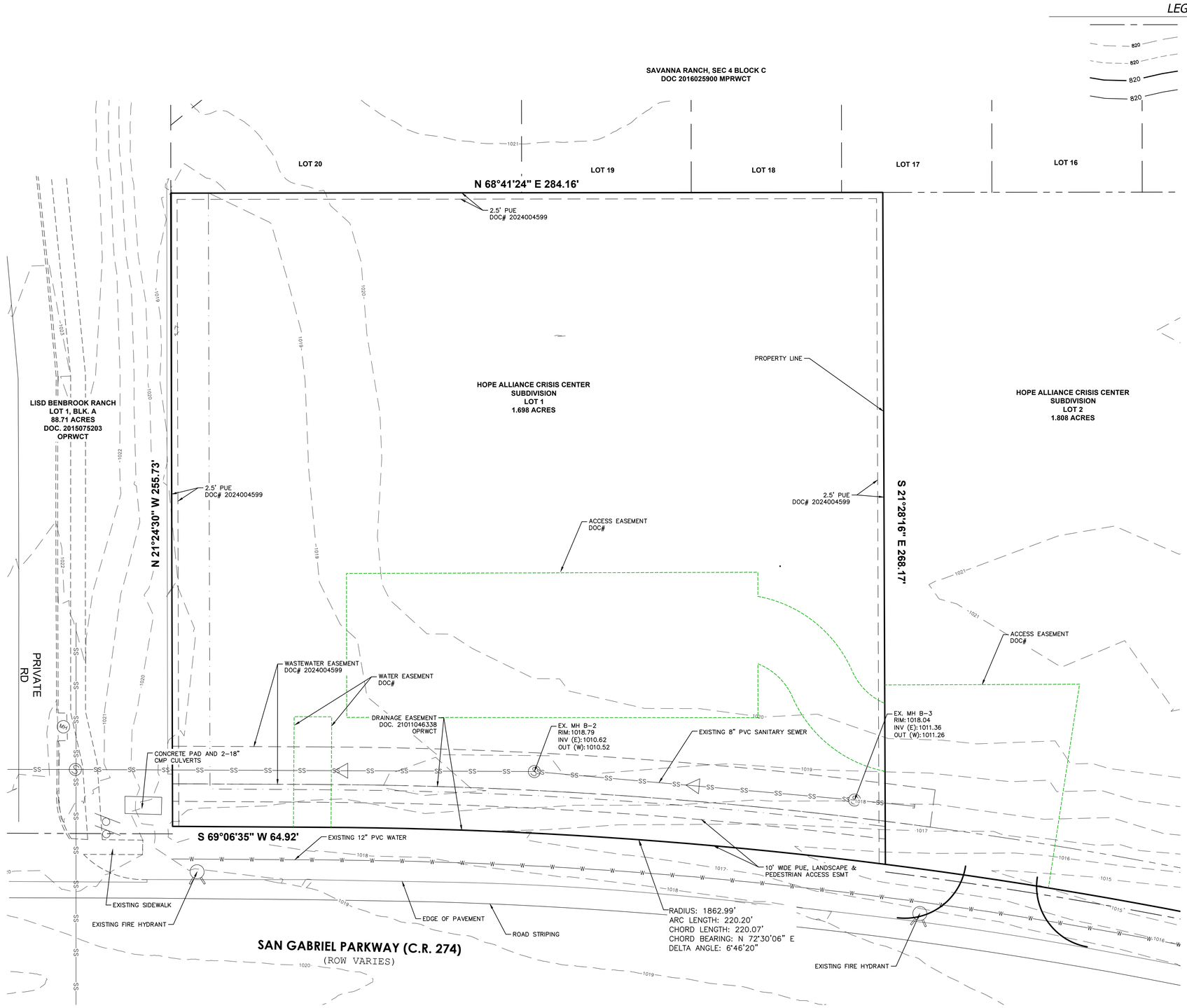
FINAL PLAT

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET	OF
5	31

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

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.



ESP Associates, Inc.
12340 Country Pkwy
San Antonio, TX 78216
(210) 340-3271
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09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

EXISTING CONDITIONS PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 6 OF 31

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

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

NOTES:

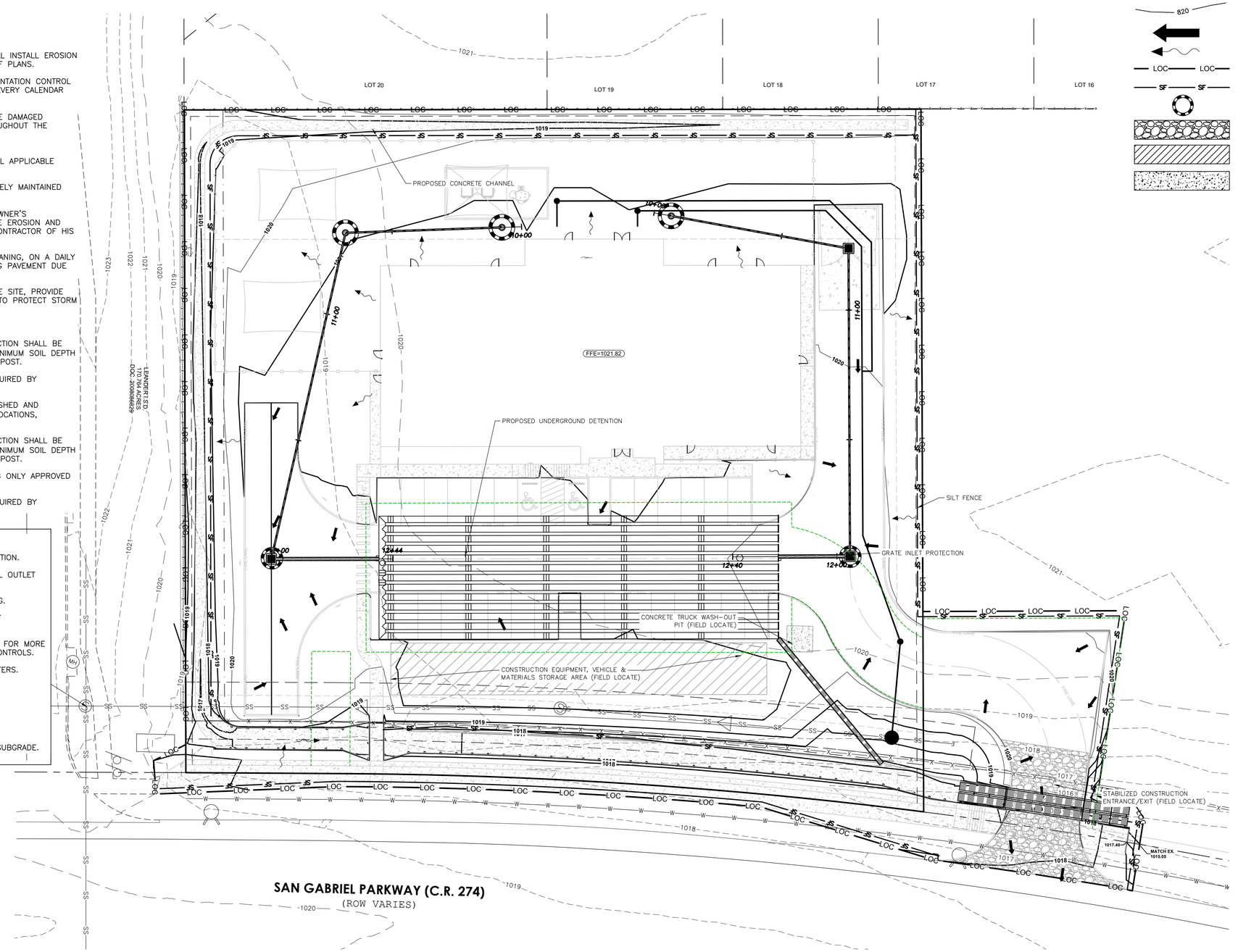
1. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
2. SEE GENERAL NOTES SHEET FOR ADDITIONAL EROSION CONTROL MEASURES.
3. MAINTAIN 3.5 FT OF COVER FOR 4" IRRIGATION SLEEVES.

EROSION & SEDIMENTATION CONTROLS

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN OF PLANS.
2. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
3. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
4. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
6. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
8. AS PROPOSED INLETS ARE INSTALLED THROUGHOUT THE SITE, PROVIDE INLET BARRIER PROTECTION AT EACH INLET IN ORDER TO PROTECT STORM SEWER SYSTEM.
9. SEE SHEET 22 FOR STANDARD SWPPP DETAILS.
10. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL. THE 6" MINIMUM SOIL DEPTH SHALL CONSIST OF 75% SOIL BLENDED WITH 25% COMPOST.
11. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.
12. ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT AND CONTRACTOR STAGING AREAS.
13. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL, THE 6" MINIMUM SOIL DEPTH SHALL CONSIST OF 75% SOIL BLENDED WITH 25% COMPOST.
14. ALL DISTURBED AREAS SHALL BE RE-VEGETATED USING ONLY APPROVED GRASSES FROM THE GROW GREEN GUIDE.
15. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.

PROJECT SEQUENCING – (EROSION CONTROL PHASE 1)

1. CONTRACTOR TO INSTALL STORM DRAIN INLET PROTECTION.
2. INSTALL UNDERGROUND DETENTION POND AND INSTALL OUTLET STRUCTURE.
3. BEGIN OVERALL SITE GRADING AND TOPSOIL STRIPPING.
4. INSTALL STORM SEWER SYSTEM AND ADDITIONAL INLET PROTECTION.
5. DISTURBED AREAS WHERE CONSTRUCTION WILL CEASE FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH EROSION CONTROLS.
6. INSTALL TEMPORARY SANITARY FACILITIES AND DUMPSTERS.
7. INSTALL UTILITIES, AND WATER SERVICES.
8. BEGIN CONSTRUCTION OF BUILDING FOUNDATION AND STRUCTURE.
9. INSTALL RETAINING WALLS.
10. INSTALL GUTTERS, CURBS, AND PREPARE PAVEMENT SUBGRADE.



NORTH ORIENTED TO GRID REF.

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

LEGEND

- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- DIRECT FLOW ARROW
- OVERLAND FLOW ARROW
- LIMITS OF CONSTRUCTION
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY CONSTRUCTION ENTRANCE
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)

THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROL ON SITE THROUGHOUT THE DURATION OF THE PROJECT.

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

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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(210) 349-3271
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STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED PROFESSIONAL ENGINEER
09/07/2024

NO.	DATE	REVISION	BY

EROSION & SEDIMENTATION CONTROL PLAN PHASE 1

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 7 OF 31

NOTES:

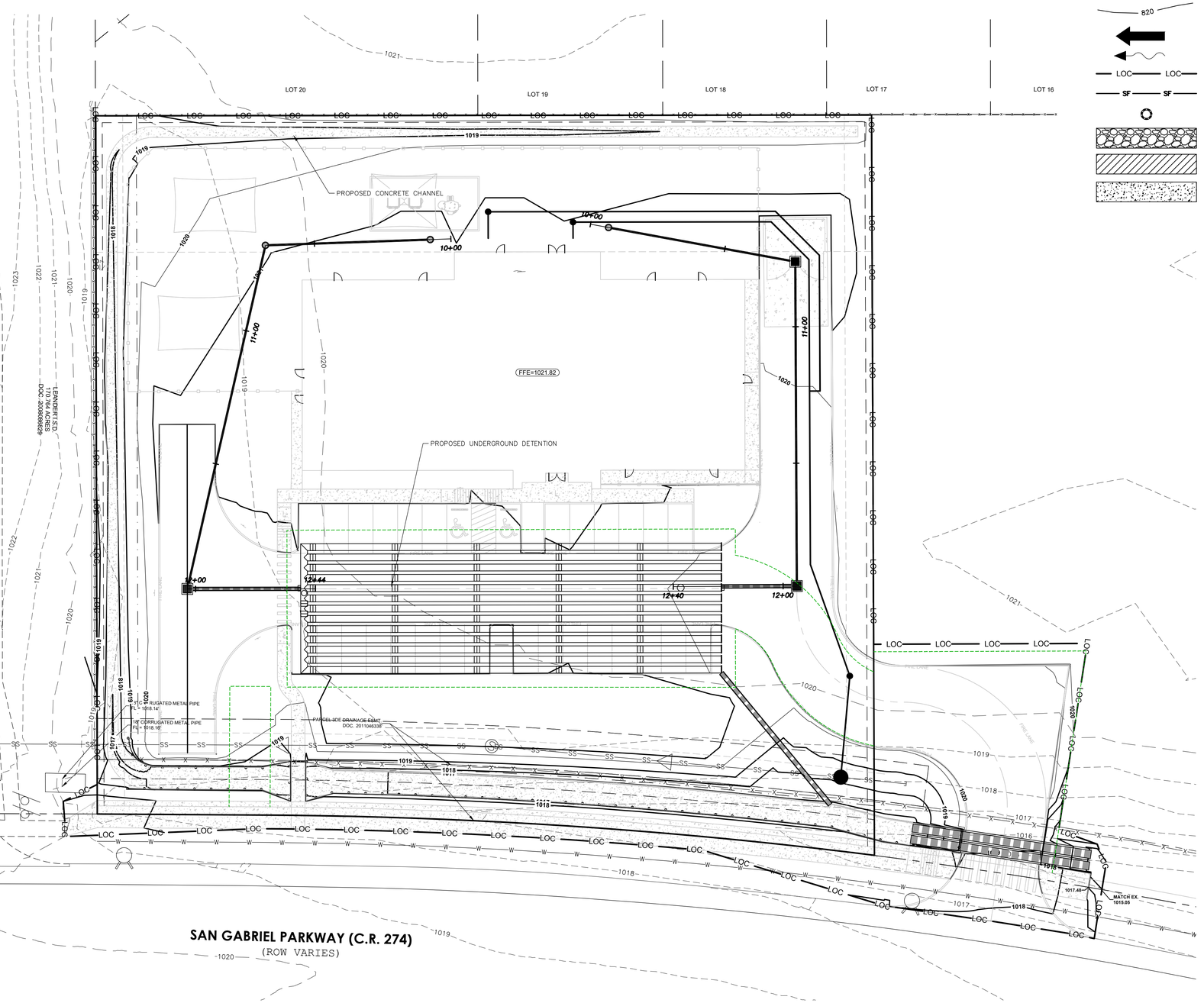
1. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
2. SEE GENERAL NOTES SHEET FOR ADDITIONAL EROSION CONTROL MEASURES.
3. MAINTAIN 3.5 FT OF COVER FOR 4" IRRIGATION SLEEVES.

EROSION & SEDIMENTATION CONTROLS

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN OF PLANS.
2. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
3. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
4. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
6. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
8. AS PROPOSED INLETS ARE INSTALLED THROUGHOUT THE SITE, PROVIDE INLET BARRIER PROTECTION AT EACH INLET IN ORDER TO PROTECT STORM SEWER SYSTEM.
9. SEE SHEET 22 FOR STANDARD SWPPP DETAILS.
10. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL. THE 6" MINIMUM SOIL DEPTH SHALL CONSIST OF 75% SOIL BLENDED WITH 25% COMPOST.
11. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.
12. ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT AND CONTRACTOR STAGING AREAS.
13. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6" TOPSOIL, THE 6" MINIMUM SOIL DEPTH SHALL CONSIST OF 75% SOIL BLENDED WITH 25% COMPOST.
14. ALL DISTURBED AREAS SHALL BE RE-VEGETATED USING ONLY APPROVED GRASSES FROM THE GROW GREEN GUIDE.
15. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.

PROJECT SEQUENCING – (EROSION CONTROL PHASE 2)

1. PARKING LOT PAVED, EXTERIOR BUILDING CONSTRUCTED.
2. INSTALL FENCE.
3. REMOVE TEMPORARY CONCRETE WASHOUT AREA.
4. IMPLEMENT WINTER STABILIZATION PROCEDURES.
5. FINALIZE PAVEMENT ACTIVITIES.
6. REMOVE ALL TEMPORARY CONTROL BMP'S AND STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL WITH EROSION CONTROLS.
7. PREPARE FINAL SEEDING AND LANDSCAPING.
8. MONITOR STABILIZED AREAS UNTIL FINAL STABILIZATION IS REACHED.



NORTH ORIENTED TO GRID REF.

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

LEGEND

- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- DIRECT FLOW ARROW
- OVERLAND FLOW ARROW
- LIMITS OF CONSTRUCTION
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY CONSTRUCTION ENTRANCE
- MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)

THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROL ON SITE THROUGHOUT THE DURATION OF THE PROJECT.

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CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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07/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

EROSION & SEDIMENTATION CONTROL PLAN PHASE 2

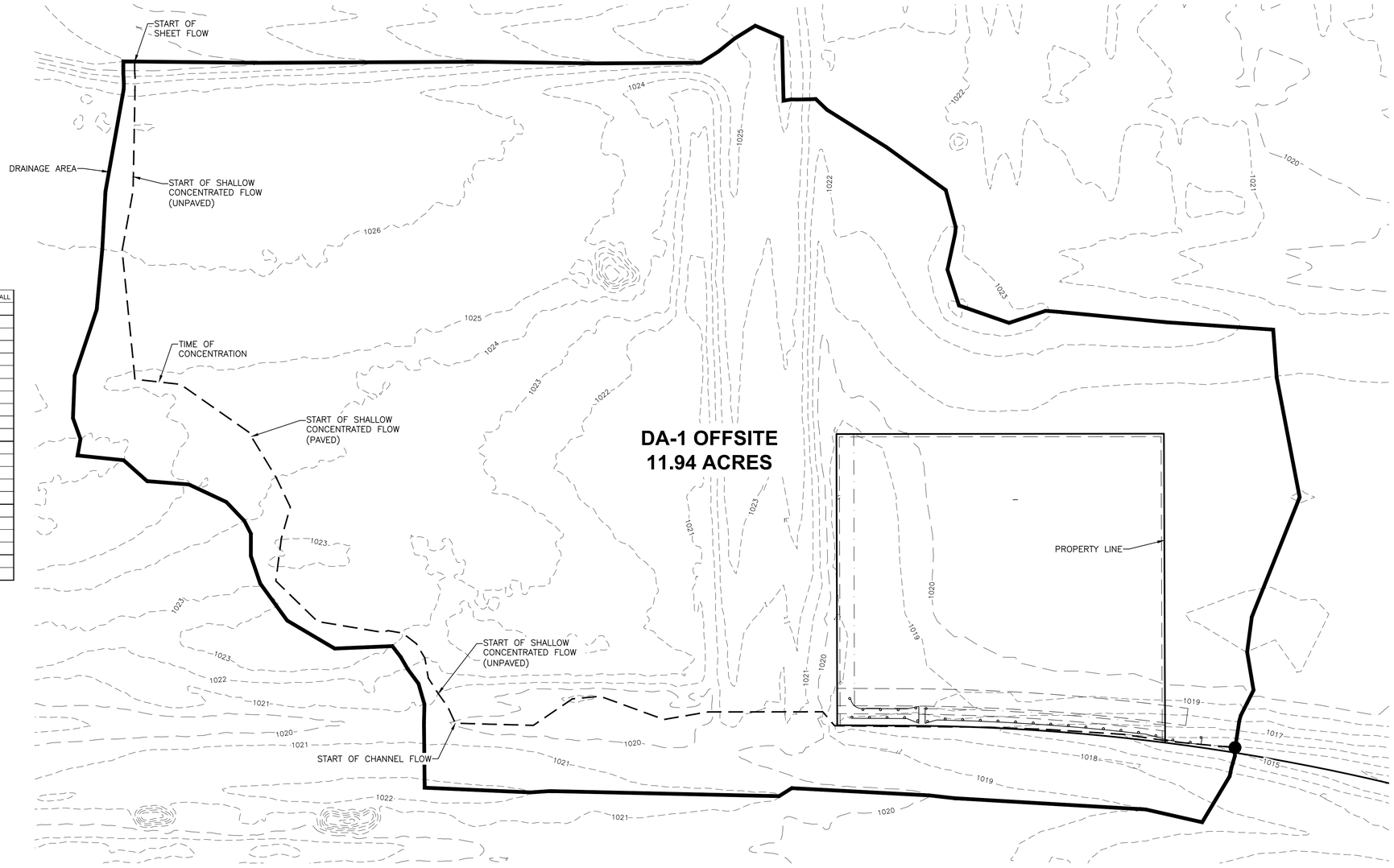
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 8 OF 31

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH



	Areas		DA-1 OVERALL
			EX
Overland	Length	ft	100
	n		0.130
$t_o = \frac{0.42(nL)^{0.8}}{(P)^{0.5}(s)^{0.4}}$	slope	ft/ft	0.038
	To	min	6.13
P=3.92 in		hr	0.10
Shallow Concentrated (Unpaved)	Length	ft	323
	Slope	ft/ft	0.010
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		16.13
	Tsc	min	3.37
		hr	0.06
Shallow Concentrated (Paved)	Length	ft	325
	Slope	ft/ft	0.011
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		20.33
	Tsc	min	2.58
		hr	0.04
Channel	Length	ft	694
	Velocity	ft/sec	6.00
$t_c = \Sigma \frac{L}{(60V)}$	Tc	min	1.93
		hr	0.03
Total Time of Concentration		**min**	**14.0**
$t_c = t_o + t_{sc} + t_c$		**hr**	**0.23**

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	DA-1 EX	0.44	0.50	0.55	0.62	11.94	14.0	4.31	6.45	7.93	10.52	22.73	38.61	51.67	78.29

NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 INCH = 50 FT.

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

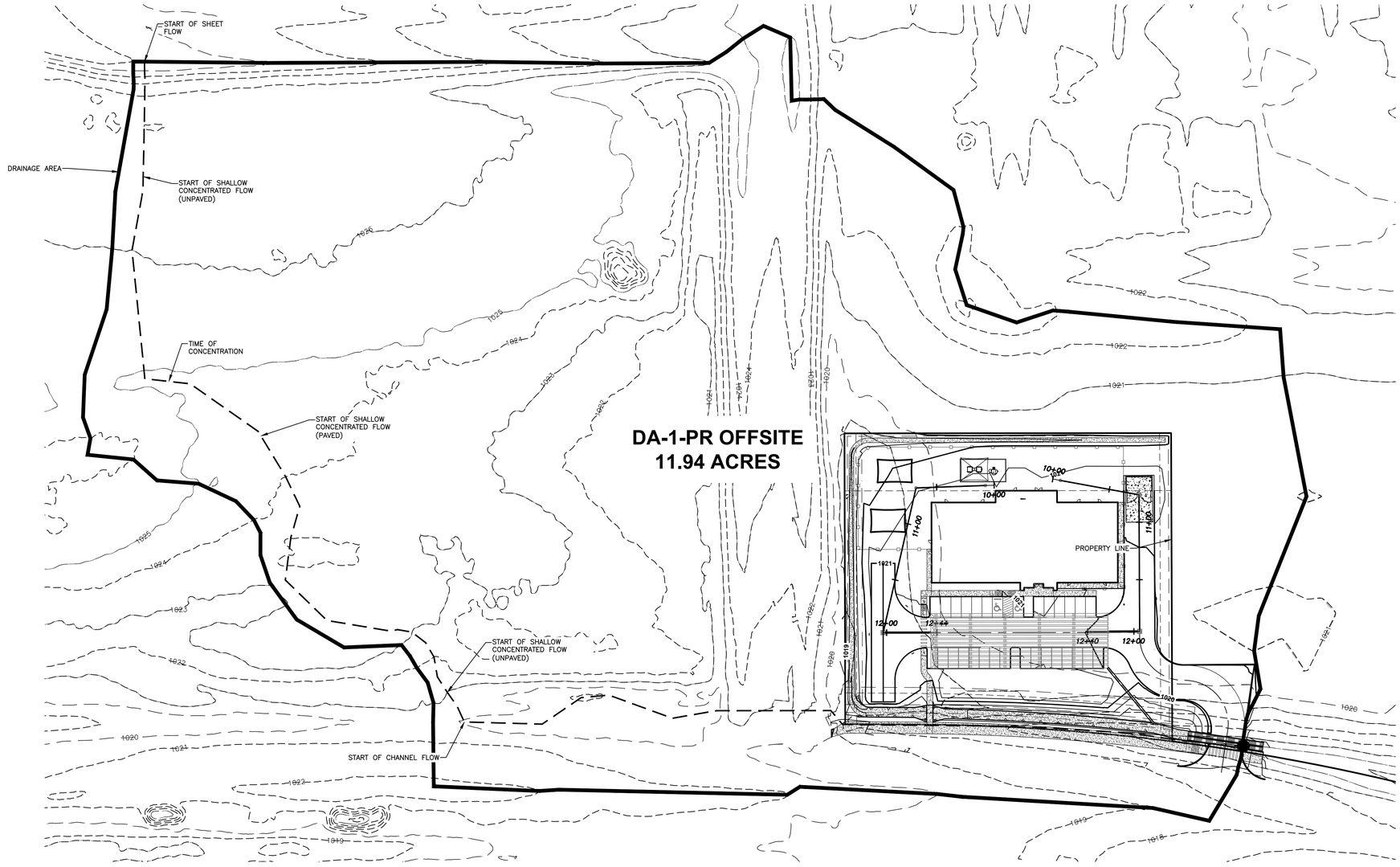
NO.	DATE	REVISION	BY

OFFSITE EXISTING DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 9 OF 31



LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH

	EXISTING (CFS)	PROPOSED (CFS)	POST-DETENTION (CFS)
2-YR	2.03	3.58	1.99
10-YR	3.71	6.33	3.48
25-YR	5.22	8.47	4.82
100-YR	8.42	15.11	6.45

Time of Concentration Worksheet

		Areas	DA-1 OVERALL
			PROP
Overland	Length	ft	100
	n		0.130
$t_o = \frac{0.42(nL)^{0.8}}{(P)^{0.5}(s)^{0.4}}$	slope	ft/ft	0.038
	To	min	6.13
P=3.92 in		hr	0.10
Shallow Concentrated (Unpaved)	Length	ft	323
	Slope	ft/ft	0.010
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		16.13
	Tsc	min	3.37
		hr	0.06
Shallow Concentrated (Paved)	Length	ft	325
	Slope	ft/ft	0.011
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		20.33
	Tsc	min	2.58
		hr	0.04
Channel	Length	ft	694
	Velocity	ft/sec	6.00
$t_c = \Sigma \frac{L}{(60V)}$	Tc	min	1.93
		hr	0.03
Total Time of Concentration		**min**	**14.0**
$t_c = t_o + t_{sc} + t_c$		**hr**	**0.23**

NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

Existing Overall Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	DA-1 EX. OVERALL	0.44	0.50	0.55	0.62	11.94	14.0	4.31	6.45	7.93	10.52	22.73	38.61	51.67	78.29

Proposed/Ultimate Overall Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	DA 1 PR	0.49	0.55	0.59	0.67	11.94	14.0	4.31	6.45	7.93	10.52	25.04	42.37	56.38	84.72

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ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
09/07/2024

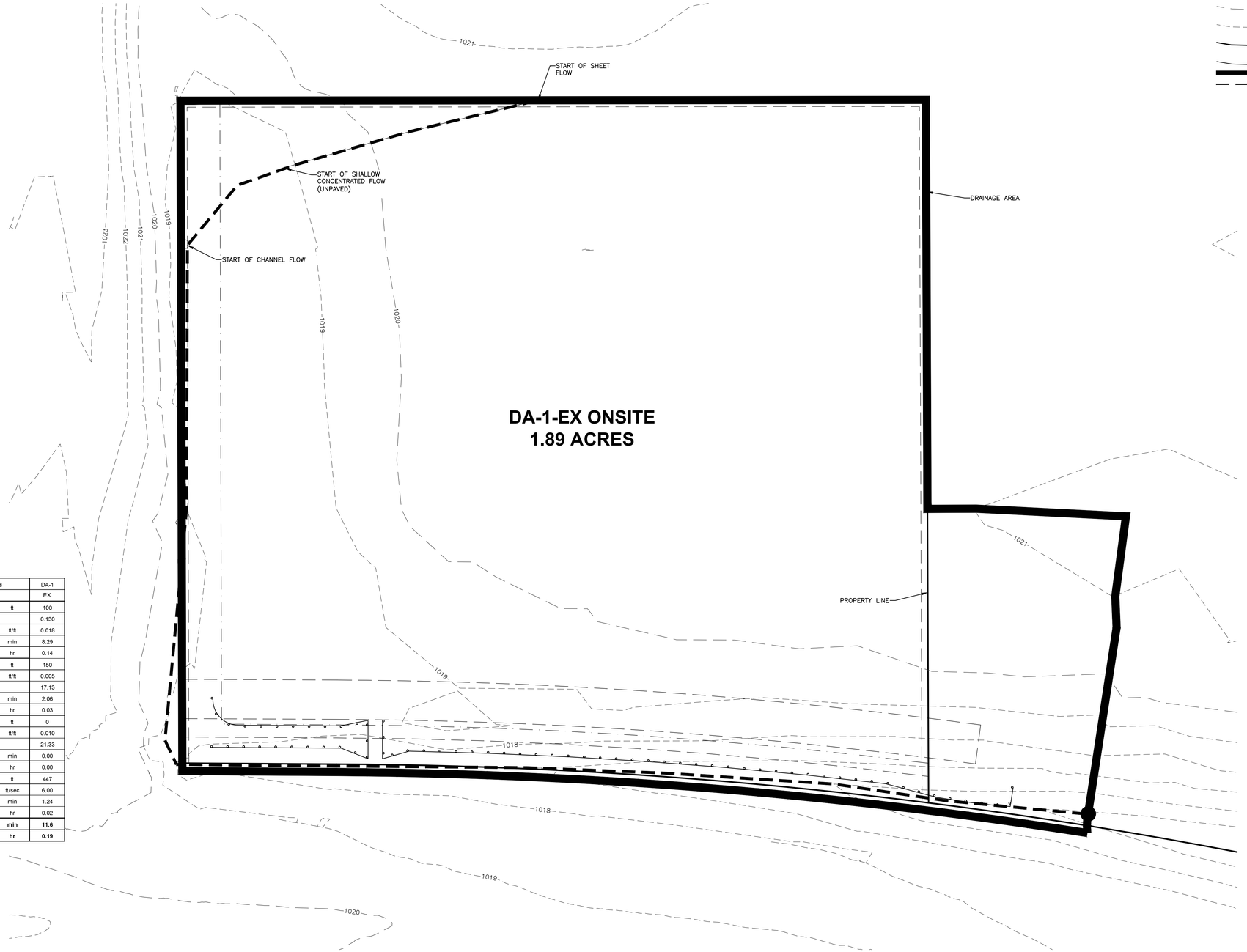
NO.	DATE	REVISION	BY

OFFSITE PROPOSED DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 10 OF 31



LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH

	Areas		DA-1
			EX
Overland	Length	ft	100
	n		0.130
$t_o = \frac{0.42(nL)^{0.8}}{(P)^{0.5}(s)^{0.4}}$	slope	ft/ft	0.018
	To	min	8.29
P=3.92 in		hr	0.14
Shallow Concentrated (Unpaved)	Length	ft	150
	Slope	ft/ft	0.005
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		17.13
	Tsc	min	2.06
		hr	0.03
Shallow Concentrated (Paved)	Length	ft	0
	Slope	ft/ft	0.010
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		21.33
	Tsc	min	0.00
		hr	0.00
Channel	Length	ft	447
	Velocity	ft/sec	6.00
$t_c = \Sigma \frac{L}{(60V)}$	Tc	min	1.24
		hr	0.02
Total Time of Concentration		**min**	**11.6**
$t_c = t_o + t_{sc} + t_c$		**hr**	**0.19**

NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

Existing Overall Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
C	DA-1 EX ON	0.23	0.28	0.32	0.39	1.89	11.6	4.67	6.99	8.59	11.39	2.06	3.65	5.14	8.32

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07/07/2024
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141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

ONSITE EXISTING DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET	OF
11	31

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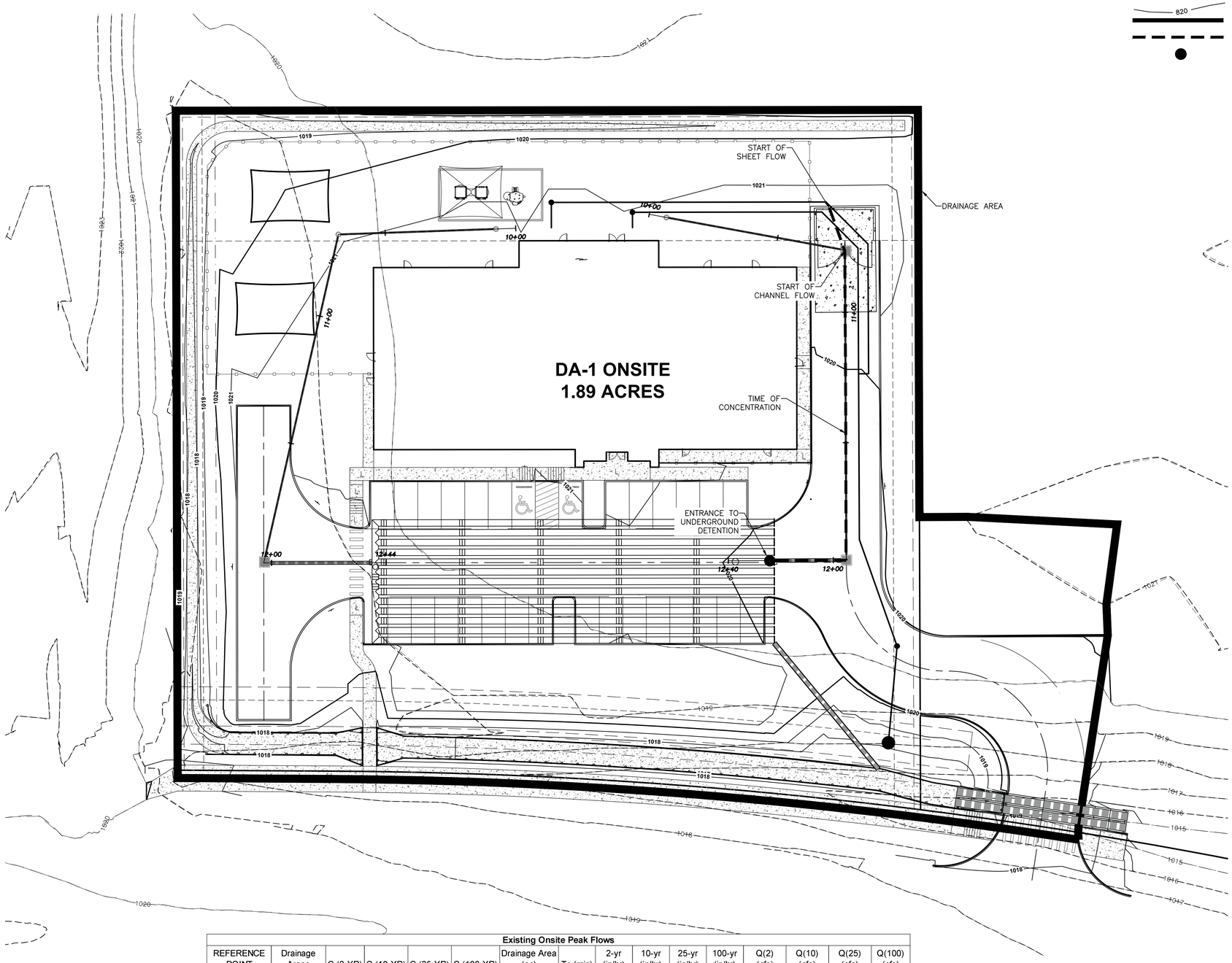
Time of Concentration Worksheet

	Areas		DA-1
			PROP.
Overland	Length	ft	38
	n		0.150
$t_o = \frac{0.42(nL)^{0.8}}{(P)^{0.5}(s)^{0.4}}$	slope	ft/ft	0.033
	To	min	3.33
P=3.92 in		hr	0.06
Shallow Concentrated (Unpaved)	Length	ft	0
	Slope	ft/ft	0.005
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		17.13
	Tsc	min	0.00
		hr	0.00
Shallow Concentrated (Paved)	Length	ft	143
	Slope	ft/ft	0.013
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K		21.33
	Tsc	min	0.98
		hr	0.02
Channel	Length	ft	125
	Velocity	ft/sec	6.00
$t_c = \Sigma \frac{L}{(60V)}$	Tc	min	0.35
		hr	0.01
Total Time of Concentration		**min**	**4.7**
$t_c = t_o + t_{sc} + t_c$		**hr**	**0.08**

	EXISTING (CFS)	PROPOSED (CFS)	POST-DETENTION (CFS)
2-YR	2.03	3.58	1.99
10-YR	3.71	6.33	3.48
25-YR	5.22	8.47	4.82
100-YR	8.42	15.11	6.45



NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

Existing Onsite Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	DA-1	0.23	0.28	0.32	0.39	1.89	11.6	4.67	6.99	8.59	11.39	2.06	3.65	5.14	8.32

Proposed/Ultimate Onsite Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	DA 1	0.52	0.59	0.63	0.71	1.89	5.0	6.14	9.19	11.30	15.00	5.98	10.15	13.44	20.08

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH

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09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

ONSITE PROPOSED DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION

PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 12 OF 31

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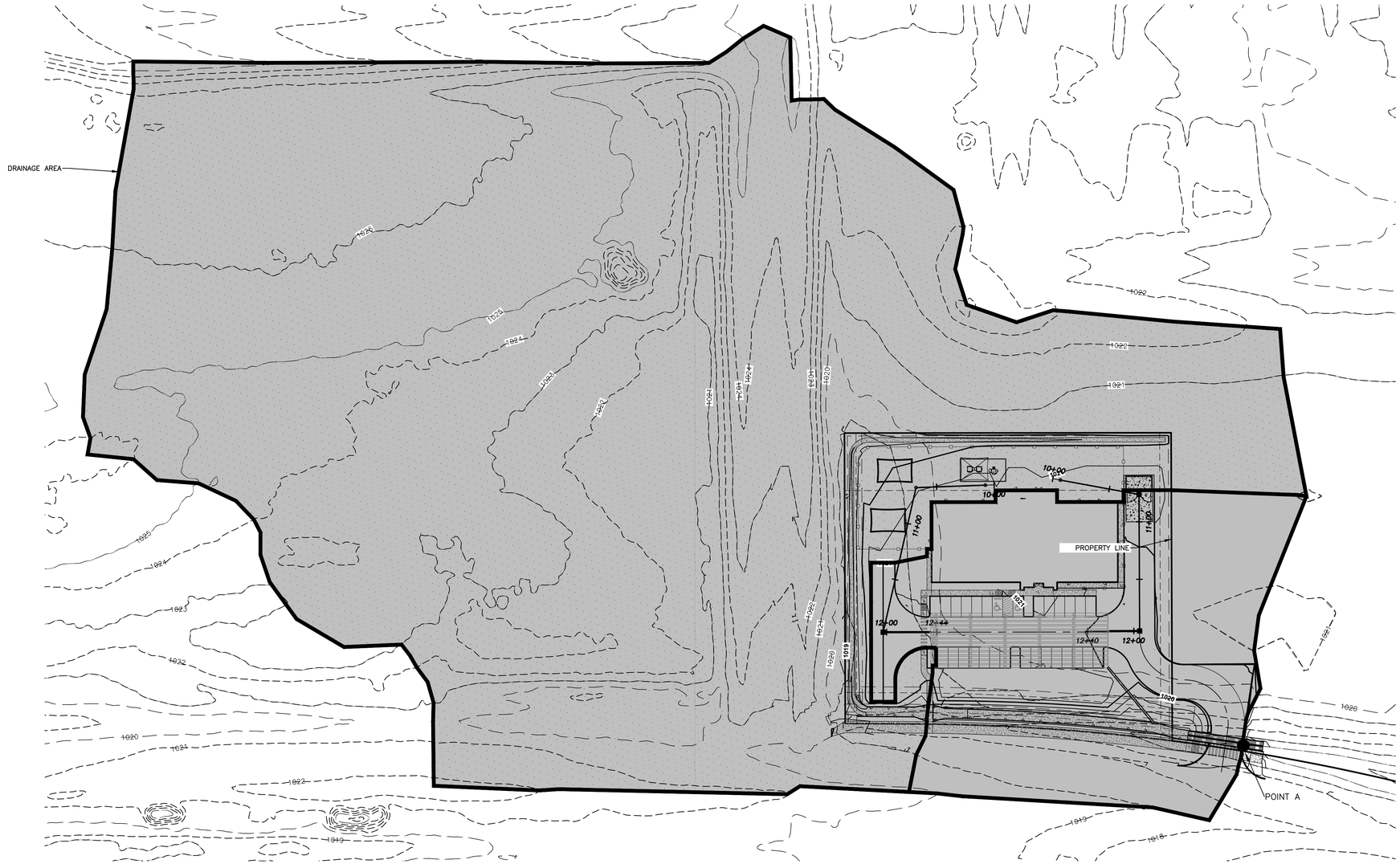

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH
- CHANNEL 1 DRAINAGE AREA 10.04 AC
- CHANNEL 2 DRAINAGE AREA 11.94 AC

Time of Concentration Worksheet

Exhibit G

			Areas	Chanel
Overland	Length	ft		100
	n			0.130
$t_o = \frac{0.42(nL)^{0.8}}{(P)^{0.5}(s)^{0.4}}$	slope	ft/ft		0.038
	To	min		6.13
P=3.92 in		hr		0.10
Shallow Concentrated (Unpaved)	Length	ft		323
	Slope	ft/ft		0.010
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K			16.13
	Tsc	min		3.37
		hr		0.06
Shallow Concentrated (Paved)	Length	ft		325
	Slope	ft/ft		0.011
$t_{sc} = \frac{L}{60 * K * s^{0.5}}$	K			20.33
	Tsc	min		2.58
		hr		0.04
Channel	Length	ft		394
	Velocity	ft/sec		6.00
$t_c = \Sigma \frac{L}{(60V)}$	Tc	min		1.10
		hr		0.02
Total Time of Concentration		**min**		**13.2**
$t_c = t_o + t_{sc} + t_c$		**hr**		**0.22**

Proposed/Ultimate Overall Peak Flows

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
A	Channel 1	0.48	0.54	0.58	0.66	10.04	13.2	4.42	6.62	8.15	10.80	21.21	35.92	47.84	71.99
A	Channel 2	0.49	0.55	0.59	0.67	11.94	13.2	4.4	6.6	8.1	10.8	25.70	43.50	57.86	86.94

NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

CAUTION:
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141035
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PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

CHANNEL DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

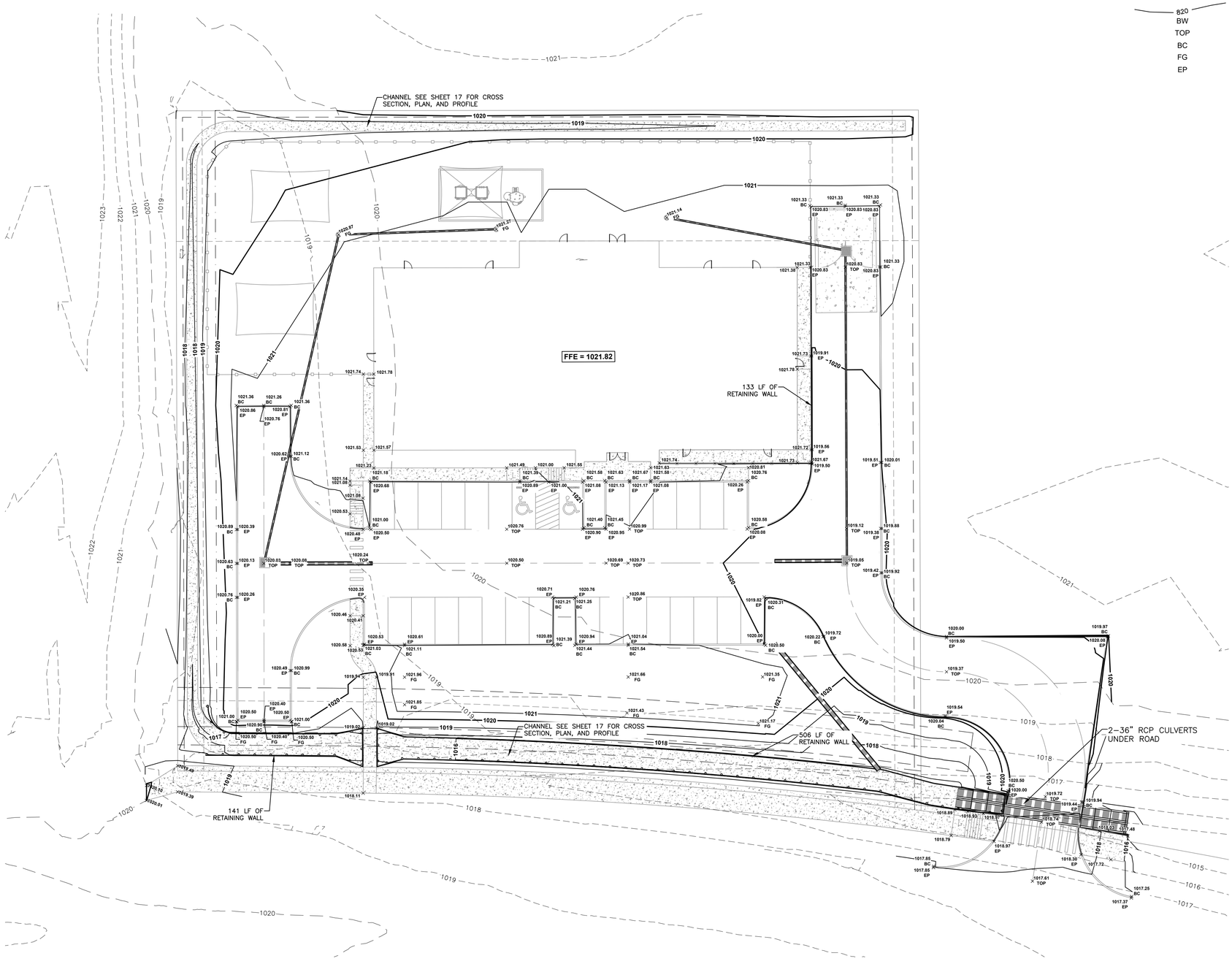
SHEET	OF
13	31

NOTES:

ALL ELEVATION ONLY SPOT GRADES ARE CONSIDERED TO BE TOP OF SIDEWALK.

LEGEND

	ROAD CENTERLINE
820	EXISTING MAJOR CONTOURS
820	EXISTING MINOR CONTOURS
820	PROPOSED MAJOR CONTOURS
820	PROPOSED MINOR CONTOURS
BW	BOTTOM OF WALL
TOP	TOP OF PAVEMENT
BC	BACK OF CURB
FG	FINISHED GROUND
EP	EDGE OF PAVEMENT



NORTH ORIENTED TO GRID REF.

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

CAUTION:
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09/07/2024

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PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY

GRADING PLAN

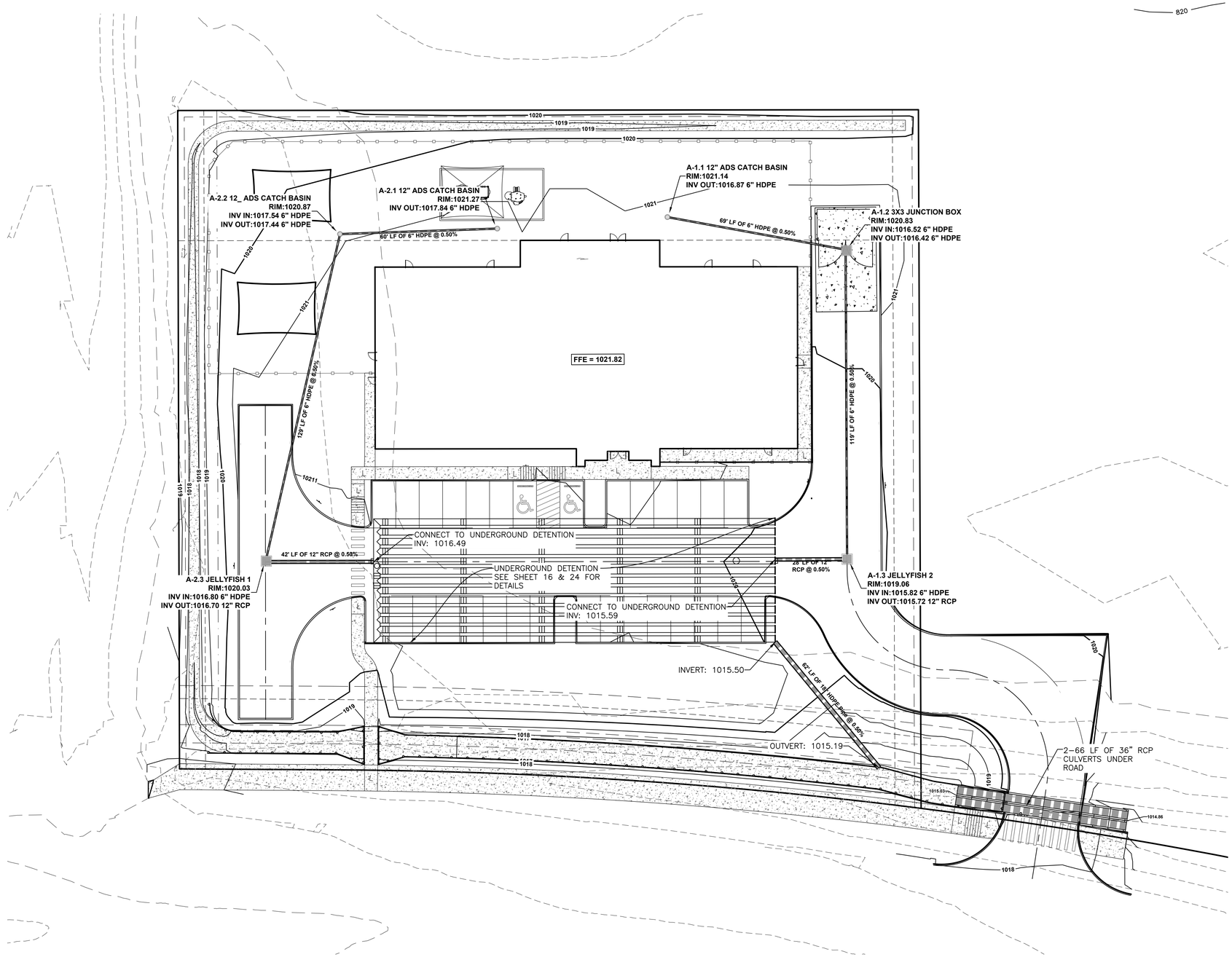
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 14 OF 31

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)



NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

CAUTION:
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811 know what's below. Call before you dig

ESP Associates, Inc.
12540 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

07/07/2024

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

BY | NO. | DATE | REVISION

STORM DRAIN PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 15 OF 31

LEGEND

ROAD CENTERLINE

EXISTING MAJOR CONTOURS (820)

EXISTING MINOR CONTOURS (820)

PROPOSED MAJOR CONTOURS (820)

PROPOSED MINOR CONTOURS (820)

NORTH ORIENTED TO GRID REF.

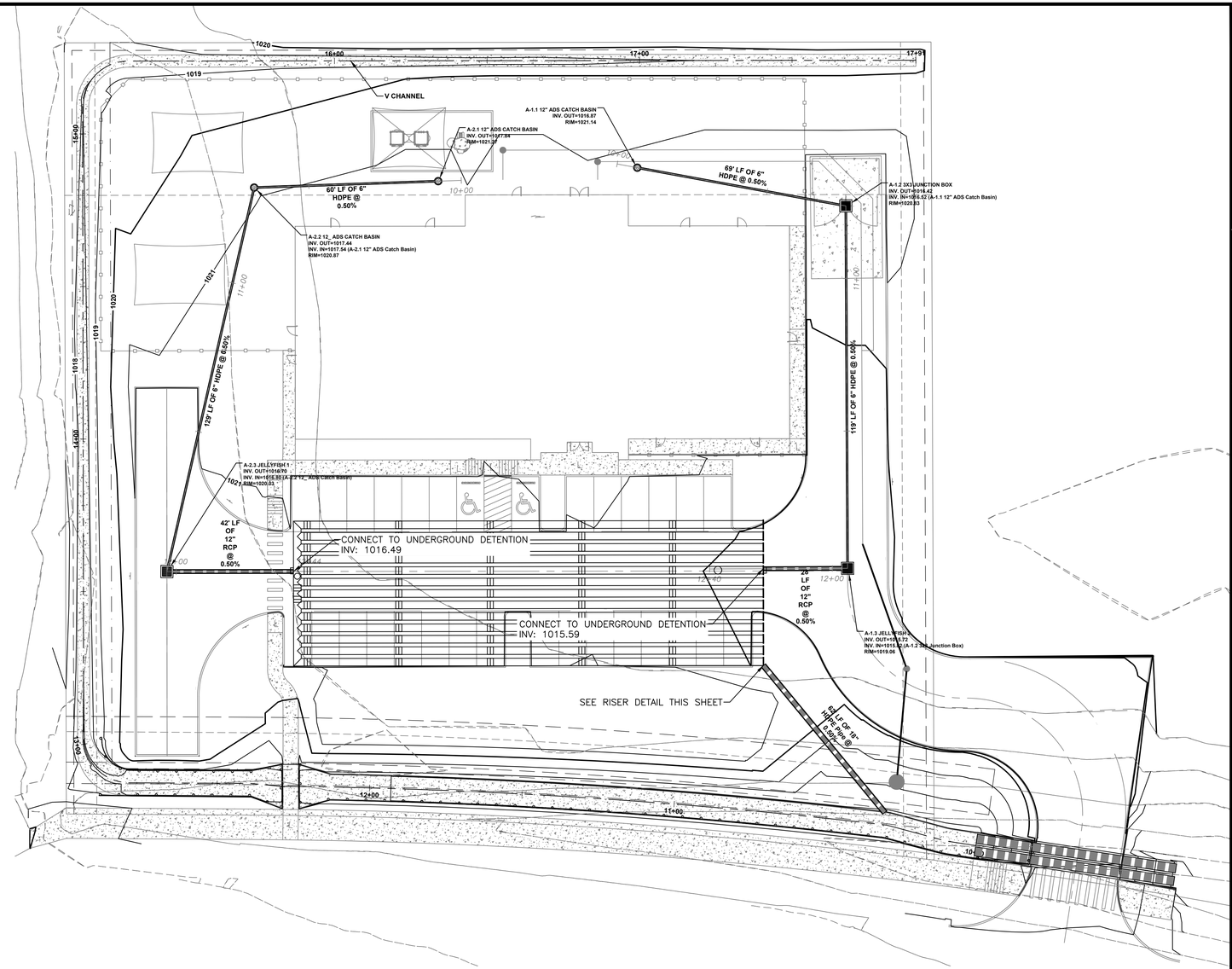
GRAPHIC SCALE

20' 0 10' 20' 40' 80'

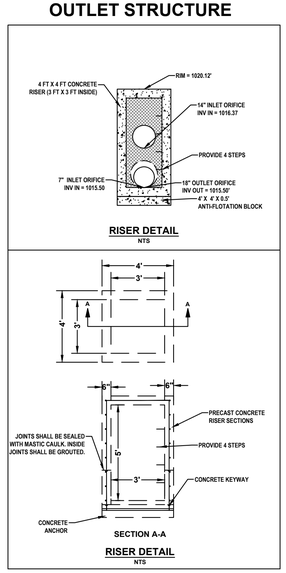
(IN FEET)
1 INCH = 20 FT.

UNDERGROUND DETENTION CALCULATION DATA

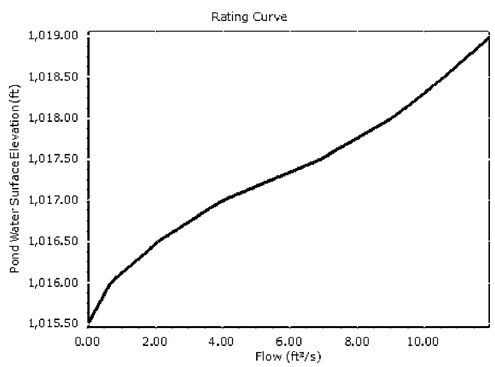
Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
PO-1 (IN)	Post-Development 2	2	4,586.000	6.000	3.35	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 2	2	4,586.000	27.000	1.43	1,015.81	2,908.000
PO-1 (IN)	Post-Development 10	10	9,179.000	6.000	7.28	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 10	10	9,179.000	24.000	5.01	1,017.17	4,588.000
PO-1 (IN)	Post-Development 25	25	11,256.000	6.000	8.93	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 25	25	11,256.000	24.000	6.25	1,017.38	5,635.000
PO-1 (IN)	Post-Development 100	100	14,839.000	6.000	11.78	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 100	100	14,839.000	24.000	8.15	1,017.79	7,528.000



UNDERGROUND DETENTION OUTLET STRUCTURE



UNDERGROUND DETENTION OUTLET STRUCTURE REPORT



	EXISTING (CFS)	PROPOSED (CFS)	POST-DETENTION (CFS)
2-YR	2.03	3.58	1.99
10-YR	3.71	6.33	3.48
25-YR	5.22	8.47	4.82
100-YR	8.42	15.11	6.45

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UNDERGROUND DETENTION PLAN

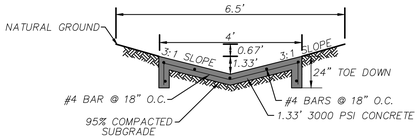
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 16 OF 31

LEGEND

ROAD CENTERLINE
EXISTING MAJOR CONTOURS (820)
EXISTING MINOR CONTOURS (820)
PROPOSED MAJOR CONTOURS (820)
PROPOSED MINOR CONTOURS (820)



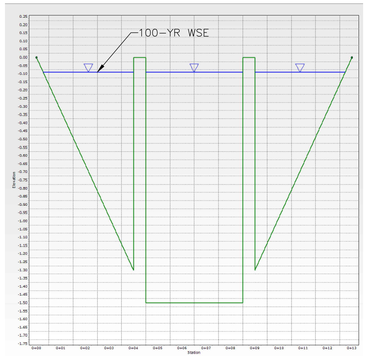
TYPICAL V CHANNEL CROSS SECTION
NTS

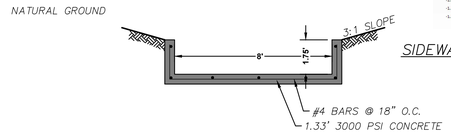
25 YEAR	100 YEAR
Q = 50.46 CFS	Q = 75.91 CFS
D = 1.86'	D = 2.17'
V = 4.84 FPS	V = 5.36 FPS
n = 0.02	n = 0.02
S = 0.5%	S = 0.5%

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

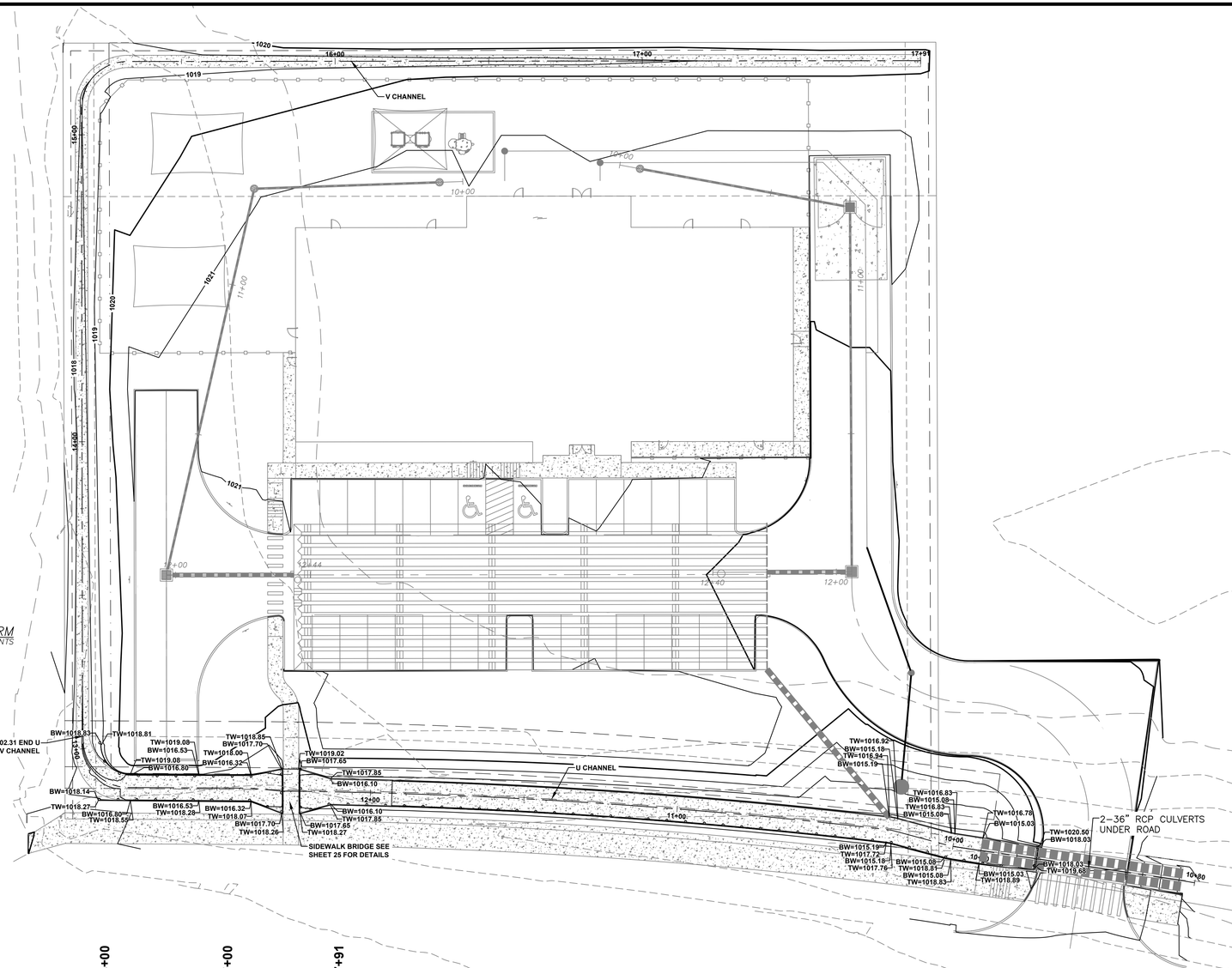


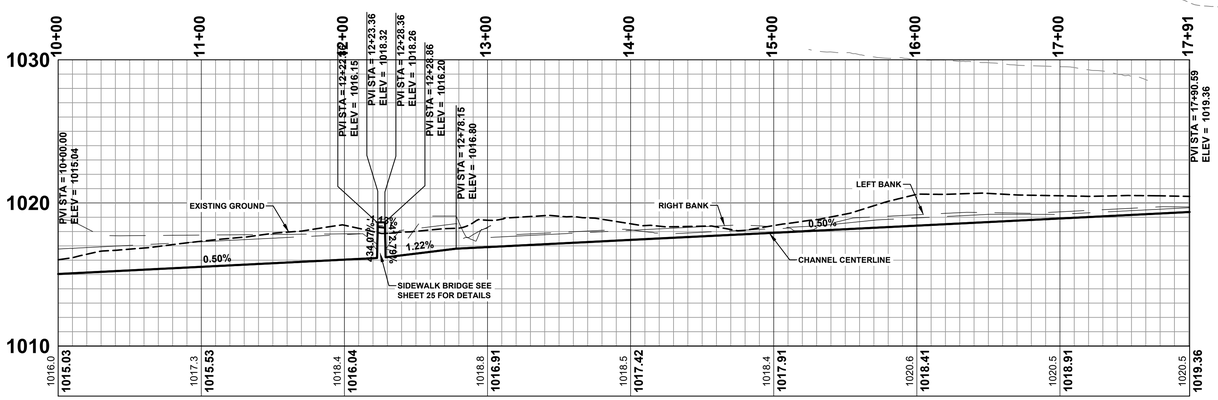


TYPICAL U CHANNEL CROSS SECTION
NTS

25 YEAR	100 YEAR	25 YEAR	100 YEAR
Q = 57.34 CFS	Q = 86.40 CFS	Q = 57.34 CFS	Q = 86.40 CFS
D = 1.35'	D = 1.79'	D = 1.01'	D = 1.32'
V = 5.29 FPS	V = 6.05 FPS	V = 7.11 FPS	V = 8.17 FPS
n = 0.02	n = 0.02	n = 0.02	n = 0.02
S = 0.5%	S = 0.5%	S = 1.22%	S = 1.22%

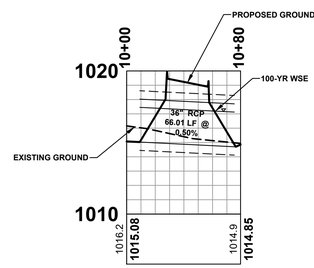
SIDEWALK BRIDGE CROSS SECTION FOR 100 YR STORM
NTS





CHANNEL CENTERLINE PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



DRIVEWAY CENTERLINE PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

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07/07/2024
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NO.	DATE	REVISION	BY

CHANNEL PLAN AND PROFILE

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 17 OF 31

NOTES:

ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.

EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC ROW OF ADJACENT RESIDENTIAL DISTRICTS OR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.

AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.

AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.

GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL STRUCTURE LOCATED CLOSEST TO THE ROADWAY. GARBAGE DUMPSTERS ARE SCREENED BY A WALL (COMPROMISED OF MASONRY COMPATIBLE WITH THE STRUCTURE OR WOODCRETE) AT LEAST AS HIGH AS THE CONTAINER. THE OPEN SIDE TO THE DUMPSTER OR OTHER TRASH RECEPTACLE IS A GATE CONSTRUCTED OF SOLID WOOD OR METAL. THE DUMPSTER IS ORIENTED FOR PICKUP BY A FRONT LOAD GARBAGE TRUCK.

FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.

ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN (DATED: 03/20/2023, CONDUCTED BY TITLE RESOURCES GUARANTY COMPANY) FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

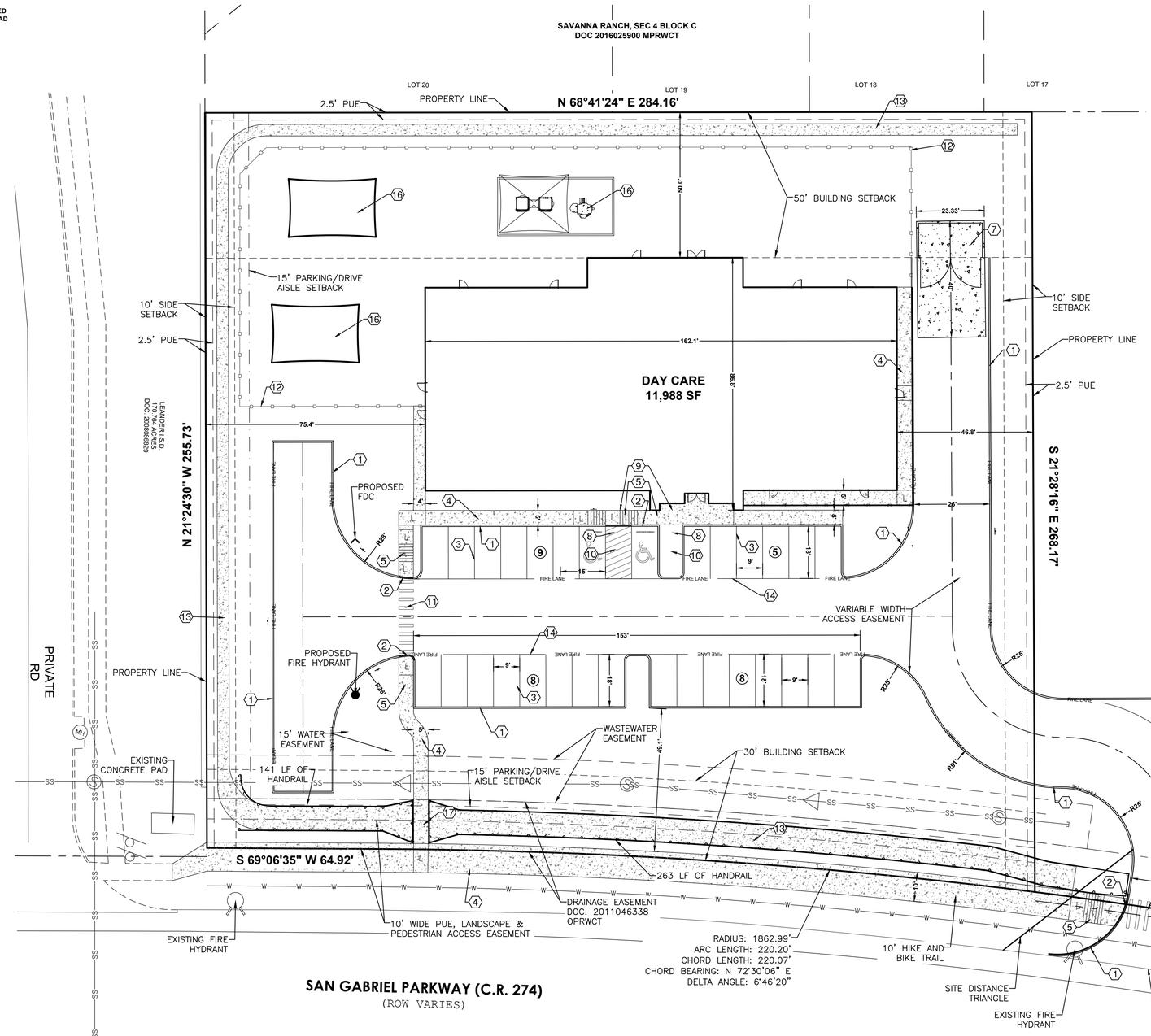
SITE CONTAINS UNDEFINABLE EASEMENTS. PLAN ASSUMES THESE EASEMENTS ARE RESOLVABLE.

ALL PARKING RETURNS NOT LABELED ARE TO BE ASSUMED TO HAVE A RADIUS OF 2'.

HOURS OF OPERATION TO THE GENERAL PUBLIC SHALL BE LIMITED TO BETWEEN 5:00 A.M. AND 10:00 P.M. SUNDAY THROUGH THURSDAY, AND 5:00 A.M. TO 11:00 P.M. FRIDAY AND SATURDAY.

PARKING SUMMARY TABLE

TYPE OF FACILITY:	DAYCARE
PARKING SPACE REQUIREMENT:	1 SPACE FOR EVERY 400 SF OF BUILDING
BUILDING SQUARE FOOTAGE:	11,988 SF
REQUIRED PARKING:	30 SPACES
PROPOSED PARKING:	30 SPACES
REQUIRED HANDICAP PARKING:	2 SPACES (1 VAN)
PROPOSED HANDICAP PARKING:	2 SPACES (2 VAN)



NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)
- (8) PARKING COUNT

DETAIL LEGEND

1. STANDARD 6" CURB (SEE SHEET 26)
2. HEADER CURB (SEE SHEET 26)
3. 4" STRIPING (SEE SHEET 26)
4. CONCRETE SIDEWALK (SEE SHEET 25)
5. WHEELCHAIR RAMP (SEE SHEET 27)
6. CONCRETE/ASPHALT PAVEMENT JOINT (SEE SHEET 26)
7. DUMPSTER ENCLOSURE (SEE SHEET 28)
8. CONCRETE WHEEL STOP (SEE SHEET 26)
9. ACCESSIBLE PARKING SIGN (SEE SHEET 26)
10. HANDICAP PARKING (SEE SHEET 26)
11. PEDESTRIAN CROSSWALK (SEE SHEET 28)
12. FENCE (SEE SHEET 28, TO BE CONFIRMED BY ARCHITECT BEFORE INSTALLATION)
13. DRAINAGE CHANNEL (SEE SHEET 17)
14. FIRE LANE STRIPING (SEE SHEET 25)
15. TYPE II COMMERCIAL DRIVEWAY (SEE SHEET 26)
16. PLAYGROUND (DONE BY OTHERS)
17. SIDEWALK BRIDGE (SEE SHEET 25)

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ESP

09/07/2024

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

SITE PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 18 OF 31

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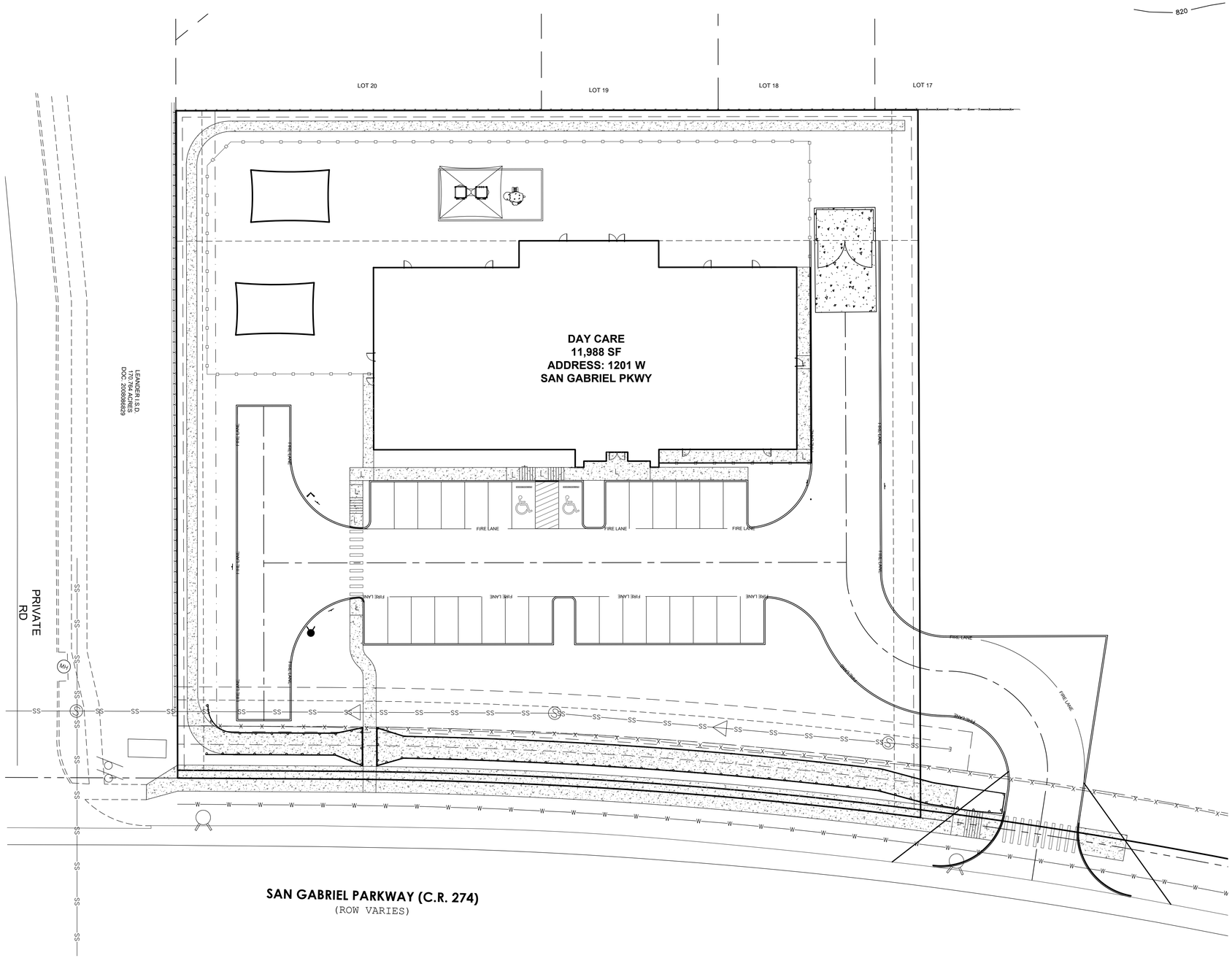
LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)



NORTH ORIENTED TO GRID REF

GRAPHIC SCALE

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PROFESSIONAL ENGINEER
09/07/2024

NO.	DATE	REVISION	BY

ADDRESS PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 19 OF 31

CAUTION!!!

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TRENCH EXCAVATION SAFETY PROTECTION

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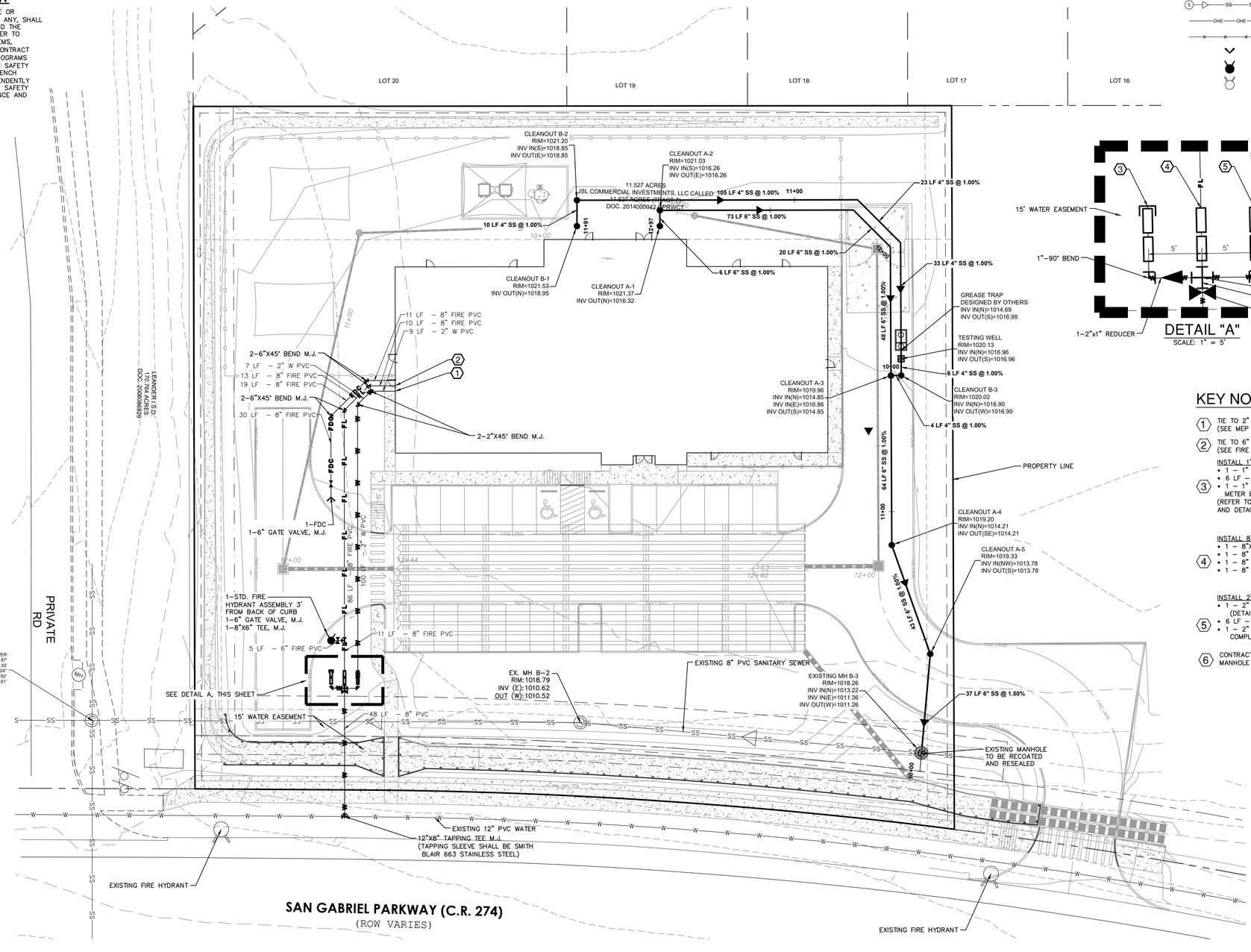
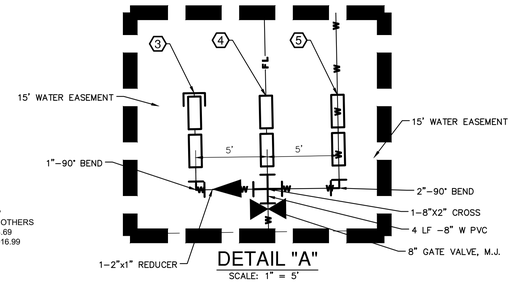
WASTEWATER LINE A

LINE ID	FROM	TO	DA (Ac)	LENGTH (ft)	SLOPE (ft/ft)	SIZE (in)	n	A s.f.	Wp ft	Rh ft	PIPE CAPACITY (GPD) 100%	75%	50%	F GPD	PDWF GPD	I/I GPD	PWWF GPD	PWWF <75% PIPE CAPACITY?	PDWF <50% PIPE CAPACITY?
	PLUG	MH B-3	4	26	0.005	8	0.03	0.35	2.09	0.17	239,958	179,969	119,979	932	2,488	3,000	5,488	YES	YES
	MH B-3	MH B-2	4	128	0.005	8	0.03	0.35	2.09	0.17	239,958	179,969	119,979	932	2,488	3,000	5,488	YES	YES
	MH B-2	EX MH	4	183	0.005	8	0.03	0.35	2.09	0.17	239,958	179,969	119,979	932	2,488	3,000	5,488	YES	YES

LEGEND

- PROPERTY LINE
- R.O.W LINE
- W W — PROPOSED DOMESTIC WATER LINE
- FL FL — PROPOSED FIRE WATER LINE
- FDC — PROPOSED FDC WATER LINE
- 6"SS — PROPOSED SANITARY SEWER LINE
- S SS SS — EXISTING SANITARY SEWER
- OHE OHE — EXISTING OVERHEAD ELECTRIC
- W W W — EXISTING WATER
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT





DETAIL "A"
SCALE: 1" = 5'

KEY NOTES

1. TIE TO 2" DOMESTIC WATER LINE FROM BUILDING (SEE MEP PLAN FOR CONTINUATION)
2. TIE TO 6" FIRE LINE FROM BUILDING (SEE FIRE SPRINKLER PLAN FOR CONTINUATION)
3. INSTALL 1" IRRIGATION WATER SERVICE
   - 1 – 1" RPZ BACKFLOW PREVENTER
   - 6 LF – 1" HDPE PIPE
   - 1 – 1" WATER METER W/ METER BOX (WITH A NON SLIP LID), COMPLETE

   (REFER TO IRRIGATION PLAN FOR CONTINUATION AND DETAILS OF BACKFLOW PREVENTER)
4. INSTALL 8" FIRE LINE SERVICE
   - 1 – 8"X8" TEE M.J.
   - 1 – 8" GATE VALVE, M.J.
   - 1 – 8" VALVE BOX (WITH A NON SLIP LID), COMPLETE
   - 1 – 8" FIRE LINE BACKFLOW PREVENTER (DETAIL: 520S–19B)
5. INSTALL 2" DOMESTIC WATER SERVICE
   - 1 – 2" DOUBLE CHECK VALVE BACKFLOW PREVENTER (DETAIL: BP–3/4–2)
   - 6 LF – 2" PVC
   - 1 – 2" METER W/ METER BOX (WITH A NON SLIP LID), COMPLETE
6. CONTRACTOR TO ADJUST TOP OF MANHOLE TO FINISHED GRADE (TYP)

NORTH ORIENTED TO GRID REF

GRAPHIC SCALE
20' 0 10' 20' 40' 80'
(IN FEET)
1 INCH = 20 FT.

WATER LINE

USE	LUE CALCULATIONS QUANTITY		LUE RATIO			LUE
OFFICE_HOPE ALLIANCE (Square feet of floor)	25,678	1	PER	3,000	S.F.	8.6
REST HOME_ HOPE ALLIANCE (Beds)	72	1	PER	2	Beds	36.0
DAYCARE (Students)	196	1	PER	15	Students	13.1
RETAIL_PHARMACY (Square feet of floor)	15,500	1	PER	1,000	S.F.	15.5
					TOTAL	73.1

DEMAND CALCULATIONS	GPD/LUE	LUE	GPD
AVERAGE	200	73	14,625
PEAK DAY	530	73	38,757
PEAK HOUR	900	73	65,813

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NO.	DATE	REVISION	BY

UTILITY PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET	20
OF	31

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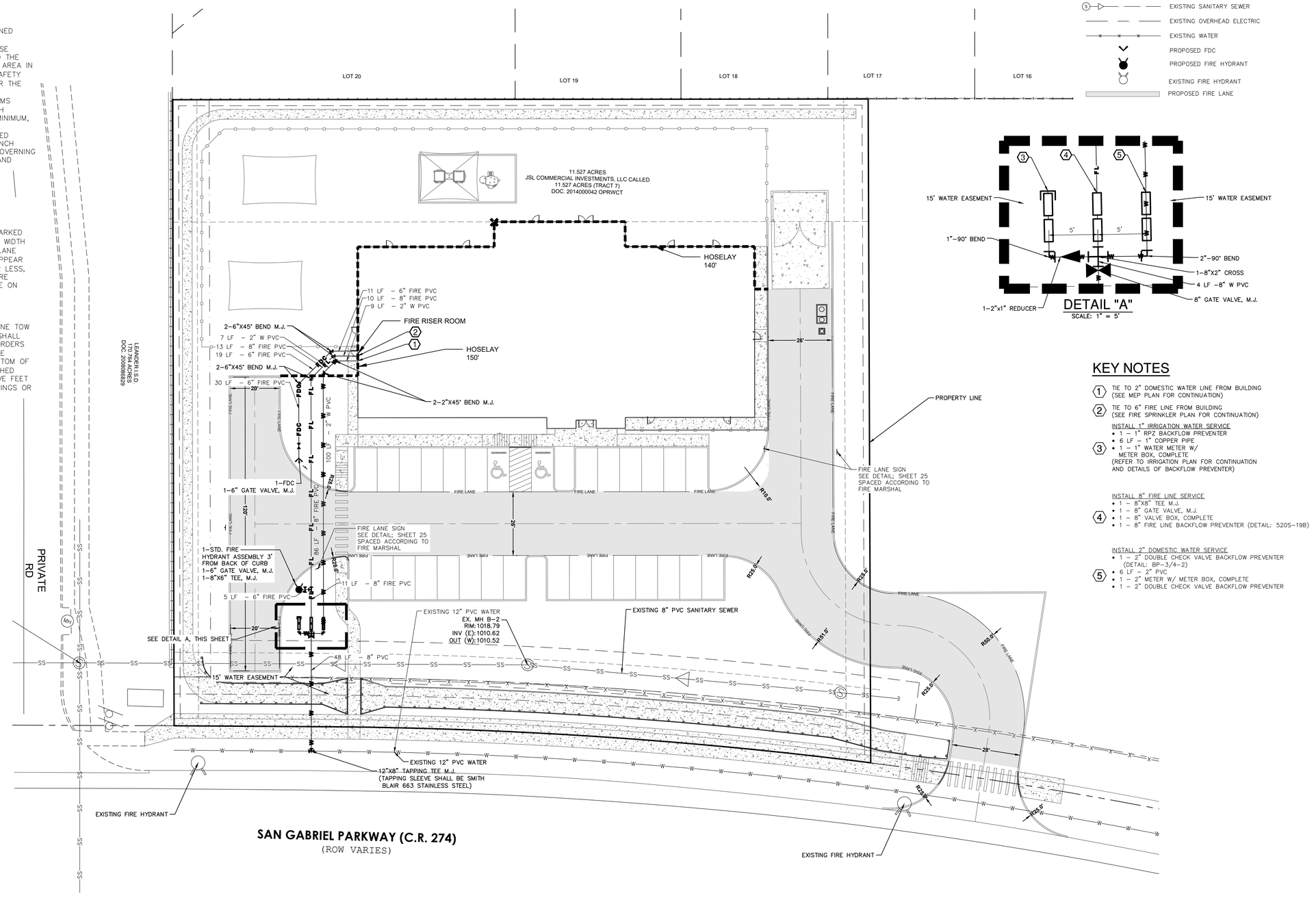
NOTES:

FIRE LANE STRIPING:

FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE TOW AWAY ZONE" OR "FIRE ZONE TOW AWAY ZONE" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET INTERVALS OR LESS, ON THE RED BORDER MARKINGS ALONG BOTH SIDE OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.

FIRE LANE SIGNS:

SIGNS SHALL READ "FIRE LANE TOW AWAY ZONE" OR FIRE ZONE TOW AWAY ZONE" AND SHALL BE 12" WIDE AND 18" HIGH. SIGNS SHALL BE PAINTED ON A WHITE BACKGROUND WITH LETTERS AND BORDERS IN RED, USING NOT LESS THAN 2" LETTERING. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NOT MORE THAN THIRTY-FIVE FEET (35') APART. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE CODE OFFICIAL.



LEGEND

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- R.O.W LINE
- W W — PROPOSED DOMESTIC WATER LINE
- FL FL — PROPOSED FIRE WATER LINE
- FDC — PROPOSED FDC WATER LINE
- 6"SS — PROPOSED SANITARY SEWER LINE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED FIRE LANE

DETAIL "A"
SCALE: 1" = 5'

KEY NOTES

1. TIE TO 2" DOMESTIC WATER LINE FROM BUILDING (SEE MEP PLAN FOR CONTINUATION)
2. TIE TO 6" FIRE LINE FROM BUILDING (SEE FIRE SPRINKLER PLAN FOR CONTINUATION)
3. INSTALL 1" IRRIGATION WATER SERVICE
   - 1 – 1" RPZ BACKFLOW PREVENTER
   - 6 LF – 1" COPPER PIPE
   - 1 – 1" WATER METER W/ METER BOX, COMPLETE

   (REFER TO IRRIGATION PLAN FOR CONTINUATION AND DETAILS OF BACKFLOW PREVENTER)
4. INSTALL 8" FIRE LINE SERVICE
   - 1 – 8"X8" TEE M.J.
   - 1 – 8" GATE VALVE, M.J.
   - 1 – 8" VALVE BOX, COMPLETE
   - 1 – 8" FIRE LINE BACKFLOW PREVENTER (DETAIL: 520S–19B)
5. INSTALL 2" DOMESTIC WATER SERVICE
   - 1 – 2" DOUBLE CHECK VALVE BACKFLOW PREVENTER (DETAIL: BP–3/4–2)
   - 6 LF – 2" PVC
   - 1 – 2" METER W/ METER BOX, COMPLETE
   - 1 – 2" DOUBLE CHECK VALVE BACKFLOW PREVENTER

NORTH (RIGHTED TO GRID REF.)

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

811 know what's below. Call before you dig

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ESP Associates, Inc.
12540 Country Pkwy
San Antonio, TX 78216
(210) 340-3271
www.espassociates.com

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
07/07/2024

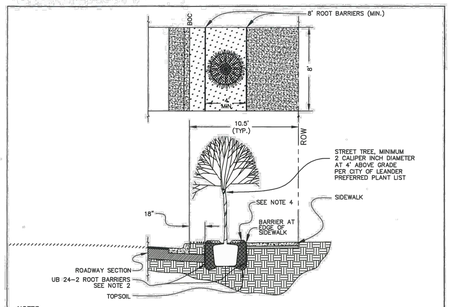
NO.	DATE	REVISION	BY

FIRE PROTECTION PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 21 OF 31



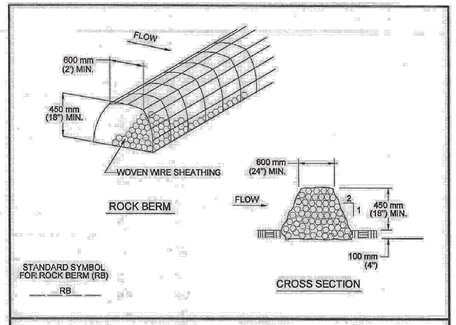
NOTES:

1. CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ALL DAMAGE THAT RESULTS FROM HIS WORK, INCLUDING ANY DAMAGE TO ROADWAY STRUCTURAL ELEMENTS SUCH AS CURB, FLEXIBLE BASE, GEOGRID, ETC.
2. "DEEPROOT" ROOT BARRIERS, OR APPROVED EQUAL, A MINIMUM OF TWENTY–FOUR INCHES (24") IN HEIGHT AND EIGHT FEET IN LENGTH (8') SHALL BE PROVIDED PARALLEL TO CURBLINE ON BOTH SIDES OF STREET TREES. ROOT BARRIERS SHALL BE PLACED WITH TOP OF ROOT BARRIER TWO INCHES (2") BELOW FINISHED GRADE AND RIBS FACING TOWARDS THE TREE.
3. TREES SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM ALL EXISTING AND PROPOSED WASTEWATER LINES, WATER SERVICES, STORM SEWER LINES, AND CURB INLETS.
4. A WATER RETENTION BASIN THREE INCHES (3") IN HEIGHT AND FOUR FEET (4') IN DIAMETER FORMED WITH TOPSOIL SHALL BE PROVIDED AROUND ALL TREES. INTERIOR OF BASIN SHALL BE FILLED WITH THREE INCH (3") LAYER OF SHREDDED BARK MULCH HELD THREE INCHES (3") BACK FROM THE TRUNK.
5. ALL TREES SHALL BE STAKED WITH 7' LENGTH STEEL "T" POSTS, PAINTED DARK GREEN. LOCATE POSTS 6" +/– FROM ROOTBALL. DO NOT DISTURB ROOTBALL. POSTS SHALL BE DRIVEN 2' INTO GROUND WITH 5' EXPOSED ABOVE GROUND. POSTS SHALL BE CONSISTENT HEIGHT AND ALIGNED PARALLEL TO ADJACENT CURBS. USE 12–GAUGE STRANDED CABLE WITH HOSE TO PROTECT TRUNK. ENSURE THERE IS NO SLACK IN WIRES.
6. IF SOLID ROCK IS ENCOUNTERED AT DEPTHS LESS THAN TWENTY–SIX INCHES (26") FROM FINISHED GRADE, INSTALL ROOT BARRIER TO TOP OF ROCK LAYER AND TRIM EXCESS LENGTH.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

WAYNE S. WATTS 89124 — 08/07/18

City Of Leander, Texas
DETAIL #204-4
STREET TREE INSTALLATION

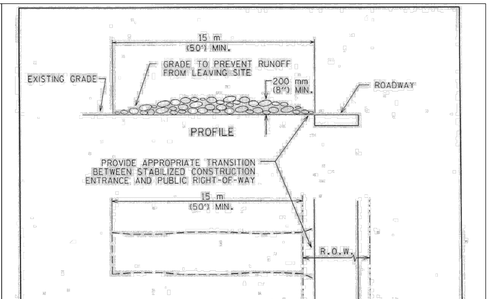


STANDARD SYMBOL FOR ROCK BERM (RB): RB

NOTES:

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

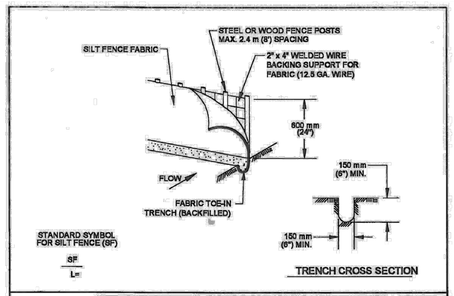
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:

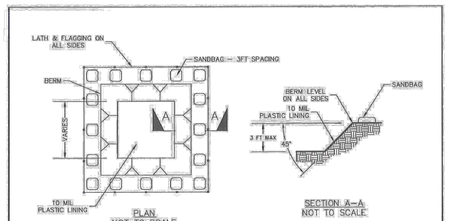
1. STONE SIZE: 75–125 mm (3–5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO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

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



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 Inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 Inches) DEEP AND 150 mm (6 Inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 Inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

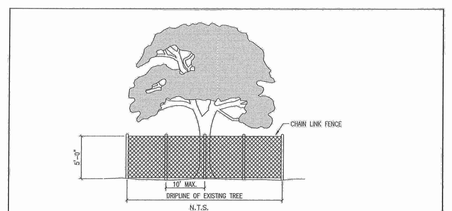


NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD

01/30/15

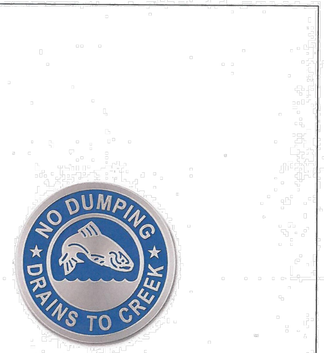
City Of Leander, Texas
309-1
CONCRETE WASHOUT



1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6")) CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT,
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'–0") TO BUILDING.
4. CRITICAL ROOT ZONE REQUIREMENTS
   A. NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PRESERVED INCLUDING SIGNIFICANT TREES, HERITAGE TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE CREDITED. THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
   B. THIS DEFINED AREA SHALL BE FLAGGED AND ENCIRCLED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE PLANNING DIRECTOR MAY APPROVE CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (½) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND VINDUENESS OF THE SITUATION.
   C. CUT OR FILL THAT IS GREATER THAN FOUR (4) INCHES IN DEPTH AND THE SEVERING OF MAJOR ROOTS SHALL BE CONSIDERED DISTURBANCE FOR THE PURPOSES OF THIS ORDINANCE.
   D. WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY FLATWORK, DECKING, OR SIMILAR CONSTRUCTION, MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
   E. IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS SECTION, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

08/21/15

City Of Leander, Texas
303-2
TREE PROTECTION



NOTES:

1. INSTALL 4" DIAMETER STAINLESS STEEL "NO DUMPING – DRAINS TO CREEK" MARKER, FACTORY PAINTED BLUE AS SHOWN, 2" ABOVE VERTICAL FACE OF INLET AT MIDPOINT OF ALL INLETS.
2. MARKER SHALL BE AFFIXED TO SURFACE WITH ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS.
3. MARKER SHALL BE MANUFACTURED BY ALMATEK INDUSTRIES OR APPROVED EQUAL:
   ALMATEK INDUSTRIES, INC.
   2 JOY DRIVE
   HACKETTSTOWN, NJ 07840
   (800) 248–2080
   WWW.ALMATEK.COM

06/20/18

City Of Leander, Texas
DETAIL #309-3
STORM DRAIN MARKERS

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

811 Know what's below. Call before you dig

ESP Associates, Inc.
12540 Country Pkwy
San Antonio, TX 78216
(210) 349-0271
www.espassociates.com

09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

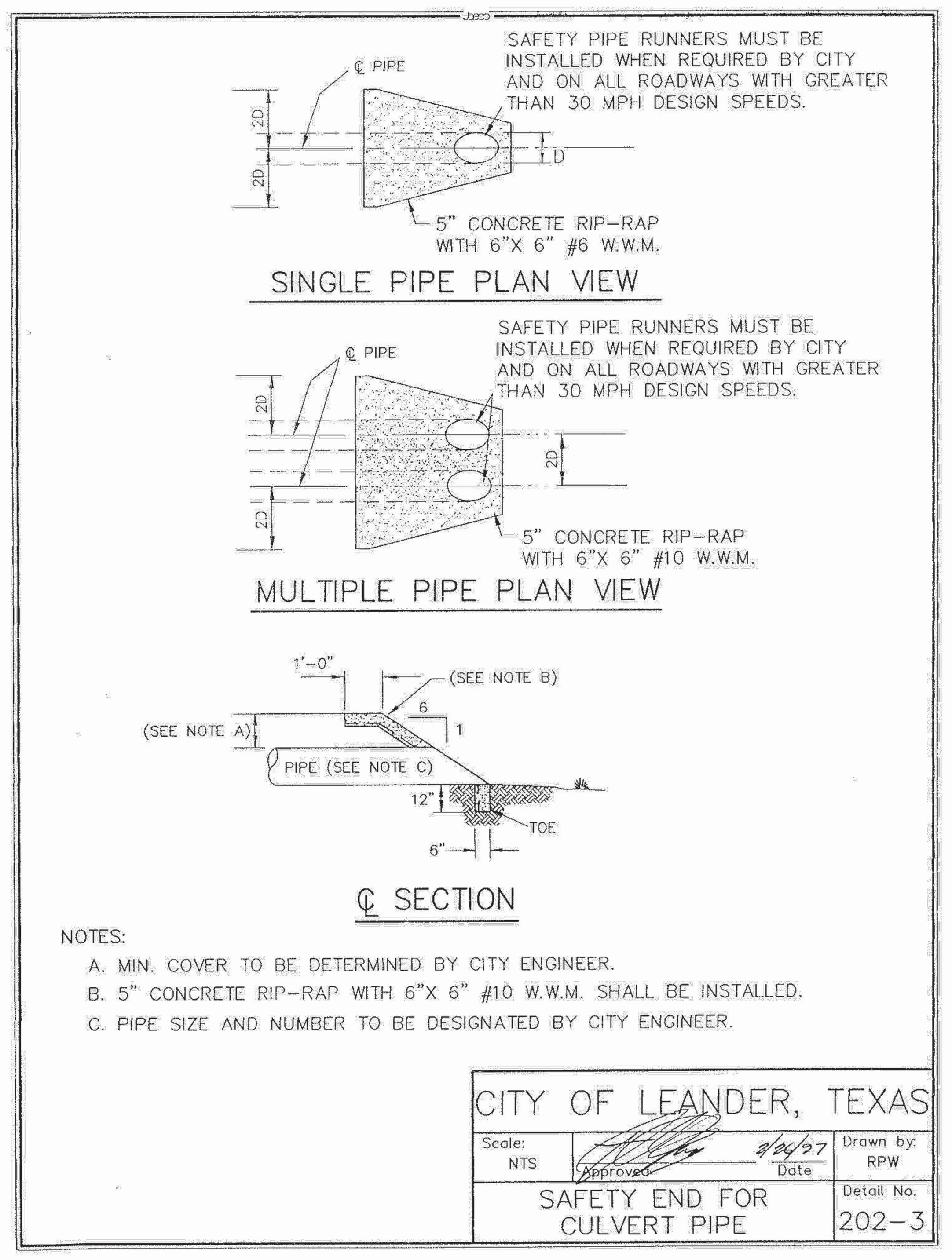
NO.	DATE	REVISION	BY

EROSION & SEDIMENTATION CONTROL DETAILS

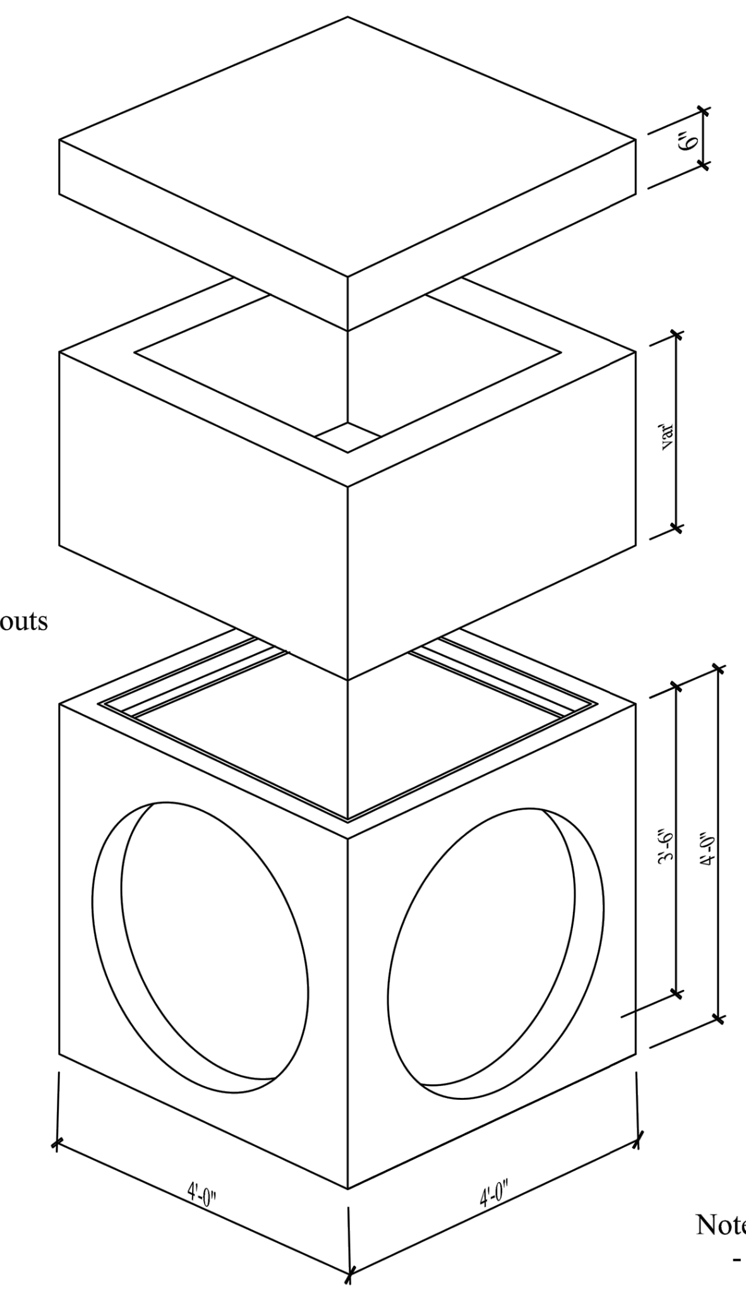
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET	OF
22	31



3' x 3' x var Junction Box



Bottom Section
36" dia thinwall knockouts all four sides

Approximate weight of base: 4,100 lbs

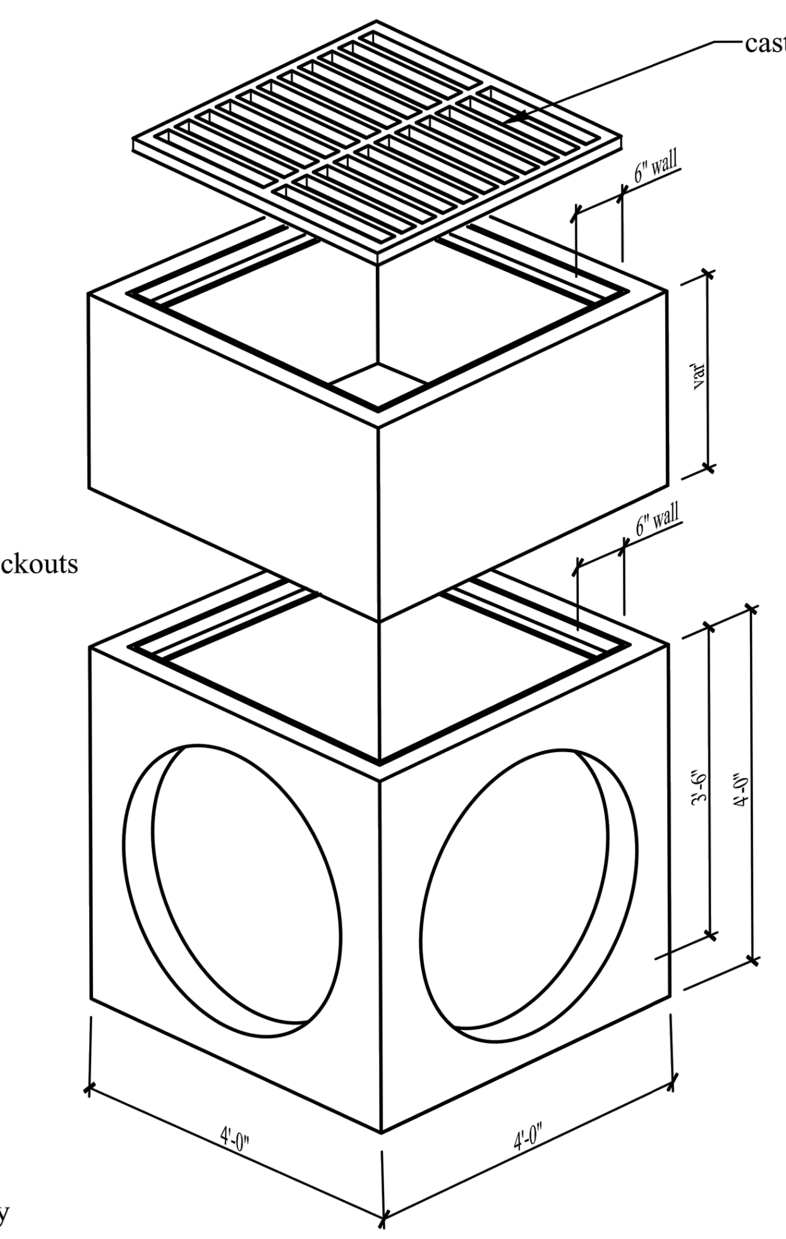
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 Grade 60
- Load design is H-20

Notes:
- The structure shall be placed on a compacted granular base
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP
SAN MARCOS, TEXAS 7866
PH. (830) 606-6200

FOR 3' x 3' x var Junction Box			
JOB			
DRAWN RW	DATE 8/22/2013	Rev. No.	SHEET 1 OF 1
FILE catalog/grate inlets/3x3 JB nolid			

3' x 3' x var Grate Inlet



cast iron frame and grate or as required

Bottom Section
36" dia thinwall knockouts all four sides

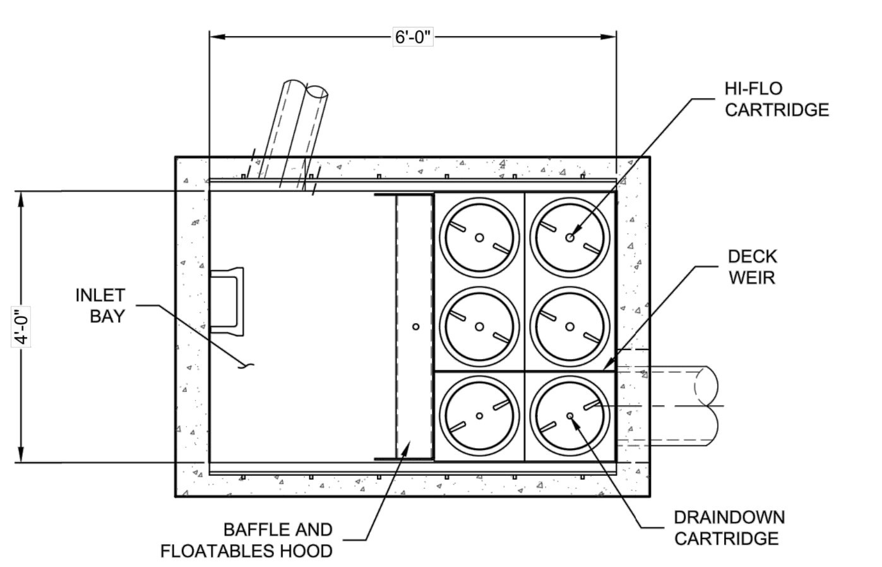
Approximate weight of base: 4,100 lbs

Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 Grade 60
- Load design is H-20

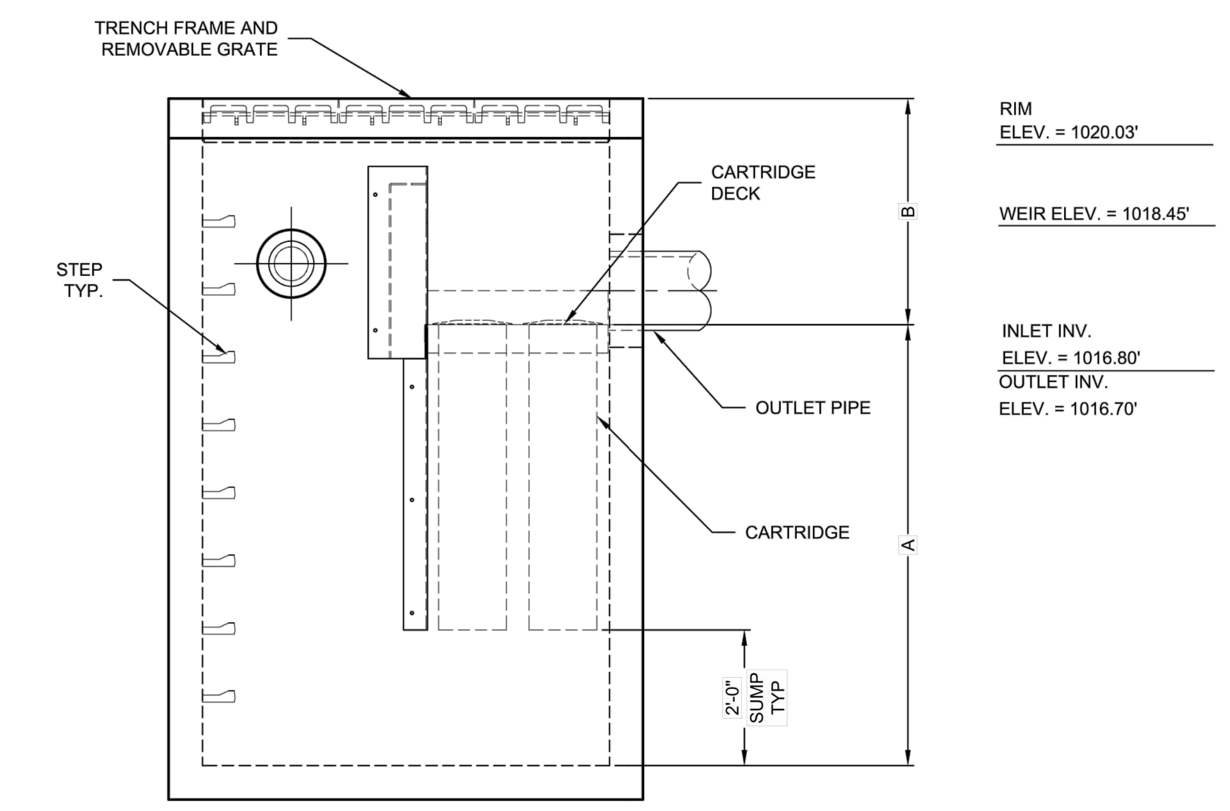
Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTHH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 3' x 3' x var Grate Inlet			
JOB			
DRAWN RW	DATE 12/1/2015	Rev. No.	SHEET 1 OF 1
FILE catalog/grate inlets/3x3 Grate Inlet			



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



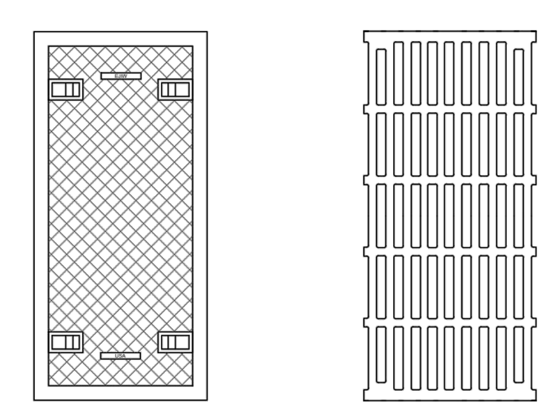
ELEVATION VIEW

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD SURFACE INLET STYLE WITH TRENCH GRATE AND COVER IS SHOWN. ALTERNATE CURB INLET OR PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HIGH-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	0.89	0.67	0.45	0.25
OUTLET INVERT TO RIM (MIN) (B)	3'-4"	3'-4"	3'-4"	3'-4"



24" TRENCH COVER
N.T.S.

24" TRENCH GRATE
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	JF1
WATER QUALITY FLOW RATE (cfs)	0.77
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	4 / 1
CARTRIDGE LENGTH	54"

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	1016.80'	HDPE	6"	*	*
INLET #2	*	*	*	*	*
OUTLET	1016.70'	RCP	12"	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	1020.03'	
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

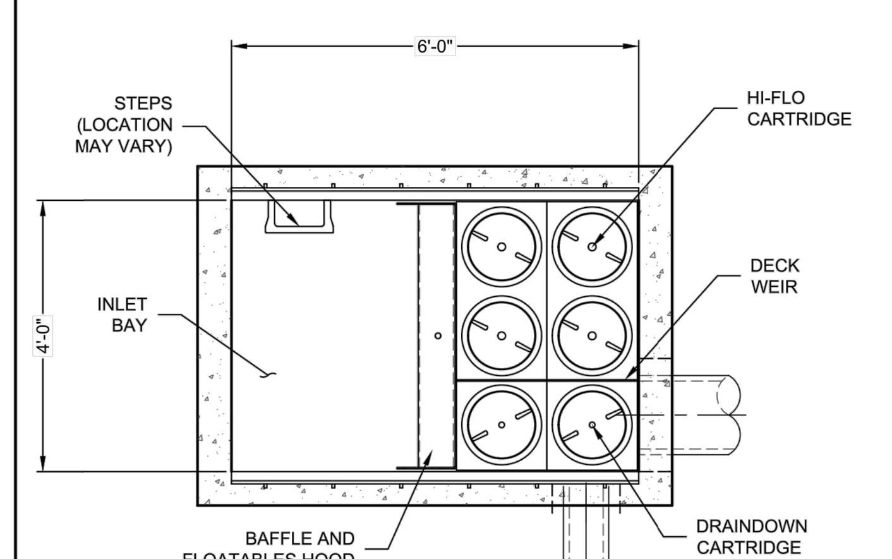
GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION AND SITE SPECIFIC EARTH COVER REQUIREMENT. TYPICAL CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDEDTO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE (WHERE APPLICABLE) AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

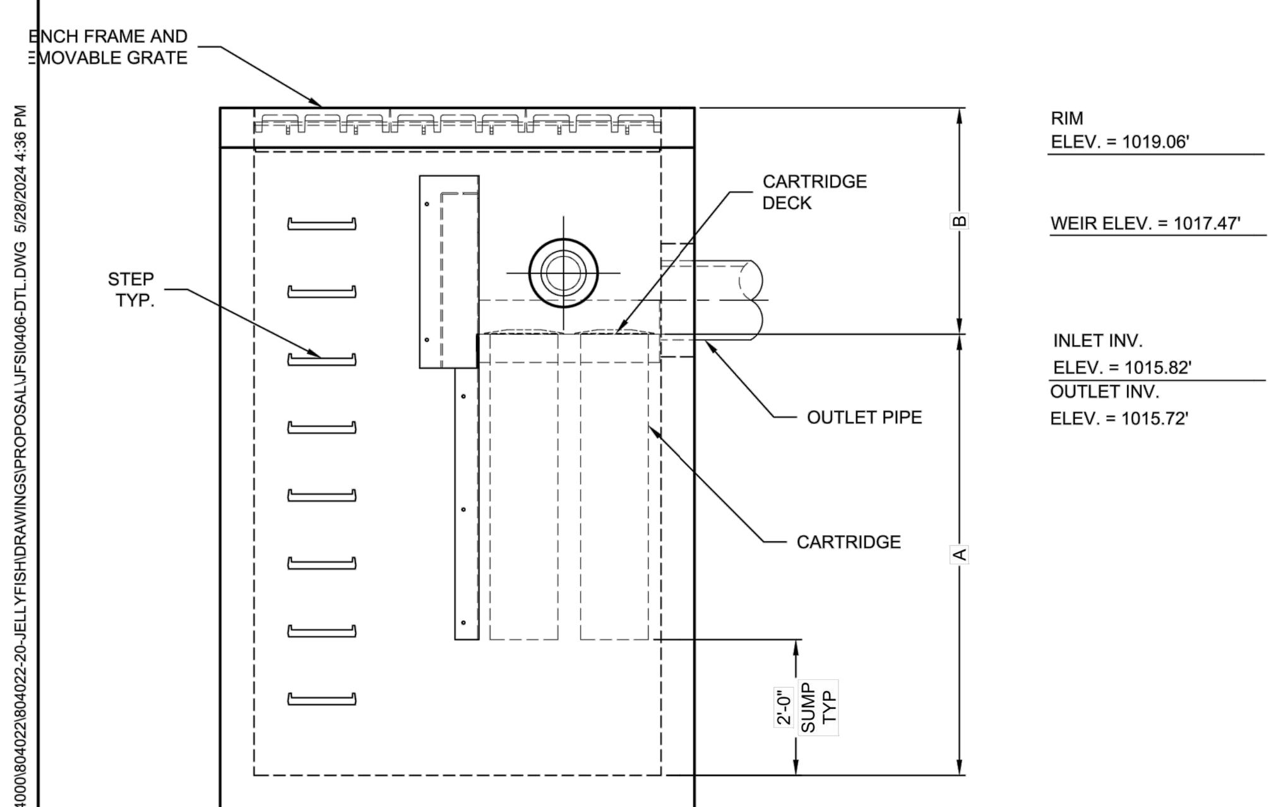
Jellyfish® Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

4' x 6' JELLYFISH - 804022 - 15
SAN GABRIEL DAY CARE
LEANDER, TX
SITE DESIGNATION: JELLYFISH 1



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



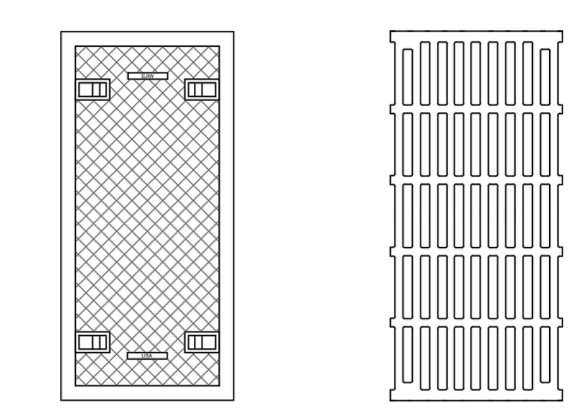
ELEVATION VIEW

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD SURFACE INLET STYLE WITH TRENCH GRATE AND COVER IS SHOWN. ALTERNATE CURB INLET OR PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HIGH-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	0.89	0.67	0.45	0.25
OUTLET INVERT TO RIM (MIN) (B)	3'-4"	3'-4"	3'-4"	3'-4"



24" TRENCH COVER
N.T.S.

24" TRENCH GRATE
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	JF2
WATER QUALITY FLOW RATE (cfs)	0.78
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	4 / 1
CARTRIDGE LENGTH	54"

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	1015.82'	HDPE	6"	*	*
INLET #2	*	*	*	*	*
OUTLET	1015.72'	RCP	12"	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	1019.06'	
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION AND SITE SPECIFIC EARTH COVER REQUIREMENT. TYPICAL CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDEDTO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE (WHERE APPLICABLE) AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish® Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,726; 8,221,618; US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

4' x 6' JELLYFISH - 804022 - 20
SAN GABRIEL DAY CARE
LEANDER, TX
SITE DESIGNATION: JELLYFISH 2

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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

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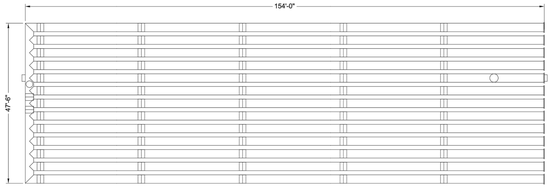
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED PROFESSIONAL ENGINEER
08/07/2024

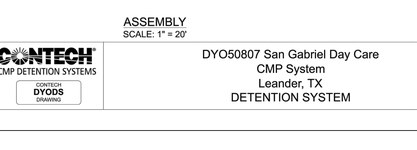
NO.	DATE	REVISION	BY

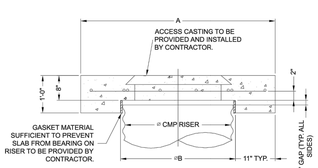
STORM DRAIN DETAILS

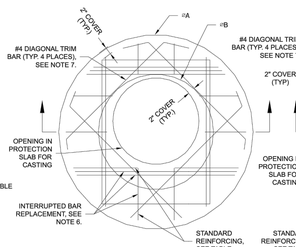
ARKA MONTESSORI SCHOOL

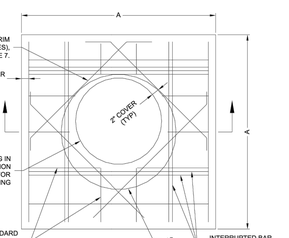
PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET	OF
23	31

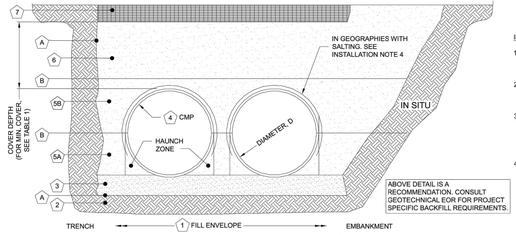


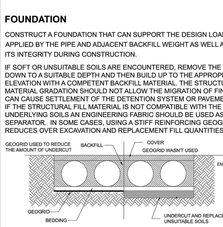


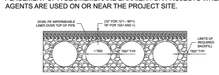


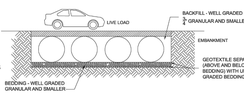


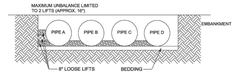


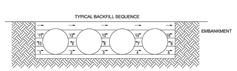


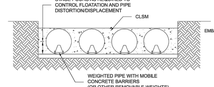


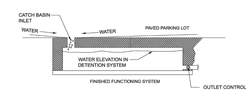












PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 2,017 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 9,888 CF
- PIPE STORAGE VOLUME = 9,901 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 9,901 CF

PIPE DETAILS
- DIAMETER = 30"
- CORRUGATION = 2 2/3x1/2
- GAGE = 16
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 15"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"

ASSEMBLY
SCALE: 1" = 20'

NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO50807 San Gabriel Day Care
CMP System
Leander, TX
DETENTION SYSTEM

PROJECT No.: 35338	SEQ. No.: 50807	DATE: 5/15/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT
- ULTRAFLO ALSO AVAILABLE FOR SIZES 18" - 120" WITH 3/4"x 3/4"x 7 1/2" CORRUGATION

ABOVE DETAIL IS A RECOMMENDATION. CONSULT GEOTECHNICAL EOR FOR PROJECT SPECIFIC BACKFILL REQUIREMENTS.

MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

INSTALLATION NOTES

1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. BACKFILL USING CONTROLLED LOW-STRENGTH MATERIAL (CLSM, "FLASH FILL" OR "FLOWABLE FILL") MAY BE USED WHEN THE SPACING BETWEEN THE PIPES WILL NOT ALLOW FOR PLACEMENT AND ADEQUATE COMPACTION OF THE BACKFILL. CONTACT CONTECH FOR FURTHER EVALUATION.
4. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2: SOLID STANDARD

CMP DETENTION AND CMP DRAINAGE STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.0D PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** OR PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** (APPROVED REGIONAL EQUIVALENTS INCLUDE CA-7)	ENGINEER OF RECORD TO DETERMINE IF BEDDING IS REQUIRED. PIPE MAY BE PLACED ON THE TRENCH BOTTOM OF A RELATIVELY LOOSE, NATIVE SUITABLE WELL GRADED GRANULAR MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH. THE BEDDING MATERIAL MAY BE SUITABLE FOUNDATION SOILS CONFORMING TO AASHTO SOIL CLASSIFICATIONS A1, A2, OR A3 WITH MAXIMUM PARTICLE SIZE OF 3" PER AASHTO 26.3.8.1	
4	CORRUGATED METAL PIPE			
5A	CRITICAL BACKFILL	**AASHTO M 145: A-1, A-2, A-3 ***	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A THREE LIFT (24") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WELL GRADED GRANULAR MATERIAL WHICH MAY CONTAIN SMALL AMOUNTS OF SILT OR CLAY AND MAXIMUM PARTICLE SIZE OF 3" (PER AASHTO 26.3.8.1 AND 12.4-1.3).	
5B	BACKFILL	**AASHTO M 145: A-1, A-2, A-3**		
6	COVER MATERIAL	UP TO MIN. COVER - SEE 5A AND 5B ABOVE ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROAD BASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	OPTIONAL SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION.	
B	OPTIONAL GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.

* APPROVED REGIONAL EQUIVALENTS FOR SECTION 5A INCLUDE CA-7, CODOT #67, MIDOT 2G, 34G, OR 21AA STONE OR GRAVEL; #8; #57; MIDOT 6A, 2G, 3G, 34G.

MANUFACTURER RECOMMENDED BACKFILL
NOT TO SCALE

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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO50807 San Gabriel Day Care
CMP System
Leander, TX
DETENTION SYSTEM

PROJECT No.: 35338	SEQ. No.: 50807	DATE: 5/15/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

APPLICABLE POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745
APPLICABLE

HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL APPLICABLE PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.
REQUIREMENTS

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

NOTE:
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SECTION VIEW

REINFORCING TABLE

⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY

ROUND OPTION PLAN VIEW

SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO50807 San Gabriel Day Care
CMP System
Leander, TX
DETENTION SYSTEM

PROJECT No.: 35338	SEQ. No.: 50807	DATE: 5/15/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.

IN-SITU TRENCH WALL

IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.

BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.

WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.

CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM

DATE	REVISION DESCRIPTION	BY

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9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO50807 San Gabriel Day Care
CMP System
Leander, TX
DETENTION SYSTEM

PROJECT No.: 35338	SEQ. No.: 50807	DATE: 5/15/2024
DESIGNED: DYO	DRAWN: DYO	
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SHEET NO.: 1		

ESP Associates. Inc.
12940 Country Pkwy
San Antonio, TX 78216
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www.espassociates.com

08/07/2024
ARIELLA D. MEADOWS
141035
Ariella D Meadows

NO.	DATE	REVISION	BY

STORM DRAIN DETAILS

ARKA MONTESSORI SCHOOL

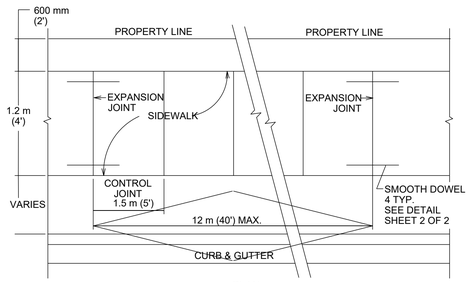
CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

811 Know what's below. Call before you dig

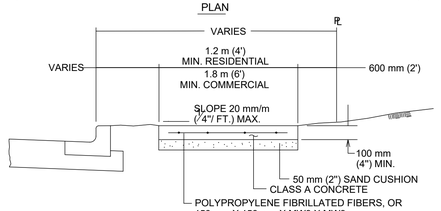
PROJECT INFORMATION

PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET	OF
24	31



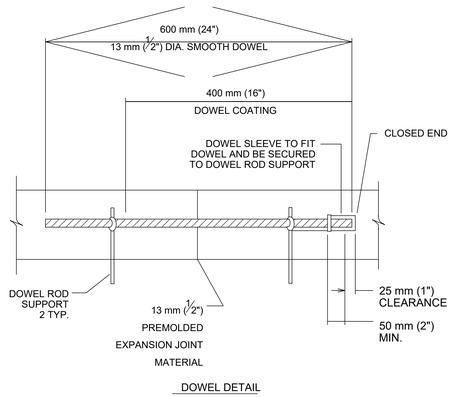
PLAN



POLYPROPYLENE FIBRILLATED FIBERS, OR 150 mm X 150 mm X MW9 X MW9 (6" X 6" X W1.4 X W1.4) WELDED WIRE FABRIC OR ONE LAYER 10M (#3) BARS PLACED NOT MORE THAN 450 mm (18") C.C. BOTH DIRECTIONS.
REINFORCEMENT SHALL ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF BAR SUPPORTS OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE P.C. CONCRETE. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE OR SAND CUSHION LAYER.

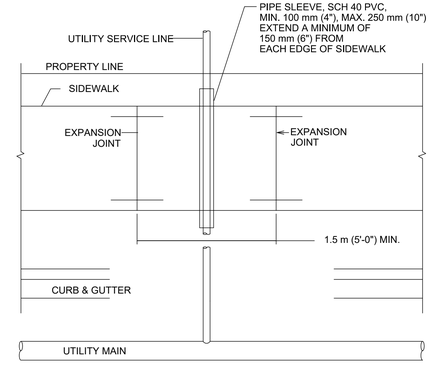
SECTION

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

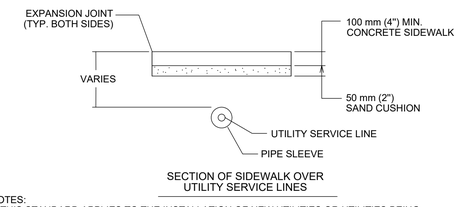


DOWEL DETAIL

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



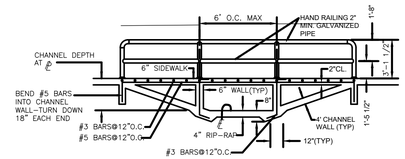
SIDEWALK OVER UTILITY SERVICE LINE PLAN



SECTION OF SIDEWALK OVER UTILITY SERVICE LINES

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

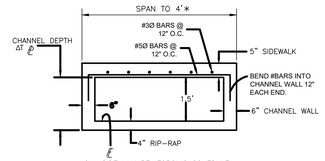
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3



NOTE: UPSTREAM SIDE OF 6"x3' WALL TO BE ROUNDED TO 3" RADIUS.

SIDEWALK BRIDGE DETAIL

FOR SIDEWALK ADJACENT TO ℄



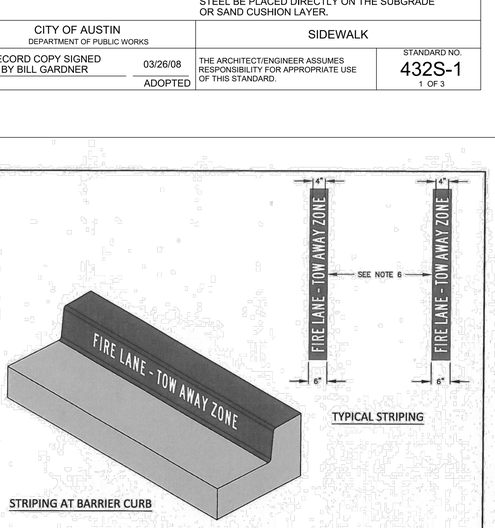
* = SIDEWALK REINFORCING SCHEDULE
SCH. A – SPAN 0' TO 3'-6x6-6/6 WELDED WIRE MESH
SCH. B – SPAN 3' TO 6'-AS SHOWN

SIDEWALK BRIDGE DETAIL

(FOR SPAN LENGTHS UP TO 6' ONLY)

SIDEWALK BRIDGE DETAIL

N.T.S.



TYPICAL STRIPING

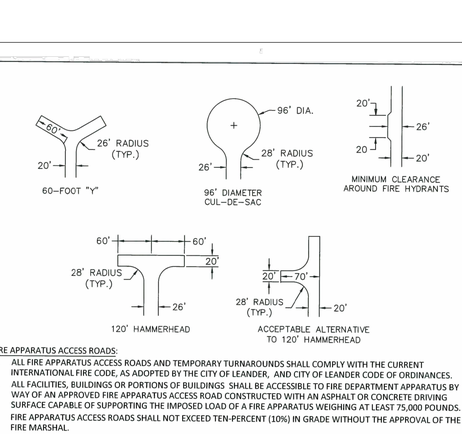
STRIPING AT BARRIER CURB

NOTES:
1. ALL FIRE LANE STRIPING SHALL COMPLY WITH THE CURRENT INTERNATIONAL FIRE CODE, AS ADOPTED BY THE CITY OF LEANDER, AND CITY OF LEANDER CODE OF ORDINANCES.
2. FIRE LANES SHALL BE CONTINUOUSLY MARKED BY RED TRAFFIC PAINT THAT IS MINIMUM SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE.
3. "FIRE LANE - TOW AWAY ZONE" SHALL APPEAR IN FOUR INCH (4") TYPE D WHITE BLOCK LETTERS AT TWENTY-FIVE FOOT (25') INTERVALS, OR LESS, ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANE.
4. WHERE A 6" BARRIER CURB EXISTS, THE FIRE LANE STRIPING SHALL BE ON BOTH THE VERTICAL FACE OF THE CURB AND TOP OF CURB. "FIRE LANE - TOW AWAY ZONE" SHALL BE MARKED IN 4" WHITE BLOCK LETTERS ON FACE OF CURB ONLY.
5. WHERE A FIRE LANE IS ADJACENT TO PARKING SPACES THE FIRE LANE STRIPING SHALL BE AN 8" RED STRIPE PAINTED ON THE DRIVE SURFACE WITH 4" WHITE LETTERS STATING "FIRE LANE NO PARKING TOW-AWAY ZONE." FIRE LANE STRIPING SHALL EXTEND BEHIND ALL PARKING SPACES.
6. WHERE A FIRE HYDRANT, FIRE DEPARTMENT CONNECTION, OR OTHER FIRE PROTECTION EQUIPMENT IS LOCATED ON A FIRE LANE, THE FIRE LANE SHALL BE A MINIMUM OF TWENTY-SIX FEET (26') IN WIDTH, EXCLUSIVE OF SHOULDERS.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS · MICHAEL LAFFERTY · 118708 · LICENSED PROFESSIONAL ENGINEER
2007-01-28
FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-2
FIRE LANE STRIPING



FIRE APPARATUS ACCESS ROADS:
1. ALL FIRE APPARATUS ACCESS ROADS AND TEMPORARY TURNAROUNDS SHALL COMPLY WITH THE CURRENT INTERNATIONAL FIRE CODE, AS ADOPTED BY THE CITY OF LEANDER, AND CITY OF LEANDER CODE OF ORDINANCES.
2. ALL FACILITIES, BUILDINGS OR PORTIONS OF BUILDINGS SHALL BE ACCESSIBLE TO FIRE DEPARTMENT APPARATUS BY WAY OF AN APPROVED FIRE APPARATUS ACCESS ROAD CONSTRUCTED WITH AN ASPHALT OR CONCRETE DRIVING SURFACE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF A FIRE APPARATUS WEIGHING AT LEAST 75,000 POUNDS.
3. FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED TEN-PERCENT (10%) IN GRADE WITHOUT THE APPROVAL OF THE FIRE MARSHAL.
4. DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF ONE HUNDRED AND FIFTY FEET (150') IN LENGTH SHALL BE PROVIDED WITH WIDTH AND TURNAROUND PROVISIONS IN ACCORDANCE WITH THE TABLE BELOW.

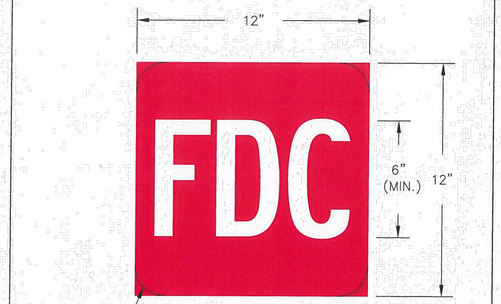
LENGTH (FEET)	WIDTH (FEET)	TURNAROUNDS REQUIRED
0-150	20	NONE REQUIRED
151-500	20	120-FOOT HAMMERHEAD, 60-FOOT "Y" OR 96-FOOT DIAMETER CUL-DE-SAC
501-750	26	120-FOOT HAMMERHEAD, 60-FOOT "Y" OR 96-FOOT DIAMETER CUL-DE-SAC
OVER 750	SPECIAL APPROVAL REQUIRED	

5. GATES SECURING FIRE APPARATUS ACCESS ROADS SHALL BE NOT LESS THAN TWENTY FEET (20') IN WIDTH WHERE A SINGLE GATE IS PROVIDED. WHERE A FIRE APPARATUS ROAD CONSISTS OF A DIVIDED ROADWAY, THE GATE WIDTH SHALL BE NOT LESS THAN TWELVE FEET (12').
6. ALL GATE LOCKS SHALL COMPLY WITH CITY OF LEANDER CODE OF ORDINANCES SECTION 506.1.1.
7. GATES SECURING FIRE APPARATUS ACCESS ROADS SHALL BE OF THE SWINGING OR SLIDING TYPE.
8. FIRE APPARATUS ACCESS ROADS SHALL BE TWENTY-SIX FEET (26') IN WIDTH FOR TWENTY-FEET (20') IN BOTH DIRECTIONS FROM FIRE HYDRANTS, AT MINIMUM, TO PROVIDE MINIMUM CLEARANCE FOR EMERGENCY OPERATIONS.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS · MICHAEL LAFFERTY · 118708 · LICENSED PROFESSIONAL ENGINEER
2006-08-15
FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-3
FIRE APPARATUS ACCESS
ROADS & TURNAROUNDS



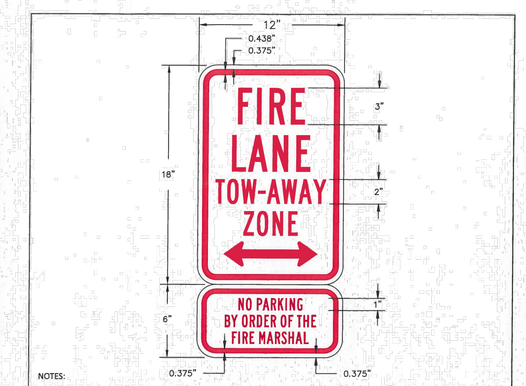
OPTIONAL 1 1/2" RADIUS CORNERS

NOTES:
1. 12-INCH BY 12-INCH, 0.080 INCH THICK ALUMINUM BLANKS. COVERED WITH 3M DIAMOND GRADE, WHITE, REFLECTIVE SHEETING. LETTERING SHALL BE UPPER CASE, MINIMUM OF 6" IN HEIGHT WITH 1-1/4" LETTER STROKE, AND CUT FROM RED 3M ELECTRO CUT FILM.
2. ALL FONTS SHALL BE TRAFFIC CAD SERIES B OR FHWA SERIES B.
3. ON BUILDINGS, WHERE THE FIRE DEPARTMENT CONNECTION (FDC) IS NOT VISIBLE FROM THE FIRE LANE, THE FDC SHALL BE INDICATED BY AN APPROVED SIGN MOUNTED AS DIRECTED BY THE FIRE MARSHAL.
4. SIGN SHALL BE INSTALLED WITH ITS HORIZONTAL CENTERLINE A MINIMUM OF FOUR FEET (4') ABOVE THE FIRE DEPARTMENT CONNECTION AND PROVIDING AN UNOBSTRUCTED VIEW FROM THE FIRE DEPARTMENT ACCESS ROAD, TO INCLUDE CONSIDERATION FOR FUTURE VEGETATIVE GROWTH.
5. NO WATER-BASED ADHESIVES ARE PERMISSIBLE FOR USE IN ANY PART OF THE SIGN.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS · MICHAEL LAFFERTY · 118708 · LICENSED PROFESSIONAL ENGINEER
2007-01-28
FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-4
FIRE DEPARTMENT CONNECTION SIGN



NOTES:
1. 12-INCH BY 18-INCH AND 12-INCH BY 6-INCH, 0.080 INCH THICK ALUMINUM BLANKS. COVERED WITH 3M DIAMOND GRADE, WHITE, REFLECTIVE SHEETING. BORDER AND LETTERING SHALL BE CUT FROM RED 3M ELECTRO CUT FILM
2. ALL FONTS SHALL BE TRAFFIC CAD SERIES B OR FHWA SERIES B
3. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN ASSEMBLY SHALL BE SIX FEET, SIX INCHES (6'-6") ABOVE FINISHED GRADE.
4. SIGNS SHALL BE SPACED NOT MORE THAN 35' APART.
5. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS AS APPROVED BY THE FIRE CODE OFFICIAL.
6. IF THE SIGN IS AT THE END OF A FIRE ZONE, THE SIGN SHALL HAVE A SINGLE-HEADED ARROW POINTING IN THE DIRECTION OF THE ZONE. IF THE SIGN IS AT AN INTERMEDIATE POINT IN THE ZONE, THE SIGN SHALL HAVE A DOUBLE-HEADED ARROW POINTING IN BOTH DIRECTIONS.
7. FIRE LANE SIGNS SHALL BE POSTED ON BOTH SIDES OF FIRE APPARATUS ACCESS ROADS THAT ARE TWENTY FEET (20') TO TWENTY-SIX FEET (26') WIDE.
8. FIRE LANE SIGNS SHALL BE POSTED ON ONE SIDE OF FIRE APPARATUS ACCESS ROADS MORE THAN TWENTY-SIX FEET (26') WIDE AND LESS THAN THIRTY-TWO FEET (32') WIDE.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS · MICHAEL LAFFERTY · 118708 · LICENSED PROFESSIONAL ENGINEER
2007-01-28
FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-1
FIRE LANE SIGN ASSEMBLY

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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

ESP Associates, Inc.
12540 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS · ARIELLA D. MEADOWS · 141035 · LICENSED PROFESSIONAL ENGINEER
09/07/2024

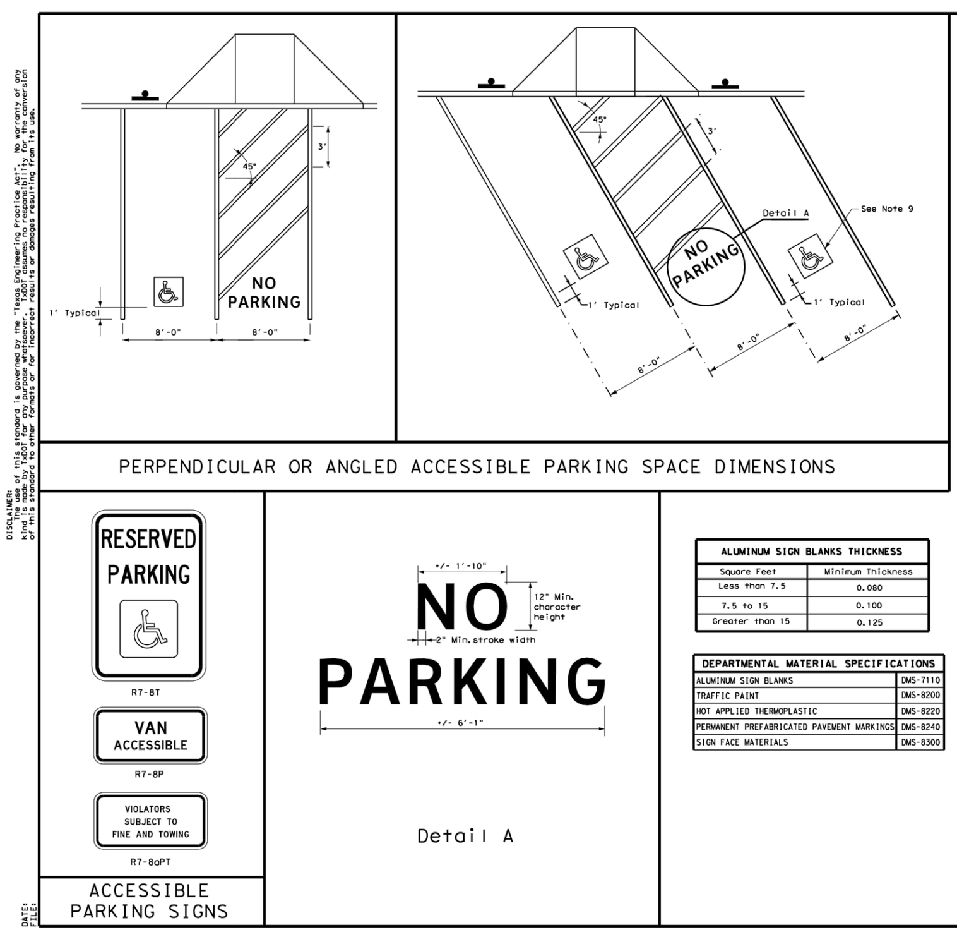
NO.	DATE	REVISION	BY

SITE DETAILS

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 25 OF 31



ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
SIGN FACE MATERIALS	DMS-8300

GENERAL NOTES:

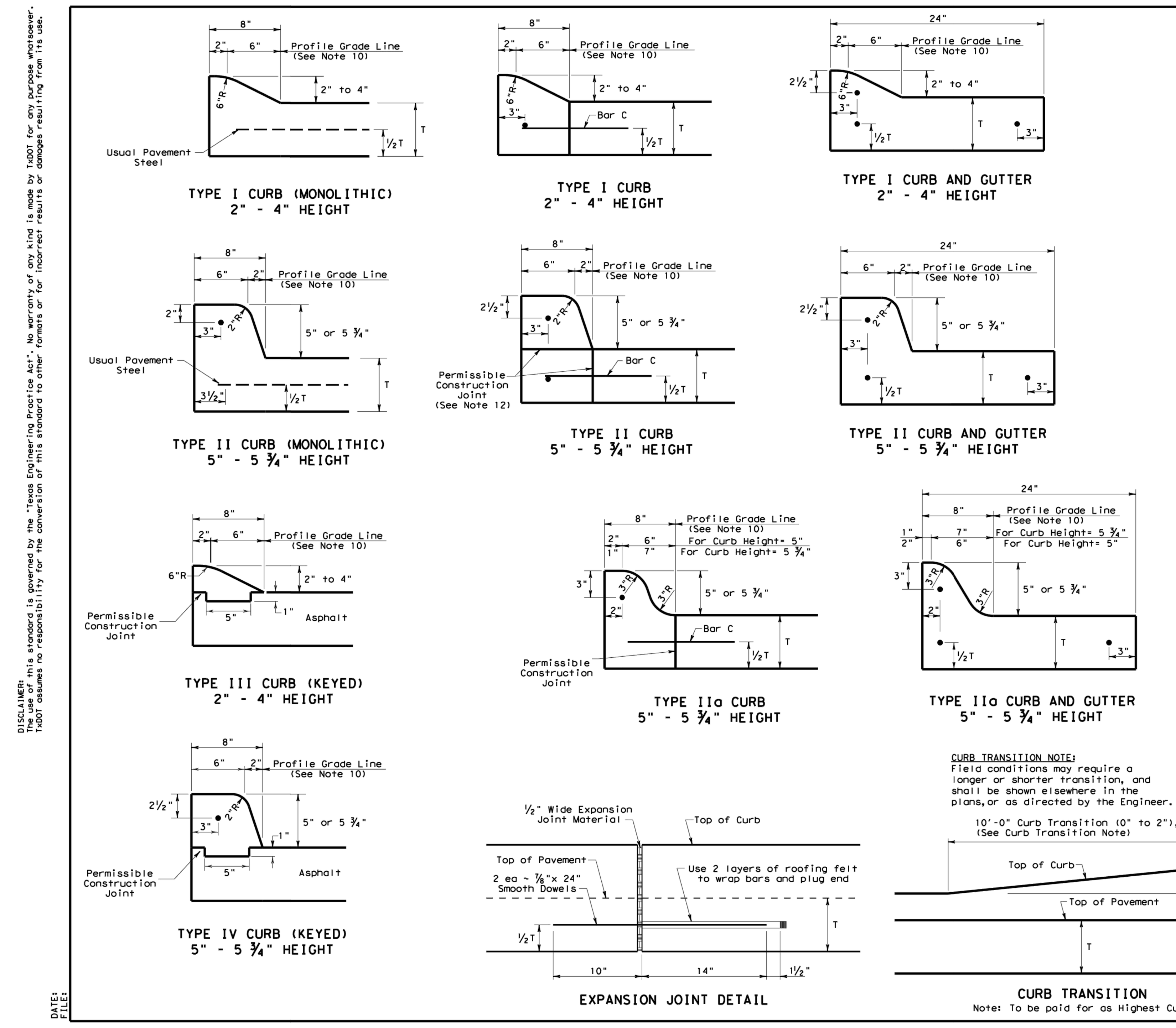
1. All paved accessible parking space limit lines shall be 4" solid white lines.
2. Paved accessible parking spaces must include a white International Symbol of Accessibility applied conspicuously on the surface in a color that contrasts the pavement. A blue background with white border may supplement the symbol for additional contrast.
3. The words "NO PARKING" must be applied on any access aisle adjacent to the parking space. The words must be white, applied:
   a) in all capital letters.
   b) centered within each access aisle adjacent to the parking space.
4. RESERVED PARKING (R7-8T) sign including the International Symbol of Accessibility.
   a) shall be REQUIRED for each accessible parking space.
   b) shall NOT be placed between two accessible parking spaces.
   c) shall NOT be placed in a location that restricts movement of wheelchairs within the adjacent sidewalk.
   d) shall have a mounting height of 7 feet to the bottom of the sign.
5. A sign identifying the consequences of parking illegally in a paved accessible parking space. Must:
   a) at a minimum state "VIOLATORS SUBJECT TO FINE AND TOWING" (Plaque)(R7-8aPT).
   b) be mounted on a pole, post, wall or freestanding board.
   c) be no more than eight inches (8") below sign R7-8T a sign required by the Texas Accessibility Standards, 502.6.
   d) be installed so that the bottom edge of the sign is no lower than 48 inches and no higher than 80 inches above the ground level.
6. Signs identifying van parking spaces shall contain the designation "VAN ACCESSIBLE" (R7-8P) Signs shall be 60 inches minimum above the ground level measured to the bottom of the sign.
7. Perpendicular or angled parking spaces shall be 8 feet wide minimum with an access aisle 8 feet minimum wide (van accessible). Two parking spaces are permitted to share a common access aisle.
8. Access aisles shall be at street level, extend the full length of the parking space they serve, follow ADA surface requirements, and marked to discourage parking in the access aisle. Curb ramps shall connect the access aisle to the adjacent pedestrian access route. Curb ramps shall not be located within the access aisle.
9. International Symbol of Accessibility Parking Space Marking and sign details can be found in The Standard Highway Sign Designs for Texas (SHSD) at the following website. http://www.txdot.gov/

Texas Department of Transportation — Traffic Safety Division Standard

PAVEMENT MARKINGS AND SIGNING FOR ACCESSIBLE PARKING

PM(AP)-21

FILE: pm(ap)-21 | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT
© TxDOT July 2021 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.
22F



GENERAL NOTES

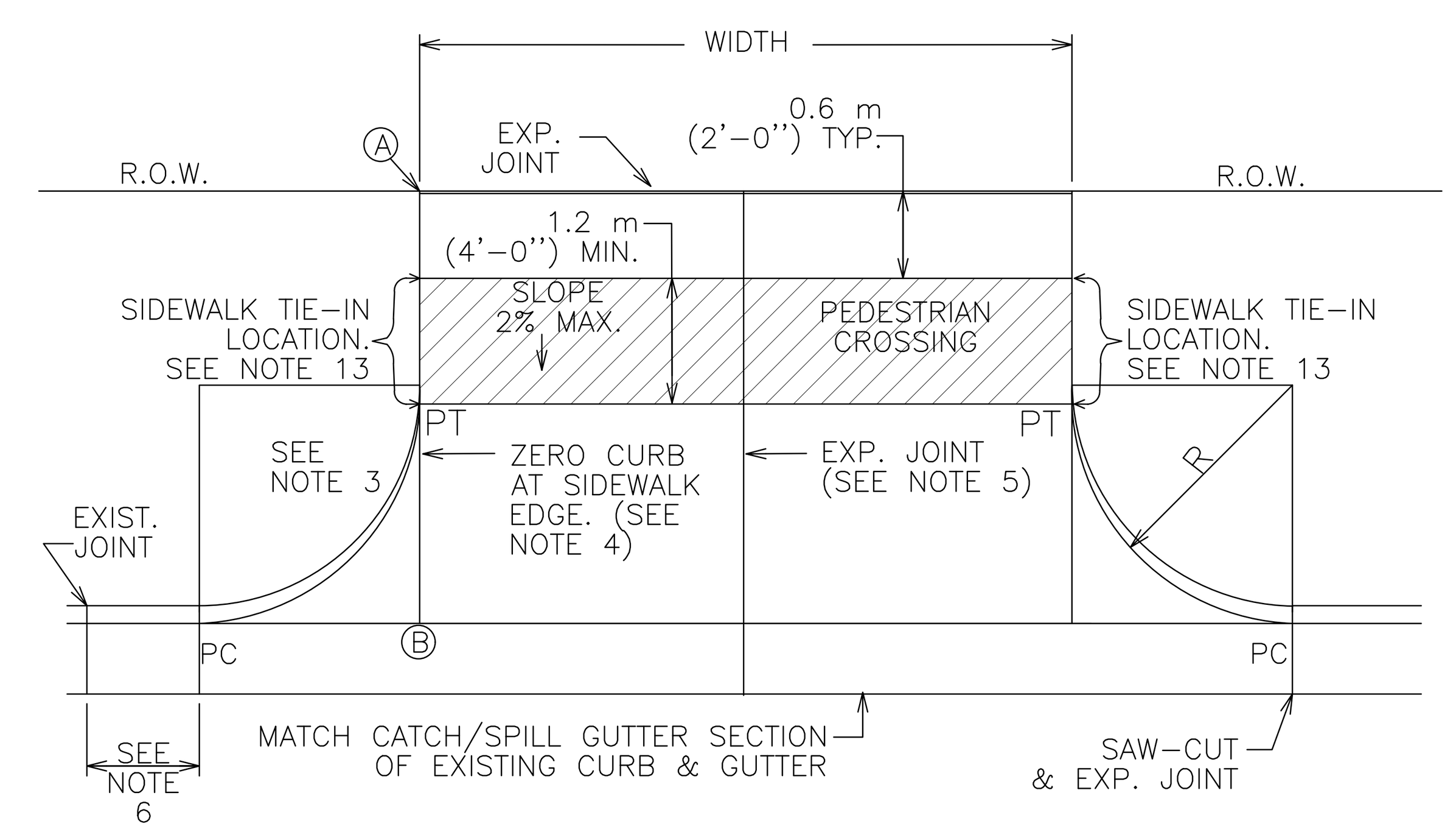
1. All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
2. Concrete shall be Class A.
3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
4. Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and the grouted in place, or may be inserted into fresh concrete.
7. Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
9. Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
10. Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
11. One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
12. When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
13. Bar B used as needed to support curb reinforcing steel during concrete placement.

Texas Department of Transportation — Design Division Standard

CONCRETE CURB AND CURB AND GUTTER

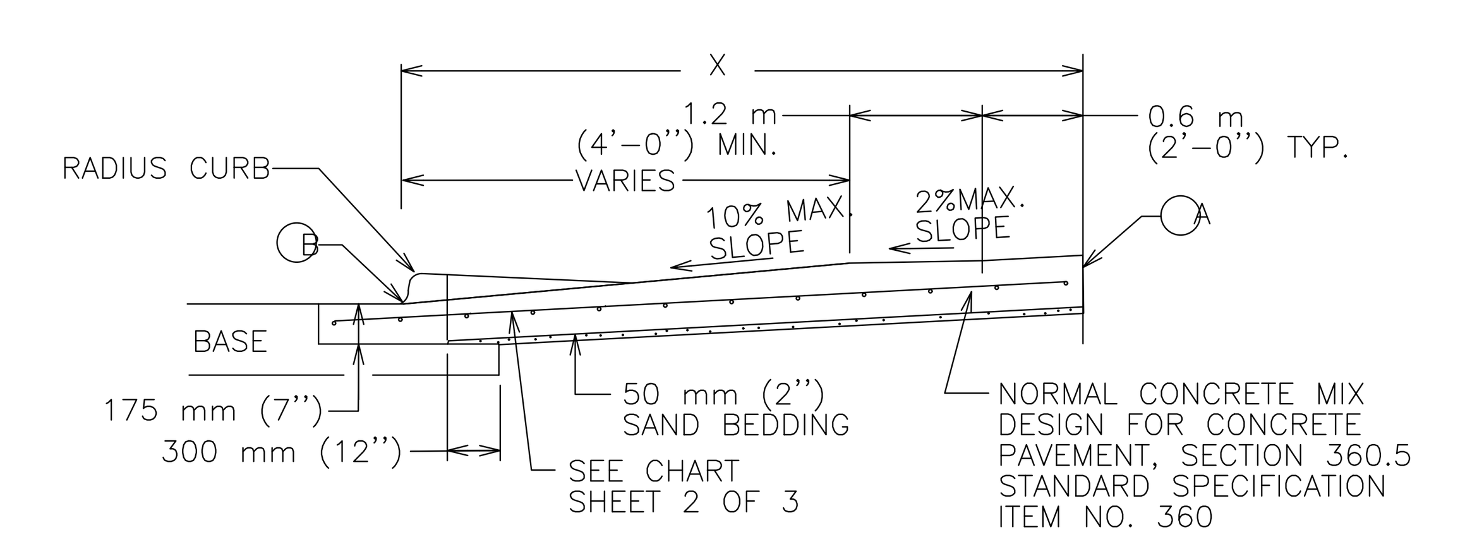
CCCG-21

FILE: cccg21.dgn | DN: TxDOT | CK: KN | DW: SS | CK: KW
© TxDOT FEBRUARY 2021 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.



PLAN

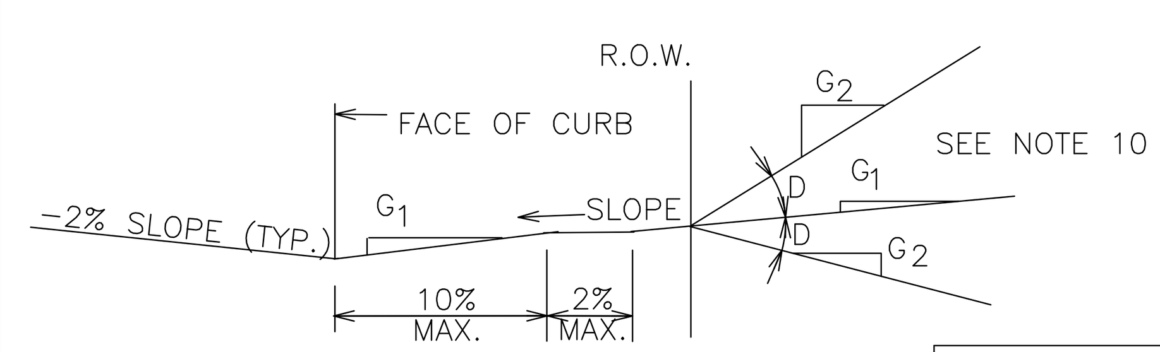
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT A ABOVE POINT B IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (1/4" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS



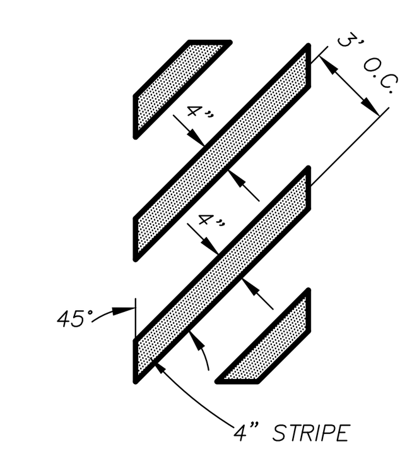
ALLOWABLE GRADES

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

NOTES:

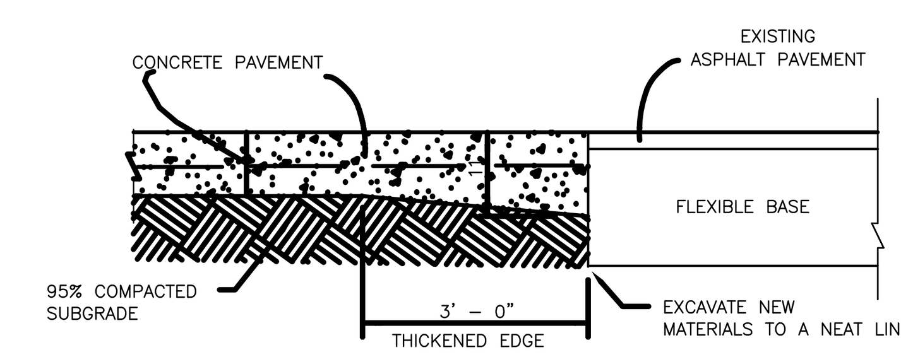
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL. SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE AT 30 METERS (100 FEET): WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH, SEE NOTE 5.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

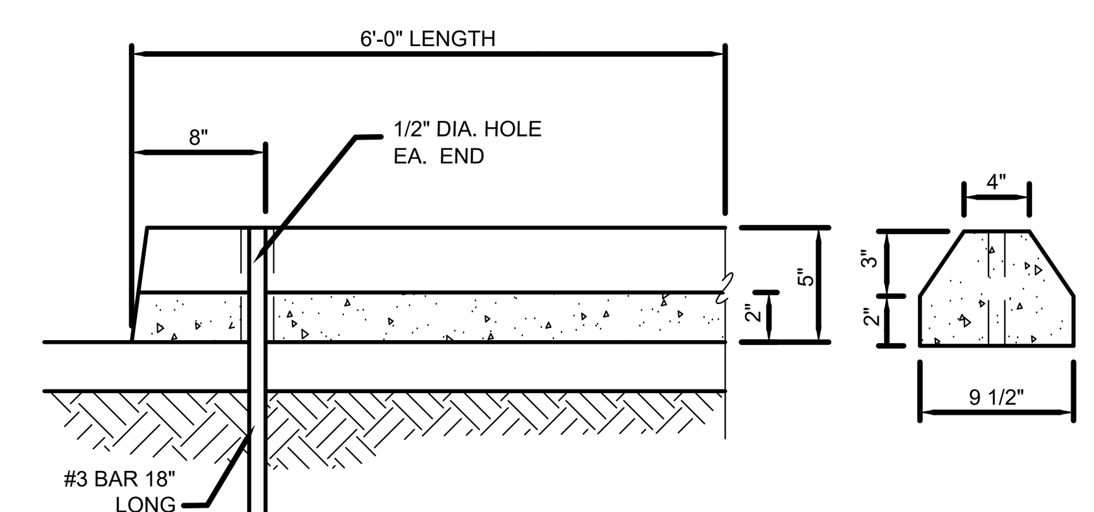


NOTE: TRAFFIC CONTROL MARKINGS SHALL BE PAINTED WITH A WHITE TRAFFIC MARKING PAINT, PAINT SHALL BE SHERWIN-WILLIAMS "PRO-MAR" TRAFFIC MARKING PAINT, SERIES B29.4.2. PAINT SHALL BE APPLIED IN TWO COATS WITH A 15 MIL MINIMUM DRY FILM THICKNESS.

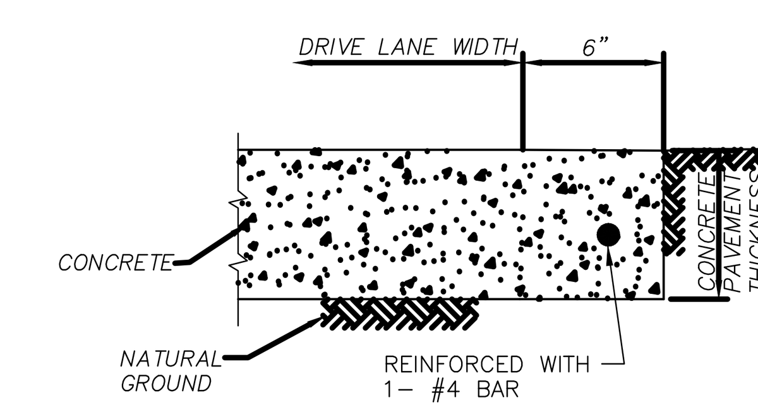
STRIPING DETAIL
N.T.S.



ASPHALT TO CONCRETE PAVEMENT JOINT
NTS



CONCRETE WHEEL STOP DETAIL
N.T.S.



HEADER CURB
N.T.S.

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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NO.	DATE	REVISION	BY

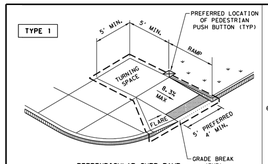
SITE DETAILS

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET	OF
26	31

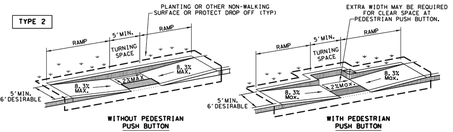
DATE:
FILE:

TYPE 1



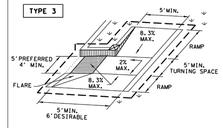
PERPENDICULAR CURB RAMP

TYPE 2

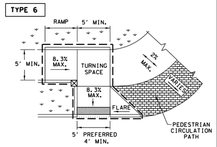


PARALLEL CURB RAMP

TYPE 3

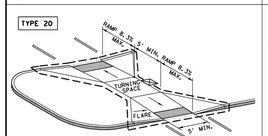


TYPE 6



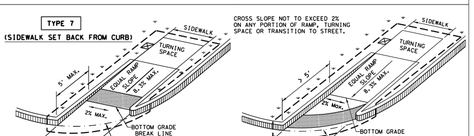
COMBINATION CURB RAMPS

TYPE 20

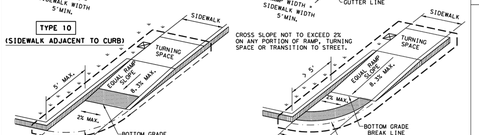


CURB RAMPS AT MEDIAN ISLANDS

TYPE 7
(SIDEWALK SET BACK FROM CURB)

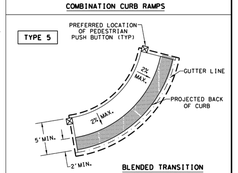


TYPE 10
(SIDEWALK ADJACENT TO CURB)



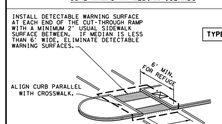
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 5



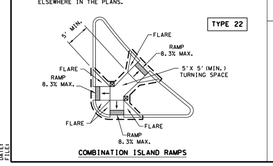
BLENDED TRANSITION (FLUSH LANDING)

TYPE 21

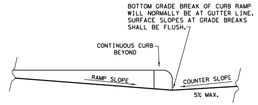


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation — Design Division Standard

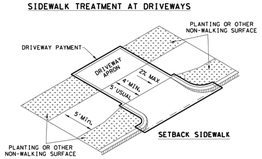
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

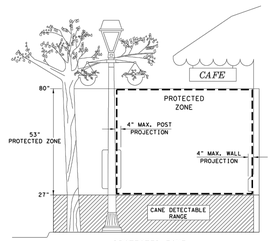
FILE: ped18	DN:TxDOT	CK:	DW:VP	CK:KM	CK:PK & JG
© TxDOT: MARCH, 2002	CONT:	SECT:	JOB:		HIGHWAY:
REVISIONS	DIST:		COUNTY:		SHEET NO.:

DATE:
FILE:

SIDEWALK TREATMENT AT DRIVEWAYS

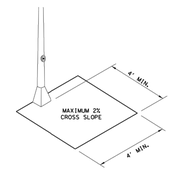


NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

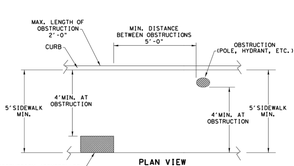


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



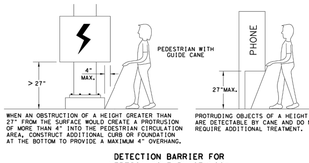
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW

PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN:TxDOT	CK:	DW:VP	CK:KM	CK:PK & JG
© TxDOT: MARCH, 2002	CONT:	SECT:	JOB:		HIGHWAY:
REVISIONS	DIST:		COUNTY:		SHEET NO.:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared slopes where the pedestrian circulation path crosses the curb ramp. Flared slides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians rarely would travel across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

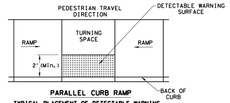
DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

SIDEWALKS

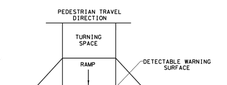
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

DETECTABLE WARNING SURFACE DETAILS



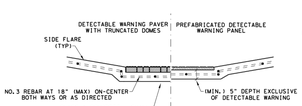
PARALLEL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.

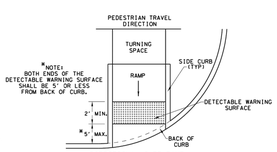


PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS



DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SHEET 2 OF 4

Texas Department of Transportation — Design Division Standard

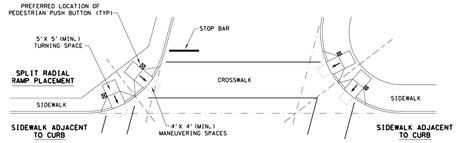
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

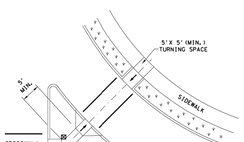
FILE: ped18	DN:TxDOT	CK:	DW:VP	CK:KM	CK:PK & JG
© TxDOT: MARCH, 2002	CONT:	SECT:	JOB:		HIGHWAY:
REVISIONS	DIST:		COUNTY:		SHEET NO.:

DATE:
FILE:

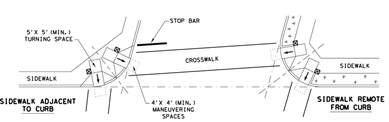
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



SKEWED INTERSECTION WITH "LARGE" RADIUS

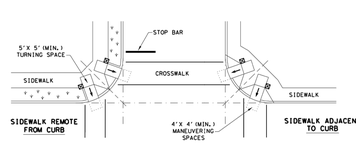


AT INTERSECTION W/FREE RIGHT TURN & ISLAND



SKEWED INTERSECTION WITH "SMALL" RADIUS

MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

LEGEND:

SHOWS DOWNWARD SLOPE.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

SHEET 4 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN:TxDOT	CK:	DW:VP	CK:KM	CK:PK & JG
© TxDOT: MARCH, 2002	CONT:	SECT:	JOB:		HIGHWAY:
REVISIONS	DIST:		COUNTY:		SHEET NO.:

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CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ESP Associates, Inc.
12540 Country Pkwy
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(210) 349-0277
www.espassociates.com

07/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

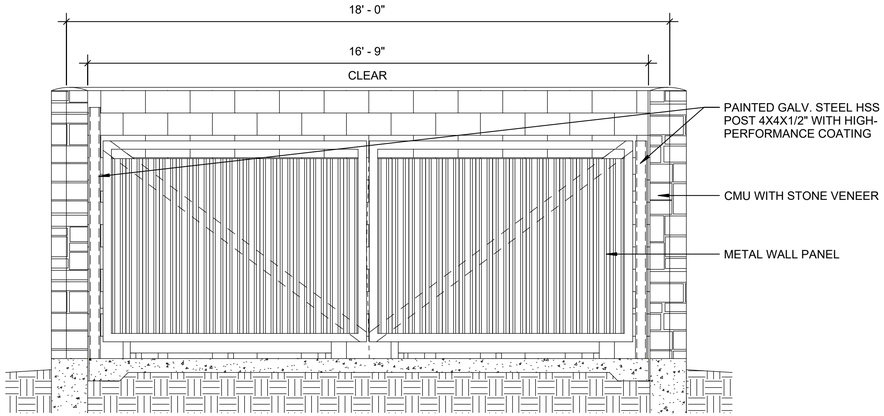
NO.	DATE	REVISION	BY

SITE DETAILS

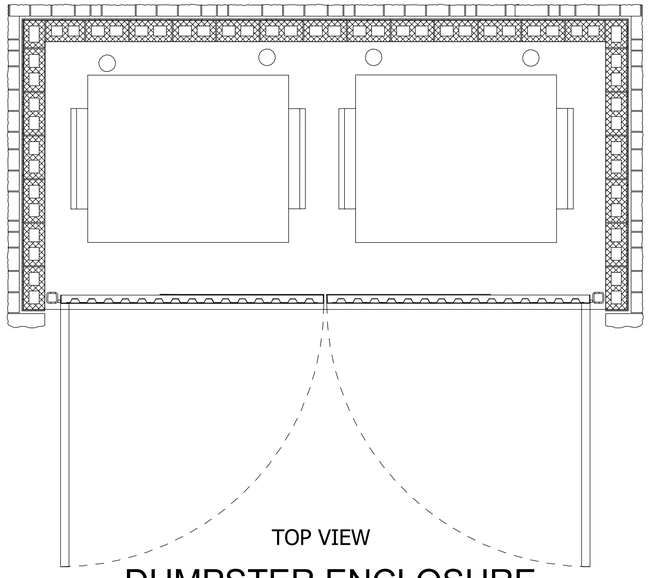
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 27 OF 31



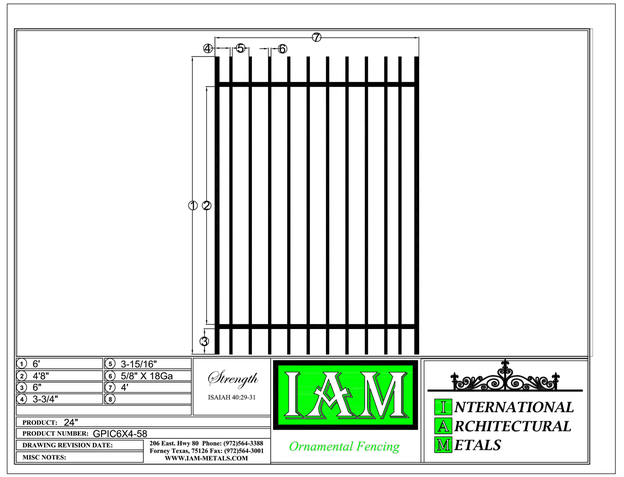
ELEVATION

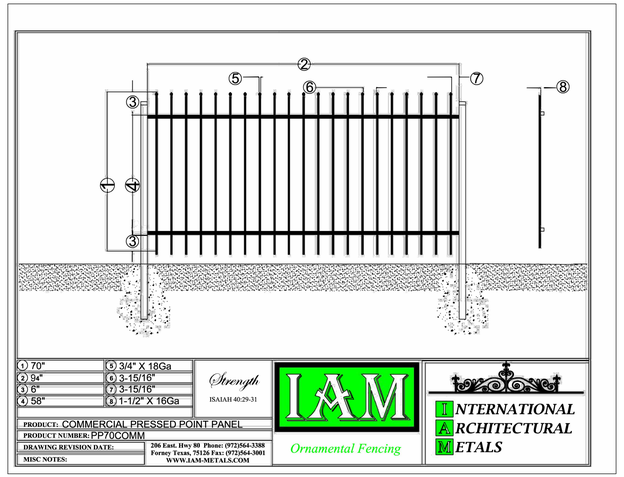


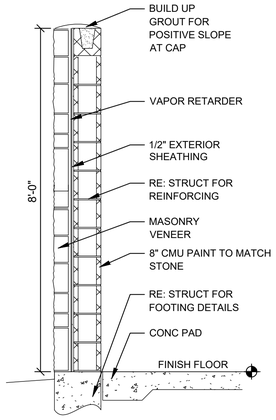
TOP VIEW

DUMPSTER ENCLOSURE

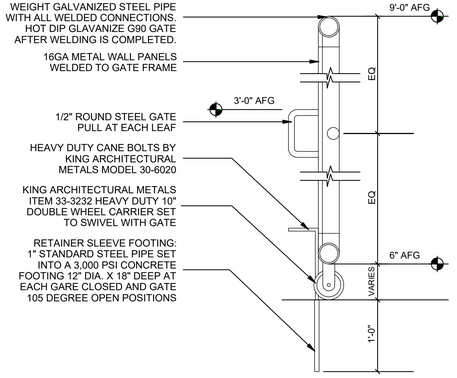
NOT TO SCALE





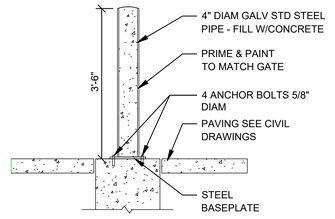


SECTION



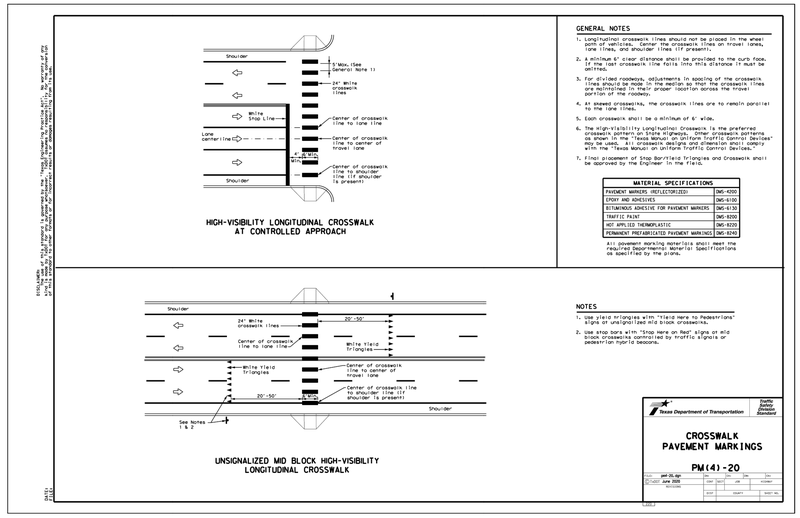
DUMPSTER GATE

NOT TO SCALE



BOLLARD

NOT TO SCALE



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ESP

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
09/07/2024

NO.	DATE	REVISION	BY

SITE DETAILS

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET	OF
28	31

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

CAUTION:
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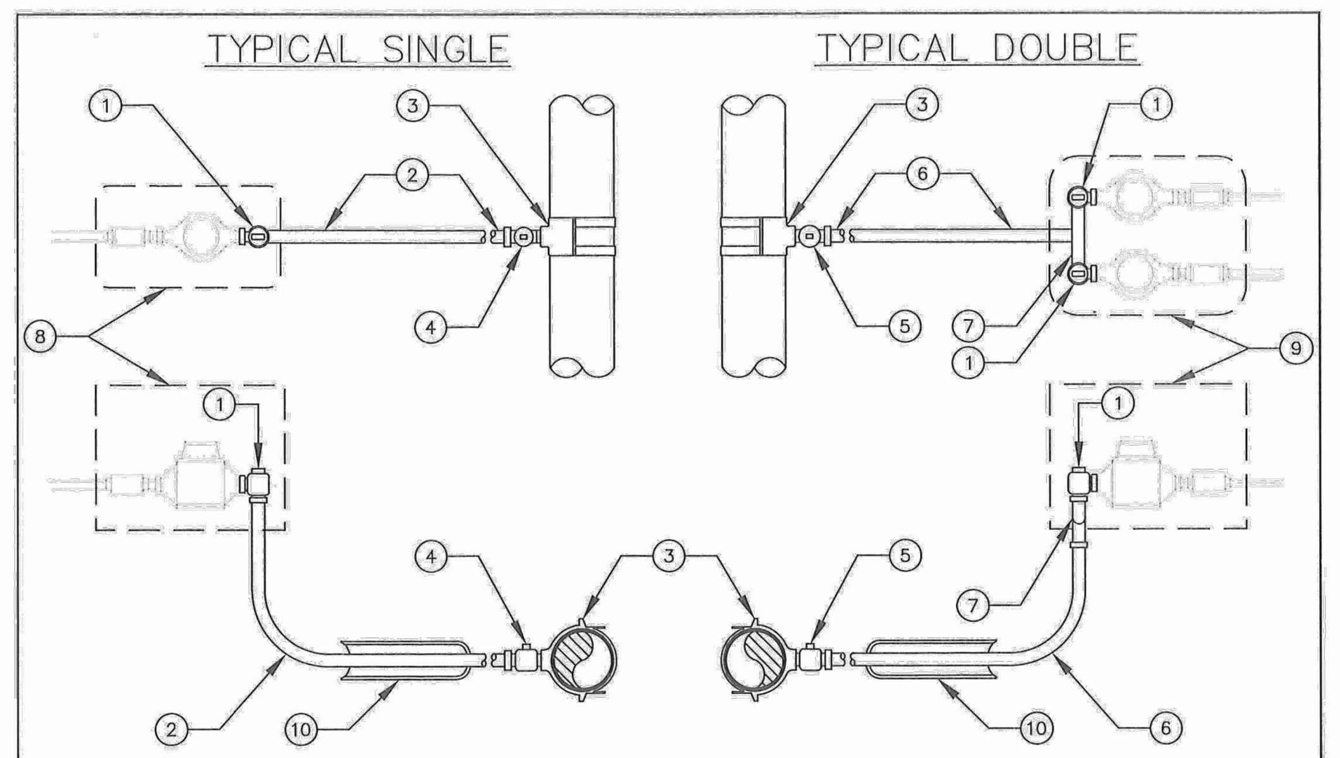


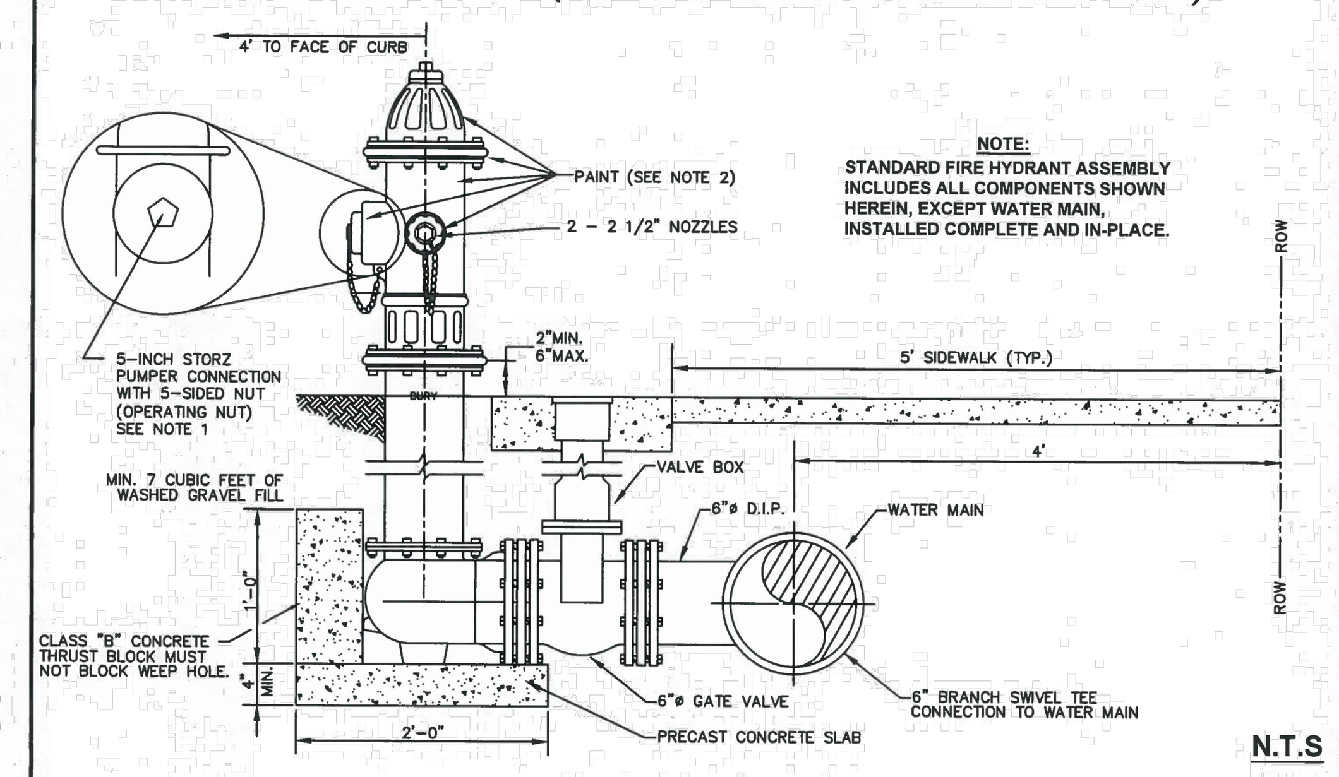
ITEM	SIZE & DESCRIPTION	SPEC. OR EQUAL
1	1" X 1" ANGLE METER STOP, LOCKING	AS APPROVED
2	1" SDR9 POLYETHYLENE TUBING	CLASS 250
3	EPOXY COATED DUCTILE IRON TAPPING SADDLE	AS APPROVED
4	1" CORPORATION STOP	AS APPROVED
5	1 1/2" CORPORATION STOP	AS APPROVED
6	1 1/2" SDR9 POLYETHYLENE TUBING	CLASS 250
7	BRASS U-BRANCH, 1 1/2" X 1"	FORD, OR EQUAL
8	METER BOX, SINGLE	DFW37F-12-1CA, OR EQUAL
9	METER BOX, DOUBLE	DFW39F-12-1CA, OR EQUAL
10	3" SCH. 40 PVC SLEEVE FOR LONG SIDE SERVICES (TYP.)	

NOTES:
1. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
2. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS.
3. BRANCH CONNECTION AND BOTH ANGLE METER STOPS SHALL BE INSTALLED PRIOR TO FIRST METER INSTALLATION.
4. SLEEVES FOR LONG-SIDE SERVICE TO BEGIN AND TERMINATE 6" BEHIND BACK OF CURB.
5. TOP OF METER BOXES SHOULD BE 1" ABOVE GROUND.
6. METER BOX SHALL BE BEHIND CURB AT ROW/PROPERTY LINE OR EASEMENT. METER BOX SHALL NOT BE INSTALLED IN SIDEWALK, DRIVEWAY OR VEHICULAR TRAVEL AREA.
7. 1" X 3/4" BRASS METER BUSHING REQUIRED FOR 5/8" AND 3/4" METERS.
8. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, CHECK VALVE, PIPING AND OWNER'S CUTOFF) SHALL BE 11" BELOW TOP OF BOX. METER BOXES ARE SIZED TO ACCOMMODATE METER STOP, WATER METER AND CHECK VALVE.

STATE OF TEXAS – WAYNE S. WATTS – 86134 – LICENSED PROFESSIONAL ENGINEER – 10/29/15

City Of Leander, Texas
DETAIL #101-1
WATER SERVICE CONNECTIONS

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)

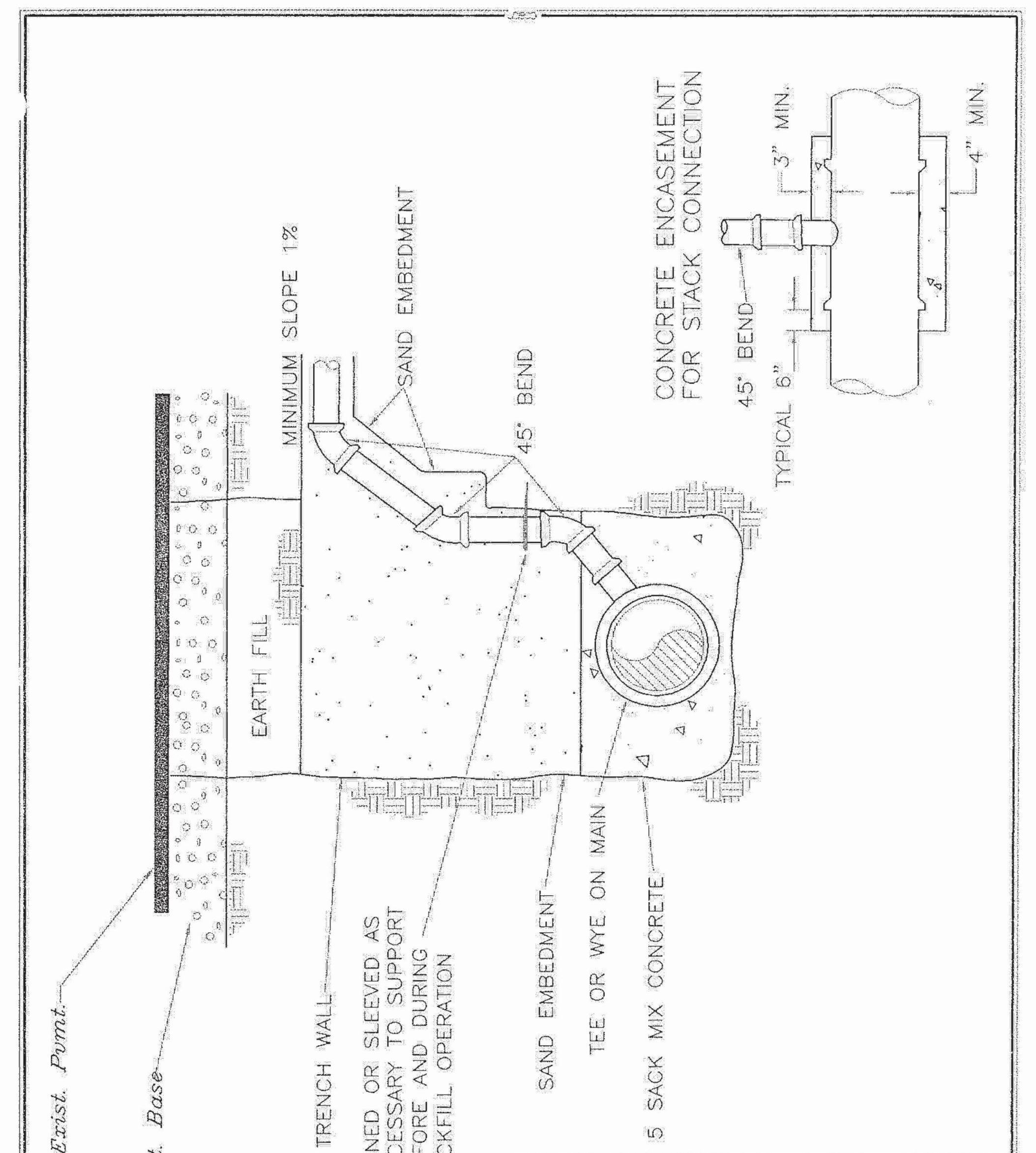


NOTES:
1. FIRE HYDRANT SHALL BE CLOW MEDALLION F2545, AMERICAN DARLING B-84-B-5, MUELLER SUPER CENTURION, EJ 5CD250 WATERMASTER, KENNEDY K81D GUARDIAN, AVK 2780, OR APPROVED EQUAL VIA SUBMITTAL PROCESS. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5-INCH STORZ PUMPER NOZZLE; 1.5-INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE FACTORY PAINTED WITH FLYNT ALUMINUM SILVER PAINT OR SHERWIN WILLIAMS SILVER B59S11. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY OR IF PAINT IS FLAT IN APPEARANCE.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

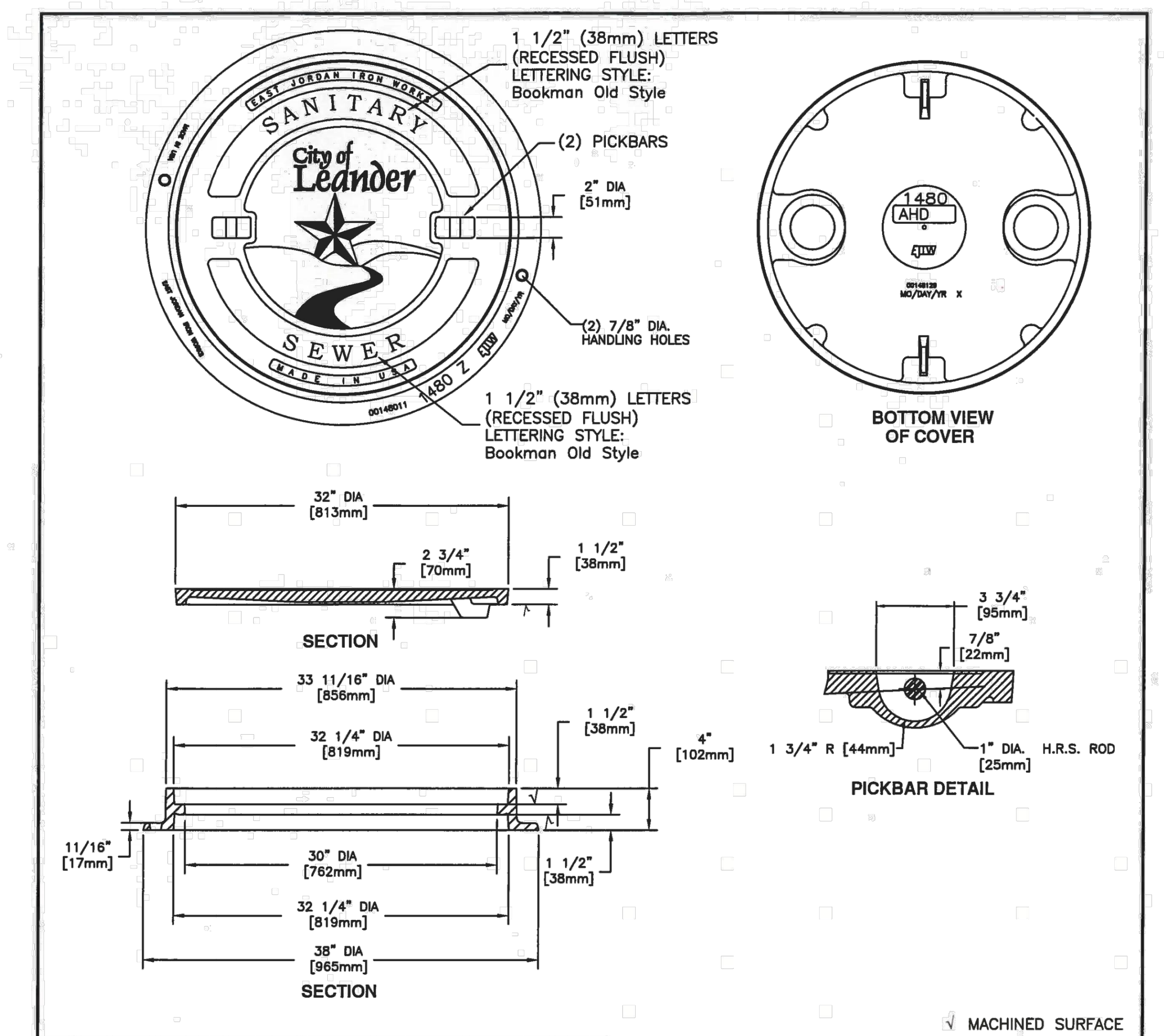
LOCATION:
6. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
7. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM RADIUS TANGENT POINT
8. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN THREE FEET (3') IN ALL DIRECTIONS FROM F.H.
9. 5-INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED.

STATE OF TEXAS – WAYNE S. WATTS – 86134 – LICENSED PROFESSIONAL ENGINEER – 02/05/19

City Of Leander, Texas
DETAIL #101-4
STANDARD FIRE HYDRANT ASSEMBLY



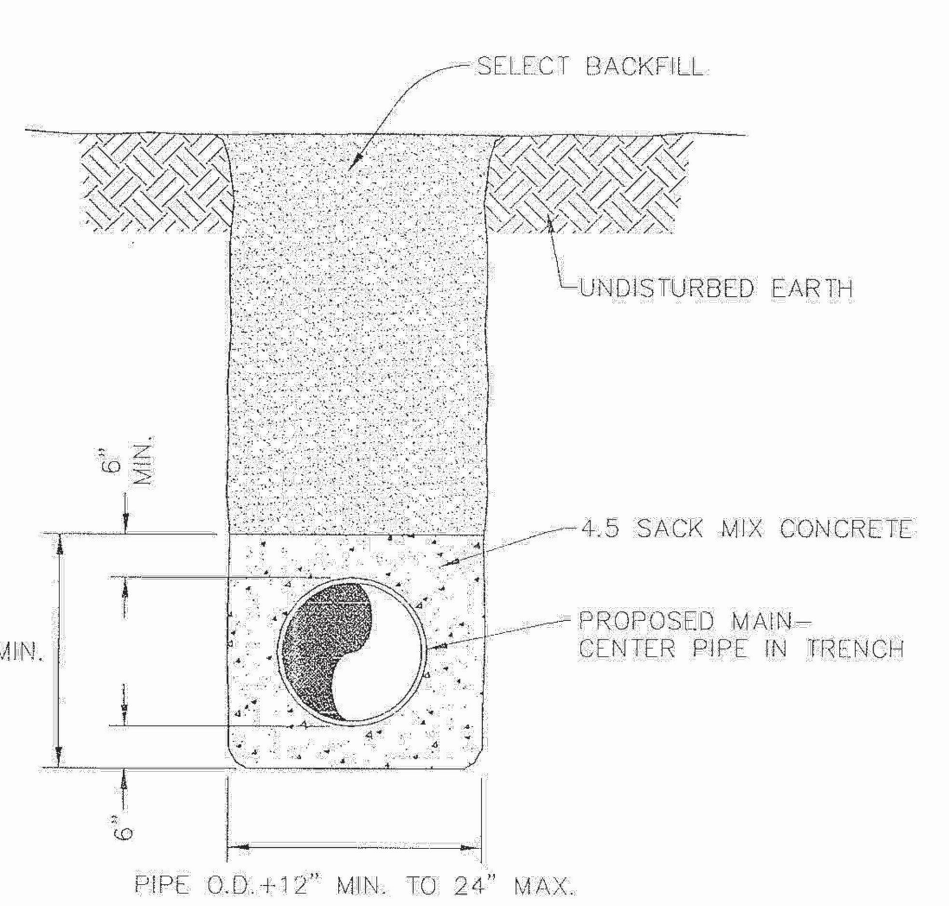
CITY OF LEANDER, TEXAS
Scale: NTS | Approved | Date | Drawn by: SDK
WATER & WASTEWATER DEEP SERVICE CONNECTION | Detail No. 102-2



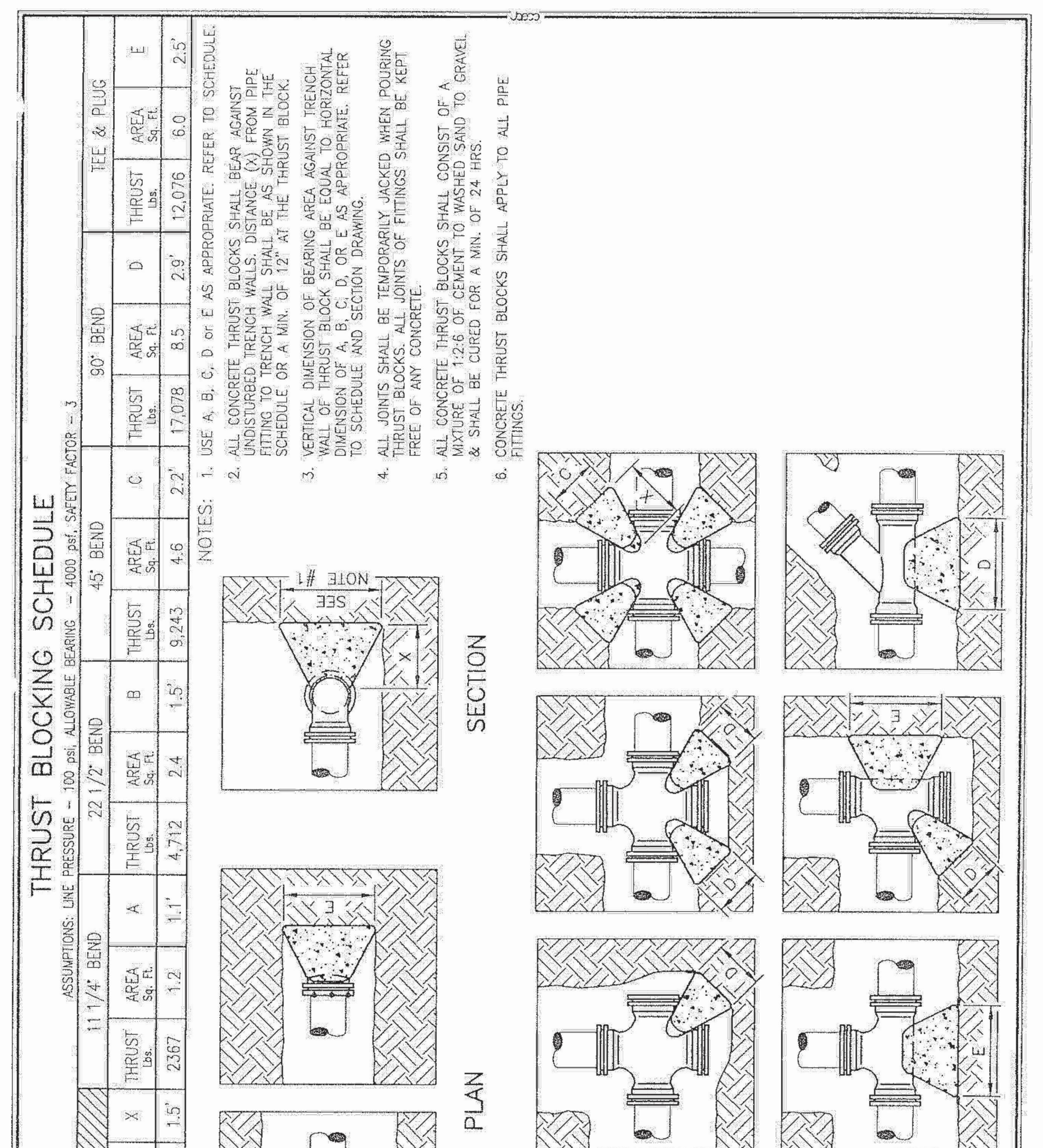
MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg	
EAST JORDAN IRON WORKS PRODUCT NO. 00148107 OR NEENAH FOUNDRY DF-1274 LEANDER SANITARY	OPEN AREA N/A; MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B	LOAD RATING HEAVY DUTY (H20)

STATE OF TEXAS – WAYNE S. WATTS – 86134 – LICENSED PROFESSIONAL ENGINEER – 02/22/16

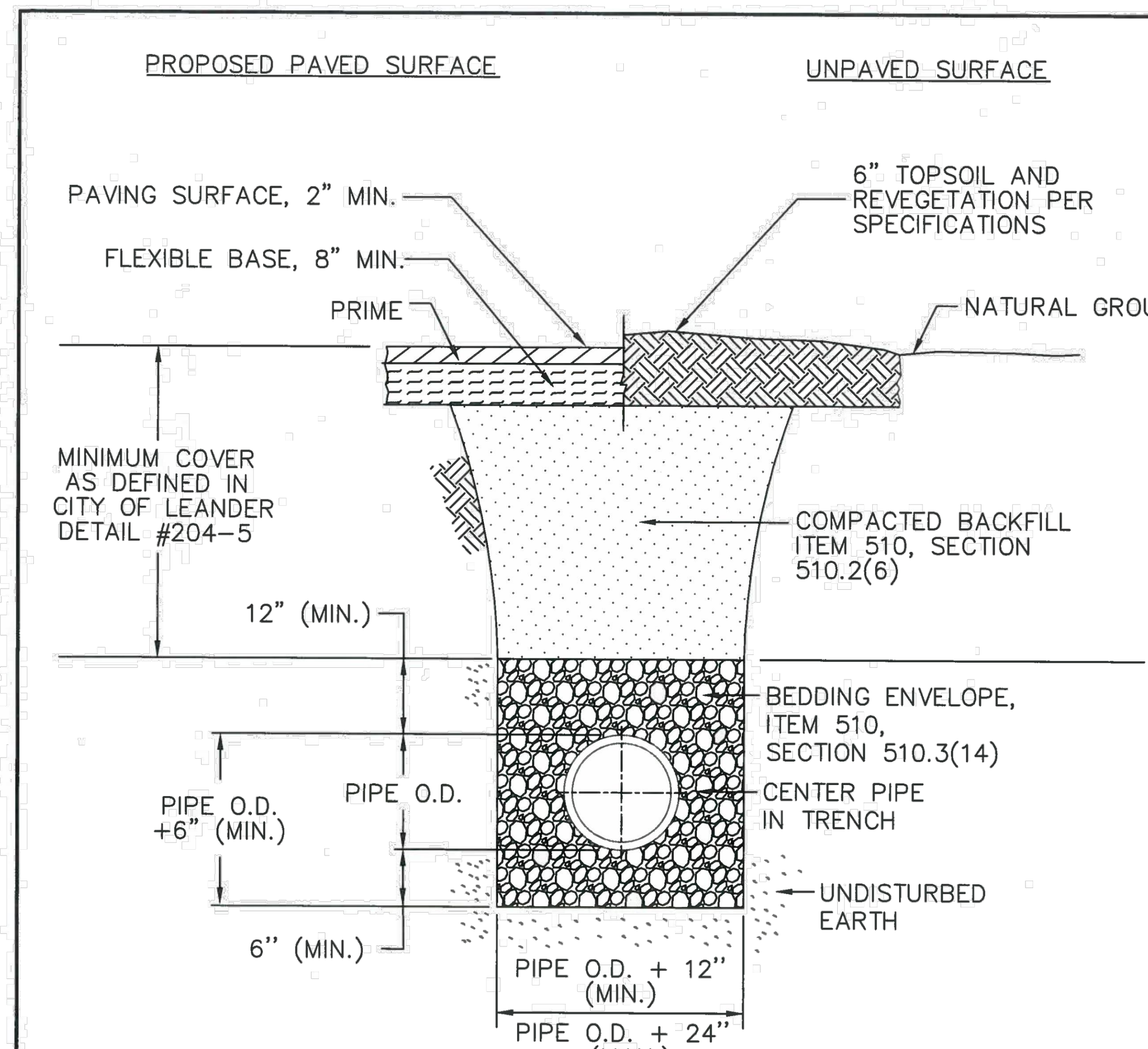
City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER



CITY OF LEANDER, TEXAS
Scale: NTS | Approved | Date | Drawn by: RPW
CONCRETE ENCASEMENT | Detail No. 105-1



CITY OF LEANDER, TEXAS
Scale: NTS | Approved | Date | Drawn by: RPW
THRUST BLOCKING DETAILS | Detail No. 103-1

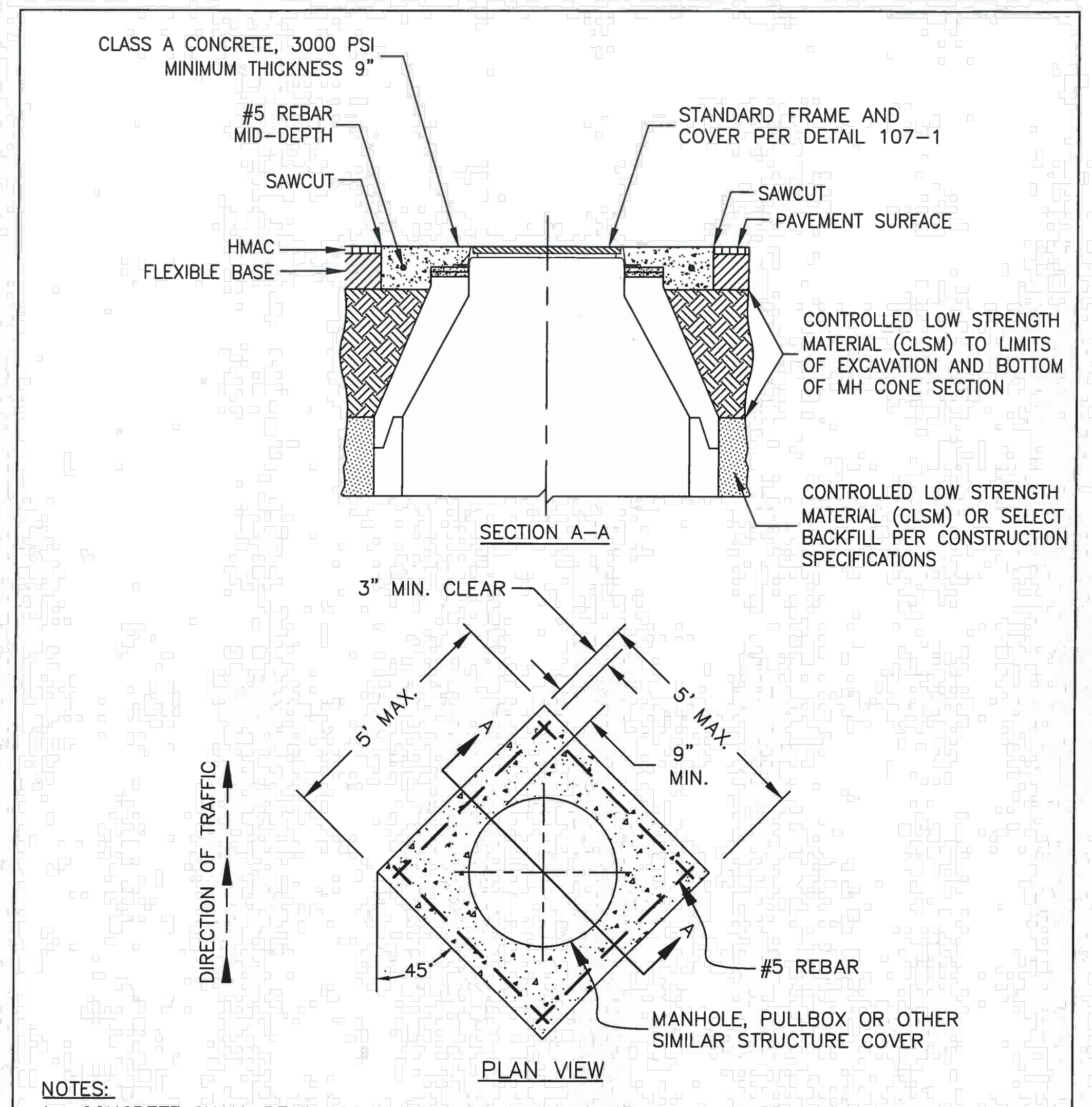


NOTES:
1. SEE CITY OF LEANDER DETAIL #104-2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

REFERENCES:
1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

STATE OF TEXAS – MICHAEL LAFFERTY – 118706 – LICENSED PROFESSIONAL ENGINEER – 2019-05-23

City Of Leander, Texas
DETAIL #104-1
TYPICAL PIPE TRENCH AND EMBEDMENT



NOTES:
1. CONCRETE SHALL BE CLASS A, 3000 PSI MINIMUM AND SHALL BE REINFORCED WITH #5 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO SAW CUT PAVEMENT EDGE.
2. PLACEMENT OF CLSM SHALL BE BELOW FLEXIBLE BASE LAYER TO LIMITS OF EXCAVATION.
3. INSTALLATION OF HMAC OVER CONCRETE ADJUSTMENT SHALL NOT BE ALLOWED.
4. INSTALLATION OF CONCRETE CASTING ADJUSTMENT IS REQUIRED FOR ALL TYPES OF MANHOLES TO BE LOCATED IN THE ROADWAY.

STATE OF TEXAS – WAYNE S. WATTS – 86134 – LICENSED PROFESSIONAL ENGINEER – 02/22/17

City Of Leander, Texas
DETAIL #107-4
MANHOLE CASTING ADJUSTMENT

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(210) 349-3271
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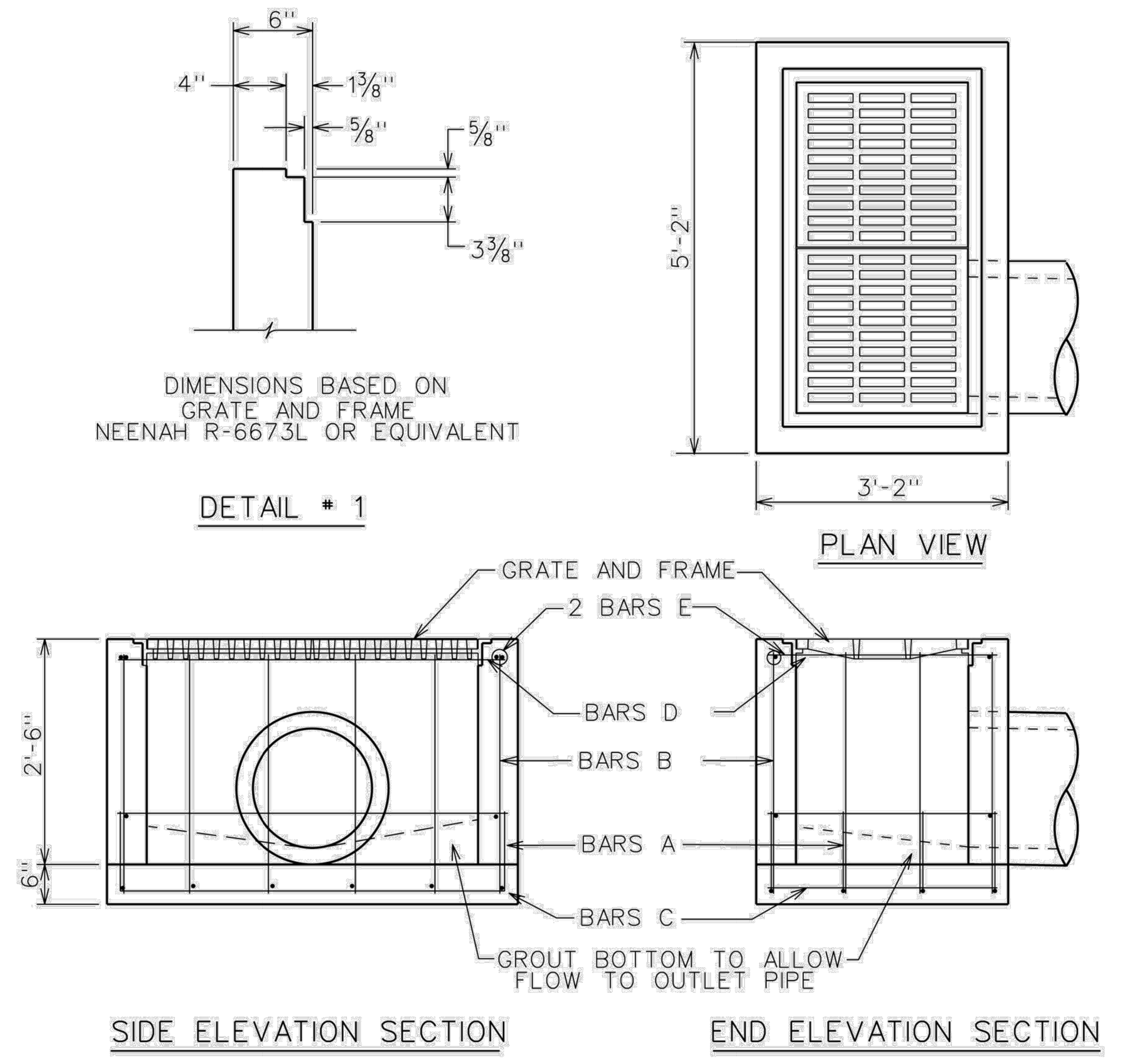
STATE OF TEXAS – ARIELLA D. MEADOWS – 141035 – LICENSED PROFESSIONAL ENGINEER – 08/07/2024

NO.	DATE	REVISION	BY

UTILITY DETAILS
ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET 29	OF 31



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

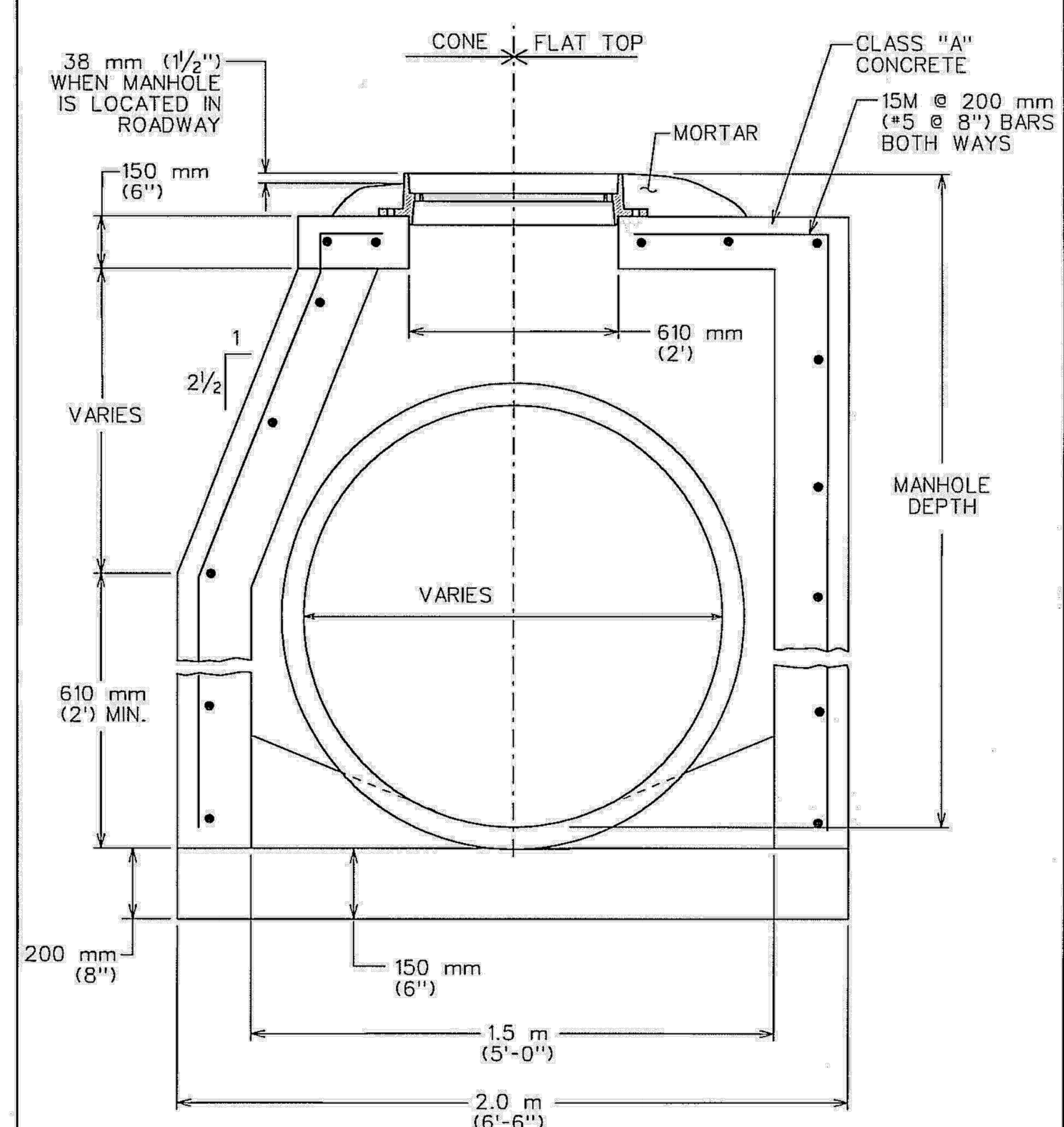
CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

STANDARD DROP INLET

RECORD COPY SIGNED BY ALLEN BRECHER 5/24/88 ADOPTED

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

STANDARD NO. 508-11



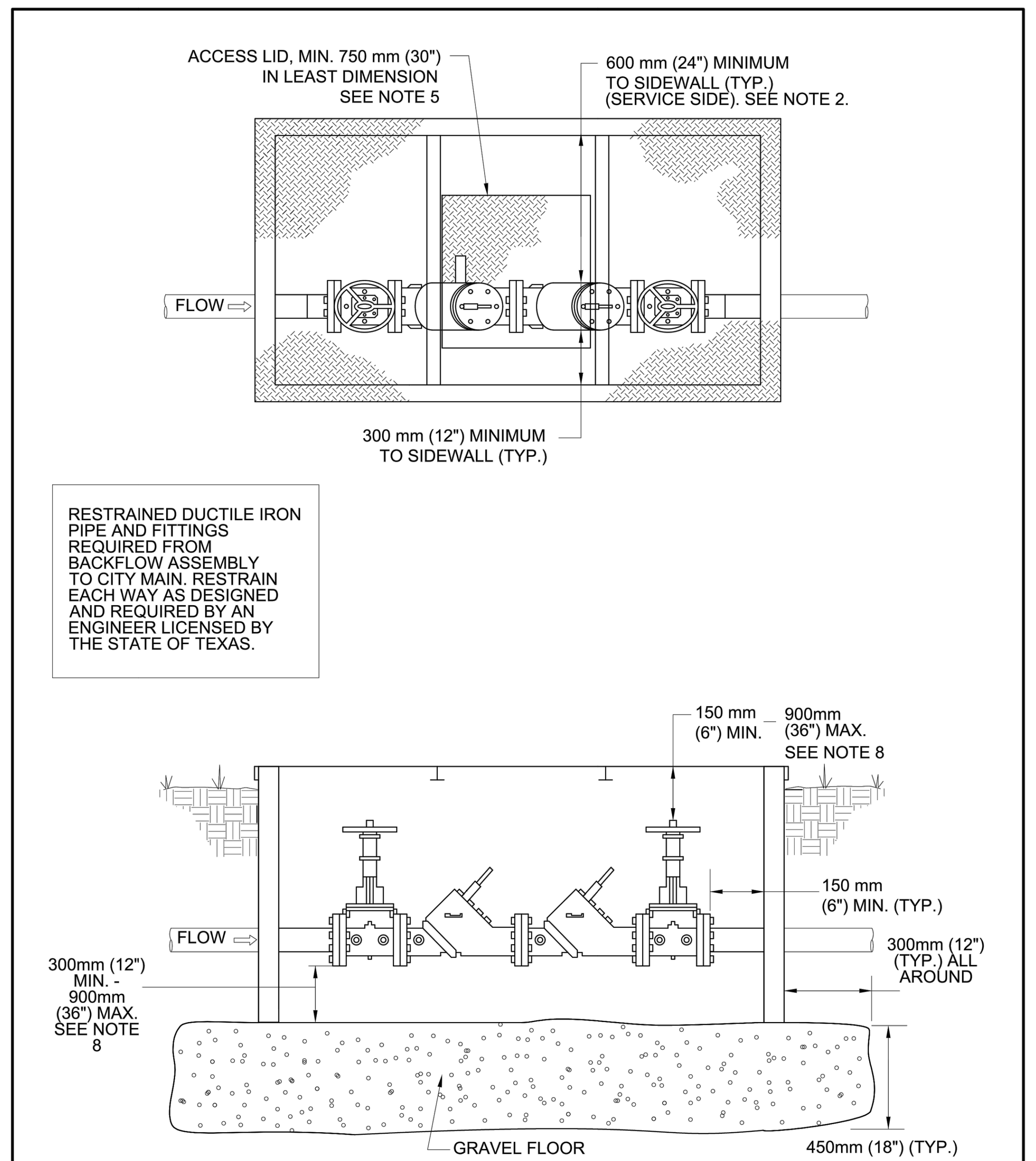
CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

STORM DRAIN MANHOLE DETAIL

George Oswald 2/14/02 ADOPTED

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

STANDARD NO. 506S-11



CITY OF AUSTIN
AUSTIN WATER UTILITY

STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER

RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011 ADOPTED

THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.

STANDARD NO. 520S-19B 1 OF 2

NOTES:

1. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
2. ALL TEST PORTS SHALL BE DIRECTED UPWARD AND PLUGGED. TEST PORTS ARE LOCATED ON SERVICE SIDE. PLUGS SHALL BE NON-FERROUS.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
4. CLEARANCE SHALL BE AS INDICATED,AND IN THE STANDARD CROSS CONNECTION ORDINANCES AND UCM.
5. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 750 mm (30") IN LEAST DIMENSION.
6. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY AUSTIN WATER UTILITY'S SPECIAL SERVICE DIVISION WITHIN 5 DAYS AFTER BEING INSTALLED.
7. VAULT SHALL NOT BE INSTALLED IN TRAFFIC AREA.
8. VAULT DEPTH MAY NOT EXCEED 1.8m (72"), BOTTOM OF LID TO TOP OF FLOOR.
9. HAND WHEELS SHALL BE HORIZONTALLY LOCATED WITHIN 300mm (12") OF ACCESS OPENING.
10. FOR ACCESS DOORS SEE SPL WW-614 OR APPROVED EQUAL (H20 LOADING REQUIRED).
11. FOR VAULT SEE SPL WW-298 OR APPROVED EQUAL (H20 LOADING REQUIRED).
12. VAULT PIPE WALL VOIDS SHALL BE SEALED WITH NON-SHRINK GROUT OR SEALANT PER SPL WW-146A OR APPROVED EQUAL.
13. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

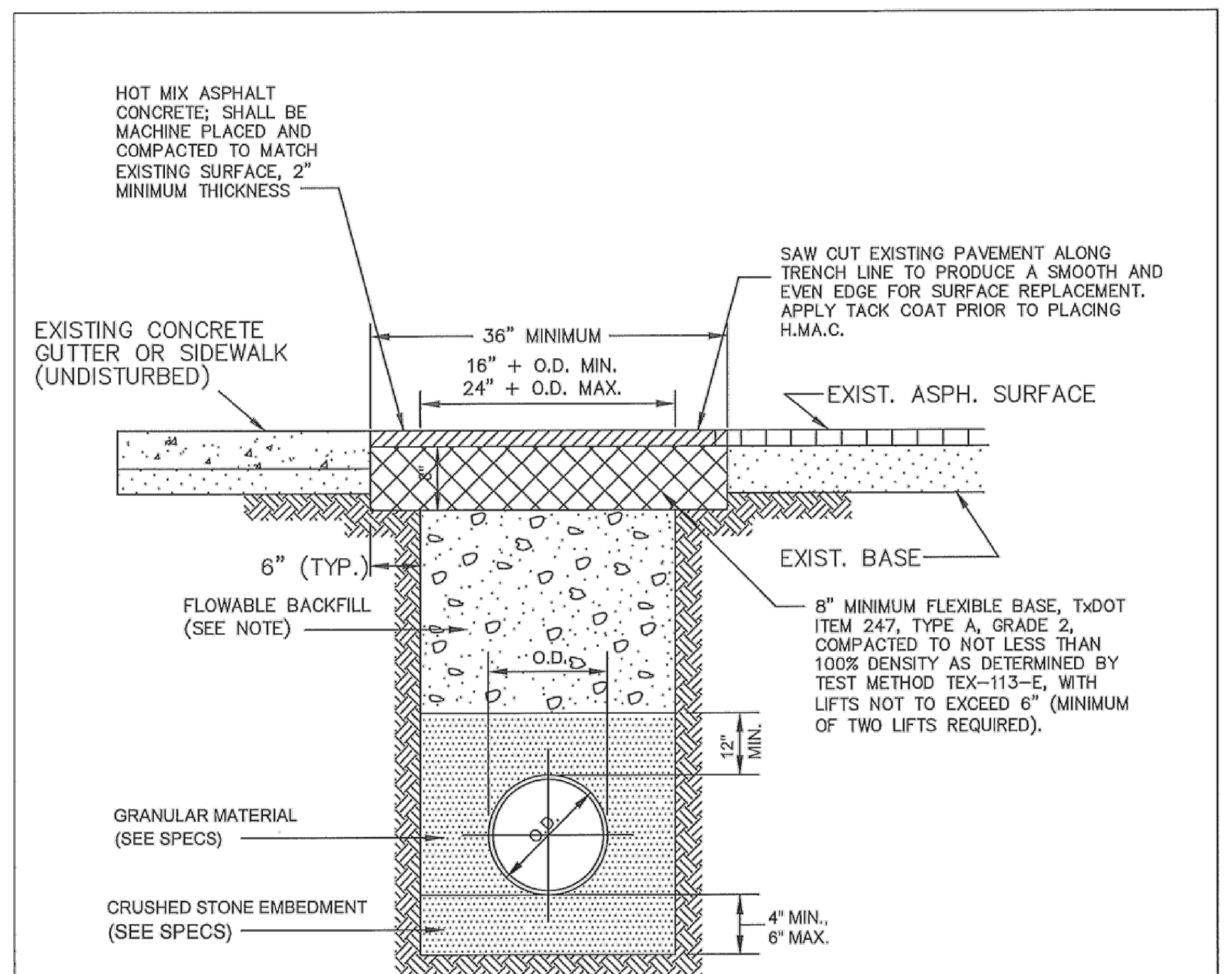
CITY OF AUSTIN
AUSTIN WATER UTILITY

STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER

RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011 ADOPTED

THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.

STANDARD NO. 520S-19B 2 OF 2



N.T.S.

NOTES:

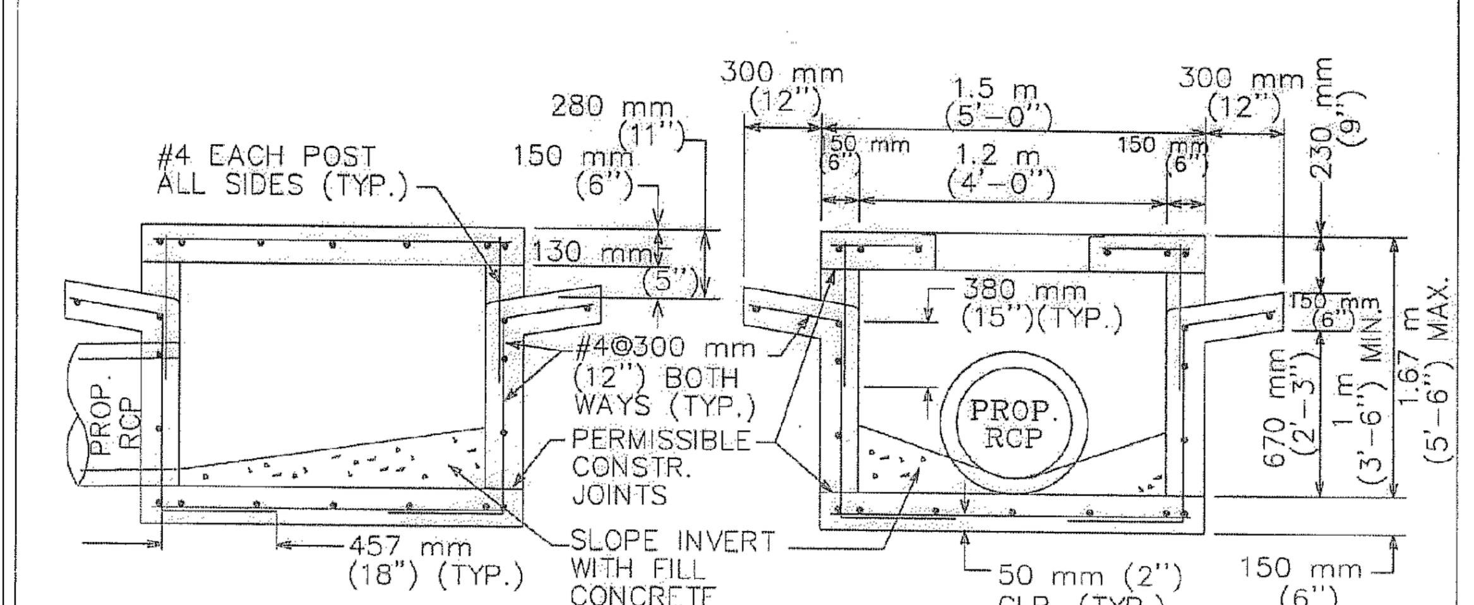
FLOWABLE BACKFILL SHALL CONSIST OF A MIXTURE OF NATIVE SOILS OR MANUFACTURED MATERIALS, CEMENT AND/OR FLY ASH, AND WATER WHICH PRODUCES A MATERIAL WITH UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 250 AND 450 PSI AFTER 28 DAYS. ANY MATERIALS USED SHALL BE PRIMARILY GRANULAR, WITH A PLASTICITY INDEX <12 AND WITH 100% PASSING A 3/4 INCH SIEVE. THE FLOWABLE MIXTURE SHALL BE MIXED IN A PUG MILL, CONCRETE MIXER, OR TRANSIT MIXER AND SHALL HAVE A MINIMUM SLUMP OF 5 INCHES. THE FLOWABLE MIXTURE MUST BE ALLOWED TO SET PRIOR TO THE PACEMENT OF ANY OVERLAYING MATERIAL.

ONE CONCRETE CYLINDER WILL BE REQUIRED FOR TESTING AND WILL BE FABRICATED BY THE CITY INSPECTOR.

THE PUBLIC WORKS DEPARTMENT IS TO BE CONTACTED AT 259-2640 PRIOR TO COMMENCEMENT OF BACKFILL OPERATIONS.

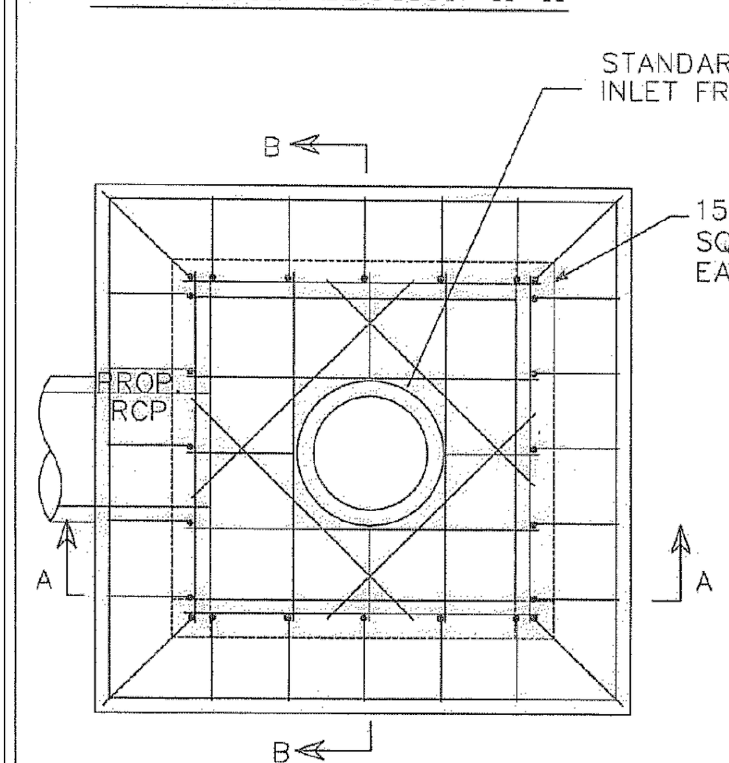
STATE OF TEXAS — WAYNE S. WATTS — 86134 — LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 07/20/12

City Of Leander, Texas
DETAIL #104-2
TYPICAL TRENCH AND H.M.A.C. SURFACE REMOVAL AND REPLACEMENT DETAIL



ELEVATION-SECTION A-A

ELEVATION-SECTION B-B



PLAN

N.T.S.

NOTES:

1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD-BENT AS REQUIRED TO CLEAR PIPE AND MANHOLE OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.
5. ANY MODIFICATION TO THIS STANDARD SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER.

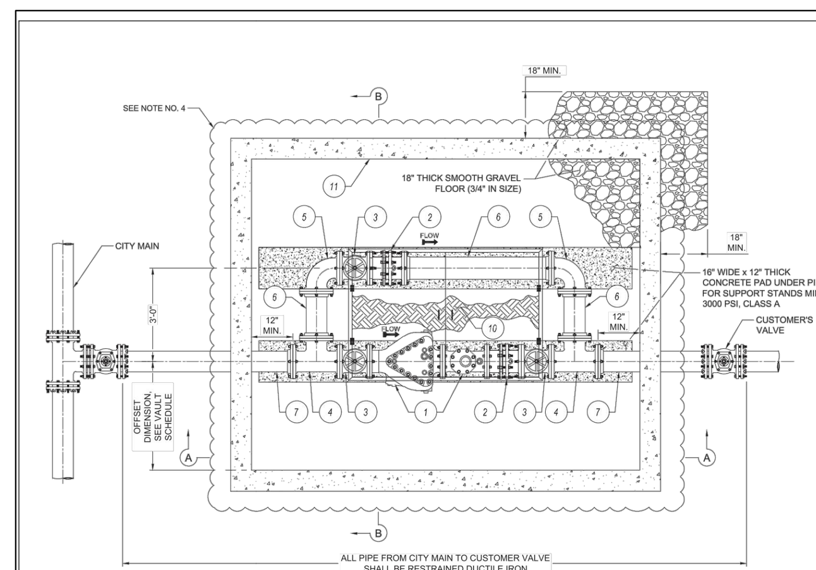
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

4-SIDED AREA INLET

Arthur C. Romero, P.E. 8/18/2010 ADOPTED

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

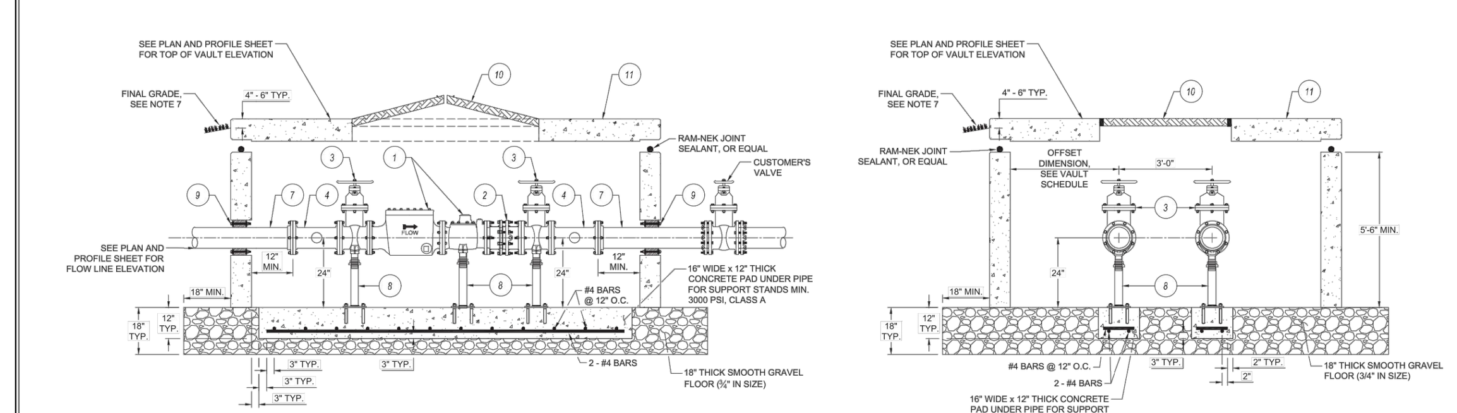
STANDARD NO. 508S-9



PLAN VIEW

6", 8" OR 10" SENSUS OMNI F2 FIRE LINE METER MATERIAL LIST			
ITEM	DESCRIPTION	SIZE	TYPE
1	FIRE LINE METER AND STRAINER (PROVIDED BY AUSTIN WATER)	6", 8" OR 10"	FLG x FLG
2	DISMANTLING JOINT PER COA SPL WW-27J	6", 8" OR 10"	FLG x FLG
3	RESILIENT-SEATED GATE VALVE (w/HAND WHEEL) PER COA SPL WW-700	6", 8" OR 10"	FLG x FLG
4	TEE PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
5	90° BEND PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
6	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x FLG
7	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x PE
8	PIPE SADDLE SUPPORT AND STANCHION PER COA SPL WW-614B (USE 5/8" DIA. x 6" LONG STAINLESS STEEL WEDGE-ALL ANCHOR, TYP.)	NA	NA
9	LINK-SEAL MODULAR SEALS SERIES LS-525 FOR 6" PIPE, LS-500 FOR 8" PIPE AND LS-650 FOR 10" PIPE w/STAINLESS STEEL HARDWARE, OR EQUAL	NA	NA
10	48" x 72" ACCESS HATCH PER COA SPL WW-614A	NA	NA
11	CONCRETE VAULT PER COA SPL WW-298 (SEE VAULT SCHEDULE)	NA	NA

VAULT SCHEDULE		
FIRE LINE METER SIZE	VAULT SIZE (INSIDE DIMENSION)	OFFSET DIMENSION
6"	8' x 12'	3'-0"
8"	10' x 12'	3'-6"
10"	10' x 15'	3'-6"



SECTION A-A VIEW

SECTION B-B VIEW

NOTES:

1. CONCRETE VAULT SHALL NOT BE INSTALLED IN A TRAFFIC AREA.
2. HIGH STRENGTH LOW ALLOY (HSLA) BOLTS AND NUTS USED THROUGHOUT ASSEMBLY.
3. FULL FACE 1/8" THICK RED RUBBER GASKETS USED THROUGHOUT ASSEMBLY.
4. ALL ITEMS IN MATERIAL LIST, INCLUDING VAULT AND ALL COMPONENTS WITHIN VAULT, TO BE IN COMPLIANCE WITH ITEM No. 512, PRE-CAST WATER UTILITY VAULTS. ALL PIPING, VALVES AND APPURTENANCES OUTSIDE VAULT TO BE SHOWN IN PLAN AND PROFILE SHEET, AND SHALL BE IN COMPLIANCE WITH ITEM Nos. 510 AND 511.
5. IF NECESSARY, WALL PENETRATION LOCATION IS ALLOWED TO MOVE HORIZONTALLY IN ACCORDANCE WITH SPL WW-298. MINIMUM 18" CLEARANCE SHALL BE PROVIDED BETWEEN VAULT WALL AND BYPASS PIPING OR FIRE LINE METER COMPONENTS, UNLESS NOTED OTHERWISE.
6. ALL BURIED PIPE AND FITTINGS SHALL BE BEDDED, BACKFILLED, AND WRAPPED IN POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH COA STANDARDS.
7. THE TOP OF THE VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATIONS SUCH AS CONNECTION OF VAULT DRAINAGE TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL FLOOR, OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.
8. BYPASS AND MAIN PIPE SHALL BE SAME DIAMETER.

USE OF THIS STANDARD

THIS STANDARD DRAWING ONLY APPLIES TO FIRE LINE METER VAULTS SATISFYING BOTH OF THE FOLLOWING STIPULATIONS; OTHERWISE, A PROJECT-SPECIFIC DESIGN MUST BE PREPARED. THE VAULT ITSELF MUST BE DESIGNED BY A TEXAS-LICENSED PROFESSIONAL ENGINEER (STRUCTURAL).
1. THE CONDITIONS AT THE SITE OF THE PROPOSED FIRE LINE METER, THE LOADS AFFECTING A PRE-CAST CONCRETE VAULT AT THAT SITE, AND THE COMPONENTS AND PHYSICAL FEATURES OF THE VAULT FOR THAT SITE ARE ALL ADEQUATELY AND RELIABLY REPRESENTED BY THE STRUCTURAL DESIGN CRITERIA, DESIGN LOADS, AND DETAILS INCLUDED WITH SPL WW-298.
2. THE PIPING AND VALVES FOR THE PROPOSED FIRE LINE METER ARE THE SAME MATERIAL, TYPE, SIZE, AND ORIENTATION AS THOSE SHOWN IN THIS STANDARD.

CITY OF AUSTIN
AUSTIN WATER

6", 8" AND 10" FIRE LINE METER

JEFF A. KYLE 11/07/2022 ADOPTED

THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.

STANDARD NO. 512-AW-02 1 OF 1

ESP Associates, Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS — ARIELLA D. MEADOWS — 141035 — LICENSED PROFESSIONAL ENGINEER — 08/07/2024
Ariella Meadows

NO.	DATE	REVISION	BY

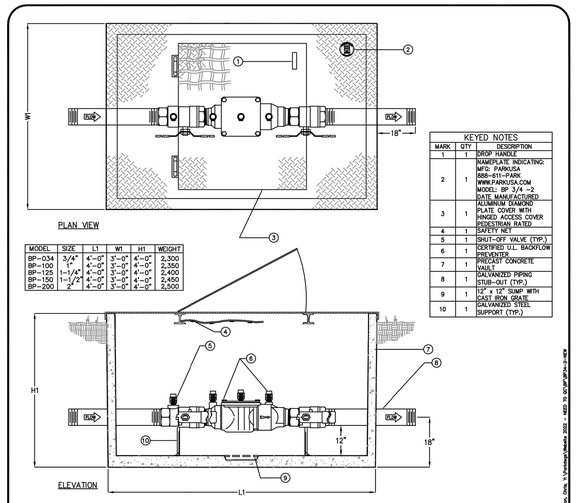
UTILITY DETAILS 2

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024
SHEET	OF
30	31

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

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.



MODEL	SIZE	L1	W1	H1	WEIGHT
BP-034	3/4"	4'-0"	3'-0"	4'-0"	2,300
BP-100	1"	4'-0"	3'-0"	4'-0"	2,350
BP-125	1-1/4"	4'-0"	3'-0"	4'-0"	2,400
BP-150	1-1/2"	4'-0"	3'-0"	4'-0"	2,450
BP-200	2"	4'-0"	3'-0"	4'-0"	2,500

KEYED NOTES

MARK	QTY	DESCRIPTION
1	1	DROP HANDLE
2	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-811-PARK WWW.PARKUSA.COM MODEL: BP 3/4 -2 DATE MANUFACTURED
3	1	ALUMINUM DIAMOND PLATE COVER WITH HINGED ACCESS COVER PEDESTRIAN RATED
4	1	SAFETY NET
5	1	SHUT-OFF VALVE (TYP.)
6	1	CERTIFIED U.L. BACKFLOW PREVENTER
7	1	PRECAST CONCRETE VAULT
8	1	GALVANIZED PIPING STUB-OUT (TYP.)
9	1	12" x 12" SUMP WITH CAST IRON GRATE
10	1	GALVANIZED STEEL SUPPORT (TYP.)

Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

ACCESS COVER: 1/4" skid-resistant aluminum floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges

Engineering Data

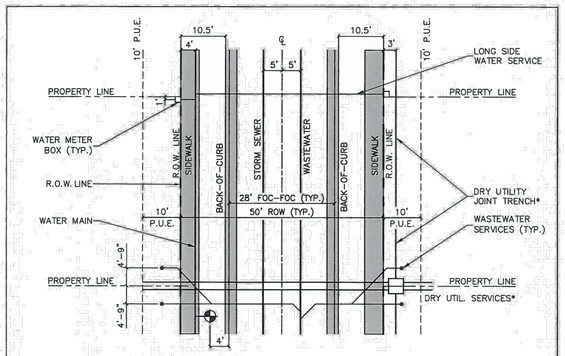
The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

AWWA UL FCCC IAPMO FM

PARK USA
A Northwest Pipe Company

DOUBLE CHECK BACKFLOW PREVENTER
ASSEMBLY MODEL BP – 3/4" THRU 2"

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	BP-3/4-2	A
DATE 03/2023					



MINIMUM COVER BELOW FINISH-GRADE

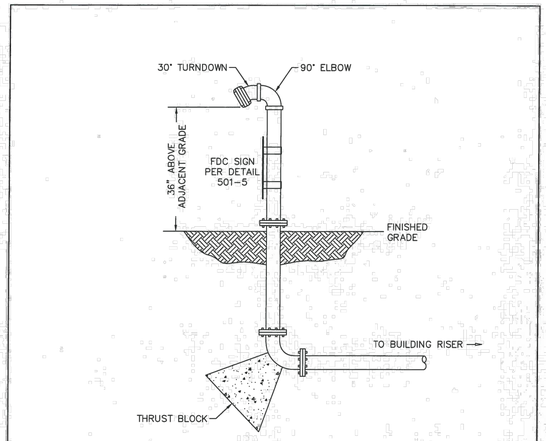
	BELOW SUBGRADE
STORM SEWER	48"
WASTEWATER	36"
WATER	36"
ELECTRIC PRIMARY*	30"
ELECTRIC SECONDARY*	24"
GAS*	24"
TELECOMMUNICATIONS*	24"

RESIDENTIAL STREET
NOT TO SCALE

*NOTE:
ALL GAS, ELECTRIC, AND TELECOMMUNICATION LINES SHALL BE INSTALLED PER THE UTILITY PROVIDER'S STANDARDS AND SPECIFICATIONS.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 7/05/18

City Of Leander, Texas
DETAIL #204-5
UTILITY ASSIGNMENTS
WITHIN RESIDENTIAL DEVELOPMENT



REMOTE FIRE DEPARTMENT CONNECTIONS:

1. REMOTE FIRE DEPARTMENT CONNECTION (FDC) SHALL BE LOCATED REMOTELY FROM THE STRUCTURE AND OUT OF THE COLLAPSE ZONE.
2. REMOTE FDC SHALL BE LOCATED WITHIN ONE HUNDRED FEET (100') OF A FIRE HYDRANT ASSEMBLY.
3. FDC'S SHALL HAVE A LOCKING KNOX CAP INSTALLED.
4. FDC'S SHALL BE A FIVE INCH (5") STORZ CONNECTION WITH THIRTY DEGREE (30°) ELBOW.
5. A SIGN SHALL BE PERMANENTLY AFFIXED TO THE FDC STATING THE ADDRESS IT SERVES PER STANDARD DETAIL #501-5.
6. PIPE SIZE SHALL BE DETERMINED BY HYDRAULIC CALCULATIONS, BUT SHALL BE A MINIMUM OF FOUR INCH (4") DIA .
7. A STROBE OPERATED BY THE FIRE SUPPRESSION SYSTEM'S WATER FLOW ALARM SHALL BE MOUNTED ABOVE THE REMOTE FDC WHEN THERE ARE MULTIPLE FDC'S ADJACENT TO ONE ANOTHER WITHIN A SITE OR DEVELOPMENT.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS MICHAEL LAFFERTY 118708 LICENSED PROFESSIONAL ENGINEER
2017-01-28

FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-6
REMOTE FIRE DEPARTMENT CONNECTION

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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

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12540 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS ARIELLA D. MEADOWS 141035 LICENSED PROFESSIONAL ENGINEER
07/07/2024

NO.	DATE	REVISION	BY

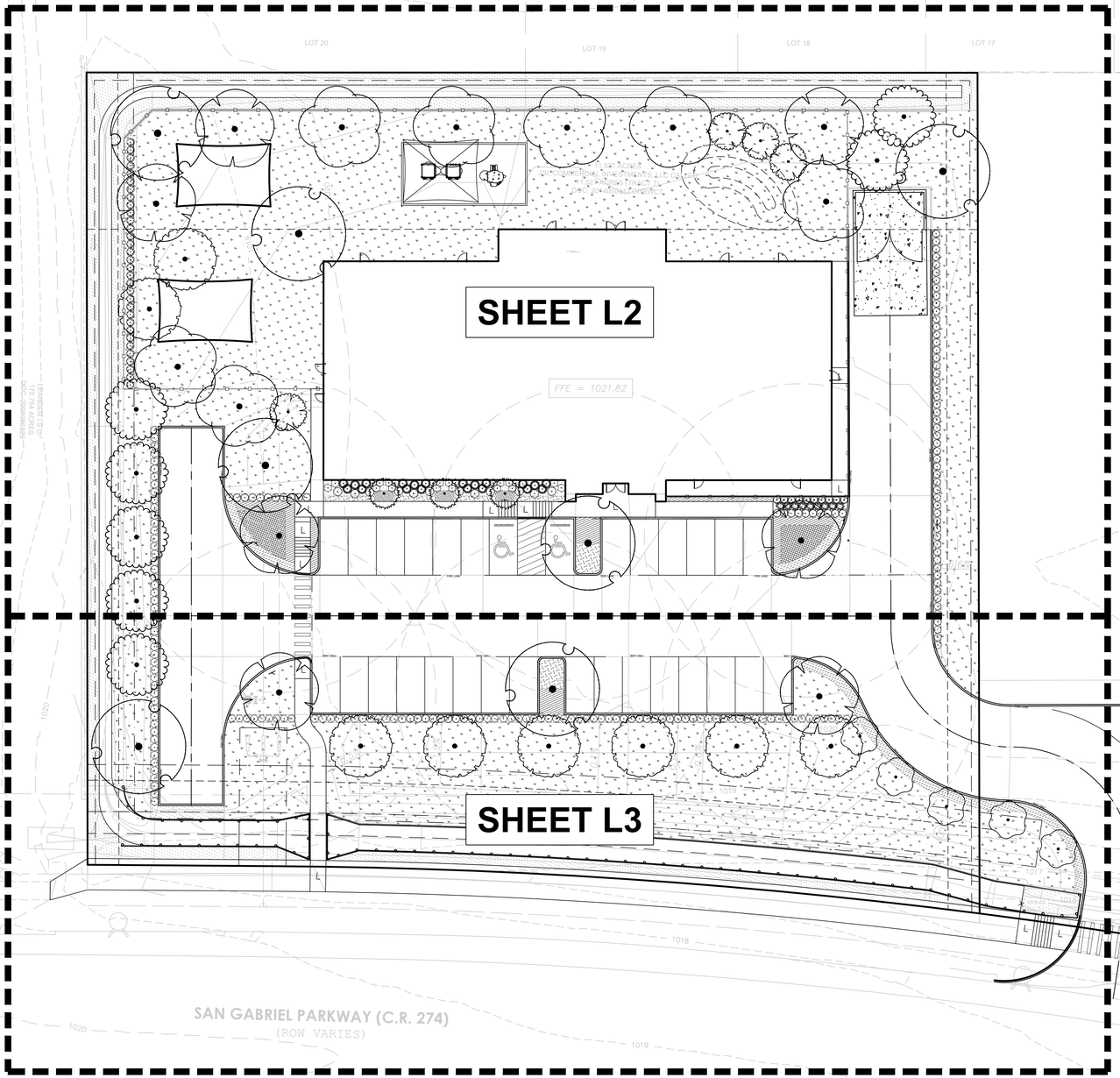
UTILITY DETAILS 3

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION

PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/19/2024

SHEET 31 OF 31



PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	METHOD
TREES				
	CM	4	CERCIS CANADENSIS MEXICANA / MEXICAN REDBUD	2" CAL., MIN.
	DS	3	DERMATOPHYLLUM SECUNDIFLORUM / TEXAS MOUNTAIN LAUREL	2" CAL., MIN.
	LI	5	LAGERSTROEMIA INDICA / CRAPE MYRTLE	2" CAL., MIN.
	PM	7	PLATANUS MEXICANA / MEXICAN SYCAMORE	2.5" CALIPER
	QM	7	QUERCUS POLYMORPHA 'MONTEREY' / MONTEREY MEXICAN WHITE OAK	2.5" CALIPER
	QV	7	QUERCUS VIRGINIANA / SOUTHERN LIVE OAK	2.5" CALIPER
	TD	7	TAXODIUM DISTICHUM / BALD CYPRESS	2.5" CALIPER
	UC	8	ULMUS CRASSIFOLIA / CEDAR ELM	2.5" CALIPER
SHRUBS				
	DT	12	DASYLIRION TEXANUM / TEXAS SOTOL	5 GAL.
	IB	41	ILEX CORNUTA 'BURFORDII' / BURFORD HOLLY	5 GAL.
	LS	32	LEUCOPHYLLUM FRUTESCENS 'SILVERADO' / SILVERADO TEXAS SAGE	5 GAL.
	MG	20	MISCANTHUS SINENSIS 'GRACILLIMUS' / EULALIA GRASS	5 GAL.
	MC	10	MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS	5 GAL.
	ML	9	MUHLENBERGIA LINDHEIMERI / LINDHEIMER'S MUHLY	5 GAL.
	RA	24	RHUS AROMATICA / FRAGRANT SUMAC	CONT.
	RK	49	ROSA SHRUB 'KNOCK OUT' / 'KNOCK OUT ROSE	5 GAL.
	SL	54	SALVIA LEUCANTHA / MEXICAN BUSH SAGE	5 GAL.
	TC	36	TEUCRIUM FRUTICANS 'COMPACTUM' / COMPACT BUSH GERMANDER	5 GAL.
	YP	22	YUCCA PARVIFLORA / RED YUCCA	5 GAL.
GROUND COVERS				
	CX	25,881 SF	CYNODON DACTYLON X TRANSVAALENSIS / HYBRID BERMUDAGRASS	SOD
	DA	296 SF	DICHONDRA ARGENTEA / SILVER DICHONDRA	3 GAL.
	DB	1,683 SF	DOUBLE GROUND HARDWD BARK MULCH	MULCH
	GG	5,245 SF	GRANITE GRAVEL	CONT.
	LP3	60 SF	LANTANA MONTEVIDENSIS / PURPLE TRAILING LANTANA	3 GAL.
	LH2	565 SF	LANTANA X 'NEW GOLD' / NEW GOLD LANTANA	3 GAL.
	LX2	256 SF	LANTANA X 'SUNBURST' / SUNBURST LANTANA	3 GAL.
	LM	161	LIRIOPE MUSCARI / LILYTURF	3 GAL.

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

ESP Associates, Inc.
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(210) 349-3271
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09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

OVERALL PLANTING PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AG
DRAWN BY:	AG
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/31/2024

SHEET	OF
L1	L5

RESIDENTIAL

LOT 20 | LOT 19 | LOT 18 | LOT 17

(4) PM
(1) QM
(1) TD

6' (FT.) MASONRY FENCE, REF. DTL. 3 / SHEET L4

CONC. SWALE

CONC. SWALE

PLAY AREA

PLAYSCAPE

11.527 ACRES
JSL COMMERCIAL INVESTMENTS, LLC CAUSE
11.527 ACRES (TRACT 7)
DOC. 2014000042 OPRWCT

BERM

+3
+2
+1

FENCE, REF. ARCHITECT SHEETS

DUMPSTER

(1) TD
(1) QM
(2) QV
(3) CM
(1) PM
(50) SL
(336 sf) DB

CONC. SWALE

(1) QM
(1) TD
(2) UC
(2) PM
(324 sf) DB
(32) LS
(4) QV
(25) RK
(303 sf) DB

PLAY AREA

FENCE, REF. ARCHITECT SHEETS

50' (FT.) TREE BUFFER

ARKA MONTESSORI SCHOOL

FFE = 1021.82

SIDEWALK

(23 sf) LX2
(3) DS
(20 sf) LP3
(20) MG
(12) DT
(22) YP
(28 sf) LX2

(20 sf) LP3
(23 sf) LX2
(20 sf) LP3
(28 sf) LX2

ENTRY

(24) LM
(10) MC
(9) ML
(162 sf) DB
(10) IB
(30) LM
(138 sf) DA
(1) QM
(87 sf) LH2

(1) CM
(1) TD
(11) IB
(68 sf) DB
(94 sf) LH2
(40) LM
(158 sf) DA
(1) QM
(17) LM

SIDEWALK

SIDEWALK

CONC. SWALE

PARKING

PARKING

(25) LM
(1) TD
(77 sf) LX2

MATCHLINE, SEE SHEET L3

MATCHLINE, SEE SHEET L3

TGHS SOUTH ENTRANCE

LEANDER I.S.D.
170.764 ACRES
DOC. 2009086829

GRAPHIC SCALE

10' 0 5' 10' 20' 40'

(IN FEET)
1 INCH = 10 FT.

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San Antonio, TX 78216
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ESP

09/07/2024
STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

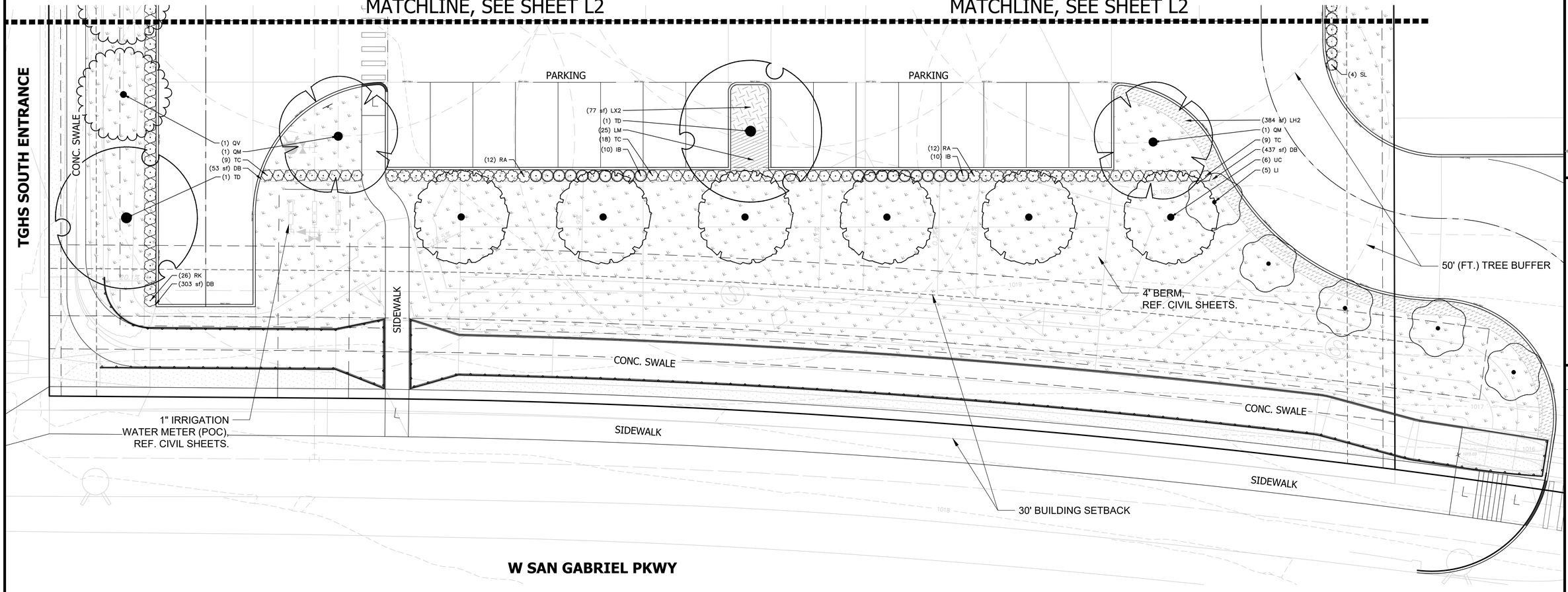
NO.	DATE	REVISION	BY

PLANTING PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AG
DRAWN BY:	AG
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/31/2024

SHEET L2 OF L5



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	GG	5,245 SF	GRANITE GRAVEL	CONT.
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GRAPHIC SCALE

10' 0 5' 5' 10' 20' 40'

(IN FEET)
1 INCH = 10 FT.

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ESP

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
07/07/2024

NO.	DATE	REVISION	BY

PLANTING PLAN

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AG
DRAWN BY:	AG
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/31/2024

SHEET L3 OF L5

LANDSCAPE ORDINANCE COMPLIANCE

TOTAL SITE AREA	**73,947 SF**								
TOTAL STREETYARD AREA	**15,254 SF**								
COMMERCIAL	73,947	X	15%	=	11,092				
OVERALL LANDSCAPE AREA REQUIRED					**11,092 SF**				
	15,254	X	15%	=	2288				
STREETYARD LANDSCAPE REQUIRED					**2,288 SF**				
	11,092	+	600	=	18	X	2	=	37
TOTAL TREES REQUIRED									**37**
	11,092	+	600	=	18	X	4	=	74
TOTAL SHRUBS REQUIRED									**74**

STREETYARD LANDSCAPE AREA (50% MIN. REQUIRED)	**3,084 SF**	**84.4%**
OTHER LANDSCAPE AREA	571 SF	15.6%
TOTAL LANDSCAPE AREA PROVIDED	**3,655 SF**	**100%**

	CODE	QTY	%	**(50% MAX. EA.)**
	CM	4	8.3%	
	DS	3	6.3%	
	LI	5	10.4%	
TOTAL SMALL/ORNAMENTAL TREES		12	25.0%	
	PM	7	14.6%	
	QM	7	14.6%	
	QV	7	14.6%	
	TD	7	14.6%	
	UC	8	16.7%	
TOTAL SIGNIFICANT/SHADE TREES (75% MIN. REQUIRED)		**36**	**75.0%**	
TOTAL TREES PROVIDED		**48**	**100%**	

PARKING LOT SCREENING

NO PACE MORE THAN 50' AWAY FROM TREE. PROVIDED AS REQUIRED.

LANDSCAPE SCREENING

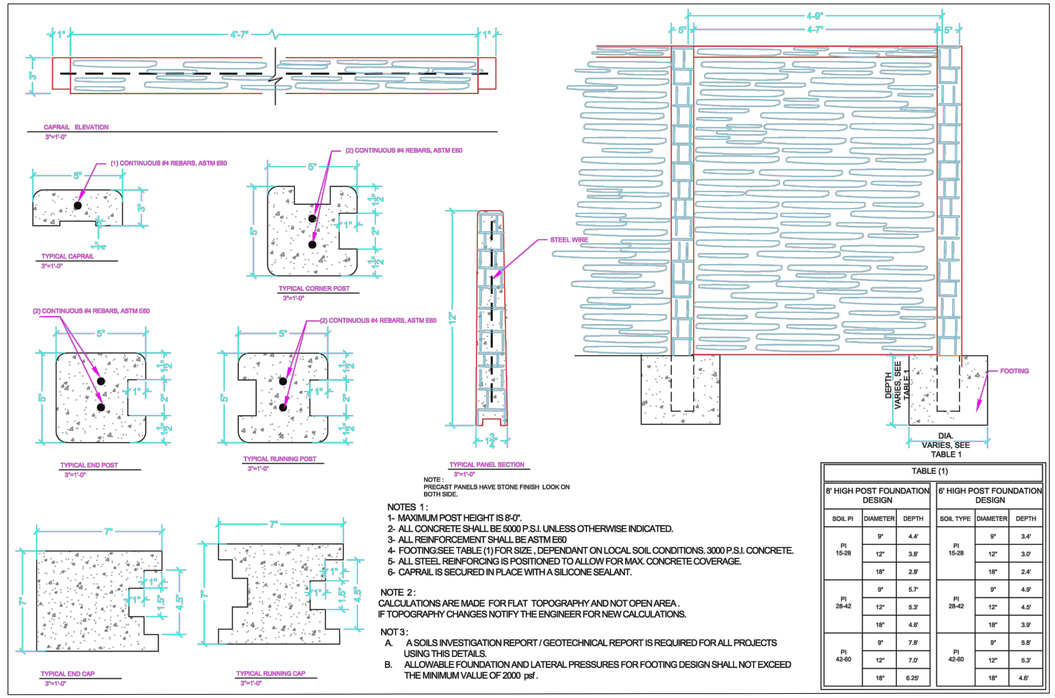
PROVIDED AS REQUIRED.

LANDSCAPE PLANTING REQUIRED

TREES AND SHURBS PROVIDED AS REQUIRED.

CITY OF LEANDER NOTES

1. THE DEVELOPER AND SUBSEQUENT OWNERS OF THE LANDSCAPED PROPERTY, OR THE MANAGER OR AGENT OF THE OWNER, SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE AREAS. SAID AREAS SHALL BE MAINTAINED SO AS TO PRESENT A HEALTHY, NEAT AND ORDERLY APPEARANCE AT ALL TIMES AND SHALL BE KEPT FREE OF REFUSE AND DEBRIS. ALL PLANTED AREAS SHALL BE PROVIDED WITH AN AUTOMATIC IRRIGATION SYSTEM AND WATERED AS NECESSARY TO ENSURE CONTINUOUS HEALTHY GROWTH AND DEVELOPMENT. MAINTENANCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL IF THAT MATERIAL WAS USED TO MEET THE REQUIREMENTS OF THE LANDSCAPE ORDINANCE.
2. TREE CALIPER IS THE TRUNK DIAMETER OF A TREE AT TWELVE (12") INCHES ABOVE NATURAL GRADE PER THE COMPOSITE ZONING ORDINANCE.
3. ALL NEW LANDSCAPES (NON-RESIDENTIAL AND RESIDENTIAL) ARE REQUIRED TO HAVE A MINIMUM OF SIX INCHES (6") OF SOIL DEPTH IN AREAS PLANTED WITH TURFGRASS. THIS SIX-INCH (6") MINIMUM SOIL DEPTH WILL CONSIST OF 75 PERCENT SOIL BLENDED WITH 25 PERCENT COMPOST. THE SOIL/COMPOST BLEND SHALL BE INCORPORATED INTO THE TOP TWO INCHES OF THE NATIVE SOIL. THE SIX-INCH (6") DEPTH REQUIREMENT DOES NOT APPLY TO THE AREA BETWEEN THE DRIP LINE AND TRUNK OF EXISTING TREES, SHRUB BEDS OR WILDSCAPE AREAS. AREAS WITH EXISTING NATIVE VEGETATION THAT REMAIN UNDISTURBED SHALL BE EXEMPT FROM THE SOIL DEPTH PROVISION; PROVIDED THAT NATIVE SOIL AND VEGETATION IN SUCH AREA IS FENCED DURING CONSTRUCTION AND PROTECTED FROM DISTURBANCE AND COMPACTION DURING THE CONSTRUCTION PROCESS.
4. ALL DISTURBED AREAS AND ROW WILL BE RE-VEGETATED BY THE DEVELOPER.
5. ALL INVASIVE SPECIES SHALL BE REMOVED FROM THE PROPERTY.
6. A MINIMUM PERVIOUS AREA 3 FEET IN RADIUS AND NOT LESS THAN 50% OF THE CALCULATED DRIP LINE AREA IS PROVIDED AROUND THE TRUNKS OF ALL EXISTING AND PROPOSED TREES.
7. NO MORE THAN 50% OF THE SAME SPECIES MAY BE PLANTED TO MEET THE TREE PLANTING REQUIREMENTS.
8. NO LANDSCAPING OVER 3 FEET HIGH IS LOCATED WITHIN 40 FEET OF THE INTERSECTION OF ANY STREET. (MEASURED FROM THE EDGE OF PAVEMENT AS IF THE CURBS OR PAVEMENT EDGES ARE NOT ROUNDED OFF AND INTERSECT AT A RIGHT ANGLE).
9. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.



NOTES 1 :
1- MAXIMUM POST HEIGHT IS 8'-0".
2- ALL CONCRETE SHALL BE 5000 P.S.I. UNLESS OTHERWISE INDICATED.
3- ALL REINFORCEMENT SHALL BE ASTM E60
4- FOOTING:SEE TABLE (1) FOR SIZE , DEPENDANT ON LOCAL SOIL CONDITIONS. 3000 P.S.I. CONCRETE.
5- ALL STEEL REINFORCING IS POSITIONED TO ALLOW FOR MAX. CONCRETE COVERAGE.
6- CAPRAIL IS SECURED IN PLACE WITH A SILICONE SEALANT.

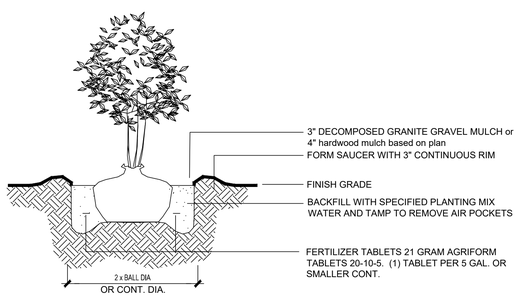
NOTE 2 :
CALCULATIONS ARE MADE FOR FLAT TOPOGRAPHY AND NOT OPEN AREA .
IF TOPOGRAPHY CHANGES NOTIFY THE ENGINEER FOR NEW CALCULATIONS.

NOT 3 :
A. A SOILS INVESTIGATION REPORT / GEOTECHNICAL REPORT IS REQUIRED FOR ALL PROJECTS USING THIS DETAILS.
B. ALLOWABLE FOUNDATION AND LATERAL PRESSURES FOR FOOTING DESIGN SHALL NOT EXCEED THE MINIMUM VALUE OF 2000 psf .

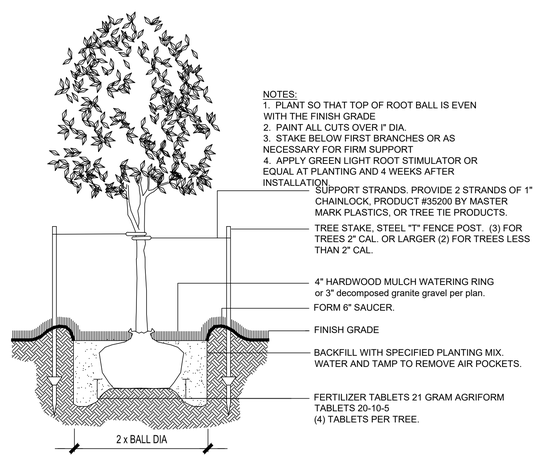
TABLE (1)

8' HIGH POST FOUNDATION DESIGN			6' HIGH POST FOUNDATION DESIGN		
SOIL PI	DIAMETER	DEPTH	SOIL TYPE	DIAMETER	DEPTH
PI 15-28	9"	4.4'	PI 15-28	9"	3.4'
	12"	3.8'		12"	3.0'
	18"	2.8'		18"	2.4'
PI 28-42	9"	5.7'	PI 28-42	9"	4.9'
	12"	5.3'		12"	4.5'
	18"	4.6'		18"	3.9'
PI 42-60	9"	7.8'	PI 42-60	9"	5.8'
	12"	7.0'		12"	5.3'
	18"	6.2'0		18"	4.6'

3 MASONRY FENCE
NOT TO SCALE



2 SHRUB PLANTING DETAIL
NOT TO SCALE



1 TREE PLANTING DETAIL
NOT TO SCALE

ESP Associates, Inc.
12940 County Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
07/07/2024

NO.	DATE	REVISION	BY

PLANTING DETAILS & CODE

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AG
DRAWN BY:	AG
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/31/2024

SHEET **L4** OF **L5**

LANDSCAPE PLANTING

PART 1: GENERAL

1.1 Section Includes
- A. Contractor will provide all labor, materials, supplies, equipment, tools, transportation, and services; perform all operations to complete installation of landscape planting, complete in place, as shown and specified on drawings; and guarantee all work.
  1. Work will include, but is not limited to
     - a. Procurement of all applicable licenses, permits, and fees.
     - b. Location of utility locations prior to construction.
     - c. Site inspection.
     - d. Soil preparation and fine grading.
     - e. Planting of trees, shrubs, and other plants.
     - f. Installation of sod.
     - g. Installation of seed.
     - h. Anchoring or staking of trees.
     - i. Mulching all trees and plant beds.
     - j. Installing landscape gravel.
     - k. Fertilization and pest and disease control for plants.
     - l. Site cleanup.
     - m. Maintenance of planting as specified in these specifications or in Contract documents.
     - n. Guarantee of all planting.

1.2 Related Sections
- A. The requirements of the "General and Supplementary Conditions of the Contract" and Division 1 specification sections will apply to all work of this Section with the same force and effect as though repeated in full herein.
- B. General Scope of Work and Requirements
- C. Site Grading (see Civil specifications)
- D. Section 32 01 90.33: Tree Protection
- E. Section 32 80 00: Irrigation System
- F. Section 32 92 13: Hydromulching
- G. Section 32 93 19: Seeding
- H. Section 32 93 23: Sodding

1.3 References
- A. American Society for Testing and Materials (ASTM)
  1. D5268-13: Topsoil Used for Landscaping Purposes
- B. American National Standards Institute (ANSI)
  1. ANSI Z60.1–2014: American Standard for Nursery Stock
- C. Hortus Third: Concise Dictionary of Plants Cultivated in United States and Canada
- D. Tree Case Industry Association (TCIA)
  1. ANSI A300PT–2017: Tree Care Operations – Trees, Shrubs and Other Woody Plant Maintenance Standard Practices (Pruning)
- E. Turfgrass Producers International (TPI)
  1. 2006 Guideline Specifications to Turfgrass Sodding
- F. U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act
- G. Texas Seed Law regulations and requirements

1.4 Submittals
- A. General Requirements:
  1. The Contractor will furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior approval by the Landscape Architect.
  2. Submit a complete material list prior to performing any work. Material list will include the manufacturer and description of all materials to be used and samples as outlined below.
  3. Contractor will be prepared to show receipt, bill of sale, or other documentation as proof of source for all materials submitted, including but not limited to plant materials, soils, soil amendments, and mulch.
  4. Submit qualifications per 1.8 Quality Assurance and Requirements.
  5. Submit a schedule of work to be performed.
- B. Plant Selection:
  1. Submit plant schedule on Contractor letterhead naming quantities and supplier of each plant species for Landscape Architect's approval.
  2. Submit source and guarantee of sod quality.
  3. Submit certification of seed and mulching agent.
  4. If material is to be approved on-site, tag and maintain plant material as representative samples. Samples may be used to complete installation, provided they remain tagged until final acceptance of entire installation.
- C. Miscellaneous Materials:
  1. Submit for approval one (1) gallon quantities and product information of topsoil, prepared soil, soil amendment, mulch and gravel.
  2. Submit topsoil analysis with recommendations for amendments required to support plant growth. See paragraph 2.4 Source Quality Control and Tests, D.
  3. Submit product information on packaged materials, tree stakes/root anchoring system, tree boots, fabric, fertilizer, herbicide and insecticide. Product information must be approved by the Landscape Architect before use on the project.
  4. All samples will be delivered in a box. Clearly mark samples with job name and Contractor name.
  5. Product information may be submitted in electronic format or printed and collated into a binder. Clearly mark binder with job name and Contractor name.
- D. Record Drawings:
  1. The Contractor will provide and keep up-to-date an "as-built" set of drawings, which will be corrected daily and show every change from the original drawings and specifications and the exact "as-built" locations and sizes of plant material installed. This set of drawings will be kept on the site and will be used only as a working set.
  2. Before the date of the final inspection, the Contractor will transfer all information from the "as-built" prints to a final set of drawings. All work will be in pen to allow proper printing of original.
  3. On or before the date of the final inspection, the Contractor will deliver the completed drawings, in hard copy or electronic format as required by contract documents, to the Owner and Landscape Architect. Delivery of the record drawings will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the prints.
- E. Maintenance Schedule: Submit a maintenance schedule identifying landscape maintenance procedures to be performed during construction and throughout the maintenance period. See section 1.12 Maintenance. The schedule will be typewritten and specify procedures to be accomplished month by month.

1.5 Substitutions
- A. Submit proof to Landscape Architect if plant material is not available 30 days prior to plant installation. Substitution will be approved by Owner or Landscape Architect by Architect's Supplemental Instructions.

1.6 Product Delivery, Storage and Handling
- A. Deliver plant material to site in containers. Protect plant material from sun-scald and wind burn during transport to site. Prune only limbs that have broken in transport. Keep plants watered as required.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- C. Deliver sod to site on pallets or in "big roll" form. Protect exposed roots from dehydration. Do not stack for more than 24 hours between time of cutting and time of delivery. Do not deliver more sod than can be laid within 24 hours.
- D. Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

1.7 Quality Assurance and Requirements
- A. Permits and Fees: The Contractor will obtain and pay for all permits and inspections as required. Contractor will also be responsible for all fees and costs involved for work.
  1. Contractor will comply with County inspector directions with agreement from Landscape Architect without additional cost to Owner.
- B. Ordinances and Regulations: All local, municipal and state laws, rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications, and their provisions will be carried out by the Contractor. Anything contained in these specifications will not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these specifications and drawings call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these specifications and drawings will take precedence.
- C. Personnel: Landscape Contractor personnel will be supervised by a certified landscape professional (TCLA or TCLP–Texas Nursery & Landscape Association). Employ only experienced installation personnel who are familiar with the required work. Provide adequate supervision by a qualified foreman.
- D. Plant Material: Plant materials will be subject to inspection and approval of Landscape Architect at place of growth or upon delivery for conformity to specifications. Such approval will not impair the right of inspection and rejection during progress of the work. Inspection and tagging of plant material by the Landscape Architect is for design intent only and does not constitute the Landscape Architects' approval of the plant materials regarding their health and vigor as specified in Part 2, Section 2.1 Plant Material. The health and vigor of the plant material is the sole responsibility of the Contractor.
  1. General: Comply with applicable federal, state, county, and local regulations governing landscape materials and work.
  2. Any plant material in shock, decline or not meeting specified planting size, height and caliper will be rejected by the Landscape Architect at any time during the project.

1.8 Project Conditions
- A. Site Utilities:
  1. Contractor will be responsible for determining locations of all underground utilities prior to commencement of work.
  2. Perform all work in a manner which will avoid damage to utilities, including damage from heavy equipment or trucks.
  3. Hand excavate as required to minimize possibility of damage to underground utilities.
  4. Coordinate work with the Irrigation Contractor to prevent damage to underground wire or pipe located in landscape areas.
  5. Contractor will be responsible for repairing any damage to underground utilities caused by landscape work.
- B. Condition of Surfaces: All shrub and groundcover planting areas will be left at finished grade.
- C. Water will be provided on site by the Owner. Landscape Contractor will provide hoses and other watering equipment and labor necessary for work. The round-a-bouts do not have water and will require regular visits with a water truck to insure one year of survival.

1.9 Schedules
- A. The Contractor will begin exterior landscape work upon acceptance of the Contract by the Owner. Landscape Contractor will submit a schedule for the work to be performed to the Landscape Architect for approval.

1.10 Protections
- A. All items required to complete this contract remain the property and responsibility of the Contractor until final acceptance. Contractor will take adequate precautions to protect all work and materials from damage. Contractor will cooperate fully with other trades to ensure a satisfactory completion.

1.11 Maintenance
- A. Maintain plant material for three (3) months after final acceptance by Owner.
- B. Maintain plant materials upon delivery to job site.
- C. Maintain plant materials immediately after placement and until plants are well established and exhibit a vigorous growing condition.
- D. Maintenance to include:
  1. Cultivation and weeding plant beds and tree pits.
  2. Applying herbicides, insecticides, and fungicides as necessary for weed control of all areas and plant materials in accordance with manufacturer's instructions. Remedy damage resulting from use of herbicides.
  3. Irrigating sufficiently to saturate root system of all plant materials and to sustain life and promote growth.
  4. Pruning and treatment of pruned areas or other wounds.
  5. Applying appropriate chemicals as required to control any disease that may occur during the maintenance period. Notify Owner and Landscape Architect of any sign of serious disease.
  6. Maintaining tree anchor systems. Tighten straps as necessary.
  7. Maintaining guys and tree stakes. Adjust to keep guy wires firm. Repair or replace accessories when required.
  8. Replacing mulch.
  9. Watering, mowing, edging, weeding and fertilizing lawn areas.

1.12 Warranty
- A. Contractor will warranty trees for one year after final acceptance.
  1. Replace trees which have partially died thereby damaging shape, size or symmetry with same kind and sizes as originally planted at no additional cost to Owner.
  2. Trees may be replaced at the start of next year's planting or digging season at the direction of Owner or Landscape Architect. In such cases, remove dead trees immediately.
  3. Provide one-year guarantee on replacement trees.
- B. Replace dead plant materials and plant materials not in vigorous, thriving condition as soon as weather permits and on notification by Owner or Landscape Architect.
- C. Protect irrigation system and any other piping, conduit, or other work during replacement. Repair any damage immediately.
- D. Warranty excludes replacement of plants because of injury by storm, drought, hail, freeze, insects or diseases, and other acts of God occurring after final acceptance.

PART 2: PRODUCTS

2.1 General
- A. All materials and equipment furnished will be free of noxious weeds including.
- B. Plants will be in accordance with the latest edition of "American Standard for Nursery Stock" sponsored by AmericanHort.
- C. All plants will have a normal habit of growth and will be sound, healthy, vigorous and free from insect infestations, plant diseases, sunscalds, fresh abrasions of the bark, excessive abrasions, shock or other objectionable disfigurements. If sample plants inspected are found to be defective, the Landscape Architect reserves the right to reject the entire lot or lots of plants represented by the defective samples. Any plants rendered unsuitable for planting because of this inspection will be rejected and will be the responsibility of the Contractor and removed from site.
- D. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock or as specified on drawings. The minimum acceptable size of all plants measured before pruning with the branches in normal position will conform with the measurements specified on the drawings. Plants larger in size than specified may be used with no change in contract price.
- E. If larger plants than indicated on drawings are approved, the rootball for each plan will be increased proportionally. Under no conditions will there be any substitutions for plants or sizes listed in the drawings, except with the express consent of the Landscape Architect.
- G. Plant material will be true to botanical and common name and variety.
- H. Plants will be hardy under climatic conditions similar to those in locality of project.
- I. Seed will be prepared for sale during the year of installation.
- J. All materials used will be new and without flaws or defects of any type and will be the best of their class and kind.
- K. Any materials that have become wet, moldy, or otherwise damages in transit or in storage will not be used.

2.2 Shade and Ornamental Trees
- A. Healthy, vigorous, full-branched, well-shaped, trunk diameter and height requirements as specified. Trees will be in containers unless otherwise noted on plans.
- B. B&B trees will not be accepted for containerized materials without approval from Landscape Architect.
- C. Specified B&B trees will have rootballs that correspond with that normally expected for species and variety of commercially available nursery stock. Rooballs will be firm, neat, slightly tapered, and heeled for a period of one (1) year.
- D. Trees with loose or broken rootballs at time of planting will be rejected.
- E. Trees in grow bags or grow liners will be rejected.
- F. Trees will be individually approved by the Landscape Architect.
- G. Rootballs will conform to ANSI Z60.1–2014 American Standard for Nursery Stock.

2.3 Shrubs, Groundcovers, and Perennials
- A. Shrubs, groundcovers, and perennials will be nursery grown, healthy, vigorous, bushy, well branched, of normal habit of growth for species, free from disease, insect eggs and larvae. Specified sizes will be before pruning, and plants will be measured with their branches in normal position.
- B. Rootballs will conform to ANSI Z60.1–2014 American Standard for Nursery Stock.

2.4 Turf Materials:
- A. Sod: Sod will be classified as certified stock or originate as certified stock.
  1. TPI, Certified Turfgrass Sod; Approved Turfgrass Sod; Nursery Turf grass Sod; Field Turfgrass Sod; or cultivated grass sod; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1,000 sq ft. Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
  2. Deliver to site on pallets. Do not stack for more than 24 hours between time of cutting and time of delivery.
  3. Species will be Common Bermuda (Cynodon dactylon).
- B. Seed:
  1. Seed will only be that which is specified by Landscape Architect in drawings. All seed shall be mixed by a wholesale see supplier in order to obtain the specified mixture and application rate required by Landscape Architect. No species substitutions will be permitted without prior approval of the Landscape Architect.
  2. All seed will conform to all current State and Federal regulations.
  3. All seed and seed mixed will be furnished din bags or container clearly labeled to show the name and address of the supplier, the common, scientific, and variety name(s) of the seed(s), the lot number, point of origin, new weight, percent of weed content, and the guaranteed percentage of purity and germination.
  4. All seed will be guaranteed for purity and germination, free of noxious weed seed, and supplied on a Pure Live Seed (PLS) basis.
  5. Seed species:
     - a. Seed mix will be hulled Common Bermuda (Cynodon dactylon), minimum two (2#) PLS per one thousand (1,000 sq.ft.) square feet.
     - b. Seed mix will be Buffalograss (Buchloe dactyloides), minimum two (2#) PLS per one thousand (1,000 sq. ft.) square feet.
     - c. Shade areas: Shade-Friendly Grass Mix, by Native American Seed, 1–800–728–4043, minimum one and one–half (1.5#) PLS per one thousand (1,000 sq. ft.) square feet.
     - d. Sunny areas: Caliche Mix, by Native American Seed, 1–800–728–4043, minimum four and one–half (4.5#) PLS per one thousand (1,000 sq.ft.) square feet.

2.5 Soil Preparation Materials
- A. Topsoil:
  1. Native topsoil: Soil in–place on site will be harvested and stockpiled for reuse. Native topsoil will be free from contaminants and debris, and reasonably free from rocks, roots and limbs.
  2. When native soil cannot be used, or is not plentiful, soil may be imported as follows:
     - a. Bed areas: 4–Way Mix, manufactured by New Earth Soil and Compost in San Antonio, TX, or approved equal
     - b. Lawn areas: Enriched Topsoil, manufactured by New Earth Soil and Compost in San Antonio, TX, or approved equal
  3. Soils containing high clay content, rock or debris greater than one–half (1/2") inch diameter, or weeds will be rejected and the Contractor will be responsible for removing it from site.
- B. Native topsoil will be amended with: Landscapers Compost, manufactured by New Earth Soil and Compost in San Antonio, TX, or approved equal.
- C. Fertilizer:
  1. Turf Fertilizer: Complete fertilizer with 12:4:8 ratio (unless otherwise approved), organic base, uniform in composition, dry and free flowing. Deliver fertilizer to site in original, unopened containers, each bearing manufacturer's guaranteed statement of analysis.
  2. Tree and Shrub Fertilizer: Agriform 20–10–5 planting tablets, 21 grams.
- D. Herbicide:
  1. Pre–emergent herbicide: Will be of a composition to kill undesirable weed species. Submit information.
  2. Post–emergent herbicide: Will be of composition to selectively kill undesirable weed species. Submit information
- E. Pesticides:
  1. Fungicides: Submit information as required.
  2. Insecticides: Submit information as required.
  3. Other chemicals: Submit information as required.

2.6 Miscellaneous Materials
- A. Mulch: Mulch will be Double Shredded Native Hardwood Mulch by New Earth Soil and Compost in San Antonio, TX, or approved equal.
- B. Seed mulching material: Wood cellulose fiber, free from germination or grown inhibiting factor. Shall become evenly dispersed and suspended when agitated with water. Will form a groundcover which readily absorbs water and allows infiltration to underlying soil. Weight specifications from suppliers will refer to air dry weight of the fiber with a standard equivalent to eighteen (18%) percent moisture. Mulch material will be marked by the manufacturer to show the dry weight content.
- C. Steel edger: 4"x1/4" steel landscape edging with stakes, black in color
- D. Tree root anchor: ArborGuy tree guying system by GreenBlue Urban, 1–866–282–2743, or approved equal.
- E. Tree staking
  1. Stakes: Metal T–posts, 6' ht., green in color.
  2. Tie: A.M. Leonard rubber extra heavy duty adj–a–tye chain lock 1" thick tree ties or approved equal.
- F. Tree boot: ArborGard+, Model AG9–4 or approved equal.
- G. Tree watering bag: TreeGator Bag, 15 gallon, or approved equal.
- H. Gravel: Gravel will be 1" diameter scale Texas Blend gravel and will be clean, washed, hard, sound, durable, uniform in quality, and free of foreign matter. Available from Keller Material, Inc., San Antonio, Texas, (210) 648–4221, or approved equal.
- I. Filter fabric: Dewitt's Pro–5 Weed Barrier, 5 oz. woven, needle punched polypropylene fabric or approved equal.
- J. Water: Water will be available on site.

2.7 Source Quality Control and Tests
- A. Section 01 40 00 – Quality Requirements: If existing, excavated, on–site soil is to be reused, provide a chemical analysis of existing topsoil.
- B. Soil analysis will ascertain the percentage of nitrogen, phosphorus, potash, soluble salt, organic matter and pH value. Contractor will indicate, by test results, information regarding necessary soil amendments to support plant growth.
- C. Testing is not required for imported soil if recent tests are available. Submit these test results to the Landscape Architect for approval.
- D. Soils analysis must be dated within 45 days of installation of topsoil.

PART 3: EXECUTION

3.1 General
- A. It will be the responsibility of the Contractor to locate and protect all utilities and existing feature (including vegetation) on the work site. Any damage caused by the Contractor or Subcontractor will be immediately repaired or correct by the Contractor at no expense to the Owner.
- B. In order to protect the site from excessive erosion, planting will be completed as soon as practical after the completion of final grading. Contractor will coordinate the actual start of planting operations with Landscape Architect.
- C. Planting will be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practices.
- D. Plants will be grown in containers as indicated on the plans. Plants will remain in those containers until transplanting.
- E. Contractor is responsible for establishing a healthy and full stand of lawn. Contractor will maintain seeded areas until established and approved by Landscape Architect. Provide temporary irrigation as required for grown of a full stand of lawn.

3.2 Inspection
- A. Observe site prior to construction and accept site when satisfied with conditions. Landscape Contractor will be responsible for shaping all planting areas as indicated on plans or as directed by Landscape Architect.
- B. Inspect trees, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning.
- C. All planting beds will be free of any deleterious materials, including but not limited to concrete debris, trash, buried organic material, and base material from drive and building construction.
- D. Do not begin planting until deficiencies are corrected or plants replaced. Do not start work until grading is complete and approved by Engineer or Architect.

3.3 Soil Preparation
- A. Preparing subgrade:
  1. Prepare subgrade to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
  2. Remove foreign material, rocks, base material, weeds and undesirable plants and their roots. Remove contaminated subgrade.
  3. Till subgrade to a minimum depth of six (6") inches areas where plants are to be placed.
  4. Till subgrade to a depth twelve (12") inches areas where soil has been compacted by construction activities.
- B. Placing topsoil:
  1. Place topsoil during dry weather and on dry unfrozen subgrade.
  2. Spread topsoil to a minimum depth of four (4") inches over bed areas. Rake smooth.
  3. Spread topsoil to a minimum depth of two (2") inches over sod and seed areas. Rake smooth.
  4. Remove organic matter and foreign non–organic material from topsoil while spreading. Break up soil clods as possible, remove those that cannot be broken.
  5. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.
  6. Install topsoil in pits and beds intended for plant root balls, to a minimum thickness of 6 inches.
- C. Final grades:
  1. Minor modifications to grade may be required to establish the final grade.
  2. Finish grading will insure proper drainage of the site as determined by the Landscape Architect. Surface drainage will be away from all building pads.
  3. Grade all areas so that the final grades are one (1") below adjacent paved areas, sidewalks, valve boxes, edging, concrete headers, clean–outs, drains, manholes, etc., in lawn areas and in bed areas.
  4. Eliminate all erosion scars prior to mulching and commencing maintenance period.
- D. Dispose of any unacceptable soil or debris offsite. Excess soil may be spread on site.

3.4 Pre–plant weed Control:
- A. Eliminate all existing Bermuda grass in lawn areas by spraying with a non–selective systemic contact herbicide. Follow manufacturer's directions for applications.
- B. Clear and remove existing weeds by grubbing weeds over the entire area to be planted.
- C. Prior to planting install pre–emergent per manufacturer's recommendations.

3.5 Tree planting:
- A. Protect all areas from excessive compaction when trucking plants or other material to the planting site.
- B. Till area two to three (2–3) times the size of the rootball of tree to be planted to a depth of twelve (12") inches.
- C. Excavated pits will:
  1. Have vertical sides with roughened surfaces
  2. Be twice the diameter of the rootball
  3. Be the same depth of the rootball, such that the top of the rootball is level with finish grade
- D. Do not bury root flares.
- E. Face trees with fullest growth to most visible direction.
- F. Trees will be backfilled with:
  1. Two (3) parts native topsoil
  2. One (1) part compost
  3. One (1 lb.) pound of fertilizer per one (1 c.y.) cubic yard of mix
  4. Agriform tablets (see manufacturer's specifications for number of tablets per tree)
- G. OR
  1. 4–way landscape mix
  2. One (1 lb.) pound of fertilizer per one (1 c.y.) cubic yard of mix
  3. Agriform tablets (see manufacturer's specifications for number of tablets per tree)
- H. Trees which settle deeper than the surrounding grade will be raised to the correct level. Do not bury root flares. Additional backfill will be added as necessary.
- I. If B&B is specified, remove any polyethylene rope from rootballs and trunks. Bend 1/3 of wire down away from trunk and rootball.
- J. Tamp soil as backfilling occurs to minimize settling of soil.
- K. After backfilling, construct an earthen basin around each plant. Each basin will be four (4") inches deep. Basins may be constructed of existing soil, amended backfill materials, or mulch.
- L. Install a two (2") inch thick, four (4') foot diameter of mulch at each tree. Mulch will be set back six (6") from root flare.
- M. Pruning will be limited to the minimum necessary to remove injured twigs and branches.
- N. Install tree watering bag. See section 3.7 Miscellaneous Materials.

3.6 Bed planting:
- A. Add soil amendments to existing soil/topsoil as needed for bed preparation. The final soil mix will be:
  1. Two (2") inches of compost and one (1 lb.) pound of fertilizer per one (1 c.y.) cubic yard of mix. Install Agriform tablets per manufacturer's recommendations.
  OR
  2. 4–way landscape mix and one (1 lb.) pound of fertilizer per one (1 c.y.) cubic yard of mix. Install Agriform tablets per manufacturer's recommendations.
- B. Shrubs, perennials and groundcovers will be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals as called out on the drawings. Triangular spacing will be used unless otherwise noted on the drawings.
- C. Install a two (2") inch layer of mulch in plant areas, unless otherwise noted on drawings.
- D. Water plants by hose after planting until the entire area is soaked to the full depth of each hole.
- E. Exercise care at all times to protect the plants after planting. Any damage to plants by trampling or other operations will be repaired.

3.7 Installing lawn:
- A. Fertilizing
  1. Apply fertilizer at the rate specified by manufacturer, based on recommendation from soil analysis.
  2. Apply fertilizer after smooth raking of topsoil, and no more than 48 hours before laying sod.
  3. Thoroughly mix into upper two (2") of topsoil.
  4. Lightly water soil to aid the dissipation of fertilizer.
- B. Hydromulching:
  1. Apply seeded slurry with a hydraulic seeder at a rate of two (2 lbs.) per 1,000 sq. ft. evenly in two intersecting directions with following mixture:
     - a. Mixture 1 (Standard Mix):
     - b. 45 lbs./1,000 sq. ft. mulching agent
     - c. 20 lbs./1,000 sq. ft. water soluble fertilizer
     - d. Mixture 2 (for Slopes over 6:1 [17%] and Problem Areas);
     - e. 50 lbs./1,000 sq. ft. mulching agent
     - f. 20 lbs./1,000 sq. ft. water soluble fertilizer
     - g. 1.5 lbs./1,000 sq. ft. glue agent
  2. Do not hydroseed area in excess of that which can be mulched on same day.
  3. Immediately following hydromulching, apply mulch to a thickness of one–eighth (1/8") inch. Stay clear of shrubs and trees.
  4. Apply water with a fine spray immediately after each area has been seeded. Saturate top four (4") inches of soil. Water lightly and frequently to prevent top of soil from drying out.
  5. Once seeds have begun to sprout, reduce watering frequency.
  6. Control weed growth. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
  7. Immediately reseed areas which show bare spots.
  8. Winter rye grass installation will be considered a temporary grass for applications after September 31 and before March 15. Should rye grass be installed, the contractor will return to site after March 15 to apply seed as specified.
- C. Laying Sod
  1. Moisten prepared surface immediately prior to laying sod.
  2. Lay sod immediately after delivery to site; within 24 hours after harvesting to prevent deterioration.
  3. Lay sod tight with no open joints visible, and no overlapping; stagger end joints twelve (12") inches minimum. Do not stretch or overlap sod pieces.
     - a. Fill gaps between sod squares with top dressing.
  4. Lay smooth. Align with adjoining grass areas. New finish grade and existing grade will be flush.
  5. Place top elevation of sod mat one (1") inch below adjoining edging, paving, or curbs.
  6. Slopes:
     - a. Slopes 3:1 and greater will received solid sod per specifications.
     - b. Lay sod perpendicular to slope and swales and secure ever row with wooden pegs at maximum two (2') feet on center. Drive pegs flush with soil portion of sod.
     - c. Prior to placing sod on slopes exceeding eight (8") inches per foot, or where indicated, place reinforcing mat over topsoil. Securely anchor in place with wood pegs sunk firmly into the ground.
  7. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
  8. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities. Roll sodded areas with roller not exceeding 100–150 lbs. per linear foot of roller.
- D. Should construction last longer than twenty (20) days beyond specified finish date with any area of lawn in disrepair or in an unacceptable state to Landscape Architect or owner, Landscape Contractor will install solid sod in sod or seed areas to complete project with no additional cost to Owner.
- E. Leave four (4') foot diameter ring around each tree, whether newly planted or existing, free of turf material. See section 3.5 Tree Planting.

3.8 Miscellaneous Materials
- A. Steel edging: install per manufacturer's recommendation where indicated on drawings.
- B. Decomposed Granite Gravel: Install filter fabric. Install steel edger where gravel abuts lawn or bed areas. 3" gravel depth. Lay gravel in 2" lifts. Roll of tamp in place.
- C. Texas Blend River Rock: Size 2"–6". Install filter fabric.
- D. Shadow Rock: Size 1"–2". Install filter fabric.
- E. Tree root anchors: Install per manufacturer's recommendation.
- F. Tree staking: Install three (3) stakes per tree. Install tie straps forty–fifty (40–50%) percent the height of the tree. Tighten straps to hold trees firmly.
- G. Tree guards: Install tree guards per manufacturer's recommendation. Join two or more guards as necessary for larger caliper trees.
- H. Pruning: At no time will new trees or plant materials be pruned, trimmed or topped prior to delivery. Any alteration of their shape will be conducted only with the approval of the Landscape Architect.
- I. Tree watering bags: Watering bags will be used when indicated on drawings, or when trees are planted prior to irrigation is complete. Install watering bags per manufacturer's recommendation.

3.9 Areas Disturbed by Construction
- A. Recondition areas disturbed by construction operations including, but not limited to, graded areas, laydown areas, construction trailers and movement of vehicles.
- B. Till all compacted areas to twelve (12") inches depth. Rake smooth and free of any rock or other deleterious materials. Apply sod or seed as specified on the drawings. Install temporary irrigation as required to establish these areas.
- C. Slopes 3:1 and greater will receive solid sod per specifications. This will apply to areas on site whether or not identified on the plans.

3.10 Maintenance of Site (While Under Construction or Until Final Acceptance)
- A. Maintain all plant materials and trees by watering, cultivating, weeding, spraying chemicals, cleaning and replacing as necessary to keep landscape in a vigorous, healthy condition.
- B. Contractor is responsible for maintenance whether or not existing or new irrigation system is operational. Notify the Owner and Landscape Architect for any deficiencies in the irrigation system. Failure to do so does not relieve the Contractor from replacing plant materials that have died.
- C. Water plant materials necessary to keep top two (2") inches of soil moist, or as necessary to encourage growth.
- D. Remove weeds and foreign grass from bed and lawn areas weekly. Herbicides may be used when required. Rake bed areas as required. Work will not be accepted with a presence of weeds in landscape.
- E. Mow and edge newly planted lawns as necessary to maintain two (2") height.
- F. It is the responsibility of the Contractor to ensure plant material is in vigorous, healthy condition. Apply fertilizers, herbicides, pesticides, and fungicides as necessary per manufacturer requirements and state and local codes as necessary to encourage growth and to control pest, insect, or fungal problems.

3.11 Clean Up
- A. Contractor will maintain a clean and neat site throughout construction. This includes, but is not limited to, picking up and disposing trash daily. Do not allow trash or other debris to be scattered by wind or rain.
- B. After all planting operations have been completed, remove all trash, excess soil, empty plant containers and other debris from the property. All scars, ruts or other marks in the ground caused by this work will be repaired and the ground left in a neat and orderly condition throughout the site.
- C. The Contractor will leave the site area broom–clean and wash down all paved areas within the contract area, leaving the premises in a clean condition. All walks will be left in clean and safe condition.

3.12 Observation Schedule
- A. The Contractor will be responsible for notifying the Landscape Architect in advance for the following site visits:
  1. Pre–job conference
  2. Plant material review
  3. Plant layout review
  4. Soil preparation and planting operations
  5. Final walk–through
- B. No site visits will commence without all items noted in previous Observation Reports either completed or remedied.

END OF SECTION

ESP Associates, Inc.
12940 County Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

ESP

07/07/2024

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

GENERAL NOTES

ARKA MONTESSORI SCHOOL

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AG
DRAWN BY:	AG
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	07/31/2024

SHEET L5 OF L5

ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

Jellyfish® Filter

Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to ensure proper functioning of the system. Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments y Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed

Inspection Timing

Inspection of the Jellyfish® Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; or per the approved project stormwater quality documents (if applicable), whichever is more frequent.

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.

2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

Dry Weather Inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.

Wet Weather Inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

Maintenance Requirements

Required maintenance for the Jellyfish® Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish® Filter:

1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. Caution: Dropping objects onto the cartridge deck may cause damage.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.
2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.
3. Using the Jellyfish® rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane.
4. Collected rinse water is typically removed by vacuum hose.
5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

Sediment and Floatbles Extraction

1. Perform vacuum cleaning of the Jellyfish® Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.
6. For larger diameter Jellyfish® Filter manholes (≥8-ft) and some vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. Caution: Do not force the cartridge downward; damage may occur.
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Inspection and Maintenance Log

Owner: _____ Jellyfish Model No.:_____

Location: _____ GPS Coordinates: _____

Land Use: Commercial:_____ Industrial: _____ Service Station:_____

Road/Highway:____ Airport: _____ Residential: _____ Parking Lot:_____

Date/Time:					
Inspector:					
Maintenance Contractor:					
Visible Oil Present: (Y/N)					
Oil Quantity Removed					
Floatable Debris Present: (Y/N)					
Floatable Debris removed: (Y/N)					
Water Depth in Backwash Pool					
Cartridges externally rinsed/re-commissioned: (Y/N)					
New tentacles put on Cartridges: (Y/N)					
Sediment Depth Measured: (Y/N)					
Sediment Depth (inches or mm):					
Sediment Removed: (Y/N)					
Cartridge Lids intact: (Y/N)					
Observed Damage:					
Comments:					

Contech CMP Detention Inspection and Maintenance Guide

Underground stormwater detention and infiltration systems must be inspected and maintained at regular intervals for purposes of performance and longevity.

Inspection

Inspection is the key to effective maintenance of CMP detention systems and is easily performed. Contech recommends ongoing, annual inspections. Sites with high trash load or small outlet control orifices may need more frequent inspections. The rate at which the systems collect pollutants will depend more on-site specific activities rather than the size or configuration of the system.

Inspections should be performed more often in equipment washdown areas, in climates where sanding and/or salting operations take place, and in other various instances in which one would expect higher accumulations of sediment or abrasive/corrosive conditions. A record of each inspection is to be maintained for the life of the system.

Maintenance

CMP detention systems should be cleaned when an inspection reveals accumulated sediment or trash is clogging the discharge orifice. Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is no performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities. Contech suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Annual inspections are best practice for all underground systems. During this inspection if evidence of salting/de-icing agents is observed within the system, it is best practice for the system to be rinsed, including above the spring line soon after the spring thaw as part of the maintenance program for the system.

Maintaining an underground detention or infiltration system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dray weather.

The foregoing inspection and maintenance efforts help ensure underground pipe systems used for stormwater storage continue to function as intended by identifying recommended regular inspection and maintenance practices. Inspection and maintenance related to the structural integrity of the pipe or the soundness of pipe joint connections is beyond the scope of this guide.

Ravindra Madd

Arka Leander Investments LLC | 7/26/2024

OWNER | DATE

OWNER'S AGENT | DATE

ATTACHMENT O

PILOT-SCALE FIELD TESTING PLAN

The proposed site will be using TCEQ approved water quality product, specifically the Jelly Fish Inlet designed by Contech Engineering Solutions.

ATTACHMENT P

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Erosion control measures and construction sequencing have been implemented to minimize surface stream contamination. These measures include a silt fence along the proposed site's border and the existing drainage channel on its eastern and southern boundaries, inlet protection, construction entrances and exits, a concrete washout pit, and an equipment staging area.

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: Ravindra Maddi

Date: 7/26/2024

Signature of Customer/Agent: Ravindra Maddi

Regulated Entity Name: Arka Leander Investments, LLC

Project Information

Potential Sources of Contamination

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

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

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

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

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

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

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

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

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

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

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

Sequence of Construction

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

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

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

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

1.4.16 Spill Prevention and Control

The objective of this section 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 stormwater 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 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, 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 stormwater runon 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 runon of stormwater 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, and 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 stormwater. 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 runon of stormwater 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.

TEMPORARY STORMWATER SECTION

ATTACHMENT B

POTENTIAL SOURCES OF CONTAMINATION

During construction of this site, it is possible that there will be oil/grease and silt accumulation on the project site due to the equipment used to construct the roadways, utilities and residential lots. This may include fluid leaks from construction vehicles, hydrocarbons associated with asphalt paving, and washout from concrete trucks. Construction trash and/or debris not properly disposed of in appropriate containers are a potential source of contamination. The grading of rock and/or soil on the project site will create silt on the project site. The use of silt fences and construction exits will control the amount of silt and/or rock leaving the site.

Other potential sources of contamination include portable toilet spills or sewer contamination at the proposed sewer tie-ins. A soil berm would be constructed around the spill site and the affected area marked for further investigation and remediation.

TEMPORARY STORMWATER SECTION

ATTACHMENT C

SEQUENCE OF MAJOR ACTIVITIES

The sequence of major activities for construction with the approximate total disturbed area is as follows:

- Installation of Temporary Best Management Practices on the Project Site (1.82 Acres)
- Grading and Basin Construction (1.82 Acres)
- Building Construction (0.28 Acres)
- Establish Vegetation and Cleanup (0.74 Acres)
- Remove Temporary BMPs (1.82 Acres)

TEMPORARY STORMWATER SECTION

ATTACHMENT D

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

The temporary Best Management Practices (BMP's) shall be installed as the first construction activity of the unit and will remain in place until all construction activities are complete and 70% of the vegetative cover has been established for that unit. The unit will have a designated construction exit, a silt fence along the down gradient side of the unit, inlet protection at storm drain inlets, and tree protection for the undisturbed trees where applicable. The existing native grasses will be left undisturbed in areas not under construction. Silt fence will be placed down gradient of all disturbed areas. The temporary BMP's shall be installed according to details on the Storm Water Pollution Prevention Plan detail sheet. The silt fences will be anchored six (6) inches into the soil and shall be monitored weekly for any failures of the silt fence or problems associated with silt build up.

a. There is no surface water, groundwater or storm water that originates upgradient from the site and flows across the site, silt fencing will be placed along the south and east portion of the site.

b. To prevent pollution of surface water or groundwater that originates onsite or flows offsite, including pollution caused by contaminated storm water runoff from the site, silt fencing will be placed along the down gradient sides of the site. A construction exit and concrete washout pit will also be installed at the entrance to the unit and a storage and refueling area will be designated on the site for each unit.

c. To prevent pollutants from entering surface streams, sensitive features, or the aquifer, the silt fence and rock berms mentioned in item (b) above will be installed. If sensitive features are identified during trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The owner must contact the TCEQ San Antonio Regional Office in writing within two working days of the discovery. The applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

d. To maintain flow to naturally occurring sensitive features identified in the geologic assessment, inspections, or during construction, silt fencing or sand bag berms will be installed. If a feature must be sealed, processes must comply with Section 5.2 of the TGM RG-348 and Section 2.2 of the RG-348A.

TEMPORARY STORMWATER SECTION

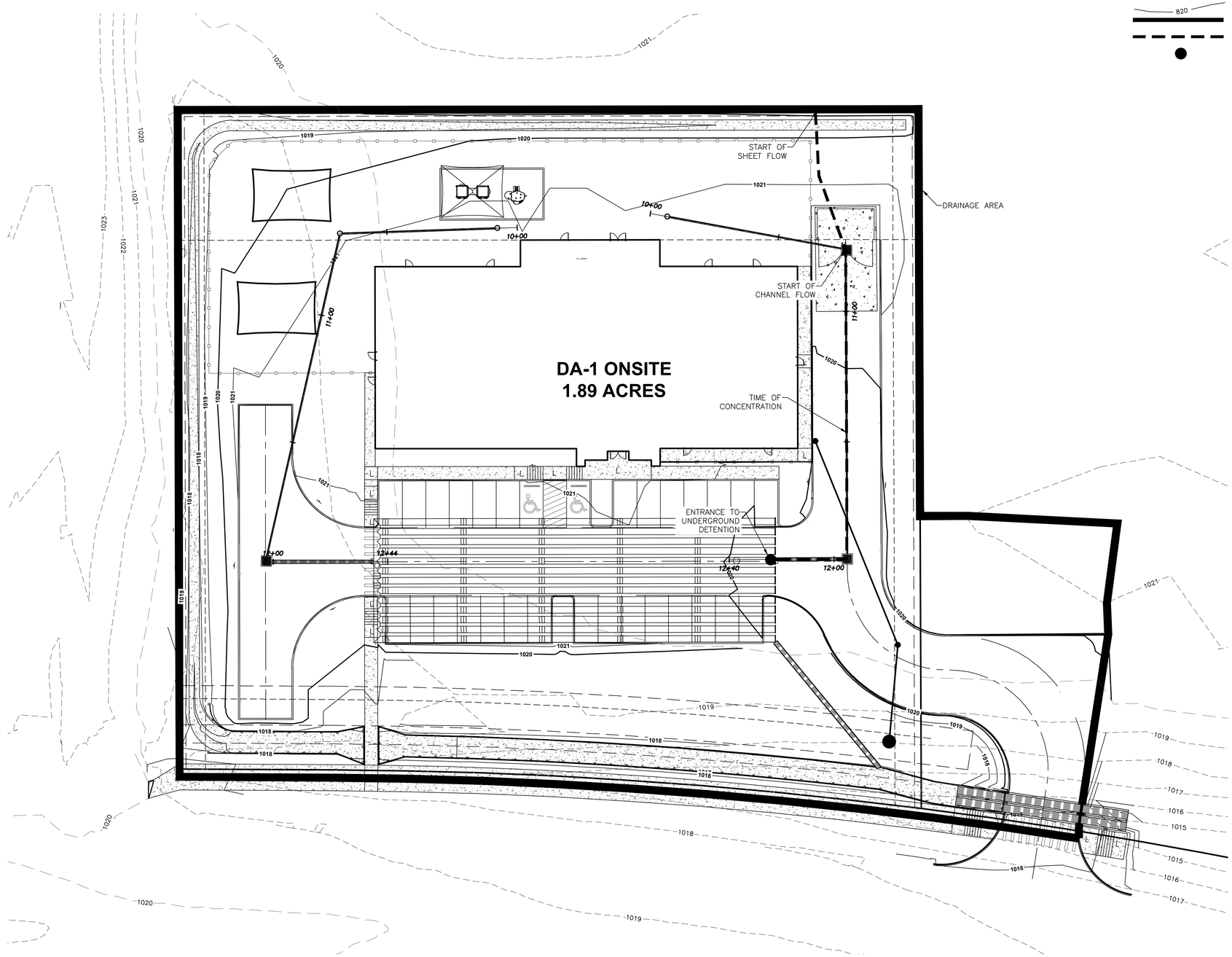
ATTACHMENT F

STRUCTURAL PRACTICES

Silt fences will be used on site to trap sediments and pollutants from leaving the areas of construction. A construction exit will be located at the entrance to the site to prevent mud and sediment from collecting on public roads. Inlet protection will be added to each constructed grate and curb inlet to filter out pollutants from entering the water quality pond and/or watershed. A concrete washout pit will be established to reduce contamination of pollutants from concrete waste and prevent pollutant discharge to storm water runoff.

LEGEND

- ROAD CENTERLINE
- EXISTING MAJOR CONTOURS (820)
- EXISTING MINOR CONTOURS (820)
- PROPOSED MAJOR CONTOURS (820)
- PROPOSED MINOR CONTOURS (820)
- DRAINAGE AREA
- TIME OF CONCENTRATION (TOC)
- END OF TOC PATH



NORTH ORIENTED TO GRID REF.

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 INCH = 20 FT.

REFERENCE POINT	Drainage Areas	C (2-YR)	C (10-YR)	C (25-YR)	C (100-YR)	Drainage Area (ac)	Tc (min)	2-yr (in/hr)	10-yr (in/hr)	25-yr (in/hr)	100-yr (in/hr)	Q(2) (cfs)	Q(10) (cfs)	Q(25) (cfs)	Q(100) (cfs)
B	DA 1 ON	0.52	0.59	0.63	0.71	1.89	5.0	6.14	9.19	11.30	15.00	5.98	10.15	13.44	20.08

SD-24-XXXX

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

CAUTION:
CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ESP Associates, Inc.
12940 Country Pkwy
San Antonio, TX 78216
(210) 349-3271
www.espassociates.com

STATE OF TEXAS
ARIELLA D. MEADOWS
141035
LICENSED
PROFESSIONAL ENGINEER
05/30/2024

NO.	DATE	REVISION	BY
1	11/10/23	REVISED PER TOWN COMMENTS	

ONSITE PROPOSED DRAINAGE AREA MAP

ARKA MONTESSORI SCHOOL

LEANDER, TX

PROJECT INFORMATION	
PROJECT MANAGER:	JT
DESIGNED BY:	AM
DRAWN BY:	CR/RM
PROJECT NUMBER:	23-00436
ORIGINAL DATE:	05/15/2024

SHEET 12 OF 34

TEMPORARY STORMWATER SECTION

ATTACHMENT I

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

_____

INSPECTOR'S SIGNATURE: _____ DATE: _____

TEMPORARY STORMWATER SECTION

ATTACHMENT J

SCHEDULED INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

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 precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Stabilization practices used on this site may include, but are not limited to, establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, seeding, vegetative buffer strips, protection of trees, protection of mature vegetation and other appropriate measures.

Infrastructure construction activities on this site include roadway excavation, utility installation, drainage construction, preliminary site grading, site cleanup, and permanent stabilization, final site grading.

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

I Ravindra Maddi,
Print Name

Owner,
Title - Owner/President/Other

of Arka Leander Investment, LLC,
Corporation/Partnership/Entity Name

have authorized Ariella Meadows
Print Name of Agent/Engineer

of ESP Associates, INC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Ravindra Maddi
Applicant's Signature

7/29/2024
Date

THE STATE OF Texas §
County of Tarrant §

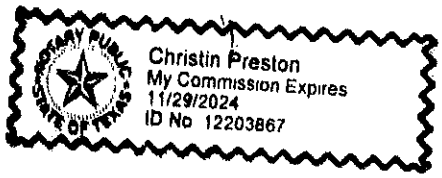
BEFORE ME, the undersigned authority, on this day personally appeared RavindraMaddi known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of July 2024.

Christin Preston
NOTARY PUBLIC

Christin Preston
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/29/24



Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Akra Leander Investments, LLC
Regulated Entity Location: 2309 Palmetto Way, Southlake, Texas
Name of Customer: Akra Leander Investments, LLC
Contact Person: Ravindra Maddi Phone: _____
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1.698 Acres	$ 4,000
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: Ravindra Maddi Date: 7/26/2024

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

☐ Other

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

SECTION II: Customer Information

4. General Customer Information

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

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

If new Customer, enter previous Customer below:

Arka Leander Investments, 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)*
0805169403	32091043359	81-3278635	

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☒ General ☐ Limited

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

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:								
	2309 Palmetto Way							
	City	South Lake	**State**	TX	**ZIP**	76092	**ZIP + 4**	1457

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	ravindra.maddi@gmail.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(972) 971- 8857		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Akra Leander Investments, LLC

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	2309 Palmetto Way							
	City	Leander	**State**	TX	**ZIP**	76092	**ZIP + 4**	1457
24. County	North Tarrant County							

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

25. Description to Physical Location:	Lot located east of the private access road of Glenn High School and San Gabrial Parkway

26. Nearest City	**State**	**Nearest ZIP Code**
Leander	TX	78641

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

27. Latitude (N) In Decimal:	30.596143		**28. Longitude (W) In Decimal:**	97.878324	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	35	46.1148	97	52	41.9664

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)
8351	6552	624410	

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

Child Daycare Facility

34. Mailing Address:	**2309 Palmetto Way**							
	City	**South Lake**	**State**	**TX**	**ZIP**	**76092**	**ZIP + 4**	**1457**
35. E-Mail Address:	**ravindra.maddi@gmail.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(972) 971 - 8857		( ) -

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
		CZP		
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☒ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Ariella Meadows PE	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 349-3271		( ) -	ameadows@espassociates.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:	Arka Leander Investments, LLC	**Job Title:**	Owner
Name *(In Print):*	Ravindra Maddi	**Phone:**	(972) 971-8857
Signature:	Ravindra Maddi	**Date:**	7/26/2024