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: Liberty Hill High School #2						**2. Regulated Entity No.:**			
3. Customer Name: Liberty Hill ISD						**4. Customer No.: 600788483**			
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):**			93.33
9. Application Fee:	$8,000		**10. Permanent BMP(s):**						
11. SCS (Linear Ft.):	NA		**12. AST/UST (No. Tanks):**						
	Williamson		**14. Watershed:**					North Fork, San Gabriel River	

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 ___Leander _X_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.
Jack Garner, P.E.
Print Name of Customer/Authorized Agent
5/8/2023
Signature of Customer/Authorized Agent Date

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

Contributing Zone Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: Jack Garner, P.E.

Date: 5/8/2023

Signature of Customer/Agent:

Regulated Entity Name: Liberty Hill High School #2

Project Information

1. County: Williamson
2. Stream Basin: North Fork, San Gabriel River
3. Groundwater Conservation District (if applicable): NA
4. Customer (Applicant):

   Contact Person: Dustin Akin
   Entity: Liberty Hill ISD
   Mailing Address: 301 Forrest St.
   City, State: Liberty Hill, TX Zip: 78642
   Telephone: 512-260-5580 Fax: 512-260-5581
   Email Address: dakin@libertyhill.txed.net

5. Agent/Representative (If any):

Contact Person: Jack Garner, P.E.
Entity: Langan Engineering
Mailing Address: 9606 N. Mopac Expressway, Suite 110
City, State: Austin, TX Zip: 78759
Telephone: 737-289-7800 Fax: 737-289-7801
Email Address: jgarner@langan.com

6. Project Location:

☐ The project site is located inside the city limits of _____.
☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Liberty Hill.
☐ 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.

The proposed school is located on the east side of US 183 about 1.1 miles north of its intersection with SH 29 and about 0.4 miles east of US 183.

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: High school campus.

13. Total project area (size of site): 93.33 Acres

    Total disturbed area: 94.59 Acres

14. Estimated projected population: 2,800

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	330,152	÷ 43,560 =	7.58
Parking	1,475,643	÷ 43,560 =	33.88
Other paved surfaces	370,633	÷ 43,560 =	8.50
Total Impervious Cover	2,176,428	÷ 43,560 =	49.96

Total Impervious Cover 49.96 **÷ Total Acreage** 93.33 **X 100 =** 53.5**% 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 Liberty Hill Wastewater (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

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

Total x 1.5 = _____ Gallons

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

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

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

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

Table 3 - Secondary Containment

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

Total: _____ Gallons

30. Piping:

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

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

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

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

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

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

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

Site Plan Requirements

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

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

    Site Plan Scale: 1" = 40'.

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 floodplain map 48491C0275E effective 9/26/2008.

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

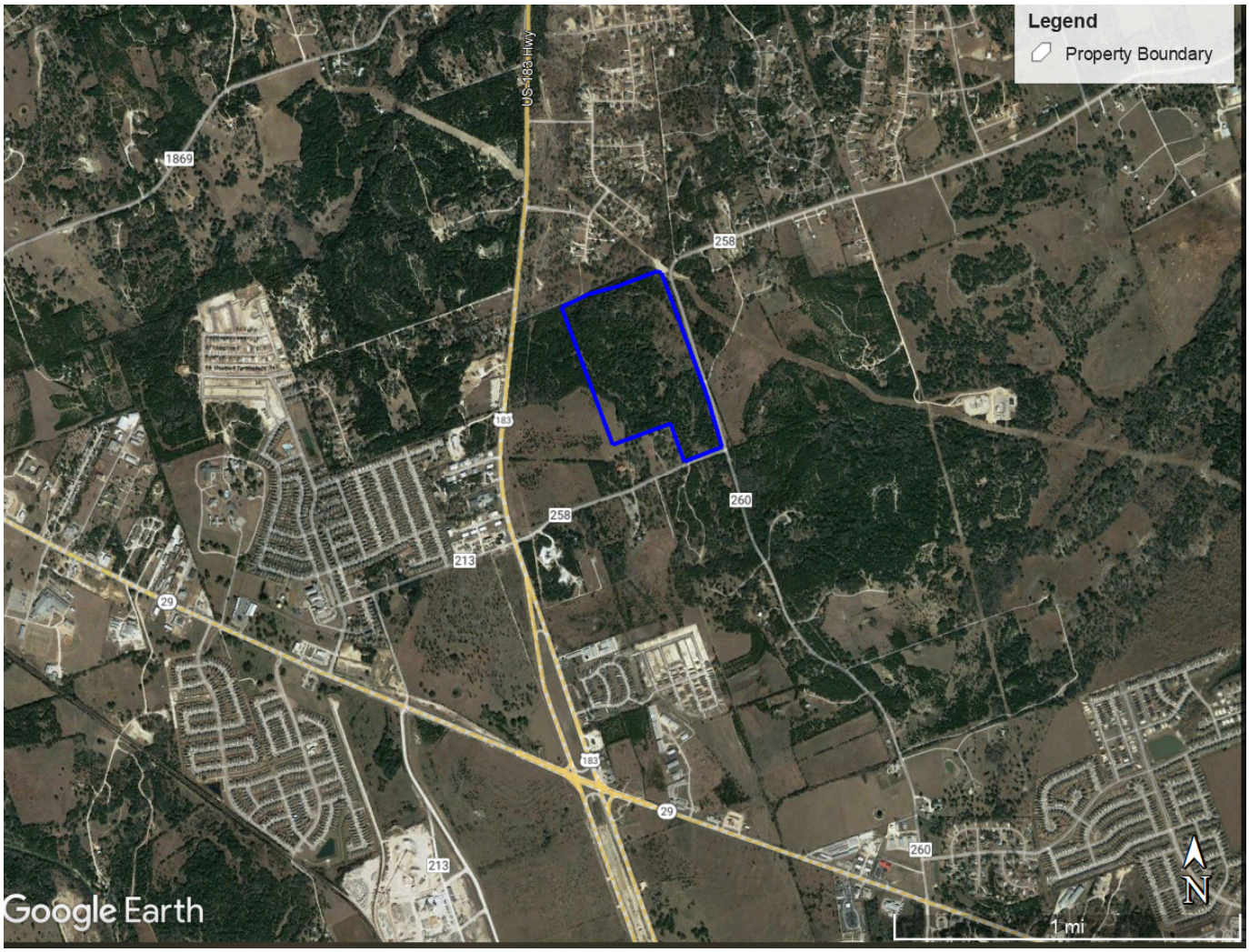
61. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.

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.

Contributing Zone Application – TCEQ Form 10257
Attachment A – Road Map
Liberty Hill High School #2
Liberty Hill, TX



Contributing Zone Application - TCEQ Form 10257
Attachment B - USGS Quadrangle Map
Liberty Hill High School #2
Liberty Hill, TX

USGS science for a changing world

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

The National Map US Topo

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE SERIES

Future Location of Liberty Hill High School #2

Contributing Zone

Recharge Zone

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

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

Imagery.....NAIP, August 2016 - November 2016
Roads.....U.S. Census Bureau, 2015 - 2019
Names.....GNIS, 1979 - 2021
Hydrography.....National Hydrography Dataset, 2002 - 2021
Contours.....National Elevation Dataset, 2004
Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory Not Available

MN GN 3°46′ 67 MILS 0°36′ 11 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PV 00 PU
Grid Zone Designation 14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Mahomet
2 Florence
3 Cobbs Cavern
4 Liberty Hill
5 Georgetown
6 Nameless
7 Leander
8 Round Rock

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

LEANDER NE, TX
2022

NSN, 7643016396982
NGA REF NO. USGSX24K52392

Contributing Zone Application – TCEQ Form 10257
Attachment C – Project Narrative

The proposed project, Liberty Hill ISD High School #2 (HS #2), is a school building and campus to be built on a 93.3-acre site on the west side of Sunset Ridge Drive (CR 258)., northwest of the intersection of CR 258 and CR 260, in Williamson County, Texas 78642. The proposed project is located in the Edwards Aquifer Contributing Zone. The site is undeveloped land with no prior land uses other than agriculture and no prior development.

On the north side of the site, the construction of an extension of CR 258 is currently under construction. With this addition, there will be three outfall points for stormwater to leave the future campus. The total evaluated basin is 142 acres, the majority of which generally drains from the west to the east-northeast, with the exception of an 18.67-acre basin that discharges to an existing culvert located at the southeast corner of the site. There are approximately 43.3 acres upstream of the project site located to the west that contribute to the evaluated drainage basin. All of the stormwater generated upstream is routed around the proposed site and will bypass the proposed detention and water quality pond, which is achieved with a series of channels and culverts. (please see the existing and proposed drainage area maps included with the submission).

The impervious cover proposed for the construction of the high school campus, which includes rooftop, drives, and parking areas, is 49.96 acres or 53.5% of the site. A wet basin will serve as the permanent BMP for the site and it will be located in the northeast corner of the subject property. The wet basin has been oversized to accommodate an additional 3.86 acres of impervious cover. This was done primarily to avoid changes to the wet basin if the school district need to add additions to the school in the future. Discharge from this pond will be to the Dyeus Branch, a tributary of the North Fork, San Gabriel River.

Contributing Zone Application – TCEQ Form 10257
Attachment D – Factors Affecting Surface Water Quality

The potential factors affecting construction period surface water quality from this site are: sediment runoff from disturbed areas, petroleum products runoff from drips from construction equipment, pesticides and fertilizers from landscaping activities, and high pH wash water from concrete and masonry cleanup/ washout facilities. The high pH wash water potential will be controlled by requiring the use of appropriately sized, plastic lined containment areas for concrete and masonry cement washout and cleanup activities. The petroleum and pesticide/ fertilizer sources will be minimized by the use of good housekeeping procedures and inspections by trained personnel to ensure that all construction activities follow the procedures given on SWPPP Plan included as part of the construction drawings prepared for the site.

The potential factors affecting post-construction surface water quality from this site are: pesticide and fertilizer runoff from vegetated areas, petroleum products runoff from parking areas and drives. Sediment runoff from the site will be significantly reduced by the action of the water quality/ detention pond with sand filter and wet basin permanent BMP. Pesticide/ fertilizer runoff will be minimized by education of the school employees or outside landscaping firm relative to acceptable landscaping practices after construction activities are completed.

Contributing Zone Application – TCEQ Form 10257
Attachment E – Volume and Character of Stormwater

Please refer to Drainage Area Maps in the construction plans for more details on the information presented below.

Pre-construction conditions: The total studied drainage area is 142.00 acres with 48.67 acres of off-site area contributing. upstream run-on within the studied limits and onsite hydrology is as shown on C5.0. Calculations are based on the SCS Method, as presented in the Williamson County Subdivision Regulations.

Post-construction conditions: The peak discharge rates for post-construction are equal to or less than predeveloped discharge rates. Pre and post construction discharge rates are shown in the design point summary shown on C5.0 & C5.1.

Contributing Zone Application – TCEQ Form 10257
Attachment J – BMPs for Upgradient Stormwater

Upgradient stormwater will be captured along the west property line and diverted around the subject site, eventually to the Dyeus Branch tributary of the North Fork of the San Gabriel River. Therefore, no upgradient stormwater will cross the surface of the proposed school site.

Contributing Zone Application – TCEQ Form 10257
Attachment K – BMPs for On-site Stormwater

Construction Phase
Please refer to Plan Sheets for more information and details about the information presented below.

Stabilization practices for this site include:

1. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
2. Frequent watering of excavation and fill areas to minimize wind erosion during construction.
3. Permanent seeding and planting of all unpaved areas.
4. Use of stabilization fabric for all slopes having a slope of 1 V:3H or greater
5. For all disturbed areas where construction activities have temporarily or permanently ceased for more than 14 days, stabilization activities shall commence no later than the 14th day after cessation of construction activities.

Structural practices for this site include:

1. Inlet protection using block and gravel filled bags and silt fence
2. Perimeter protection using silt fencing and/or erosion control lo9s
3. Stabilized construction exit point
4. Contractor shall provide sufficient velocity dissipation devices in the form of rock check dams and/or rock rip rap for velocity dissipation at areas with existing or potential channelized flow.

Permanent phase: water quality/ detention ponds

On-site water quality/ detention ponds, have been designed in accordance with the TCEQ Edwards Aquifer Compliance Technical Guidance Manual on Best Management Practices, will be constructed by the Owner for use a permanent water quality and water quantity control system. All storm water runoff from the school site will be routed to inlets in the subsurface storm water collection system and will then flow to the on-site water quality wet pond / detention pond on the northeast side of the site.

Contributing Zone Application – TCEQ Form 10257
Attachment L – BMPs for Surface Streams

The stormwater runoff from this site will flow into an on-site water quality wet pond /detention pond, built and maintained by the Owner, before passing into Dyeus Branch, a tributary of the North Fork, San Gabriel River. This pond will provide effective protection to the water quality of this surface stream.

Contributing Zone Application – TCEQ Form 10257
Attachment M – Construction Plans

Please refer to construction plans prepared for this construction site which are a separate part of the permit application package.

Contributing Zone Application – TCEQ Form 10257
Attachment N – Inspection, Maintenance, Repair and Retrofit Plan

The Owner shall implement the following inspection, maintenance, repair, and record keeping procedures for the wet ponds designed to serve the site.

Routine Maintenance

1. *Mowing*
   a. The side-slopes, embankment, and emergency spillway of the basin should be mowed at least twice a year to prevent woody growth and control weeds.

2. *Inspections*
   a. Wet basins should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the basin is functioning properly.
   b. There are many functions and characteristics of these BMPs that should be inspected.
      i. The embankment should be checked for subsidence, erosion, leakage, cracking, and tree growth.
      ii. The condition of the emergency spillway should be checked. The inlet, barrel, and outlet should be inspected for clogging.
      iii. The adequacy of upstream and downstream channel erosion protection measures should be checked.
      iv. Stability of the side slopes should be checked.
      v. Modifications to the basin structure and contributing watershed should be evaluated.
   c. During semi-annual inspections, replace any dead or displaced vegetation. Replanting of various species of wetland vegetation may be required at first, until a viable mix of species is established.
   d. Cracks, voids and undermining should be patched/filled to prevent additional structural damage.
   e. Trees and root systems should be removed to prevent growth in cracks and joints that can cause structural damage.
   f. The inspections should be carried out with as-built pond plans in hand.

3. *Debris and Litter Removal*
   a. As part of periodic mowing operations and inspections, debris and litter should be removed from the surface of the basin.
   b. Particular attention should be paid to floatable debris around the riser, and the outlet should be checked for possible clogging.

4. *Erosion Control*
   a. The basin side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion. Corrective measures such as regrading and revegetation may be necessary.
   b. Similarly, the riprap protecting the channel near the outlet may need to be repaired or replaced.

5. *Nuisance Control*
    a. Most public agencies surveyed indicate that control of insects, weeds, odors, and algae may be needed in some ponds. Nuisance control is probably the most frequent maintenance item demanded by local residents. If the ponds are properly sized and vegetated, these problems should be rare in wet ponds except under extremely dry weather conditions.
    b. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Biological control of algae and mosquitoes using fish such as fathead minnows is preferable to chemical applications.

Non-routine Maintenance Wet Pond

1. *Structural Repairs and Replacement*
    a. Eventually, the various inlet/outlet and riser works in the wet basin will deteriorate and must be replaced. Some public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yr, while concrete barrels and risers may last from 50 to 75 yr. The actual life depends on the type of soil, pH of runoff, and other factors. Polyvinyl chloride (PVC) pipe is a corrosion resistant alternative to metal and concrete pipes. Local experience typically determines which materials are best suited to the site conditions. Leakage or seepage of water through the embankment can be avoided if the embankment has been constructed of impermeable material, has been compacted, and if anti-seep collars are used around the barrel. Correction of any of these design flaws is difficult.

2. *Sediment Removal*
    a. Wet ponds will eventually accumulate enough sediment to significantly reduce storage capacity of the permanent pool. As might be expected, the accumulated sediment can reduce both the appearance and pollutant removal performance of the pond.
    b. Sediment accumulated in the sediment forebay area should be removed from the facility every two years to prevent accumulation in the permanent pool.
    c. Dredging of the permanent pool should occur at least every 20 years, or when accumulation of sediment impairs functioning of the outlet structure.

3. *Harvesting*
    a. If vegetation is present on the fringes or in the pond, it can be periodically harvested and the clippings removed to provide export of nutrients and to prevent the basin from filling with decaying organic matter.

Record Keeping

1. The Owner's representative shall prepare a signed, written record of each inspection performed and actions performed at both the sand filter and wet pond, as a result of the inspection observations, shall maintain those records in the Owner's office for a period of 5 years, and shall, upon request, make those records available to TCEQ personnel and other agencies with jurisdiction over the site.

Certifications:

Design Engineer

Jack H. Garner, Jr., P.E.
Printed Name

5/8/2023
Date

PE Seal

Owner

Dustin Akin (Liberty Hill ISD)
Printed Name

5/8/2023
Date

Contributing Zone Application – TCEQ Form 10257
Attachment P - Measures for Minimizing Surface Stream Contamination

An Owner's representative shall visually inspect all roof drains and drive/parking area inlets in the collection system at a minimum interval of every 3 months, and at least once during or immediately following wet weather. Specific items to be observed are: the amount of sediment and/or trash buildup at inlets (removal required if > 10% of the inlet opening is blocked), the presence of standing water or soggy conditions, indicative of poor drainage, and damage to structural components (pipes, curb inlets, grate inlets, etc...).

The stormwater runoff from this site will flow into an on-site water quality wet pond / detention pond, built and maintained by the Owner, before passing into Dyeus Branch, a tributary of the North Fork, San Gabriel River. An Owner's representative shall visually inspect all downstream flow path at a minimum interval of every 3 months. These combined onsite and offsite practices will provide effective measures to minimize surface stream contamination.

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: Jack Garner, PE

Date: 5/8/2023

Signature of Customer/Agent:

Regulated Entity Name: Liberty Hill High School #2

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: Dyeus Branch, a tributary of North Fork, San Gabriel River

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.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment A Spill Response Actions

1 MATERIALS COVERED

The following materials or substances with known hazardous properties that may be present onsite during construction:

Concrete	Cleaning solvents
Detergent	Paints
Acids	Paint solvents
Fertilizers	Concrete additives
Soil stabilization additives	

2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

2.1 Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

A. An effort will be made to store only enough product required to do the job.

B. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or other enclosure.

C. Products will be kept in their original containers with the original manufacturer's label in legible condition.

D. Substances will not be mixed with one another unless recommended by the manufacturer.

E. Whenever possible, all of a product will be used up before disposing of the container.

F. Manufacturer's recommendations for proper use and disposal will be followed.

G. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

2.2 Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials.

A. Products will be kept in original containers with the original labels in legible condition.

B. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

C. If surplus product must be disposed of, manufacturers or local/state/federal recommended methods for proper disposal will be followed.

D. A spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

E. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with stormwater discharges.

2.3 Product Specific Practices

The following product specific practices will be followed on the job site.

A. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks used onsite will have a dike or berm containment structure constructed around it to contain any spills which may occur. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

B. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

C. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

D. Concrete Trucks

The CGP authorizes the land disposal of wash out water from concrete trucks at construction sites that are regulated under the CGP, as long as the discharge is in compliance with the restrictions given in the permit. This authorization is limited to the land disposal of wash out water from concrete trucks only. Any other direct discharge of concrete production waste water is not authorized by the CGP and must be authorized under a separate TCEQ General Permit or individual permit.

2.4 Spill Prevention Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup.

A. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite in spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.).

C. All spills will be cleaned up immediately after discovery.

D. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

E. Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 302 list and oil) will be immediately reported to the TCEQ National Response Center, telephone **1-800-832-8224**. Reportable Quantities of some substances which may be used at the job site are as follows:

oil - appearance of a film or sheen on water
pesticides - usually 1 lb.
acids - 5000 lb.
solvents, flammable - 100 lb.

F. The job site superintendent will be the spill prevention and cleanup coordinator. He will designate the individuals who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment B Potential Sources of Contamination

The following are the potential pollutants and their sources which may occur at this construction site: offsite vehicle tracking of mud from vehicle traffic through inadequate construction exit, petroleum based products from vehicle/ equipment leaks and drips (maintenance and petroleum storage areas will not be allowed on the construction site), pesticides and fertilizers from landscaping activities, and high pH washwater from concrete and masonry cleanup/ washout facilities.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment C Sequence of Major Activities

The Contractor will be responsible for implementing the following erosion and sediment control and stormwater management control structures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the general contractor. The order of activities will be as follows (refer to Plan Sheet C4.0 Erosion Control and Grading Plan in the Construction Plans for the project for details):

A. Install silt fence around perimeter of property and disturbed areas as shown on Plan Sheet C2.0 Erosion Control Plan. Approximately 94.03 acres will be disturbed during construction (0.70 acres off-site for installation of force main).

B. Install inlet protection for all existing grate inlets, curb inlets, and at the end of all exposed storm sewer pipes, if present. (Not present)

C. Construct temporary construction access (approx. 0.2 acres)

D. Commence grubbing and removal of vegetation in area to receive cut or fill. (Approx. 93.33 acres)

E. Commence grading operation for building pad preparation. (approx. 8.5 acres)

F. Install all underground utilities. (Approx. 5 acres)

G. Finalize pavement subgrade preparation (Approx. 25 acres)

H. Install all proposed storm sewer pipes and install inlet protection erosion control log at ends of exposed pipes (Approx. 20 acres)

I. Construct all grate inlets and drainage structures. Inlet protection erosion control logs may be removed temporarily for this construction (approx. 5 acres)

J. Remove erosion control logs around inlets and manholes no more than 48 hours prior to placing stabilized base course. (approx. 5 acres)

K. Install base material as required for pavement, curb and gutter. (approx. 25 acres)

L. Install all paving, curb and gutter. (Approx. 25 acres)

M. Complete planting and/or seeding of vegetated areas to accomplish stabilization, in accordance with the landscaping plan. (Approx. 65 acres)

N. Remove temporary construction exit, erosion control logs, inlet protection, and all other temporary sediment controls. (approx. 65 acres)

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment D Temporary Best Management Practices

The following temporary best management practices will be used on the construction site

Stabilization Practices

1. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed

2. Frequent watering of excavation and fill areas to minimize wind erosion during construction.

3. Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.

4. Permanent seeding and planting of all unpaved areas.

5. For all disturbed areas where construction activities have temporarily or permanently ceased for more than 14 days, stabilization activities shall commence no later than the 14th day after cessation of construction activities or after final grades have been achieved.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment F Structural Practices

The following structural best management practices will be used on the construction site:

1. Inlet protection using erosion control logs.
2. Perimeter protection using erosion control logs or silt fence.
3. Stabilized construction access point
4. Rock check dams
5. Temporary concrete washout area
6. Use of rock rip rap for velocity dissipation at areas with existing or potential channelized flow.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment G Drainage Area Map

Please refer to Plan Sheets C5.0 Existing Drainage Area Map and C5.1 Proposed Drainage Area Map of the Construction Plans for this project.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment H Temporary sediment pond plans and calculations

Project to use proposed water quality and detention pond as temporary sedimentation basin during construction duration.

The temporary sediment basin has been sized to accommodate the expected stormwater runoff from the 2 yr 24 hr storm.

Sizing of the temporary sediment basin was done using the Rational Method for runoff calculation with a weighted runoff coefficient of 0.33 (as given in the City of Austin Drainage Criteria Manual), 3.96" rainfall for the 2yr/ 24h storm, and drainage area of 71.43 acres. The calculated stormwater runoff to be contained in the sediment pond is shown below:

- Runoff = 3.94" / 12 * 0.33 * 71.43 ac * 43560 = 337,130 cubic feet = 7.74 AF
- Sediment Basin Volume provided: 1,194,107 cubic feet = 27.41 AF
- Two Faircloth skimmer dewatering devices with a 7.4" diameter orifice will be used to release the detained stormwater over a period of 48 hours.

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment I Inspection/ Maintenance for BMPs

I. Erosion and Sediment Control Maintenance and Inspection Practices

A. The following is a list of erosion and sediment controls to be used on this site during construction practice.

1. Stabilization practices for this site include:

   A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed

   B. Frequent watering of excavation and fill areas to minimize wind erosion during construction.

   C. Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.

   D. Permanent seeding and planting of all unpaved areas.

   E. For all disturbed areas where construction activities have temporarily or permanently ceased for more than 14 days, soil stabilization activities shall commence as soon as practicable but no later than the 14th day after cessation of construction activities.

2. Structural practices for this site include:

   A. Inlet protection using block and gravel-filled bags and fabric filter material

   B. Perimeter protection using silt fencing and/or straw roll wattles

   C. Stabilized construction access point

   D. Temporary concrete washout area

Velocity Dissipation: Contractor shall provide sufficient velocity dissipation devices to prevent soil erosion at discharge points where concentrated flow occurs or is expected to occur.

B. The following inspection and maintenance practices will be used to maintain erosion and sediment controls.

   1. All control measures will be inspected weekly and after each rainfall event.

2. All measures will be maintained in good working order; if repairs are found to be necessary, they will be initiated within 24 hours of report and completed prior to the next anticipated rainfall event. If completion of required repairs cannot be accomplished prior to the next anticipated rainfall event, the reason shall be documented in the SWPPP for the site and completion shall be accomplished as soon as practicable.

3. Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.

4. Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

5. The sediment basin, if present, will be inspected for depth of sediment, and built up sediment will be removed when it reaches 50 percent of the design capacity. **Contractor shall install a depth gauge in the sediment basin to use in evaluating the depth of accumulated sediment to determine when sediment removal is required.**

6. Temporary and permanent seeding will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in the SWPPP for the site.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of the qualifications of inspection personnel must be kept in the SWPPP for the site.

II. Inspection and Maintenance Report Forms

Once installation of any required or optional erosion control device or measure has been implemented, weekly inspections of each measure shall be performed by the Contractor's inspection personnel. The Inspection and Maintenance Reports found in the SWPPP for the site (or other forms which the Contractor desires to use that have been approved by the Engineer) shall be used by the inspectors to inventory and report the condition of each

measure to assist in maintaining the erosion and sediment control measures in good working order.

Based on the results of the periodic inspections, necessary control modifications shall be initiated within 24 hours and completed prior to the next anticipated rain event. These inspection reports shall be kept on file as part of the Storm Water Pollution Prevention Plan for at least three years from the date of completion and submission of the Notice of Termination.

These report forms shall become an integral part of the SWPPP for the site and shall be made readily accessible to TCEQ inspection officials, the Civil Engineering Consultant, and the Owner for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission.

The following forms shall be utilized by inspectors to report on the incremental status and condition of the control measures used on the site:

III. Summary of Erosion and Sediment Control Maintenance/Inspection Procedures

- ☐ All control measures will be at least weekly and after each rainfall event.
- ☐ All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report and completed prior to the next anticipated rain event.
- ☐ Built-up sediment will be removed from silt fences when it has reached one-third the height of the fence.
- ☐ Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- ☐ Sediment basins, if present, will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50% of the design capacity or at the end of the job. **Contractor shall install a depth gauge in the sediment basin to use in evaluating the depth of accumulated sediment to determine when sediment removal is required.**
- ☐ Diversion dikes, if present, will be inspected and any breaches promptly repaired.
- ☐ If sediment escapes the site, accumulations will be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next forecasted rain event.
- ☐ Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- ☐ A maintenance inspection report will be made after each inspection. Copies of the report forms to be used are included in the SWPPP for the site.

- ☐ The site job superintendent will select the individuals who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance reports.

- ☐ Personnel selected for inspection and maintenance responsibilities will receive training from the site job superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order. Records documenting the training and experience qualifications of each and every inspector shall be kept with the Inspection Record Forms in the SWPPP for the site.

IV. Construction/Implementation Checklist

1. Maintain Records of Construction Activities, including:

- ☐ Dates when major grading activities occur

- ☐ Dates when construction activities temporarily cease on a portion of the site

- ☐ Dates when construction activities permanently cease on a portion of the site

- ☐ Dates when stabilization measures are initiated on the site

Dates of rainfall events and post-rainfall inspections

2. Prepare Inspection Reports summarizing:

- ☐ Name of inspector

- ☐ Qualifications of Inspector

- ☐ Control measures/areas inspected

- ☐ Observed conditions and areas of non-compliance

- ☐ Location of any discharges of sediments or other pollutants from the site

- ☐ Recommended remedial actions and action on previously recommended remedial actions

- ☐ Statement that the site is or is not in compliance with the Permit/SWPPP

- ☐ Changes necessary to the SWPPP for the site

3. Report Releases of Reportable Quantities of Oil or Hazardous Materials (if they occur):

- ☐ Notify TCEQ Spill Response Center (**1-800-832-8224**) immediately
- ☐ Notify permitting authority in writing within 14 days
- ☐ Modify the pollution prevention plan to include:
    - the date of release
    - circumstances leading to the release
    - steps taken to prevent recurrence of the release

4. Modify Pollution Prevention Plan as necessary to:

- ☐ Comply with the minimum permit requirements when notified by TCEQ that the plan does not comply
- ☐ Address a change in design, construction operation, or maintenance which has an effect on the potential for discharge of pollutants
- ☐ Prevent recurrence of reportable quantity releases of a hazardous material or oil

Temporary Stormwater Management Practices TCEQ Form 0602

Attachment J Interim/ permanent soil stabilization practices

Final Stabilization/Termination Checklist

- ☐ All soil disturbing activities are complete
- ☐ Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time
- ☐ All areas of the construction site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed
- ☐ Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days.

Plans for the Construction of

WATER, SEWER, PAVING, GRADING & DRAINAGE IMPROVEMENTS

To Serve

LIBERTY HILL NEW HIGH SCHOOL #2

93.33 ACRES PORTION OF
LIBERTY HILL INDEPENDENT SCHOOL DISTRICT
INST.# 2021177340 O.P.R.W.C.T.
CITY OF LIBERTY HILL E.T.J.
WILLIAMSON COUNTY, TEXAS

INDEPENDENT SCHOOL DISTRICT
LIBERTY HILL ISD
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LIBERTY HILL, TX 78642
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CIVIL ENGINEER
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AUSTIN, TX 78759
CONTACT: JACK GARNER, JR., PE
PHONE: (737) 289-7800
EMAIL: JGARNER@LANGAN.COM

LANDSCAPE ARCHITECT
LANGAN
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AUSTIN, TX 78759
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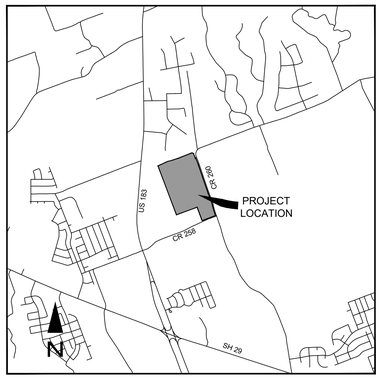
PHONE: (817) 328-3217
EMAIL: BHENRY@LANGAN.COM

SURVEYOR
JPH LAND SURVEYING, INC.
1516 E. PALM VALLEY BOULEVARD, SUITE A4
ROUND ROCK, TX 78664
CONTACT: CHRIS HENDERSON , R.P.L.S.
PHONE: (817) 431-4971
EMAIL: CHRIS@JPHLS.COM



SITE MAP
1" = 1/2 MILE

LANGAN

9606 N. Mopac Expressway, Suite 110 ■ Austin, Texas 78759 ■ (737) 289-7800

LANGAN PROJECT NO. 531013308

May 2023

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L2.0	IRRIGATION PLAN
L2.1	IRRIGATION DETAILS

LIZ BRANIGAN, MAYOR — DATE
CITY OF LIBERTY HILL, TEXAS

Based on the design engineer's certification of compliance with all applicable City, State and Federal regulations, the plans and specifications contained herein have been reviewed and are found to be in compliance with the requirements of the City of Liberty Hill.

SIGNATURE — DATE

REVIEWED FOR COMPLIANCE WITH WILLIAMSON COUNTY REQUIREMENTS.

JERRY L. MILLARD JR., CITY PLANNER — DATE
CITY OF LIBERTY HILL, TEXAS

Based on the design engineer's certification of compliance with all applicable City, State and Federal regulations, the plans and specifications contained herein have been reviewed and are found to be in compliance with the requirements of the City of Liberty Hill.

CURTIS STEGER, P.E., CITY ENGINEER — DATE
CITY OF LIBERTY HILL, TEXAS

Based on the design engineer's certification of compliance with all applicable City, State and Federal regulations, the plans and specifications contained herein have been reviewed and are found to be in compliance with the requirements of the City of Liberty Hill.

VLK | ARCHITECTS

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

STATE OF TEXAS — JOHN H. GARNER — 98447 — LICENSED PROFESSIONAL ENGINEER — 5-8-2023

TBPE Registration # F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director: JHG
Drawn By:
Designer:
Quality Control: LANGAN
Proj. Mgr.: MSH

PROJECT NO.
22-053.00

SHEET TITLE
COVER SHEET

SHEET NO.
C1.0

New High School No. 2

CITY OF LIBERTY HILL GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK STANDARD SPECIFICATIONS MANUAL.
2. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT PLANNED FOR DESTRUCTION OR REMOVAL THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER WHO SHALL BE RESPONSIBLE FOR REVISING THE PLANS AS APPROPRIATE.
4. MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL PAVING CONSTRUCTION.
5. THE CONTRACTOR SHALL GIVE THE CITY OF LIBERTY HILL 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION. TELEPHONE 512-778-5449 (PLANNING & DEVELOPMENT DEPARTMENT).
6. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REVEGETATION OF ALL DISTURBED OR EXPOSED AREAS SHALL CONSIST OF SODDING OR SEEDING, AT THE CONTRACTOR'S OPTION. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION.
7. PRIOR TO ANY CONSTRUCTION, THE ENGINEER SHALL CONVENE A PRECONSTRUCTION CONFERENCE BETWEEN THE CITY OF LIBERTY HILL, HIMSELF, THE CONTRACTOR, OTHER UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE CITY OR ENGINEER MAY REQUIRE.
8. THE CONTRACTOR AND THE ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LIBERTY HILL ACCURATE "AS-BUILT" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "AS-BUILT" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE PLANNING & DEVELOPMENT DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
9. THE LIBERTY HILL CITY COUNCIL SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
10. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE CONTRACTOR'S WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEAN-UP SHALL BE TO THE SATISFACTION OF THE CITY ENGINEER AND/OR CITY INSPECTOR.
11. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
12. BENCHMARKS UTILIZED FOR THE CONSTRUCTION OF THIS PROJECT ARE DESCRIBED AS FOLLOWS: AS NOTED ON THE SURVEY TITLED JOHN B. ROBINSON SURVEY, ABSTRACT NO. 521 & B. MANLOVE SURVEY, ABSTRACT NO.417, BY JPH LAND SURVEYING LLC., ROUND ROCK, TX, DATED 01/06/21, THE FIRST SITE BENCHMARK IS A MAG NAIL WITH A METAL WASHER STAMPED "JPH BENCHMARK" SET IN A CONCRETE DRAIN INLET ON THE EAST MARGIN OF U.S. HIGHWAY 183 AND COUNTY ROAD 258. BENCHMARK ELEVATION = 1046.29' (NAVD'88, GEOID 18). THE SECOND SITE BENCHMARK IS A MAG NAIL WITH A METAL WASHER STAMPED "JPH BENCHMARK" SET IN A CONCRETE CULVERT DRAIN ON THE NORTH MARGIN OF COUNTY ROAD 258, LOCATED APPROXIMATELY 2580' NORTHEASTERLY FROM INTERSECTION OF U.S. HIGHWAY 183 AND COUNTY ROAD 258, AND APPROXIMATELY 920' SOUTHEASTERLY FROM THE INTERSECTION OF OF COUNTY ROAD 258. BENCHMARK ELEVATION = 1055.98' (NAVD'88, GEOID 18).

CITY OF LIBERTY HILL TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDED BY THE CONTRACTOR.
2. IN ACCORDANCE WITH THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
3. IF TRENCH SAFETY SYSTEM DETAILS WERE NOT PROVIDED IN THE PLANS BECAUSE TRENCHES WERE ANTICIPATED TO BE LESS THAN 5 FEET IN DEPTH AND DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE, THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF LIBERTY HILL.

CITY OF LIBERTY HILL TRAFFIC MARKING NOTES:

1. ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
2. ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.

CITY OF LIBERTY HILL EROSION AND SEDIMENTATION CONTROL NOTES:

1. EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS.
2. ALL SLOPES SHALL BE SODDED OR SEEDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED.
3. SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CITY OF LIBERTY HILL FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY ENGINEER, THEY ARE WARRANTED.
4. ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY THE ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY THE ENGINEER.
5. ALL MUD, DIRT, ROCKS, DEBRIS, ETC., SPILLED, TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES AND AREAS USED BY THE PUBLIC SHALL BE CLEANED UP IMMEDIATELY.

CITY OF LIBERTY HILL STREET AND DRAINAGE NOTES:

1. ALL TESTING SHALL BE DONE BY AN INDEPENDENT LABORATORY AT THE OWNER'S EXPENSE. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. A CITY INSPECTOR SHALL BE PRESENT DURING ALL TESTS. TESTING SHALL BE COORDINATED WITH THE CITY INSPECTOR AND HE SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE PRIOR TO ANY TESTING. TELEPHONE 512-778-5449 (INSPECTIONS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 3" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 3" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TV, WATER SERVICES, ETC., SHALL BE A MINIMUM OF 30" BELOW SUBGRADE.
4. STREET RIGHTS-OF-WAY SHALL BE GRADED AT A SLOPE OF 1/4" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED. HOWEVER, IN NO CASE SHALL THE WIDTH OF RIGHT-OF-WAY AT 1/4" PER FOOT SLOPE BE LESS THAN 10 FEET UNLESS A SPECIFIC REQUEST FOR AN ALTERNATE GRADING SCHEME IS MADE TO AND ACCEPTED BY THE CITY OF LIBERTY HILL PLANNING & DEVELOPMENT DEPARTMENT.
5. BARRICADES BUILT TO CITY OF LIBERTY HILL STANDARDS SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB AND PUBLIC SAFETY.
6. ALL R.C.P. SHALL BE MINIMUM CLASS III.
7. THE SUBGRADE MATERIAL FOR THE PAVEMENT SHOWN HEREIN WAS TESTED BY ALLIANCE ENGINEERING GROUP, INC. AND THE PAVING SECTIONS DESIGNED IN ACCORDANCE WITH THE CURRENT CITY OF LIBERTY HILL DESIGN CRITERIA. THE PAVING SECTIONS ARE TO BE CONSTRUCTED AS SHOWN IN THE GEOTECHNICAL REPORT NO. XXX DATED XXXXXXX PREPARED BY XXXXX .

   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 REVISION OF THE CONSTRUCTION PLANS.
8. WHERE PI'S ARE OVER 20, SUBGRADES MUST BE STABILIZED UTILIZING A METHOD ACCEPTABLE TO THE CITY ENGINEER. THE GEOTECHNICAL ENGINEER SHALL RECOMMEND AN APPROPRIATE SUBGRADE STABILIZATION IF SULFATES ARE DETERMINED TO BE PRESENT.

CITY OF GEORGETOWN WATER NOTES:

1. THESE CONSTRUCTION PLANS WERE PREPARED, SEALED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT OF THE CITY.
3. THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED SITE PLAN.
4. PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2 HOURS.
5. PRIVATE WATER SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE BUILDING SPRINKLER SYSTEM, AND 200 PSI C900 PVC FOR ALL OTHERS.
6. PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 PVC AND TESTED BY THE CONTRACTOR AT 150 PSI FOR 4 HOURS.
7. ALL BENDS AND CHANGES IN DIRECTION ON WATER MAINS SHALL BE RESTRAINED AND THRUST BLOCKED.
8. LONG FIRE HYDRANT LEADS SHALL BE RESTRAINED.
9. ALL WATER LINES ARE TO BE BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO THE CITY STANDARDS AND SPECIFICATIONS.
10. WATER AND SEWER MAIN CROSSINGS SHALL MEET ALL REQUIREMENTS OF THE TCEQ AND THE CITY.
11. A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVEMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEARS IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
12. RECORD DRAWINGS OF THE PUBLIC IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT. THESE DRAWINGS SHALL BE ON TIFF OR PDF (300P DPI). IF A DISK IS SUBMITTED, A BOND SET SHALL BE INCLUDED WITH THE DISK.

CITY OF LIBERTY HILL WATER AND WASTEWATER NOTES:

1. PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 200), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200 PSI, DR 9).
2. PIPE MATERIAL FOR PRESSURE WASTEWATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 150), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC (ASTM D2241 OR D3034, MAX. DR-26), DUCTILE IRON (AWWA C-100, MIN. CLASS 200).
3. UNLESS OTHERWISE ACCEPTED BY THE CITY ENGINEER, DEPTH OF COVER FOR ALL LINES OUT OF THE PAVEMENT SHALL BE 42" MIN., AND DEPTH OF COVER FOR ALL LINES UNDER PAVEMENT SHALL BE A MIN. OF 30" BELOW SUBGRADE.
4. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C-100, MIN. CLASS 200).
5. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE AND SEALED WITH DUCT TAPE OR EQUAL ACCEPTED BY THE CITY ENGINEER.
6. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR AT 512-778-5449 TO COORDINATE UTILITY TIE-INS AND NOTIFY HIM AT LEAST 48 HOURS PRIOR TO CONNECTING TO EXISTING LINES.
7. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON RING AND COVER. ALL MANHOLES LOCATED OUTSIDE OF THE PAVEMENT SHALL HAVE BOLTED COVERS. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.
8. THE CONTRACTOR MUST OBTAIN A BULK WATER PERMIT OR PURCHASE AND INSTALL A WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
9. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE SCHEDULED WITH THE WATER & WASTEWATER SUPERINTENDENT, TELEPHONE 512-778-5449.
10. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL PERFORM STERILIZATION OF ALL POTABLE WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING TEST GAUGES), SUPPLIES (INCLUDING CONCENTRATED CHLORINE DISINFECTING MATERIAL), AND NECESSARY LABOR REQUIRED FOR THE STERILIZATION PROCEDURE. THE STERILIZATION PROCEDURE SHALL BE MONITORED BY CITY OF LIBERTY HILL PERSONNEL. WATER SAMPLES WILL BE COLLECTED BY THE CITY OF LIBERTY HILL TO VERIFY EACH TREATED LINE HAS ATTAINED AN INITIAL CHLORINE CONCENTRATION OF 50 PPM. WHERE MEANS OF FLUSHING IS NECESSARY, THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL PROVIDE FLUSHING DEVICES AND REMOVE SAID DEVICES PRIOR TO FINAL ACCEPTANCE BY THE CITY OF LIBERTY HILL.
11. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTOR'S REQUEST, AND IN CONTRACTOR'S PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LIBERTY HILL 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. THE CONTRACTOR SHALL SUPPLY A CHECK OR MONEY ORDER, PAYABLE TO THE CITY OF LIBERTY HILL, TO COVER THE FEE CHARGED FOR TESTING EACH WATER SAMPLE. CITY OF LIBERTY HILL FEE AMOUNTS MAY BE OBTAINED BY CALLING THE PLANNING & DEVELOPMENT DEPARTMENT AT 512-778-5449.
12. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL WASTEWATER PIPE INSTALLED AND PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY CITY OF LIBERTY HILL PERSONNEL.
13. THE CONTRACTOR SHALL COORDINATE TESTING WITH THE CITY OF LIBERTY HILL INSPECTOR AND PROVIDE NO LESS THAN 24 HOURS NOTICE PRIOR TO PERFORMING STERILIZATION, QUALITY TESTING OR PRESSURE TESTING.
14. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF LIBERTY HILL.
15. ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
16. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED AS FOLLOWS:

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

   TOOLS FOR MARKING THE CURB SHALL BE PROVIDED BY THE CONTRACTOR. OTHER APPROPRIATE MEANS OF MARKING SERVICE AND VALVE LOCATIONS SHALL BE PROVIDED IN AREAS WITHOUT CURBS. SUCH MEANS OF MARKING SHALL BE AS SPECIFIED BY THE ENGINEER AND ACCEPTED BY THE CITY OF LIBERTY HILL.
17. CONTACT THE CITY OF LIBERTY HILL WATER & WASTEWATER SUPERINTENDENT AT 512-778-5449 FOR ASSISTANCE IN OBTAINING EXISTING WATER AND WASTEWATER LOCATIONS.
18. THE CITY OF LIBERTY HILL FIRE DEPARTMENT SHALL BE NOTIFIED 48 HOURS PRIOR TO TESTING OF ANY BUILDING SPRINKLER PIPING IN ORDER THAT THE FIRE DEPARTMENT MAY MONITOR SUCH TESTING.
19. SAND, AS DESCRIBED IN 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

20. 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 A.M. AND 6 A.M.
21. ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS, 30 TAC CHAPTER 213 AND 317, AS APPLICABLE. WHENEVER TCEQ AND CITY OF LIBERTY HILL SPECIFICATIONS CONFLICT, THE MORE STRINGENT SHALL APPLY.

CITY OF LIBERTY HILL WATER AND WASTEWATER NOTES ARE MODIFIED TO STRIKE NON APPLICABLE WATER NOTES. ONLY THE CITY WASTEWATER NOTES APPLY TO THE PROJECT.

WILLIAMSON COUNTY CONSTRUCTION NOTES

B4 - CONSTRUCTION - GENERAL

1. A PRECONSTRUCTION MEETING SHALL BE SCHEDULED PRIOR TO THE START OF CONSTRUCTION. THE DESIGN ENGINEER, OWNER, CONTRACTOR, SUBCONTRACTORS, AND COUNTY ENGINEER SHALL ATTEND THIS MEETING. ALL ROADS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AS APPROVED BY THE COUNTY ENGINEER AND IN ACCORDANCE WITH THE SPECIFICATIONS FOUND IN THE CURRENT VERSION OF THE "TEXAS DEPARTMENT OF TRANSPORTATION MANUAL STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES" UNLESS OTHERWISE STATED ON THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER.
2. ALL MATERIALS SHALL BE SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER. THE OWNER SHALL PAY FOR ALL TESTING SERVICES AND SHALL FURNISH THE COUNTY ENGINEER WITH CERTIFIED COPIES OF THESE TEST RESULTS. THE COUNTY ENGINEER MUST APPROVE THE TEST RESULTS PRIOR TO CONSTRUCTING THE NEXT COURSE OF THE ROADWAY STRUCTURE. ANY MATERIAL WHICH DOES NOT MEET THE MINIMUM REQUIRED TEST SPECIFICATIONS SHALL BE REMOVED AND RECOMPACTED OR REPLACED UNLESS ALTERNATIVE REMEDIAL ACTION IS APPROVED IN WRITING FROM THE COUNTY ENGINEER.
3. EXCEPT FOR ELECTRICAL LINES, ALL UNDERGROUND NONFERROUS UTILITIES WITHIN A RIGHT-OF-WAY OR EASEMENT MUST BE ACCOMPANIED BY FERROUS METAL LINES TO AID IN TRACING THE LOCATION OF SAID UTILITIES THROUGH THE USE OF A METAL DETECTOR.
4. ALL PAVEMENTS ARE TO BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. THE DESIGN SHALL BE BASED ON A 20-YEAR DESIGN LIFE AND IN CONJUNCTION WITH RECOMMENDATIONS BASED UPON A SOILS REPORT OF SAMPLES TAKEN ALONG THE PROPOSED ROADWAYS. TEST BORINGS SHALL BE PLACED AT A MAXIMUM SPACING OF 500 FEET OR OTHER SAMPLING FREQUENCY APPROVED BY THE COUNTY ENGINEER BASED ON RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER. THE SOILS REPORT AND PAVEMENT DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR REVIEW. THE PAVEMENT DESIGN MUST BE APPROVED BY THE COUNTY ENGINEER PRIOR TO OR CONCURRENTLY WITH THE REVIEW AND APPROVAL OF THE CONSTRUCTION PLANS. IN ADDITION TO THE BASIS OF THE PAVEMENT DESIGN, THE SOILS REPORT SHALL CONTAIN THE RESULTS OF SAMPLED AND TESTED SUBGRADE FOR PLASTICITY INDEX, PH, SULFATE CONTENT, AND MAXIMUM DENSITY.

B5 - SUBGRADE

1. THE PREPARATION OF THE SUBGRADE SHALL FOLLOW GOOD ENGINEERING PRACTICES AS DIRECTED BY THE COUNTY ENGINEER IN CONJUNCTION WITH RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT. WHEN THE PLASTICITY INDEX (PI) IS GREATER THAN 20, A SUFFICIENT AMOUNT OF LIME SHALL BE ADDED AS DESCRIBED IN ITEM 260 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNTIL THE PI IS LESS THAN 20. IF THE ADDITION OF LIME AS DESCRIBED IN ITEM 260 IS NOT FEASIBLE, AN ALTERNATE STABILIZING DESIGN SHALL BE PROPOSED AND SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. THE SUBGRADE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A DRY DENSITY PER TXDOT ITEM 132. IN ADDITION, PROOF ROLLING MAY BE REQUIRED BY THE COUNTY ENGINEER.
2. THE SUBGRADE SHALL BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF ALL INSPECTION REPORTS FURNISHED TO THE COUNTY ENGINEER, WHO MUST APPROVE THE REPORT PRIOR TO APPLICATION OF THE BASE MATERIAL. ALL DENSITY TEST REPORTS SHALL INCLUDE A COPY OF THE WORK SHEET SHOWING THE PERCENTAGE OF THE MAXIMUM DRY (PROCTOR) DENSITY. THE NUMBER AND LOCATION OF ALL SUBGRADE TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER.

B6 - BASE MATERIAL

1. BASE MATERIAL SHALL CONFORM TO ITEM 247 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, "FLEXIBLE BASE". THE BASE MATERIAL SHALL BE TYPE A GRADE 1, TYPE A GRADE 2, OR AS APPROVED BY THE COUNTY ENGINEER.
2. EACH LAYER OF BASE COURSE SHALL BE TESTED FOR IN-PLACE DRY DENSITY AND MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL BASE TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.
3. THE BASE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A MINIMUM OF 100% OF THE MAXIMUM (PROCTOR) DRY DENSITY OR AS APPROVED BY THE COUNTY ENGINEER UPON RECOMMENDATION BY THE TESTING LABORATORY. THE MAXIMUM LIFT SHALL NOT EXCEED SIX INCHES. THE BASE MUST BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF THE TEST RESULTS FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL. PRIOR TO THE PLACEMENT OF THE FIRST LIFT OF BASE, THE STOCKPILE SHALL BE TESTED FOR THE SPECIFICATIONS FOUND IN ITEM 247 TABLE 1 AND THE RESULT FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL

B7 - BITUMINOUS PAVEMENT

1. URBAN ROADS REQUIRE A MINIMUM 2 INCH WEARING SURFACE OF HMAC TYPE D. THE MIX SHALL BE FROM A TXDOT CERTIFIED PLANT. THE MIX DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL. CONTRACTOR'S QUALITY CONTROL (CQC) TEST REPORTS SHALL BE SUBMITTED TO THE COUNTY ENGINEER ON A DAILY BASIS. AS A MINIMUM, DAILY CQC TESTING ON THE PRODUCED MIX SHALL INCLUDE: SIEVE ANALYSIS TEX-200-F, ASPHALT CONTENT TEX-210-F, HVEEM STABILITY TEX-208-F, LABORATORY COMPACTED DENSITY TEX-207-F, AND MAXIMUM SPECIFIC GRAVITY TEX-227-F. THE NUMBER AND LOCATION OF ALL HMAC TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER WITH A MINIMUM OF THREE, 6-INCH DIAMETER FIELD CORES SECURED AND TESTED BY THE CONTRACTOR FROM EACH DAY'S PAVING. EACH HMAC COURSE SHALL BE TESTED FOR IN-PLACE DENSITY, BITUMINOUS CONTENT AND AGGREGATE GRADATION, AND SHALL BE MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL HMAC TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.
2. RURAL ROADS MAY USE EITHER THE SPECIFICATIONS FOUND IN SECTION B7.1 OR A TWO-COURSE SURFACE IN ACCORDANCE WITH ITEM 316, TREATMENT WEARING SURFACE, OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE TYPE AND RATE OF ASPHALT AND AGGREGATE SHALL BE INDICATED ON THE PLANS AS A BASIS OF ESTIMATE AND SHALL BE DETERMINED AT THE PRECONSTRUCTION CONFERENCE. AGGREGATE USED IN THE MIX SHALL BE ON THE TXDOT QUALITY MONITORING SCHEDULE. AGGREGATE SHALL BE TYPE B GRADE 4. GRADATION TESTS SHALL BE REQUIRED FOR EACH 300 CUBIC YARDS OF MATERIAL PLACED WITH A MINIMUM OF TWO TESTS PER EACH GRADE PER EACH PROJECT. TEST RESULTS SHALL BE REVIEWED BY THE COUNTY ENGINEER PRIOR TO APPLICATION OF THE MATERIAL.

B8 - CONCRETE PAVEMENT

1. IN LIEU OF BITUMINOUS PAVEMENT, PORTLAND CEMENT CONCRETE PAVEMENT MAY BE USED. IN SUCH CASES, THE PAVEMENT THICKNESS SHALL BE A MINIMUM OF 9 INCHES OF CONCRETE, AND SHALL BE JOINTED AND REINFORCED IN ACCORDANCE WITH THE DETAIL INCLUDED IN APPENDIX J. THE MIX SHALL BE FROM A TXDOT CERTIFIED PLANT. THE MIX DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL.

B9 - CONCRETE - GENERAL

1. UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE IN ACCORDANCE WITH ITEM 421 OF THE CURRENT EDITION OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND BE PLACED IN ACCORDANCE WITH THE APPLICABLE ITEM.
2. ALL CONCRETE SHALL BE TESTED FOR COMPRESSIVE STRENGTH. ONE SET OF THREE CONCRETE TEST CYLINDERS SHALL BE MOLDED FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED FOR EACH CLASS OF CONCRETE PER DAY, OR AT ANY OTHER INTERVAL AS DETERMINED BY THE COUNTY ENGINEER. A SLUMP TEST SHALL BE REQUIRED WITH EACH SET OF TEST CYLINDERS. ONE CYLINDER SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT AN AGE OF SEVEN DAYS AND THE REMAINING TWO CYLINDERS SHALL BE TESTED AT 28 DAYS OF AGE.

WILLIAMSON COUNTY EMERGENCY SERVICE DISTRICT NO. 4 NOTES

1. PRIOR TO CONSTRUCTION ABOVE THE SLAB, PROVIDE AN ALL-WEATHER DRIVE SURFACE THAT IS ENGINEERED TO WITHSTAND 75,000 LBS. AN ACCEPTANCE INSPECTION BY FIRE INSPECTIONS IS REQUIRED. 2015 IFC 503 AND D102.1
2. PRIOR TO CONSTRUCTION ABOVE THE SLAB, THE FIRE HYDRANTS ON THE SITE PLAN ARE REQUIRED TO BE INSPECTED AND APPROVED FOR SERVICE BY THE FIRE CODE OFFICIAL.

GENERAL NOTES

1. THE CONTRACTOR SHALL BEGIN WORK AS DIRECTED BY THE OWNER/CITY OR THE NOTICE TO PROCEED.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, APPROVALS, AND INSPECTIONS PRIOR TO AND THROUGHOUT CONSTRUCTION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN NEAT AND ACCURATE CONSTRUCTION RECORDS FOR THE OWNER/CITY'S USE. THE CONTRACTOR SHALL PROVIDE THE CITY CLEAN AND ACCURATE FULL SIZE REPRODUCIBLE RECORD DRAWINGS WHICH CLEARLY DESCRIBE ALL CONSTRUCTION AND ANY DEVIATIONS FROM THE PLANS.
4. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE PROOFREAD AND REVIEWED BY THE GENERAL CONTRACTOR FOR APPROVAL PRIOR TO SUBMITTAL TO THE ENGINEER. SUBCONTRACTOR / GENERAL CONTRACTOR SHALL CLEARLY INDICATE, MARK, HIGHLIGHT, AND PROPERLY CLARIFY PRODUCTS TO BE CONSIDERED FOR APPROVAL. SUBMITTALS NOT PROOFREAD OR REVIEWED OR CLARIFIED PROPERLY SHALL BE RETURNED UNREVIEWED. CONTRACTOR SHALL RESUBMIT SHOP DRAWINGS AND ALLOW FOR SUITABLE REVIEW TIME. SUITABLE REVIEW TIME SHALL BE SEVEN (7) WORKING DAYS FOR TYPICAL SUBMITTALS AND LONGER DEPENDING ON THE SIZE AND NATURE OF THE SUBMITTAL.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR QUALITY CONTROL IN THE REQUIRED CONSTRUCTION SURVEYING AND MATERIALS TESTING. DIMENSIONS SHOWN AND DIGITAL FILES PROVIDED SHALL BE USED TO LAYOUT THE SITE.
6. ALL EXCAVATION IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED TO INCLUDE BUT NOT BE LIMITED TO ROCK, RUBBLE, DEBRIS, TRASH, ETC. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF SITE AT THE CONTRACTOR'S EXPENSE UNLESS OTHERWISE SPECIFIED OR AGREED TO BY OWNER.
7. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND CITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES FOR THE ESTABLISHMENT OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
8. DISTURBED AREAS THAT ARE SEEDED SHALL BE CHECKED PERIODICALLY FOR FULL COVERAGE OF GRASS. ALL DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND SEEDED OR SODDED AS NECESSARY AND BY DEFINITION 'MAINTAINED' UNTIL AN ESTABLISHED STAND OF GRASS CAN BE RELEASED TO THE OWNER. REFERENCE LANDSCAPE/IRRIGATION PLAN (IF PROVIDED) TO COORDINATE PLANTING ENHANCEMENTS AND LIMITS OF IRRIGATION COVERAGE.
9. CONTRACTOR SHALL NOT STORE MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON ADJACENT PROPERTIES OR ADJACENT RIGHT-OF-WAYS WITHOUT THE PRIOR WRITTEN CONSENT OF THE PROPERTY OWNER AND THE CITY. ALL CONSTRUCTION WASTE MATERIALS TO BE REMOVED SHALL BE DISPOSED OF AT A PERMITTED LOCATION OFF SITE, UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE CITY.

EARTHWORK NOTES

1. PLACE TOPSOIL TO WITHIN 0.10' OF FINISH GRADE. SEE TOPSOIL SPECIFICATION SHOULD IMPORTED MATERIAL BE NECESSARY.
2. AS A RESULT OF THE SITE GEOLOGY AND PROPOSED SITE PLAN, THE CONTRACTOR SHALL ESTABLISH A SOIL MANAGEMENT PLAN/OPERATION THROUGHOUT THE CONSTRUCTION PROCESS. ALL TOPSOIL SHALL BE SALVAGED AND STOCKPILED ON-SITE. STOCKPILED TOPSOIL MAY BECOME STERILE AND NON-FERTILE OVER TIME. THE CONTRACTOR SHALL AMEND AND SUPPLEMENT THE STOCKPILED TOPSOIL AS NECESSARY TO YIELD A FERTILE TOPSOIL SUPPLY. THE CONTRACTOR'S BID SHALL INCLUDE ALL NECESSARY TOPSOIL (IMPORT MAY BE REQUIRED) AS REQUIRED TO BACKFILL AND CROWN ALL LANDSCAPE ISLANDS AND LANDSCAPE AREAS. THE LACK OF AVAILABLE ON-SITE TOPSOIL WILL NOT BE GROUNDS FOR A CHANGE ORDER OR ADDITIONAL PAY.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PRIVATE OR PUBLIC, PRIOR TO MOBILIZATION. CONTRACTOR SHALL VISIT THE SITE AND MAKE ALL NECESSARY OBSERVATIONS AND INSPECTIONS TO FAMILIARIZE THEMSELVES WITH THE SITE AND THE SITE FACILITIES. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA; AND, THE CONTRACTOR, SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE.
2. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 1 WEEK PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND MAKE ARRANGEMENTS FOR ANY AND ALL TEMPORARY UTILITIES, PERMITS, AND AGREEMENTS.
3. THE CONTRACTOR SHALL PROTECT ALL UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL GIVE THE CITY, RESIDENTS AND BUSINESSES AFFECTED BY ANY ANTICIPATED WATER OR SEWER SERVICE DISRUPTIONS AT LEAST FORTY-EIGHT (48) HOURS PRIOR NOTICE.
4. CONTRACTOR SHALL EXERCISE CAUTION AND MAINTAIN ADEQUATE CLEAR ZONE BETWEEN THE CONTRACTOR'S EQUIPMENT AND ANY POWER LINES.
5. THE CONTRACTOR SHALL PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONES RISERS, WATER VALVES, UTILITIES, ETC. DURING ALL CONSTRUCTION PHASES. CONTRACTOR WILL BE RESPONSIBLE TO REPLACE ANY DAMAGED ITEMS AND RESTORE ANY SERVICES THAT HAVE BEEN DISTURBED. ALL MANHOLES, CLEAN-OUTS, WATER VALVES, FIRE HYDRANTS AND OTHER APPURTENANCES MUST BE ADJUSTED TO FINAL GRADE BEFORE THE OWNER WILL ACCEPT THE WORK.
6. THE CONTRACTOR SHALL SALVAGE ALL EXISTING CITY UTILITIES (INCLUDING SIGNS, VALVES, FIRE HYDRANTS, ETC.) IN ACCORDANCE WITH CITY REQUIREMENTS AND PROVIDE TO THE CITY.

SEQUENCING / TRAFFIC CONTROL NOTES

1. CONTRACTOR SHALL PREPARE, FURNISH, MAINTAIN, AND REMOVE ALL TRAFFIC CONTROL BARRICADES, WARNING SIGNS, LIGHTS, CONSTRUCTION FENCES, ETC. FOR THE WORK THROUGHOUT CONSTRUCTION. ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ETC., FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE INSTALLATION SHOWN IN THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION AS CURRENTLY AMENDED BY THE TEXAS DEPARTMENT OF TRANSPORTATION.
2. CONTRACTOR SHALL PROVIDE ACCESS TO ALL REQUIRED ENTRANCES AND EXITS AT ALL TIMES THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL AND SEQUENCING PLAN TO ALL AUTHORITIES HAVING JURISDICTION AND COORDINATE THE PLAN AND SCHEDULE WITH THE OWNER PRIOR TO THE START OF CONSTRUCTION.

PAVING NOTES

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PERFORMING ALL CONSTRUCTION LAYOUTS FROM THE SITE LAYOUT DIGITAL CONTROL POINTS AND FROM THE DIMENSIONS SHOWN. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN ADVANCE AND ALLOW FOR THE ENGINEER'S RESPONSE BEFORE PROCEEDING WITH THE WORK.
2. ALL PAVING DIMENSIONS ARE TO BACK OF CURB, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
3. ALL CONCRETE PAVING SHALL BE REINFORCED.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE CITY AND THE ENGINEER WITH A CONCRETE MIX DESIGN AT THE PRE-CONSTRUCTION MEETING FOR REVIEW AND APPROVAL. THE COST OF THIS DESIGN SHALL BE INCLUDED IN THE UNIT PRICE OF PAVEMENT MATERIAL. FLY ASH IS NOT PERMITTED AS A SUBSTITUTE FOR CEMENT.
5. THE CONTRACTOR SHALL PROTECT ANY EXISTING AND/OR PROPOSED UTILITIES, WHICH ARE IN THE PROPOSED SUBGRADE DURING THE SUBGRADE STABILIZATION PROCESS.
6. PRIOR TO PAVING INSTALLATION, CONTRACTOR TO REFERENCE ALL PLAN SHEETS TO IDENTIFY ALL SLEEVES AND CONDUIT NECESSARY TO SUPPORT FRANCHISE UTILITY SERVICES, TECHNOLOGY/SECURITY, SITE LIGHTING, IRRIGATION, ETC. CONTRACTOR SHALL CONFIRM WITH OWNER AND/OR OWNER'S REPRESENTATIVE TO VERIFY SIZE, LOCATION, AND QUANTITY.
7. UNLESS OTHERWISE NOTED, SUBGRADE SHALL BE STABILIZED TO 12" BEYOND THE BACK OF CURB OR EDGE OF PAVEMENT PER GEOTECH RECOMMENDATIONS. ALL CONCRETE STRENGTH SHALL BE A MINIMUM OF 3,500 PSI AND REINFORCING STEEL SHALL BE A MINIMUM OF #3 BARS 18" O.C.E.W. OR PER PROJECT GEOTECHNICAL RECOMMENDATIONS, WHICHEVER IS MORE STRINGENT. FIRE LANES, PARKING STALLS, AND ROADWAY STRIPING & MARKINGS SHALL CONFORM TO CITY STANDARDS. SIDEWALKS WITHIN LANDSCAPE AREAS SHALL BE MINIMUM 4" THICK. LARGE EXPANSES OF CONCRETE FLATWORK (SUCH AS MAJOR PEDESTRIAN AREAS, PLAZA AREAS BETWEEN BUILDINGS OR OTHER STRUCTURES) SHALL BE TREATED LIKE VEHICULAR CONCRETE PAVEMENT AND RECEIVE SAME SUBGRADE STABILIZATION AS VEHICULAR PAVEMENT (6" DEEP MINIMUM AND IN ACCORDANCE WITH A LIME SERIES TEST) AND ALL JOINTS (CONTRACTION AND EXPANSION JOINTS) SHALL BE SEALED WITH SELF LEVELING POLYURETHANE SEALANT.
8. ALL PAVEMENT WITHIN 5' OF PROPOSED BUILDING(S) SHALL ADHERE TO THE STRUCTURAL RECOMMENDATIONS AND OR ARCHITECTURAL REQUIREMENTS. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS AND RELATED TECHNICAL SPECIFICATIONS. CIVIL PAVEMENT LIMITS BEGIN 5' OUTSIDE THE BUILDING. IN THE EVENT OF OF A CONFLICT WITH THE STRUCTURAL AND OR ARCHITECTURAL WITHIN THIS AREA, THE STRUCTURAL/ ARCHITECT REQUIREMENTS SHALL GOVERN.
9. CONNECTION OF THE PROPOSED SIDEWALK TO EXISTING PAVING, SIDEWALK, BUILDING, AND WHEELCHAIR RAMPS SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF THE CONSTRUCTION OF THE SIDEWALK. ALL JOINTS (EXPANSION, ISOLATION, CONTRACTION, & CONSTRUCTION) FOR CONCRETE PAVING AND INCIDENTAL CRACKS SHALL BE SEALED AND INSTALLED IN ACCORDANCE WITH THE AMERICAN CONCRETE PAVEMENT ASSOCIATION (ACPA) RECOMMENDATIONS. CONTRACTOR SHALL OBSERVE THE ARCHITECTURAL AND STRUCTURAL JOINTING LAYOUTS. IN THE EVENT OF A DISCREPANCY OR CONFLICT FOR SITE PAVING, THE CONTRACTOR SHALL REFER TO ACPA PUBLICATION IS061.01P AND IS400.01P FOR THE JOINT SPECIFICATIONS AND THE LAYOUT OF PAVEMENT JOINTS (NON-PAY ITEM).
10. THE CONTRACTOR SHALL USE CARE DURING SOIL STABILIZATION AND COMPACTION ACTIVITIES SO AS NOT TO ADVERSELY AFFECT LANDSCAPE AREAS OR UTILITY LINES WITH SOIL STABILIZATION TREATMENTS. AFTER COMPACTION AND PRIOR TO PLACING GRASS, THE UPPER 8 INCHES (8") OF ALL LANDSCAPED AREAS SHALL BE AERATED, TILLED, OR OTHERWISE PROCESSED SO AS TO PROMOTE HEALTHY ROOT GROWTH FOR TURF AND OTHER VEGETATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY REPAIRS, UNDERCUTTING, REMOVAL, DISPOSAL, AND BACKFILLING OF THESE AREAS IF STABILIZATION IS DISCOVERED (NON-PAY ITEM).

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
5·8·2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.

22-053.00

SHEET TITLE

GENERAL NOTES

SHEET NO.

C1.1

New High School No. 2

THIS CONSTRUCTION PROJECT IS SUBJECT TO THE CONDITIONS GIVEN IN THE EDWARDS AQUIFER PROTECTION PLAN (EAPP) APPROVED AND ISSUED FOR THIS SITE BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ). NO CONSTRUCTION ACTIVITIES MAY COMMENCE UNTIL THOSE PLANS HAVE BEEN ISSUED BY THE TCEQ. CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PUBLIC NOTICE POSTINGS RELATED TO THIS TCEQ PERMIT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

CONTRACTOR AND OWNER SHALL ALSO OBTAIN COVERAGE FOR STORMWATER DISCHARGES RELATED TO CONSTRUCTION ACTIVITIES UNDER THE TEXAS GENERAL PERMIT TXR150000. CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PUBLIC NOTICE POSTINGS RELATED TO THIS TCEQ PERMIT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any ground disturbance or construction activities. This notice must include:

   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.

2. All contractors conducting regulated activities associated with this project should be provided with complete copies of the approved Contributing Zone Plan (CZP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractor(s) should keep copies of the approved plan and approval letter on-site.

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

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

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

6. Sediment must be removed from the sediment traps or sedimentation basins when it occupies 50% of the basin's design capacity.

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

8. All excavated material that will be stored on-site must have proper E&S controls.

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

10. The following records should be maintained and made available to the TCEQ upon request:

    - the dates when major grading activities occur;
    - the dates when construction activities temporarily or permanently cease on a portion of the site; and
    - the dates when stabilization measures are initiated.

11. The holder of any approved CZP must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

    A. any physical or operational modification of any best management practices (BMPs) or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;

    B. any change in the nature or character of the regulated activity from that which was originally approved;

    C. any change that would significantly impact the ability to prevent pollution of the Edwards Aquifer; or

    D. any development of land previously identified as undeveloped in the approved contributing zone plan.

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

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

TCEQ WATER DISTRIBUTION SYSTEM
GENERAL CONSTRUCTION NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS."
2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS [§290.44(A)(2)].
4. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY [§290.44(A)(3)].
5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].
7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].
8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].
11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
    - o THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

      Q = [LD(P)*0.5]/148,000

      WHERE:
      - Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
      - L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
      - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
      - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

    - o THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

      L = [SD(P)*0.5]/148,000

      WHERE:
      - L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
      - S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
      - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
      - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §290.44(E)(1)-(4).
13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT (§290.44(E)(5)).
14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].
15. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§290.44(E)(7)].
16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].
17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C-651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].
18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

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LIBERTY HILL, TEXAS

New High School No. 2

CZP SUBMITTAL

STATE OF TEXAS
JACK W. GARNER
98447
LICENSED
PROFESSIONAL
ENGINEER
5-8-2023

TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director JHG
Designer
Proj. Mgr. MSH
Drawn By
Quality Control LANGAN

PROJECT NO.

22-053.00

SHEET TITLE

TCEQ NOTES

SHEET NO.

C1.2

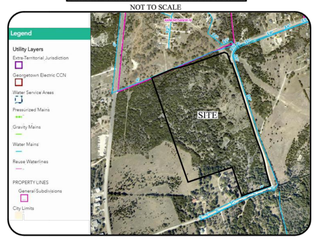
Line Data Table		
Line #	Bearing	Distance
L1	N68°46'52"E	20.43'
L2	S13°10'46"E	83.30'
L3	S20°52'46"E	60.05'

Curve Data Table					
Curve #	Arc	Radius	Delta	Chord Bearing	Chord
C1	472.76'	3268.00'	008°17'19"	N72°53'05"E	472.35'
C2	292.95'	1880.99'	008°55'25"	S17°36'56"E	292.66'
C3	305.28'	2216.94'	007°53'23"	S17°08'19"E	305.04'
C4	147.35'	2783.76'	003°01'58"	S67°23'52"W	147.34'

CITY OF GEORGETOWN UTILITY MAP

CLICK ■ HERE FOR MAP IN PDF FORMAT

NOT TO SCALE



NOTE REGARDING UTILITIES:

Utility locations are per observed and sources listed below:

DIG-TESS - ticket number 2266499669.
Utility providers listed in Texas 811 ticket link below.
https://portal.texas811.org/#/ticket/2266499669

GIS MAPS - City of Georgetown Utility Information Interactive Map
https://opendata-georgetowntx.opendata.arcgis.com/pages/interactivemaps

JPH LaNd Surveying Inc.

0 150' 300'
Scale: 1" = 150'

JPH Job/Drawing No. (see below)
2020.128.004 CR 258, Liberty Hill, Williamson Co, TX - TOPO-CTX4375.dwg

1516 E. Palm Valley Blvd., Ste. A4, Round Rock, Texas 78664
Telephone (817) 431-4971 www.jphlandsurveying.com
TBPELS Firm #10019500
DFW | Central Texas | West Texas | Houston

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MSH	

PROJECT NO.

22-053.00

SHEET TITLE

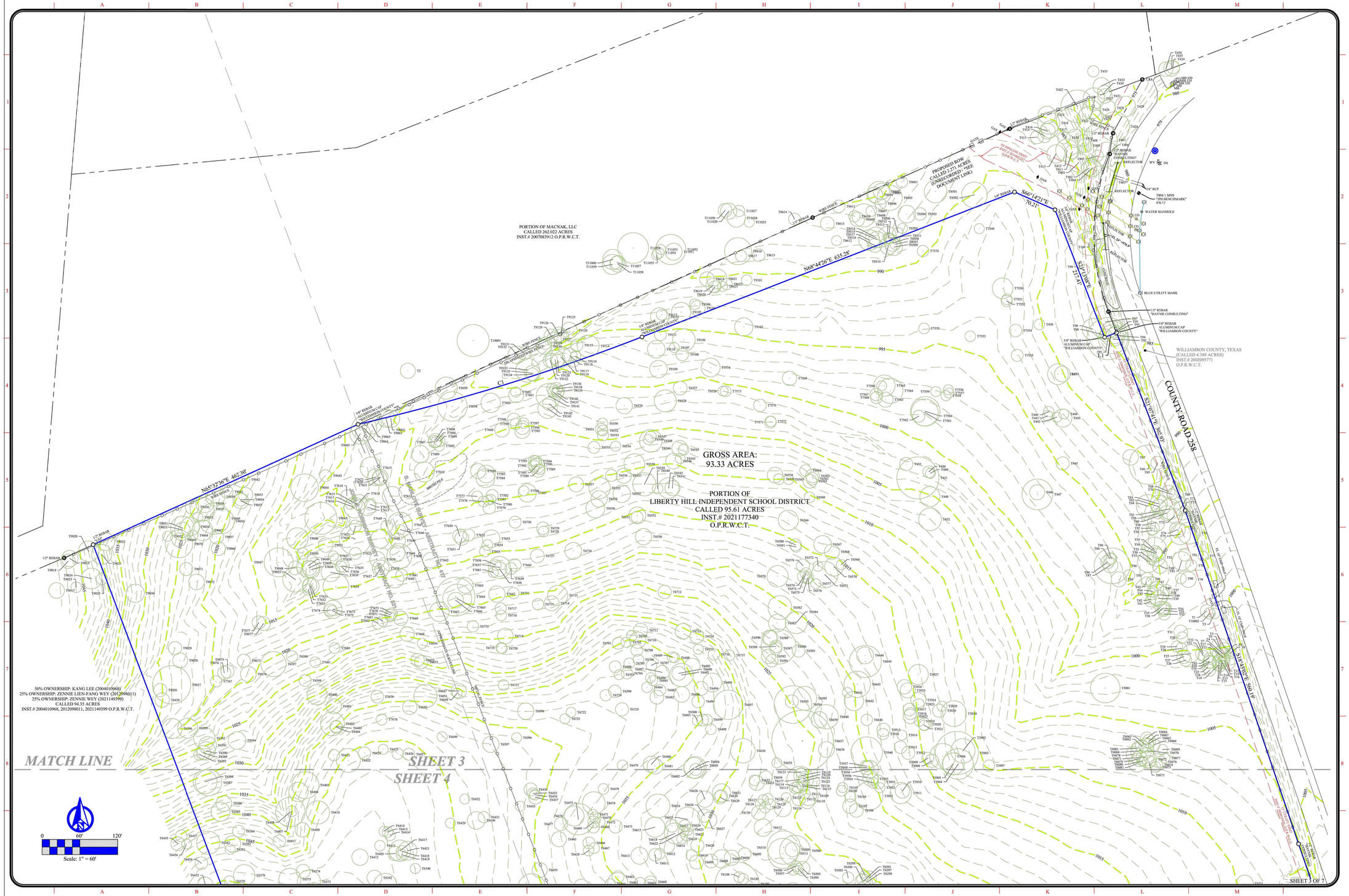
TOPOGRAPHY SURVEY
(1 OF 4)

SHEET NO.

C1.3

New High School No. 2

Date: 5/8/2023 Time: 09:58 User: amuhire Style Table: Langan.stb Layout: C1.3 TOPOGRAPHIC SURVEY (1 OF 4) Document Code: 531013308-0601-VT001-0101



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LIBERTY HILL, TEXAS

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CZP SUBMITTAL

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director: JHG
Drawn By:
Designer:
Quality Control: LANGAN
Proj. Mgr.: MSH

PROJECT NO.

22-053.00

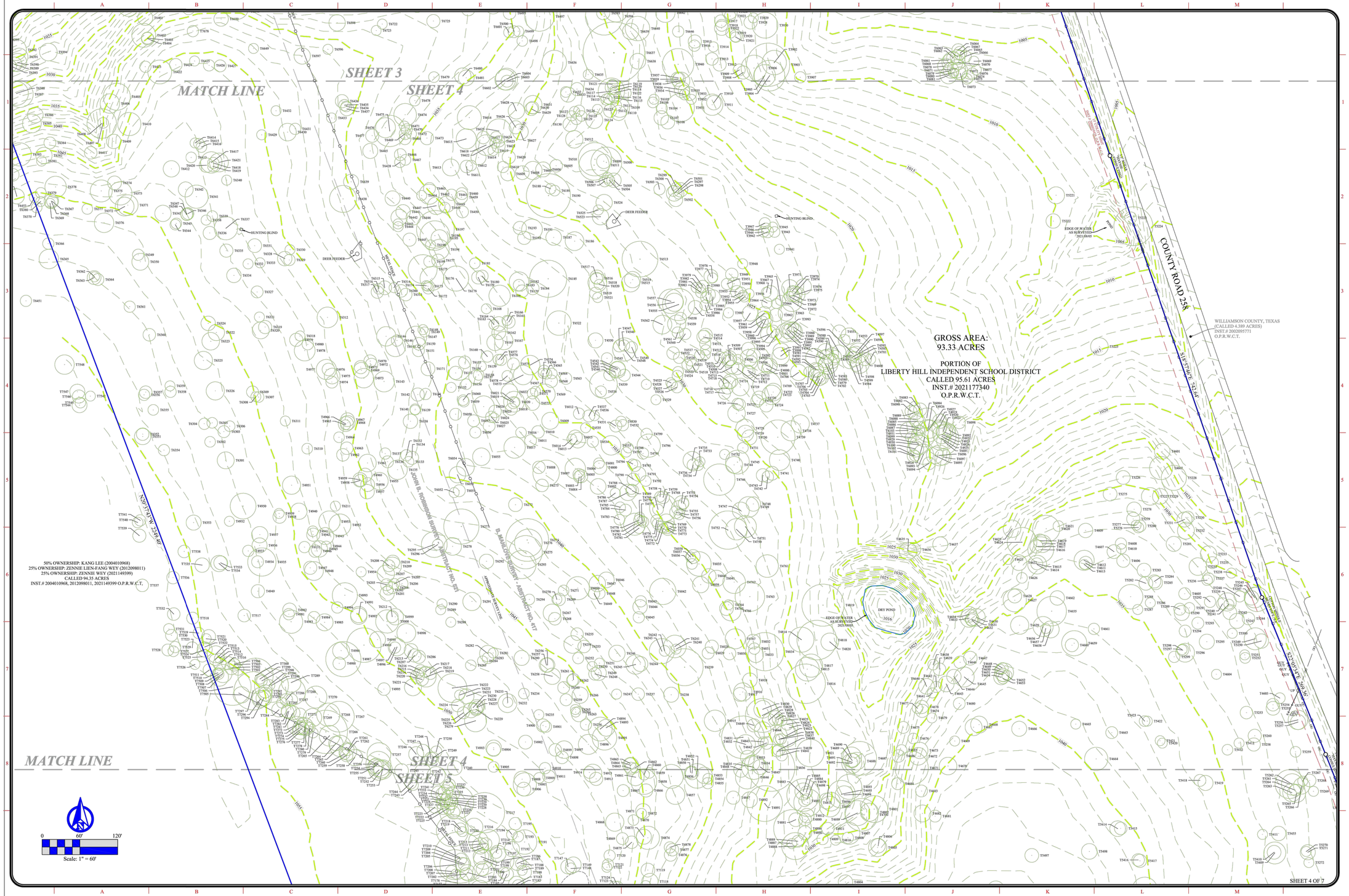
SHEET TITLE

TOPOGRAPHY SURVEY
(2 OF 4)

SHEET NO.

C1.4

Date: 5/8/2023 Time: 09:58 User: amuhire Style Table: Langan.stb Layout: C1.4 TOPOGRAPHIC SURVEY (2 OF 4) Document Code: 53101I3308-0501-IY001-0101



SHEET 4 OF 7

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CZP SUBMITTAL

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director
JHG
Designer
Proj. Mgr.
MSH

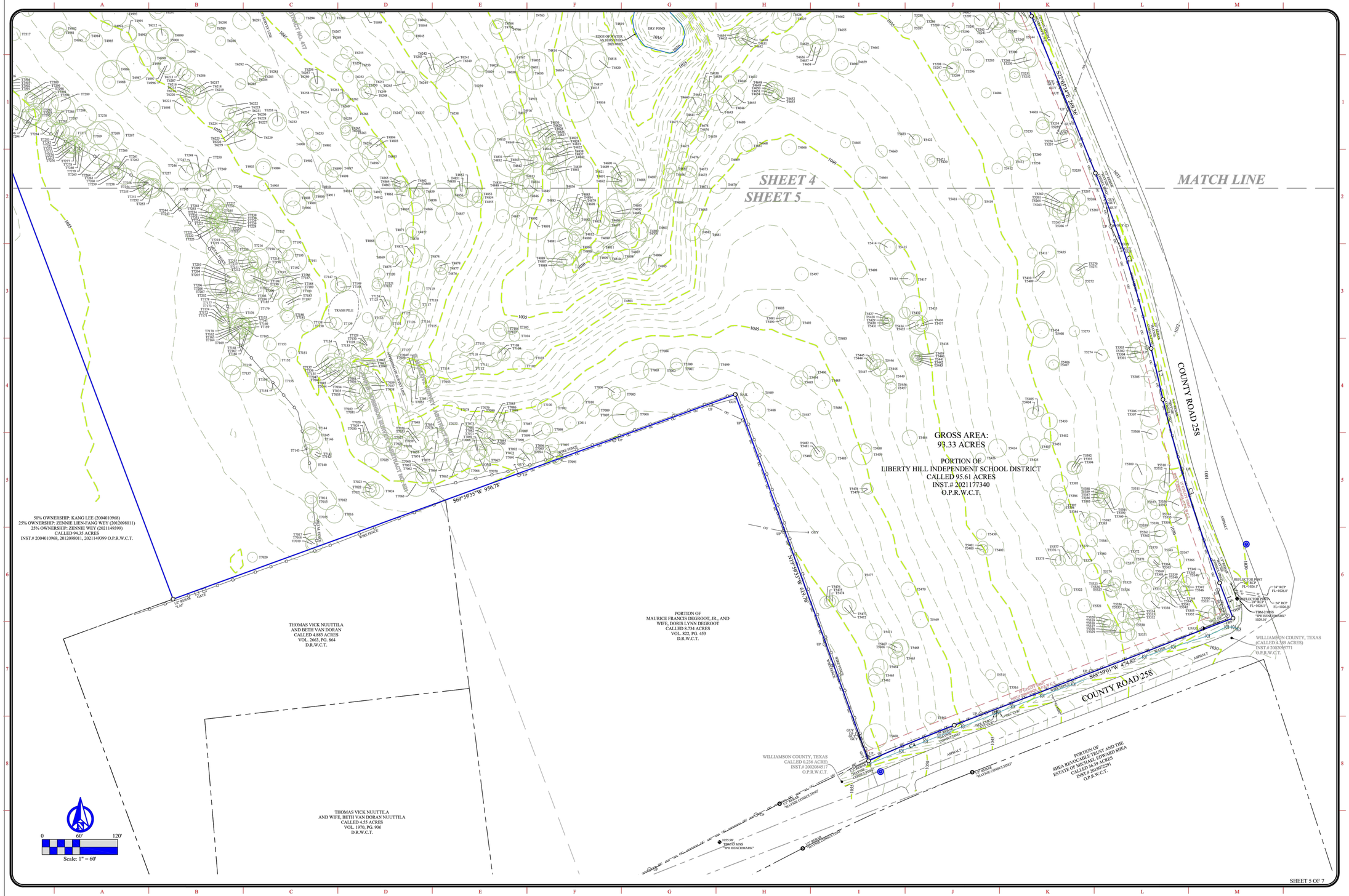
Drawn By
Quality Control
LANGAN

PROJECT NO.
22-053.00

SHEET TITLE
TOPOGRAPHY SURVEY
(3 OF 4)

SHEET NO.
C1.5

Date: 5/8/2023 Time: 09:59 User: amuhire Style Table: Langan.stb Layout: C1.5 TOPOGRAPHIC SURVEY (3 OF 4) Document Code: 53101633\08-0501-V1001-0101



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CZP SUBMITTAL

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REVISIONS

Revision No.

Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.

22-053.00

SHEET TITLE

TOPOGRAPHY SURVEY
(4 OF 4)

SHEET NO.

C1.6

New High School No. 2

Date: 5/8/2023 Time: 09:59 User: amuhire Style Table: Langan.stb Layout: C1.6 TOPOGRAPHIC SURVEY (4 OF 4) Document Code: 531013308-0601-C1201-0101

EROSION CONTROL NOTES

1. GENERAL CONTRACTOR MUST OBTAIN COVERAGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES (TXR150000) BY USING ON OF THE FOLLOWING PROCEDURES.
   A. FOR A LARGE SITE (DISTURBED AREA >5 ACRES)
      FILING A NOTICE OF INTENT FORM WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) WEDSITE USING THE STEERS SYSTEM AND POSTING ON-SITE THE NOTICE OF COVERAGE FORM (RECEIVED AFTER FILING THE NOI) AND A COMPLETED LARGE CONSTRUCTION SITE NOTICE;
   B. FOR SMALL SITE (DISTURBED AREA <5 ACRES)
      COMPLETING, SIGNING, AND POSTING A SMALL CONSTRUCTION SITE NOTICE.
   COPIES OF THESE NOTICES MUST ALSO BE PROVIDED TO THE OPERATOR OF ANY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) THAT RECEIVED STORMWATER RUNOFF FROM THE SITE.
2. THE GENERAL CONTRACTOR, (AND ALL SUBCONTRACTORS INVOLVED WITH ANY CONSTRUCTION ACTIVITY RELATED TO EARTHWORK, EROSION CONTROL., ETC., OR WHICH UTILIZE POSSIBLE POLLUTANTS AS DEFINED IN THE TPDES GENERAL PERMIT) MUST BE FAMILIAR WITH THE CONTENTS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS WELL AS ALL THE REQUIREMENTS SET FORTH IN THE TPDES GENERAL PERMIT AND ANY APPLICABLE LOCAL PERMIT REQUIREMENTS, AND SHALL COMPLY WITH ALL SUCH REQUIREMENTS DURING ALL CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL ADHERE TO THE SEQUENCE OF OPERATIONS FOR EROSION CONTROL IMPLEMENTATION SHOWN HEREON. ANY DEVIATION FROM THIS SEQUENCE DEEMED NECESSARY BY THE CONTRACTOR MAY REQUIRE THAT THE STORMWATER POLLUTION PREVENTION PLAN BE MODIFIED IN ACCORDANCE WITH THE NPDES GENERAL PERMIT GUIDELINES AND SECTION 1.01 F OF THE STORM WATER POLLUTION PREVENTION PLAN.
4. THE CONTRACTOR SHALL MODIFY THIS PLAN TO SHOW LOCATIONS OF TEMPORARY WASHDOWN AREAS, PORTABLE TOILETS, EQUIPMENT MAINTENANCE/REPAIR AREAS, STOCKPILE AREAS, FUEL STORAGE AREAS, CONCRETE WASH-OUT PITS, AND POLLUTANT CONTROLS FOR EACH, AS SOON AS POSSIBLE. THE GENERAL PERMIT AUTHORIZES THE LAND DISPOSAL OF WASH OUT WATER FROM CONCRETE TRUCKS THAT ARE ASSOCIATED WITH OFF-SITE PRODUCTION FACILITIES, AS LONG AS THE DISCHARGE IS INTO SPECIFICALLY DESIGNATED DIKED AREAS WHICH HAVE BEEN PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH OUT WATER AND STORMWATER WHICH WILL BE DISCHARGED FROM THE SITE, TO PREVENT DIRECT DISCHARGE TO SURFACE WATERS (SEE CONCRETE WASHOUT DETAIL SHOWN IN PLANS). DIRECT DISCHARGE OF CONCRETE TRUCK WASH OUT WATER TO SURFACE WATERS IN THE STATE, INCLUDING DISCHARGE TO STORM SEWERS, IS PROHIBITED BY THE GENERAL PERMIT. IF A CONCRETE PLANT IS LOCATED AT CONSTRUCTION SITE, CONTRACTOR SHALL OBTAIN COVERAGE UNDER AND COMPLY WITH GENERAL PERMIT TXG110000 OR INDIVIDUAL PERMIT.
5. THE GENERAL CONTRACTOR SHALL PERFORM ALL REQUIRED INSPECTIONS OF STORMWATER CONTROLS AND PRACTICES AT FREQUENCIES GIVEN IN THE NPDES GENERAL PERMIT, AND SHALL COMPLETE AND SIGN APPROPRIATE INSPECTION FORMS (AS PROVIDED IN THE SWPPP).
6. OIL AND GREASE ABSORBING MATERIALS SHALL BE READILY AVAILABLE ON-SITE AND SHALL BE PROMPTLY USED TO CONTAIN AND/OR CLEAN UP ALL FUEL OR CHEMICAL SPILLS OR LEAKS.
7. DUST CONTROL SHALL BE ACCOMPLISHED BY WATERING DRY, EXPOSED AREAS ON A REGULAR BASIS. SPRAYING OF PETROLEUM BASED OR TOXIC LIQUIDS FOR THIS PURPOSE IS PROHIBITED.
8. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR AT LEAST FOURTEEN DAYS SHALL BE TEMPORARILY STABILIZED WITH VEGETATION AND MULCH.
9. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED SHALL BE PERMANENTLY SEEDED WITHIN FOURTEEN DAYS PER SEEDING OR LANDSCAPING SPECIFICATIONS.
10. ALL VEHICLES SHALL BE CLEANED AT THE CONSTRUCTION EXIT POINTS ACCORDING TO NOTES SHOWN ON THE DETAIL THEREOF. IF THE MAJORITY OF MUD OR DIRT IS NOT REMOVED FROM EXITING TRAFFIC, HOSE BIBS SHALL BE PROVIDED AT CONSTRUCTION TRAFFIC EXIT POINTS, AND VEHICLE TIRES SHALL BE WASHED BEFORE EXITING ONTO PUBLIC ROADS. SILT FROM THIS WASHING OPERATION SHALL BE INTERCEPTED AND TRAPPED BEFORE WASHWATER IS ALLOWED TO BE DISCHARGED OFF-SITE.
11. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED ONTO ADJACENT ROADWAYS BY VEHICLES EXITING THE SITE SHALL BE CLEANED OR REMOVED IMMEDIATELY.
12. CONTRACTOR SHALL PREVENT ANY SILTATION FROM ENTERING THE STORM SEWER SYSTEM. ALL INLETS AND INLET OPENINGS SHALL BE FULLY ENCIRCLED WITH APPROPRIATE INLET PROTECTION DEVICES.
13. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SILT IN ANY TEMPORARY OR PERMANENT DETENTION PONDS, STORM SEWER INLETS AND PIPES, AND ALONG SILT FENCES, WITHIN 48 HOURS AFTER INSPECTION OF DEVICES REVEALS THE PRESENCE OF EXCESSIVE SILTATION (AS SPECIFIED IN SECTION 5.02 OF THE SWPPP).
14. SILT FENCES SHALL BE PLACED AROUND ANY STOCKPILES USED ON THIS SITE.
15. THE CONTRACTOR IS ADVISED TO CONSTRUCT TEMPORARY OR PERMANENT FENCING AROUND DETENTION PONDS AND SEDIMENT BASINS AT THE EARLIEST POSSIBLE TIME TO PREVENT ACCIDENTAL ACCESS BY PERSONS OR ANIMALS.
16. ANY ADDITIONAL EROSION CONTROL MEASURES REQUIRED TO ENSURE COMPLIANCE WITH THE TPDES GENERAL PERMIT OR LOCAL PERMIT REQUIREMENTS SHALL BE IMPLEMENTED BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE TO THE OWNER.
17. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE WITHIN THIRTY DAYS AFTER STABILIZATION OF ALL SURFACES.
18. THE CONTRACTOR SHALL ASSUME LIABILITY FOR DAMAGE TO ADJACENT PROPERTIES AND/OR PUBLIC RIGHT-OF-WAY RESULTING FROM FAILURE TO FULLY IMPLEMENT AND EXECUTE ALL EROSION CONTROL PROCEDURES SHOWN AND NOTED IN THESE PLANS.
19. WHENEVER DIRT, ROCK, OR OTHER MATERIALS ARE IMPORTED OR EXPORTED ON THE PRIMARY CONSTRUCTION SITE, CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR COMPLIANCE WITH ALL TCEQ STORMWATER REQUIREMENTS FOR THE REMOTE SITE. CONTRACTOR SHALL FURNISH THE ENGINEER AND THE OWNER'S CONSTRUCTION MANAGER WITH DOCUMENTATION OF COVERAGE FOR THE BORROW OR FILL SITE UNDER A NPDES PERMIT FOR STORMWATER DISCHARGES AND OF A WRITTEN AGREEMENT WITH THE LANDOWNER OF THE REMOTE SITE INDICATING EROSION CONTROL MEASURES HAVE BEEN IMPLEMENTED THEREON. AT A MINIMUM, EROSION CONTROL MEASURES MUST CONSIST OF PERIMETER CONTROLS (SILT FENCES) ON ALL DOWN SLOPES AND SIDE SLOPE BOUNDARIES OF ANY DISTURBED AREA, PLUS PROVISIONS FOR RE-VEGETATION AFTER THE FILL MATERIALS ARE IN PLACE.
20. ALL SLOPES ON SITE WHICH ARE 3:1 OR STEEPER SHALL BE STABILIZED BY TRACK WALKING (TRAVERSING UP AND DOWN THE SLOPE WITH A TRACKED VEHICLE) FOLLOWED BY INSTALLATION OF EROSION CONTROL BLANKET INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S150 OR APPROVED EQUAL.

EROSION CONTROL MAINTENANCE NOTES

1. ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON ON A SCHEDULE WHICH COMPLIES WITH THE GENERAL PERMIT REQUIREMENTS AND CLEANED AND REPAIRED WITHIN 48 HOURS OF THE INSPECTION IN ACCORDANCE WITH THE FOLLOWING:

1.A. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

1.B. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEEDED AS NEEDED.

1.C. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

1.D. THE TEMPORARY PARKING AND STORAGE AREA (IF PRESENT) SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

1.E. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS OR SEDIMENT TRAPS (IF PRESENT) SHALL BE MAINTAINED IN OPERATIONAL CONDITION AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

1.F. MAINTENANCE PROCEDURES FOR THE EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED ARE GIVEN IN THE STORM WATER POLLUTION PREVENTION PLAN.

EROSION CONTROL SEQUENCE

1. INSTALL SILT FENCES AROUND PERIMETER OF PROPERTY AND DISTURBED AREAS AS SHOWN.
2. INSTALL INLET PROTECTION FOR ALL EXISTING GRATE INLETS, CURB INLETS.
3. INSTALL ROCK CHECK DAMS AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES, IF PRESENT.
4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.
5. COMMENCE GRUBBING AND REMOVAL OF VEGETATION IN AREA TO RECEIVE CUT OR FILL.
6. COMMENCE GRADING OPERATION FOR BUILDING PAD PREPARATION.
7. INSTALL ALL UNDERGROUND UTILITIES.
8. FINALIZE PAVEMENT SUBGRADE PREPARATION.
9. INSTALL ALL PROPOSED STORM SEWER PIPES AND INSTALL INLET PROTECTION SILT FENCES AT ENDS OF EXPOSED PIPES.
10. CONSTRUCT ALL GRATE INLETS AND DRAINAGE STRUCTURES. INLET PROTECTION SILT FENCES MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION.
11. REMOVE SILT FENCES AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
12. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT, CURB & GUTTER.
13. INSTALL ALL PAVING, CURB & GUTTER.
14. COMPLETE PLANTING AND/OR SEEDING OF VEGETATED AREAS TO ACCOMPLISH STABILIZATION, IN ACCORDANCE WITH THE LANDSCAPING PLAN.
15. REMOVE TEMPORARY CONSTRUCTION EXIT, SILT FENCES & ROCK CHECK DAMS.

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

GRAPHIC SCALE
0 100 200 FEET

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BMP IMPLEMENTATION SCHEDULE

BMP	WHEN IMPLEMENTED
SILT FENCE	PRIOR TO CLEARING/GRUBBING
INLET PROTECTION	PRIOR TO CLEARING/GRUBBING
CONSTRUCTION EXIT	PRIOR TO CLEARING/GRUBBING
ROCK CHECK DAM	AFTER DETENTION POND HAS BEEN GRADED
INLET PROTECTION OF NEW PIPES/MANHOLES	DURING UTILITY INSTALLATION
PERMANENT VEGETATIVE STABILIZATION	AFTER FINAL GRADING AND PAVING

LEGEND

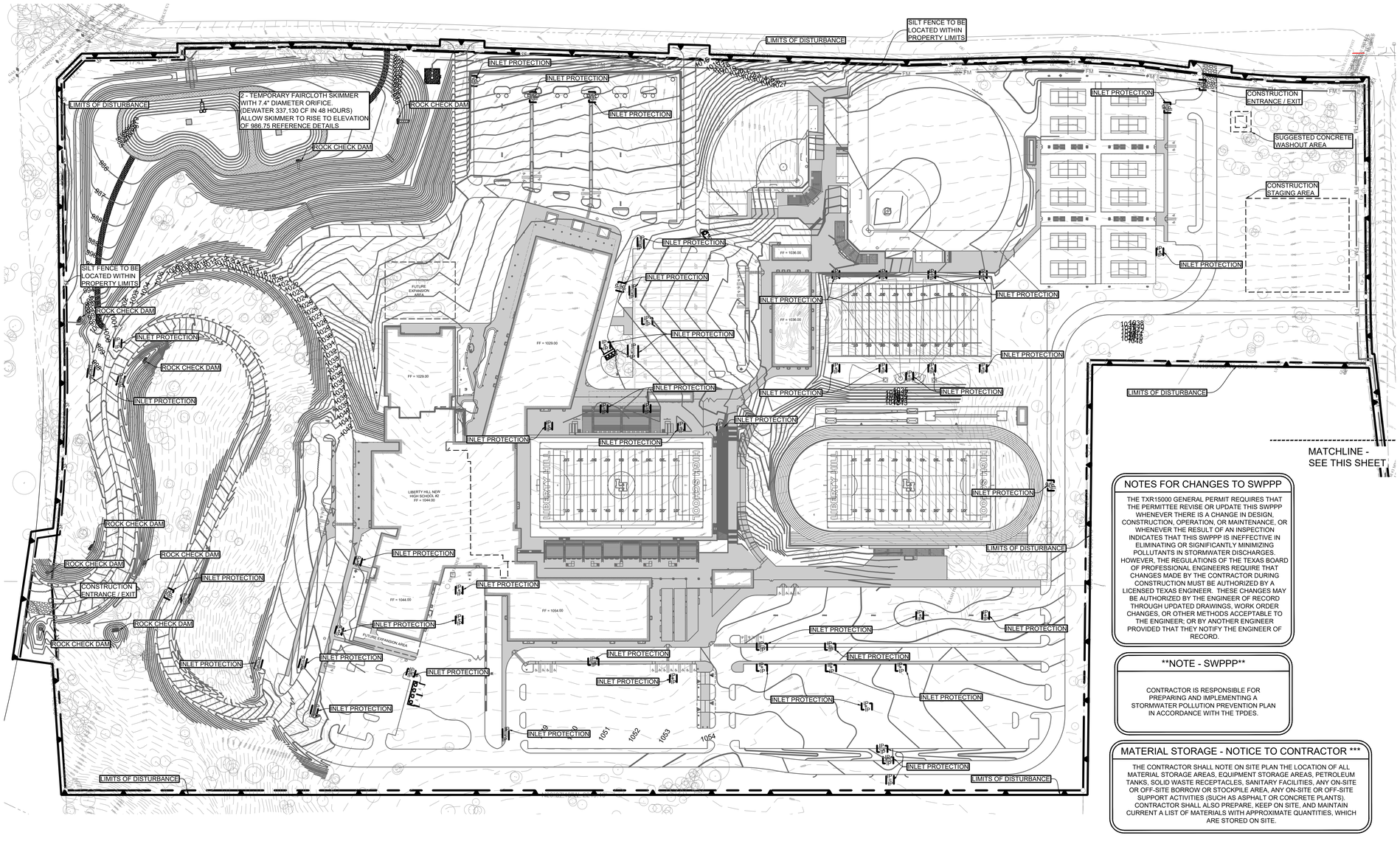
- INLET PROTECTION — IP — IP
- LIMITS OF DISTURBANCE
- SILT FENCE — SF
- TREE PROTECTION — TP
- CONSTRUCTION EXIT
- ROCK CHECK DAM — RCD
- PROPOSED FLOW ARROW

SITE DATA

PROPOSED SITE AREA: 93.33 AC
DISTURBED AREA: 93.33 AC
EXISTING IMPERVIOUS: 0 AC
PROPOSED PERVIOUS: 49.96 AC
PERVIOUS: 43.37 AC
OFF-SITE:
0.56 AC FOR DRIVEWAYS
0.70 FOR FORCE MAIN

NOTE - STABILIZATION

ALL DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND SEEDED OR SODDED AS NECESSARY AND BY DEFINITION 'MAINTAINED' UNTIL AN ESTABLISHED STAND OF GRASS CAN BE RELEASED TO THE OWNER. REFERENCE LANDSCAPE/IRRIGATION PLAN (IF PROVIDED) TO COORDINATE PLANTING ENHANCEMENTS AND LIMITS OF IRRIGATION COVERAGE.



NOTES FOR CHANGES TO SWPPP

THE TXR15000 GENERAL PERMIT REQUIRES THAT THE PERMITTEE REVISE OR UPDATE THIS SWPPP WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, OR WHENEVER THE RESULT OF AN INSPECTION INDICATES THAT THIS SWPPP IS INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS IN STORMWATER DISCHARGES. HOWEVER, THE REGULATIONS OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS REQUIRE THAT CHANGES MADE BY THE CONTRACTOR DURING CONSTRUCTION MUST BE AUTHORIZED BY A LICENSED TEXAS ENGINEER. THESE CHANGES MAY BE AUTHORIZED BY THE ENGINEER OF RECORD THROUGH UPDATED DRAWINGS, WORK ORDER CHANGES, OR OTHER METHODS ACCEPTABLE TO THE ENGINEER; OR BY ANOTHER ENGINEER PROVIDED THAT THEY NOTIFY THE ENGINEER OF RECORD.

NOTE - SWPPP

CONTRACTOR IS RESPONSIBLE FOR PREPARING AND IMPLEMENTING A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE TPDES.

MATERIAL STORAGE - NOTICE TO CONTRACTOR ***

THE CONTRACTOR SHALL NOTE ON SITE PLAN THE LOCATION OF ALL MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREAS, PETROLEUM TANKS, SOLID WASTE RECEPTACLES, SANITARY FACILITIES, ANY ON-SITE OR OFF-SITE BORROW OR STOCKPILE AREA, ANY ON-SITE OR OFF-SITE SUPPORT ACTIVITIES (SUCH AS ASPHALT OR CONCRETE PLANTS). CONTRACTOR SHALL ALSO PREPARE, KEEP ON SITE, AND MAINTAIN CURRENT A LIST OF MATERIALS WITH APPROXIMATE QUANTITIES, WHICH ARE STORED ON SITE.

VLK | ARCHITECTS

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www.langan.com

LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

JACK N. GARNER — 98447 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — 5-8-2023
TBPE Registration # F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

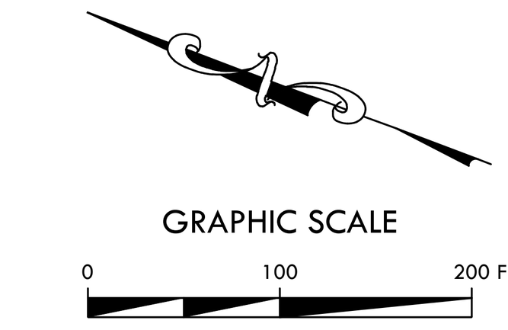
Director JHG | Drawn By
Designer | Quality Control LANGAN
Proj. Mgr. MSH

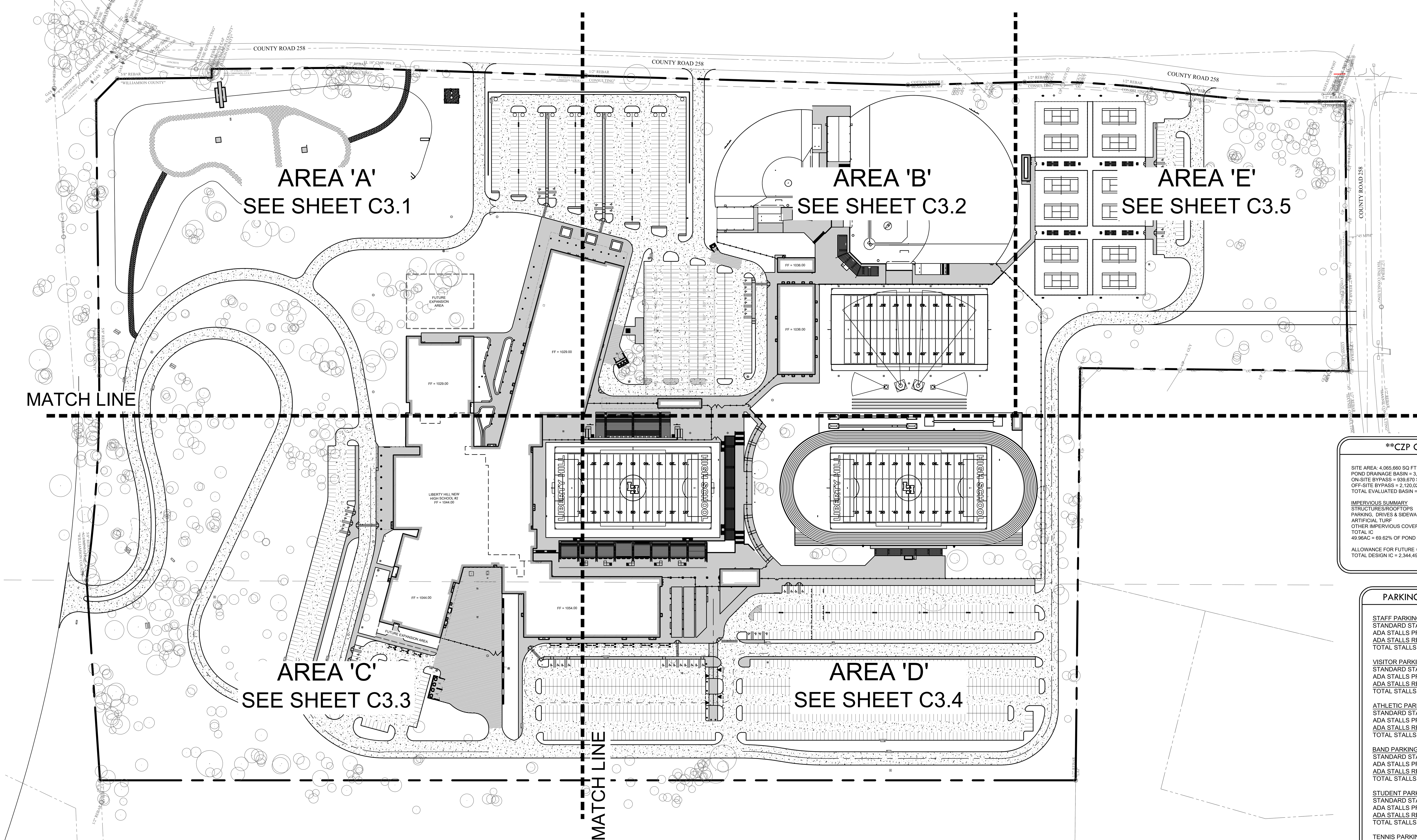
PROJECT NO.
22-053.00

SHEET TITLE
EROSION CONTROL PLAN

SHEET NO.
C2.0

New High School No. 2





CZP CALCULATIONS

SITE AREA: 4,065,660 SQ FT = 93.33 ACRES
POND DRAINAGE BASIN = 3,125,990 SQ FT = 71.76 AC
ON-SITE BYPASS = 939,670 SQ FT = 21.57 AC
OFF-SITE BYPASS = 2,120,024 SQ FT = 48.67 AC
TOTAL EVALUATED BASIN = 142.00 AC

IMPERVIOUS SUMMARY

STRUCTURES/ROOFTOPS	330,152 SQ FT = 7.58 AC
PARKING, DRIVES & SIDEWALKS	1,475,643 SQ FT = 33.88 AC
ARTIFICIAL TURF	361,986 SQ FT = 8.31 AC
OTHER IMPERVIOUS COVER	8,647 SQ FT = 0.20 AC
TOTAL IC	2,176,428 SQ FT = 49.96 AC

49.96AC = 69.62% OF POND DRAINAGE BASIN

ALLOWANCE FOR FUTURE = 168,065 SQ FT = 3.86 AC = 5.38%
TOTAL DESIGN IC = 2,344,493 SQ FT = 53.82 AC = 75% OF POND BASIN

PARKING COUNT SUMMARY

STAFF PARKING	
STANDARD STALLS PROVIDED	74
ADA STALLS PROVIDED	4
ADA STALLS REQUIRED	4
TOTAL STALLS	78
VISITOR PARKING	
STANDARD STALLS PROVIDED	78
ADA STALLS PROVIDED	4
ADA STALLS REQUIRED	4
TOTAL STALLS	82
ATHLETIC PARKING	
STANDARD STALLS PROVIDED	955
ADA STALLS PROVIDED	20
ADA STALLS REQUIRED	20
TOTAL STALLS	975
BAND PARKING	
STANDARD STALLS PROVIDED	216
ADA STALLS PROVIDED	7
ADA STALLS REQUIRED	7
TOTAL STALLS	223
STUDENT PARKING	
STANDARD STALLS PROVIDED	345
ADA STALLS PROVIDED	9
ADA STALLS REQUIRED	9
TOTAL STALLS	354
TENNIS PARKING	
STANDARD STALLS PROVIDED	54
ADA STALLS PROVIDED	4
ADA STALLS REQUIRED	4
TOTAL STALLS	58
TOTAL SITE PARKING	
STANDARD STALLS PROVIDED	1716
ADA STALLS PROVIDED	54
ADA STALLS REQUIRED	54
TOTAL STALLS	1770

CAR STACKING PROVIDED
SINGLE STACKING LANE LENGTH - 2550'
SINGLE CAR LENGTH AND CLEARANCE - 25'
SINGLE LANE STACKING - 6350'/25'= 254 VEHICLES
DOUBLE LANE STAKING - 400/25' = 16 VEHILCLES
TOTAL LANE STACKING= 270 VEHICLES

BUS STACKING PROVIDED
TOTAL STACKING LANE LENGTH - 252'
SINGLE BUS LENGTH - 38'
BUS CLEARANCE - 4'
TOTAL STACKING - 294'/42'= 7 BUSES

STANDARD ACCESSIBILITY REQUIREMENTS

PARKING:

(A) ACCESSIBLE PARKING SPACES SHALL BE AS NOTED TO A MIN. 96" WIDE OR A MIN. 132" WIDE FOR VAN DESIGNATED SPACES WITH A MAXIMUM SLOPE OF 2% (IN ALL DIRECTIONS). ALL BUILDINGS SHALL CONTAIN AT LEAST ONE VAN ACCESSIBLE SPACE FOR NO LESS THAN ONE VAN SPACE FOR EVERY 6 ACCESSIBLE SPACES.

(B) EACH ACCESSIBLE PARKING SPACE SHALL HAVE A VERTICALLY MOUNTED (OR SUSPENDED) SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. APPROPRIATE VAN ACCESSIBLE SPACES MUST INCORPORATE "VAN-ACCESSIBLE" BELOW THE SYMBOL OF ACCESSIBILITY. SIGNS SHALL BE LOCATED AS NOTED TO 80" (MIN.) ABOVE THE ADJACENT PAVED SURFACE TO BOTTOM OF SIGN.

(C) ALL ACCESS AISLES SERVING ACCESSIBLE PARKING SPACES SHALL BE AS NOTED TO A 60" WIDE MINIMUM.

RAMPS:

(D) RAMPS EXCEEDING 6" IN RISE (EXCLUDING CURB RAMPS) SHALL HAVE APPROPRIATE EDGE PROTECTION WITH HANDRAILS ON EACH SIDE AT BETWEEN 34" AND 38", AND EXTEND 12" BEYOND THE TOP AND BOTTOM OF RAMP. HANDRAIL SHALL NOT DIMINISH THE CLEAR AREA REQUIRED FOR TOP AND BOTTOM LANDINGS SERVING THE RAMPS.

(E) RAMPS SHALL HAVE A SURFACE ARRANGED SO THAT WATER WILL NOT ACCUMULATE. COLOR OF RAMP FINISH MATERIAL (INCLUDING CONCRETE) SHALL HAVE A LIGHT AND REFLECTIVE VALUE TO SIGNIFICANTLY CONTRAST FROM ADJACENT SURFACES OR COLORS ONLY IF REQUIRED BY LOCAL OR STATE JURISDICTION

(F) LANDINGS FOR RAMPS SHALL BE AS WIDE AS THE RAMP AND 60" LONG MINIMUM (36" MINIMUM FOR CURB RAMPS)

(G) RAMPS SHALL NOT EXCEED A 1:12 RUNNING SLOPE OR 30" RISE

(H) RAMPS AND LANDINGS SHALL NOT EXCEED 1:48 (2% CROSS SLOPE)

SIDEWALKS AND ACCESSIBLE ROUTES:

(I) SIDEWALKS MUST BE AT LEAST 36" WIDE WITH 5'X5' CLEAR PASSING OPPORTUNITIES IN INCREMENTS LESS THAN 150 LF
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%)

(J) LONGITUDINAL SLOPE OF ANY SIDEWALK (ACCESSIBLE ROUTE) SHALL NOT EXCEED 1:20 (5%)

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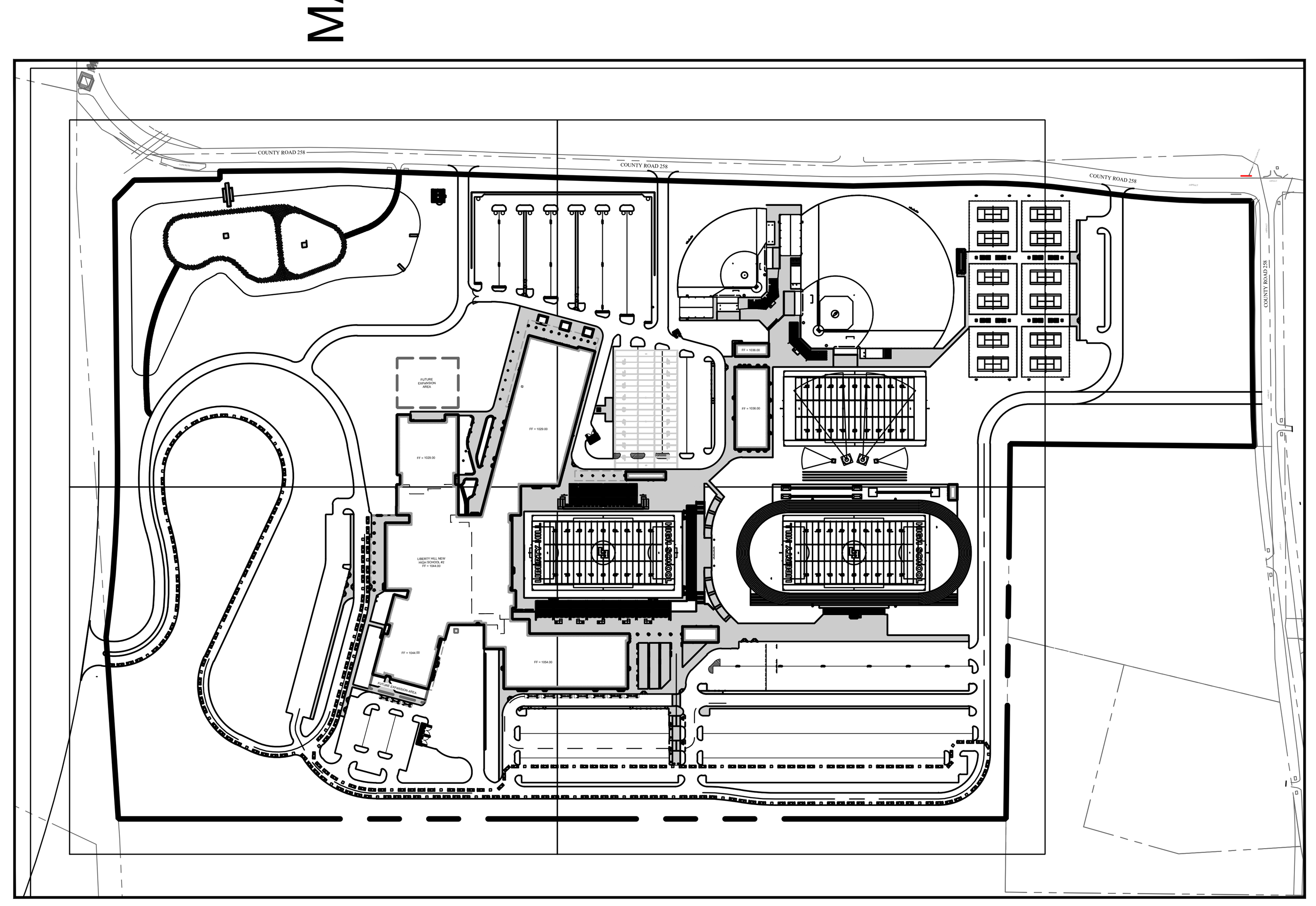

CAR STACKING

LEGEND

- PROPOSED FACE AND BACK OF CURB
- DUMPSTER APPROACH AND MAINTENANCE COURTYARDS
- BUS TRAFFIC LOOP, ACCESS ROAD AND FIRE LANES
- CAR PARKING LOT
- PROPOSED REINFORCED CONCRETE SIDEWALK

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EXISTING OVERHEAD & UNDERGROUND UTILITIES IN THE VICINITY.
VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES
BY VACUUM EXCAVATION OR OTHER POTHOLING TECHNIQUES.

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New High School No. 2

CZP SUBMITTAL

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LICENSED PROFESSIONAL ENGINEER
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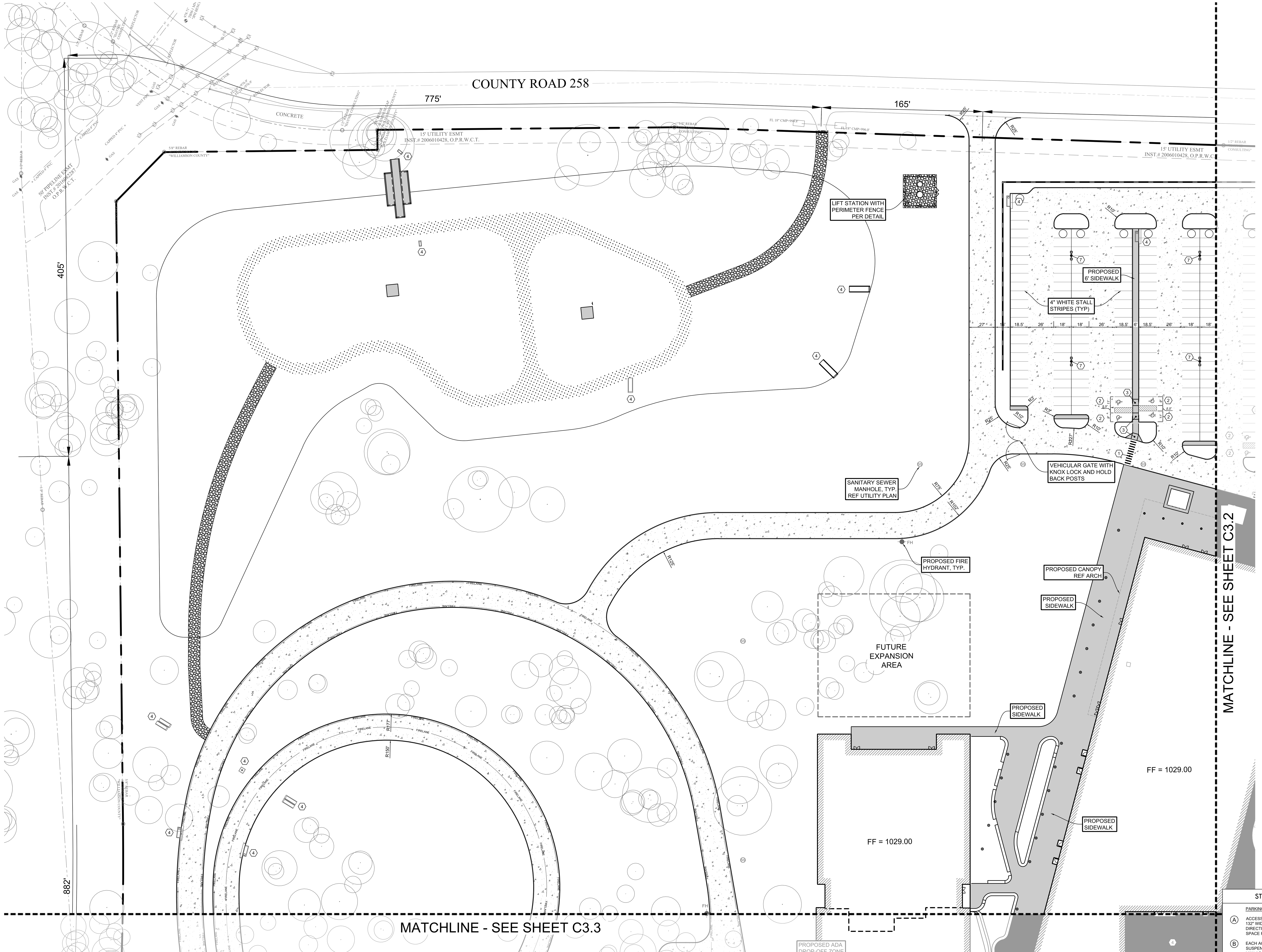
REVISIONS
Revision No.

Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.
22-053.00

SHEET TITLE
OVERALL SITEPLAN

SHEET NO.
C3.0



GRAPHIC SCALE

0 40 80 FEET

LEGEND

PROPOSED FACE AND BACK OF CURB	
DUMPSTER APPROACH AND MAINTENANCE COURTYARDS	
BUS TRAFFIC LOOP, ACCESS ROAD AND FIRE LANES	
CAR PARKING LOT	
PROPOSED REINFORCED CONCRETE SIDEWALK	
PROPOSED SIGN	
PROPOSED RETAINING WALL	
PAINTED TRAFFIC ARROW	
FIRE LANE STRIPING	FIRELANE
PROPOSED FIRE HYDRANT	FH
PROPOSED SANITARY MANHOLE	SS
PROPOSED CURB INLET	
PROPOSED GRATE INLET	
ACCESSIBLE ROUTE	
PARKING COUNT	1

SYMBOL KEY

1. CROSSWALK / PED. CROSSING TYPICAL SEE PAVING DETAILS
2. TYPICAL ACCESSIBLE PARKING SPACES SEE PAVING DETAILS (TYP)
3. INSTALL BARRIER FREE RAMP (BFR) REFER TO PAVING DETAILS (TYP)
4. PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)
5. PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
6. TRANSITION CURB REFER TO PAVING DETAILS
7. PROPOSED LIGHT POLE REF. MEP PLANS
8. PROPOSED LAYDOWN CURB/ MAINTENANCE CROSSING REFER TO PAVING DETAILS (TYP)

SIGNAGE SYMBOL KEY

- A "STOP" SIGN (R1-1)
- B "DO NOT ENTER" SIGN (R5-1)
- E ACCESSIBLE PASSENGER LOADING ZONE
- F ACCESSIBLE PARKING SIGNAGE IN BOLLARD
- G VAN ACCESSIBLE PARKING SIGNAGE IN BOLLARD
- H "BUS AND SERVICE VEHICLE ENTRANCE"

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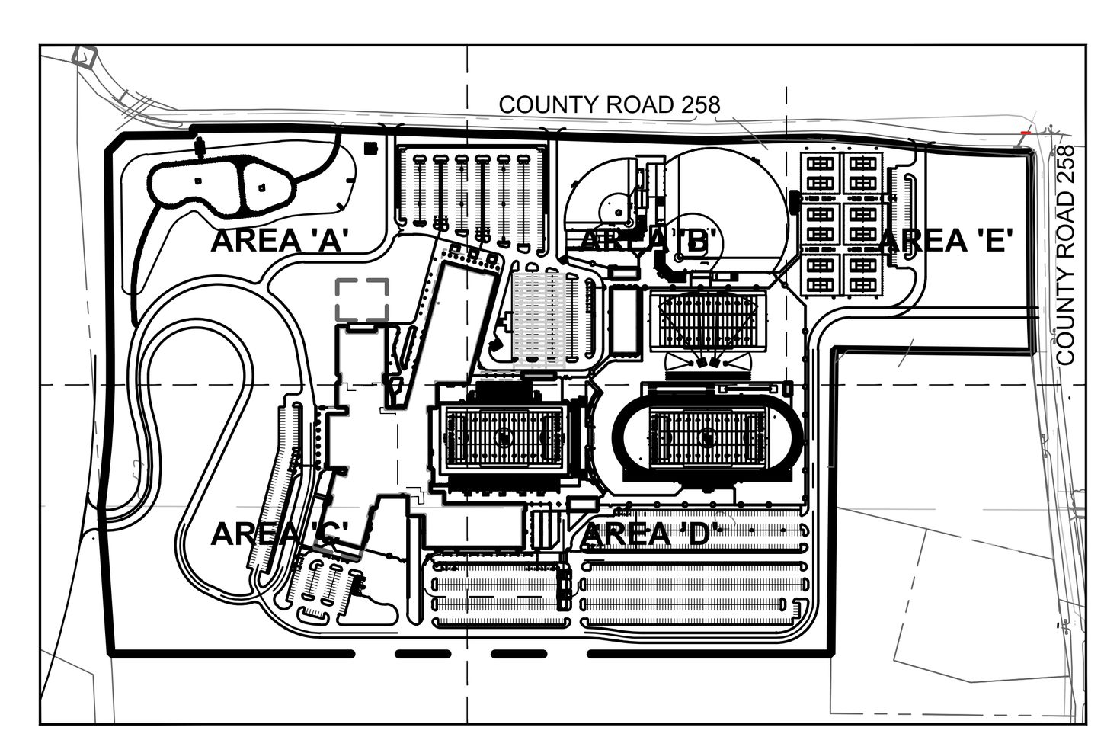

KEY MAP

VLK | ARCHITECTS

ARCHITECT
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2700 Via Fortuna, Suite 230
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www.vlkarchitects.com

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

New High School No. 2

CZP SUBMITTAL

STATE OF TEXAS — JACK H. GARNER, JR — 98447 — LICENSED PROFESSIONAL ENGINEER
CZP 5·8·2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

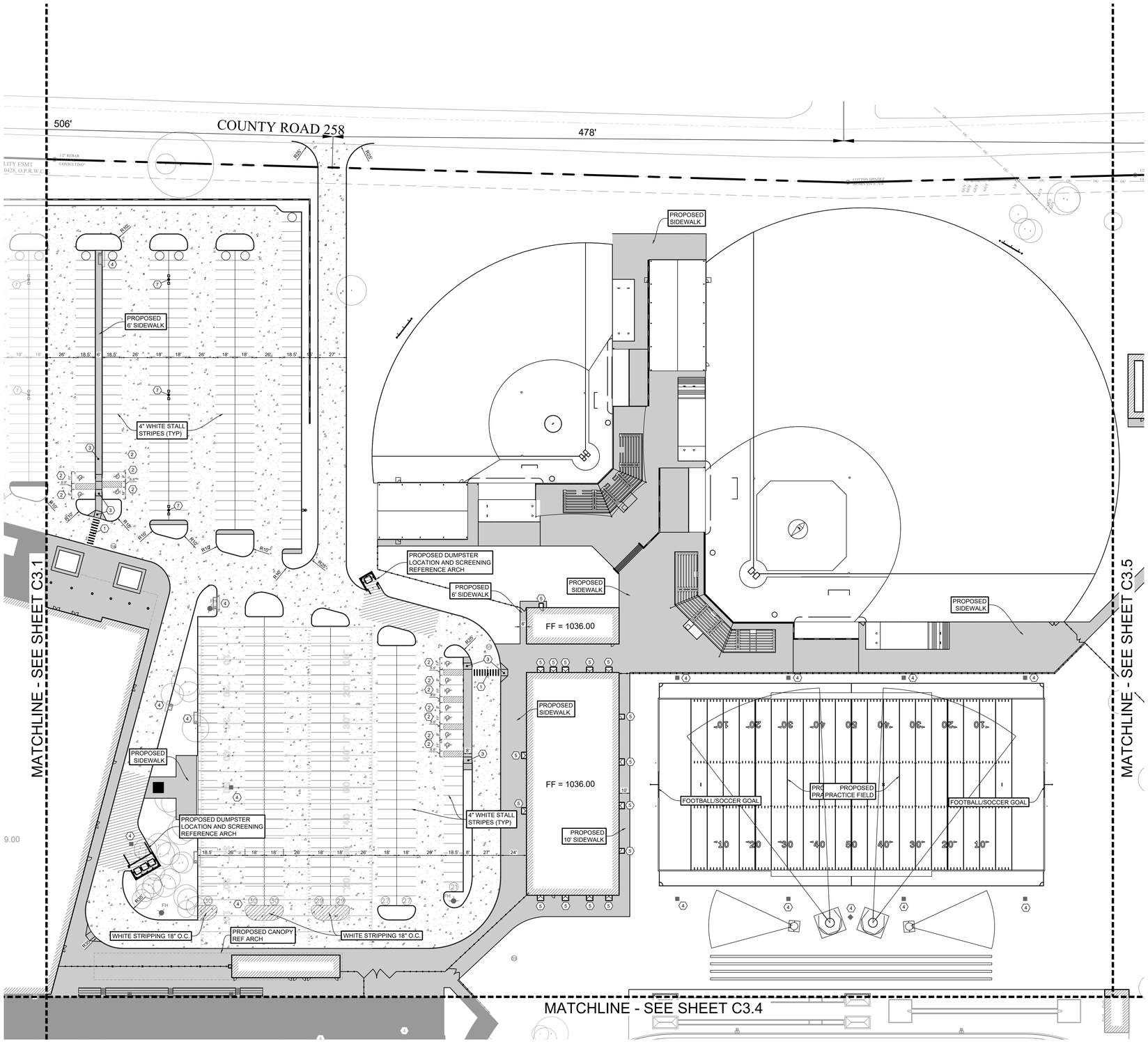
Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.
22-053.00

SHEET TITLE
SITE PLAN AREA 'A'

SHEET NO.
C3.1

Date: 5/8/2023 Time: 09:47 User: amuhire Style Table: Langan.stb Layout: C3.1 SITE PLAN AREA 'A' Document Code: 531013308-0601-CS101-0101



GRAPHIC SCALE
0 40 80 FEET

LEGEND

- PROPOSED FACE AND BACK OF CURB
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- FIRE LANE STRIPING
- PROPOSED FIRE HYDRANT (FH)
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- PROPOSED GRATE INLET
- ACCESSIBLE ROUTE
- PARKING COUNT (1)

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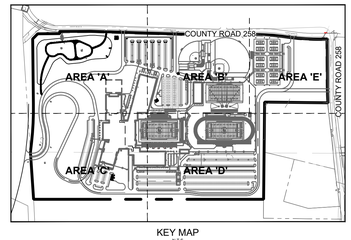

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REVISIONS
Revision No.

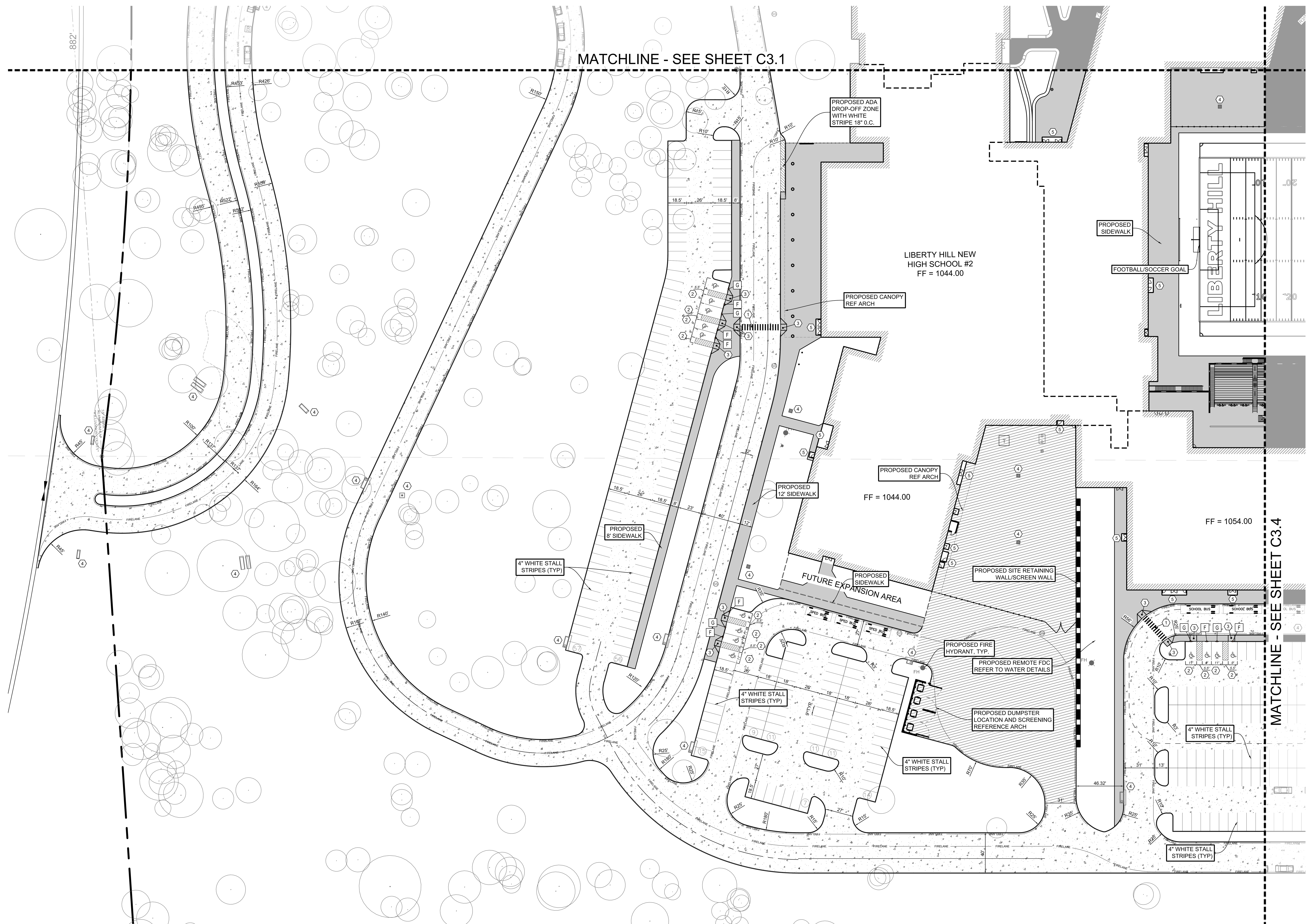
Director JHG | Drawn By
Designer | Quality Control LANGAN
Proj. Mgr. MSH

PROJECT NO.
22-053.00

SHEET TITLE
SITE PLAN AREA 'B'

SHEET NO.
C3.2

New High School No. 2



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FIRE LANE STRIPING	FIRELANE
PROPOSED FIRE HYDRANT	FH
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ACCESSIBLE ROUTE	
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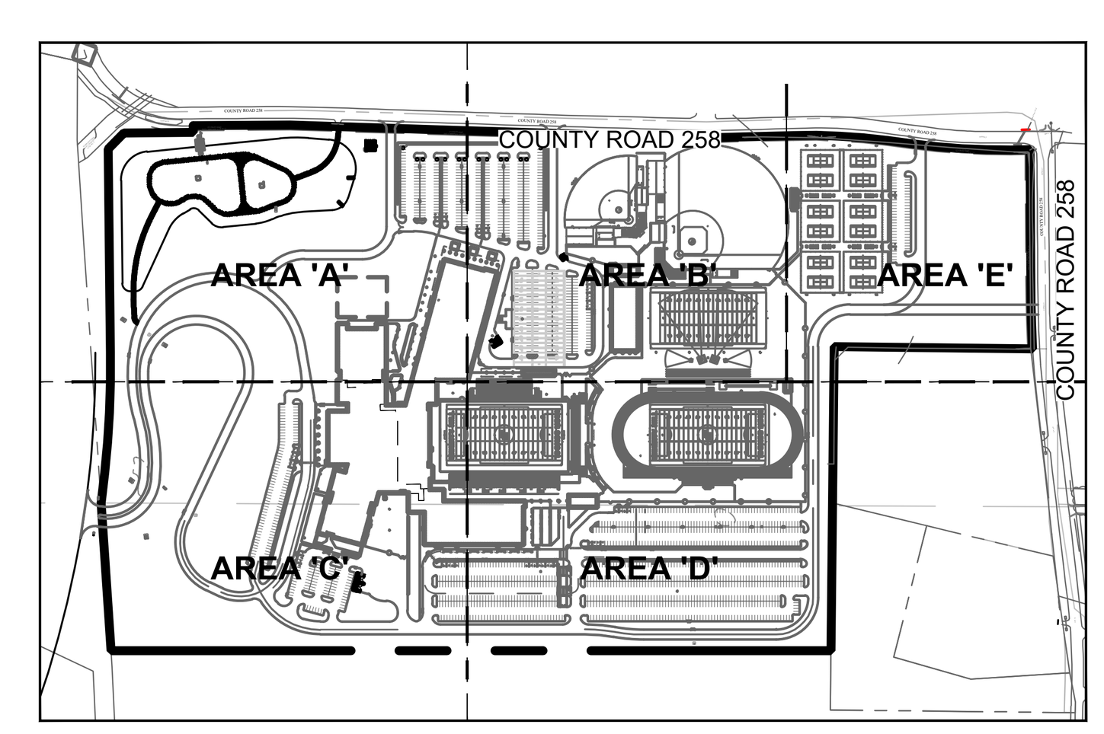

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REVISIONS

Revision No.

Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.
22-053.00

SHEET TITLE
SITE PLAN AREA 'C'

SHEET NO.
C3.3

New High School No. 2

MATCHLINE - SEE SHEET C3.2

MATCHLINE - SEE SHEET C3.3

1054.00

FOOTBALL/SOCCER GOAL

PROPOSED SCOREBOARD

PROPOSED FLAG POLES (2) REF ARCH PLANS

FOOTBALL/SOCCER GOAL

FOOTBALL/SOCCER GOAL

PROPOSED SIDEWALK

MOVABLE BARRICADES FOR TAILGATING AREA (TYP)

4" WHITE STALL STRIPES (TYP)

WHITE STRIPPING 18" O.C.

4" WHITE STALL STRIPES (TYP)

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PROPOSED 13' SIDEWALK

PROPOSED 6' SIDEWALK

PROPOSED 8' SIDEWALK

PROPOSED 6' SIDEWALK

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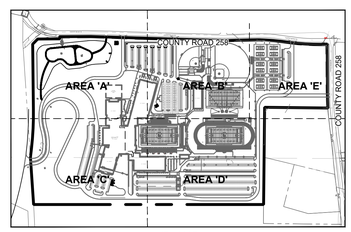

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

JACK H. GARNER 108447 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
5-8-2023
TBPE Registration # F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

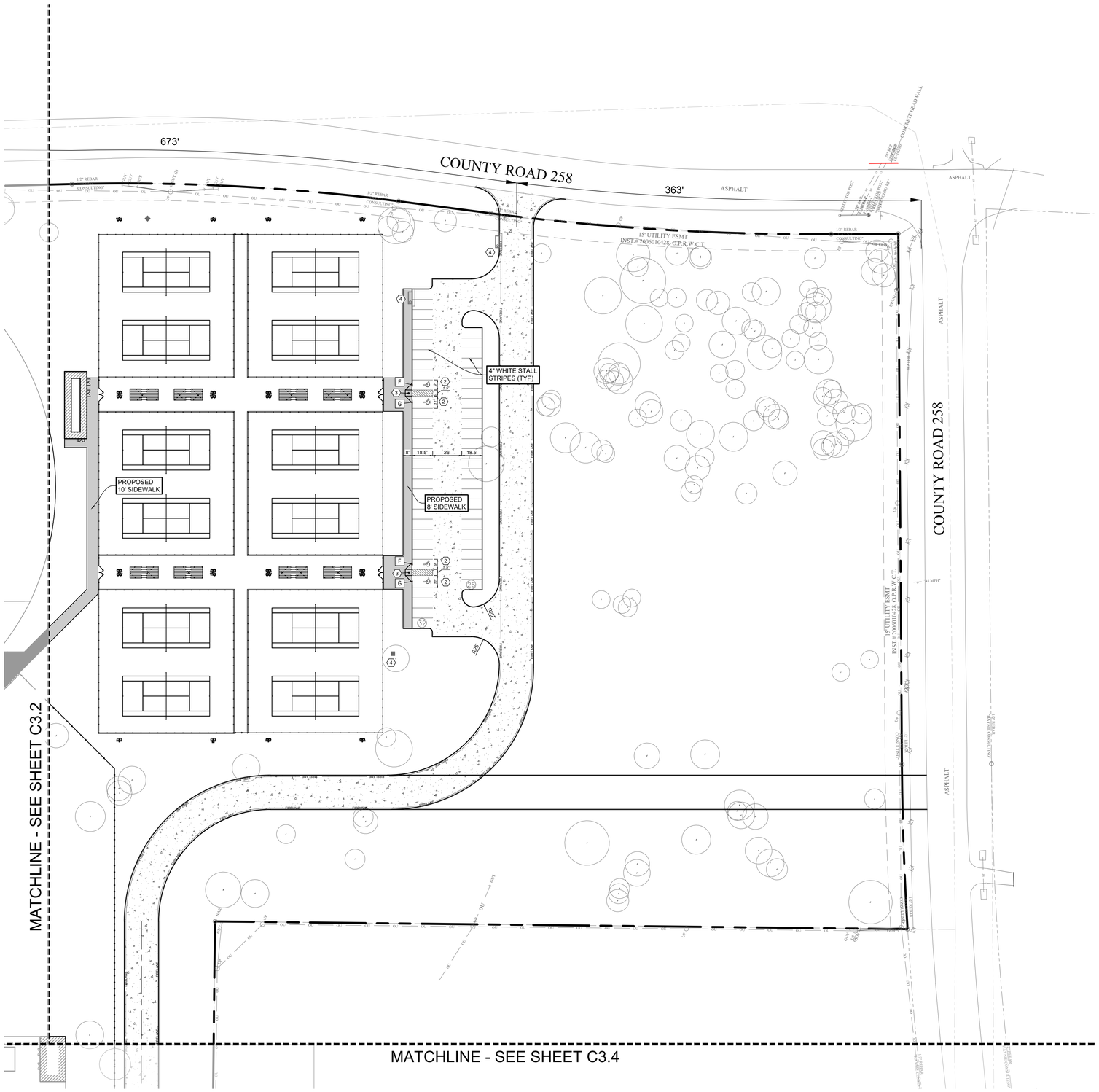
Director JHG
Designer
Proj. Mgr. MSH
Drawn By
Quality Control LANGAN

PROJECT NO.
22-053.00

SHEET TITLE
SITE PLAN AREA 'D'

SHEET NO.
C3.4

New High School No. 2



GRAPHIC SCALE

0 40 80 FEET

LEGEND

- PROPOSED FACE AND BACK OF CURB
- DUMPSTER APPROACH AND MAINTENANCE COURTYARDS
- BUS TRAFFIC LOOP, ACCESS ROAD AND FIRE LANES
- CAR PARKING LOT
- PROPOSED REINFORCED CONCRETE SIDEWALK
- PROPOSED SIGN
- PROPOSED RETAINING WALL
- PAINTED TRAFFIC ARROW
- FIRE LANE STRIPING
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- ACCESSIBLE ROUTE
- PARKING COUNT

SYMBOL KEY

1. CROSSWALK / PED. CROSSING TYPICAL SEE PAVING DETAILS
2. TYPICAL ACCESSIBLE PARKING SPACES SEE PAVING DETAILS (TYP)
3. INSTALL BARRIER FREE RAMP (BFR) REFER TO PAVING DETAILS (TYP)
4. PROPOSED DRAINAGE STRUCTURE. REFER TO DRAINAGE PLAN (TYP)
5. PROPOSED STRUCTURAL STOOP REFER TO STRUCTURAL PLANS
6. TRANSITION CURB REFER TO PAVING DETAILS
7. PROPOSED LIGHT POLE REF. MEP PLANS
8. PROPOSED LAYDOWN CURB/ MAINTENANCE CROSSING REFER TO PAVING DETAILS (TYP)

SIGNAGE SYMBOL KEY

- A "STOP" SIGN (R1-1)
- B "DO NOT ENTER" SIGN (R5-1)
- E ACCESSIBLE PASSENGER LOADING ZONE
- F ACCESSIBLE PARKING SIGNAGE IN BOLLARD
- G VAN ACCESSIBLE PARKING SIGNAGE IN BOLLARD
- H "BUS AND SERVICE VEHICLE ENTRANCE"

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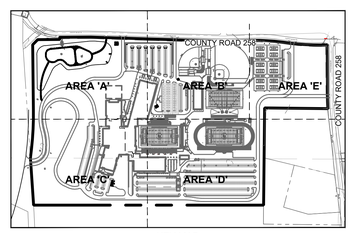

KEY MAP
N.T.S.

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PROJECT NO.

22-053.00

SHEET TITLE

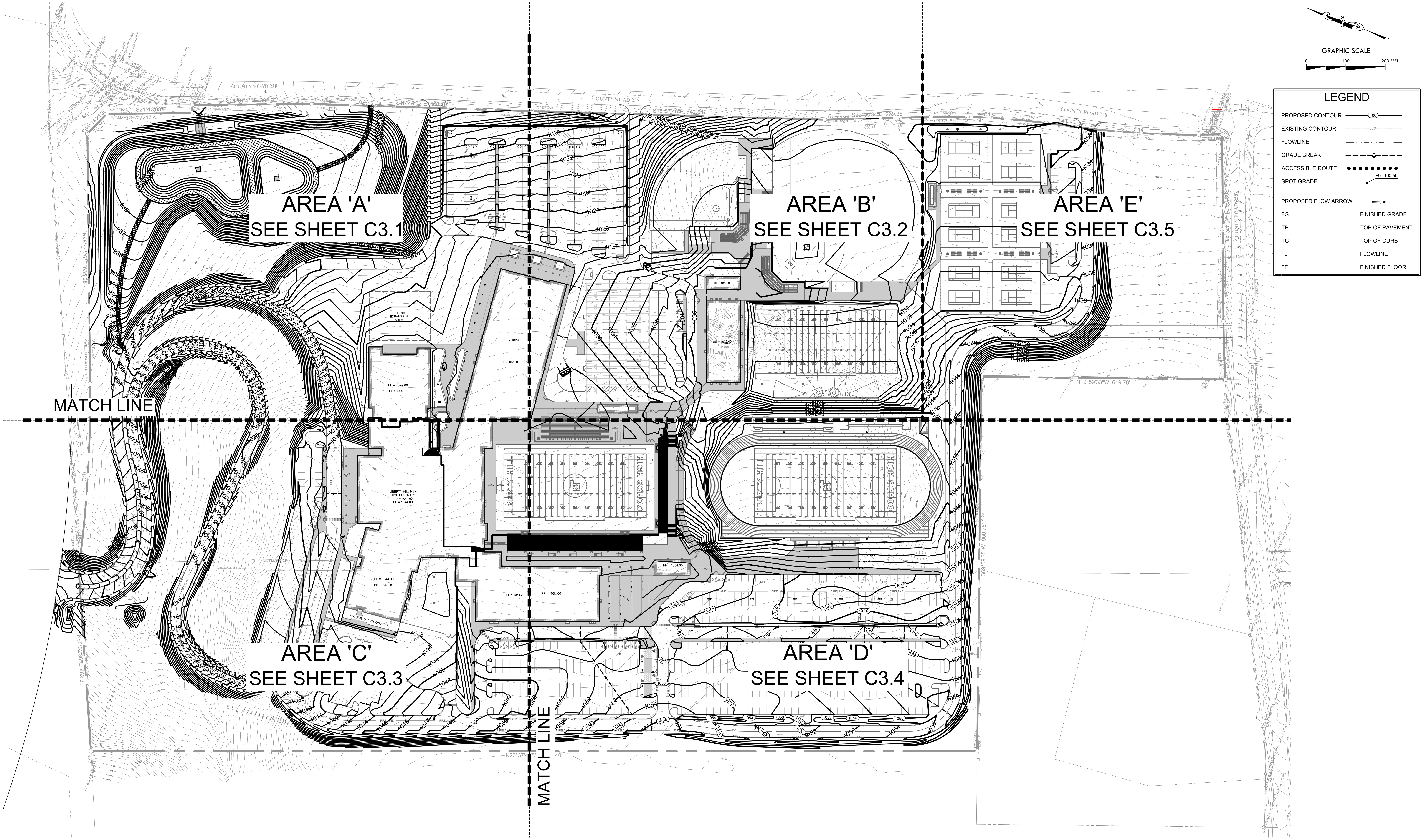
SITE PLAN AREA 'E'

SHEET NO.

C3.5

New High School No. 2

Date: 5/8/2023 Time: 09:53 User: amuhire Style Table: Langan.stb Layout: C3.5 SITE PLAN AREA 'E' Document Code: 531013308-0601-C0201-0101



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Designer	Quality Control
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PROJECT NO.
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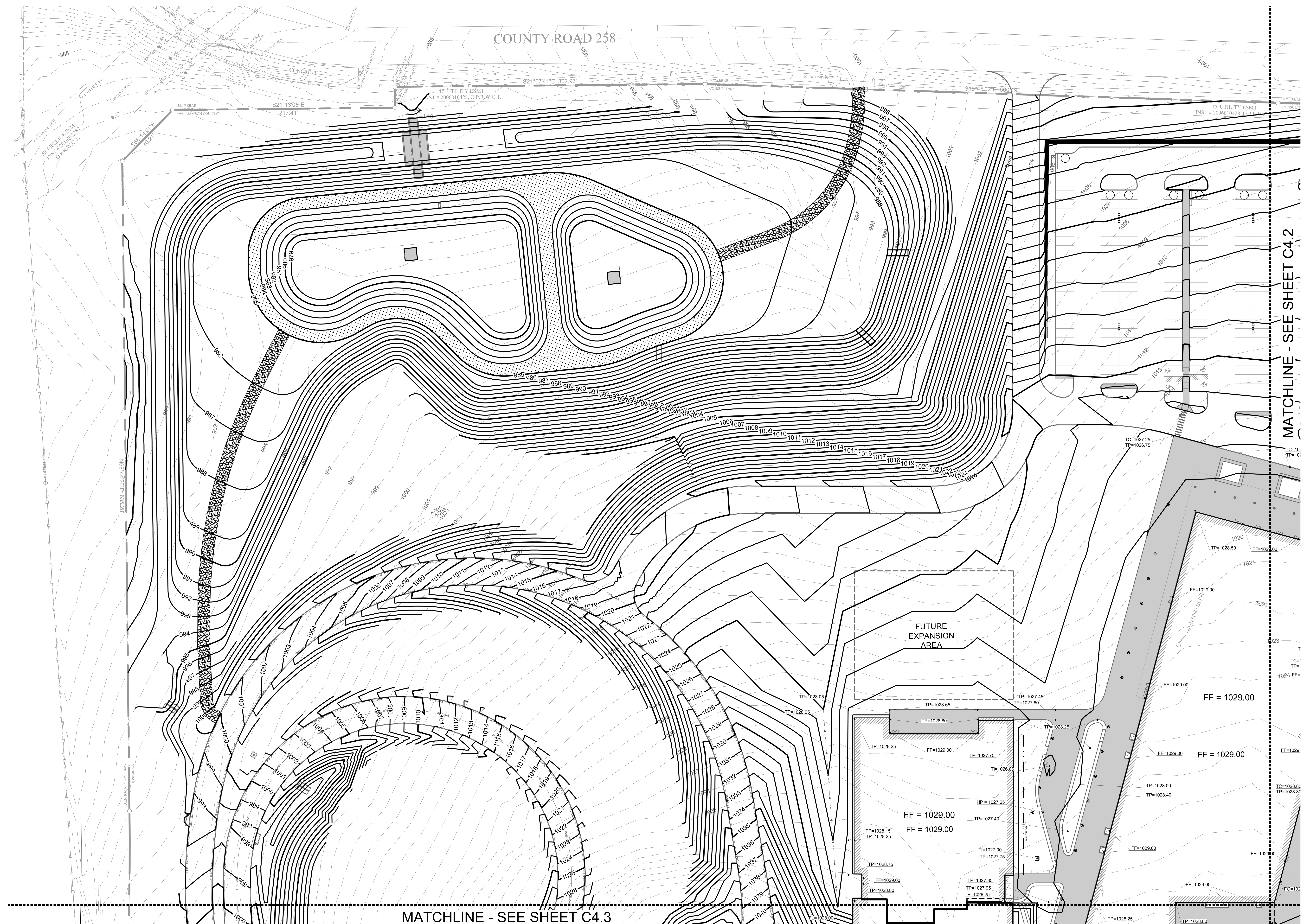
SHEET TITLE
OVERALL GRADING PLAN

SHEET NO.
C4.0



GRAPHIC SCALE
0 40 80 FEET

LEGEND

PROPOSED CONTOUR	
EXISTING CONTOUR	
FLOWLINE	
GRADE BREAK	
ACCESSIBLE ROUTE	
SPOT GRADE	FG=100.50
PROPOSED FLOW ARROW	
FG	FINISHED GRADE
TP	TOP OF PAVEMENT
TC	TOP OF CURB
FL	FLOWLINE
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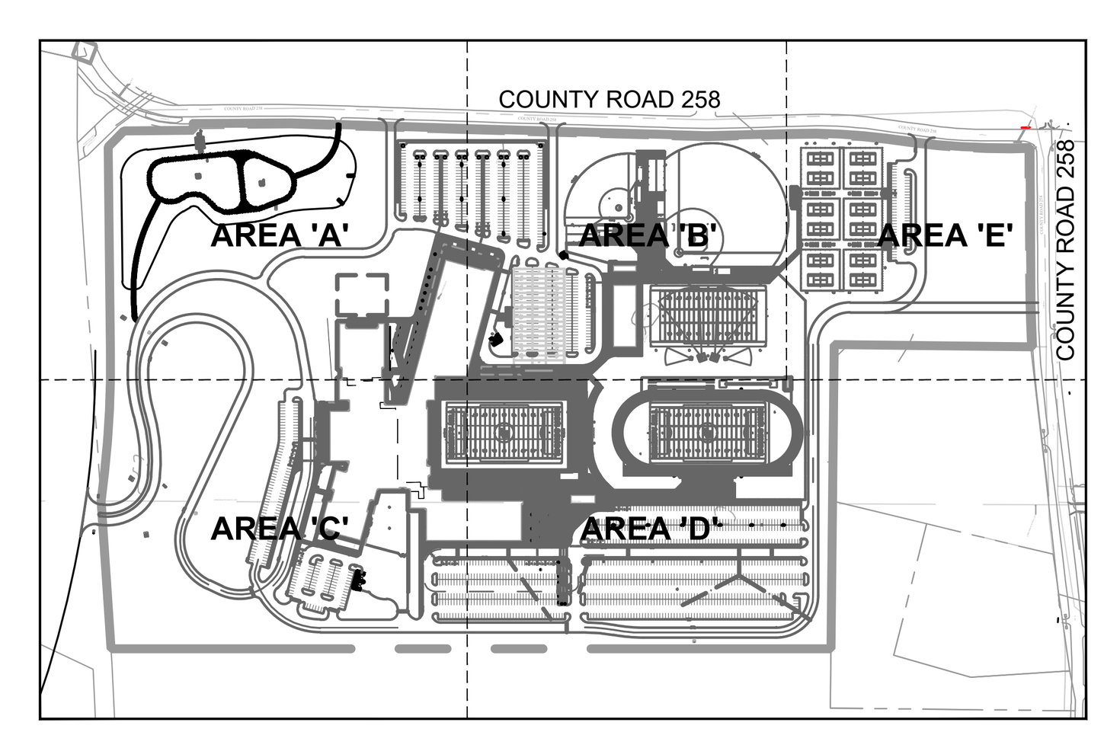

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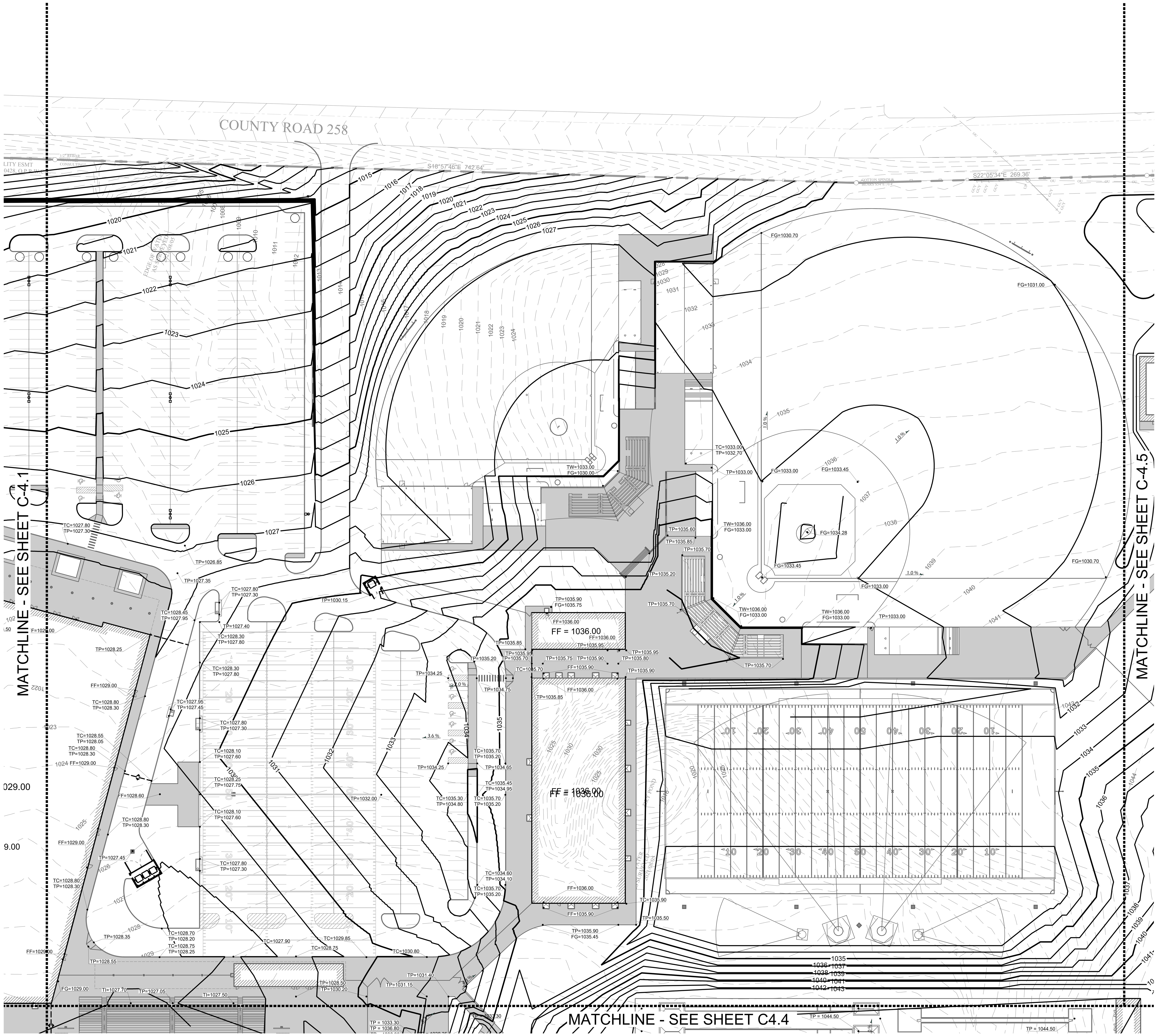
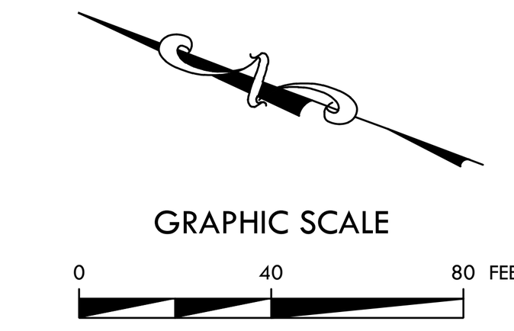
SHEET TITLE
GRADING PLAN AREA 'A'

SHEET NO.
C4.1

Date: 5/8/2023 Time: 10:09 User: amuhire Style Table: Langan.stb Layout: C4.1 GRADING PLAN AREA 'A' Document Code: 531013308-0601-CG101-0101





LEGEND

PROPOSED CONTOUR	(100)
EXISTING CONTOUR	100
FLOWLINE	
GRADE BREAK	
ACCESSIBLE ROUTE	
SPOT GRADE	FG=100.50
PROPOSED FLOW ARROW	
FG	FINISHED GRADE
TP	TOP OF PAVEMENT
TC	TOP OF CURB
FL	FLOWLINE
FF	FINISHED FLOOR

STANDARD ACCESSIBILITY REQUIREMENTS

PARKING:

(A) ACCESSIBLE PARKING SPACES SHALL BE AS NOTED TO A MIN. 96" WIDE OR A MIN. 132" WIDE FOR VAN DESIGNATED SPACES WITH A MAXIMUM SLOPE OF 2% (IN ALL DIRECTIONS). ALL BUILDINGS SHALL CONTAIN AT LEAST ONE VAN ACCESSIBLE SPACE FOR NO LESS THAN ONE VAN SPACE FOR EVERY 6 ACCESSIBLE SPACES.

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RAMPS:

(D) RAMPS EXCEEDING 6" IN RISE (EXCLUDING CURB RAMPS) SHALL HAVE APPROPRIATE EDGE PROTECTION WITH HANDRAILS ON EACH SIDE AT BETWEEN 34" AND 38", AND EXTEND 12" BEYOND THE TOP AND BOTTOM OF RAMP. HANDRAIL SHALL NOT DIMINISH THE CLEAR AREA REQUIRED FOR TOP AND BOTTOM LANDINGS SERVING THE RAMPS.

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(H) RAMPS AND LANDINGS SHALL NOT EXCEED 1:48 (2% CROSS SLOPE)

SIDEWALKS AND ACCESSIBLE ROUTES:

(I) SIDEWALKS MUST BE AT LEAST 36" WIDE WITH 5'X5' CLEAR PASSING OPPORTUNITIES IN INCREMENTS LESS THAN 150 LF
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%)

(J) LONGITUDINAL SLOPE OF ANY SIDEWALK (ACCESSIBLE ROUTE) SHALL NOT EXCEED 1:20 (5%)

SITE GRADING - IBC REQUIREMENT (SEC. 1804)

- THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10-FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL.
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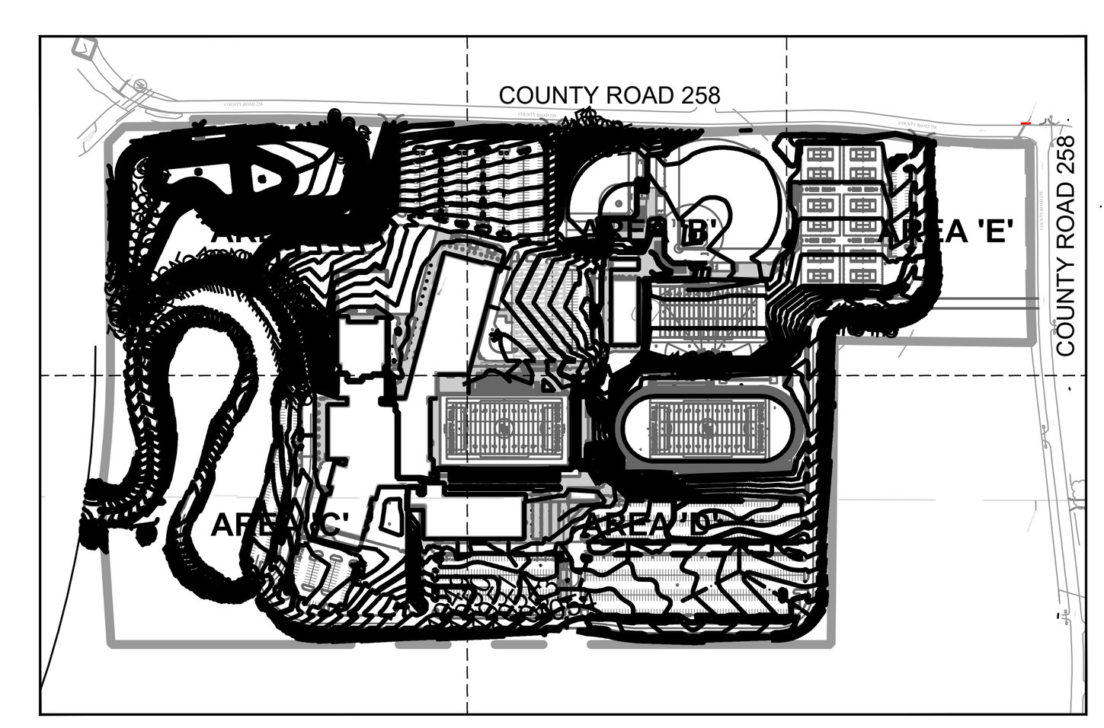

KEY MAP
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LIBERTY HILL, TEXAS

CZP SUBMITTAL

STATE OF TEXAS
JACK H. GARNER, JR.
98447
LICENSED PROFESSIONAL ENGINEER
5·8·2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

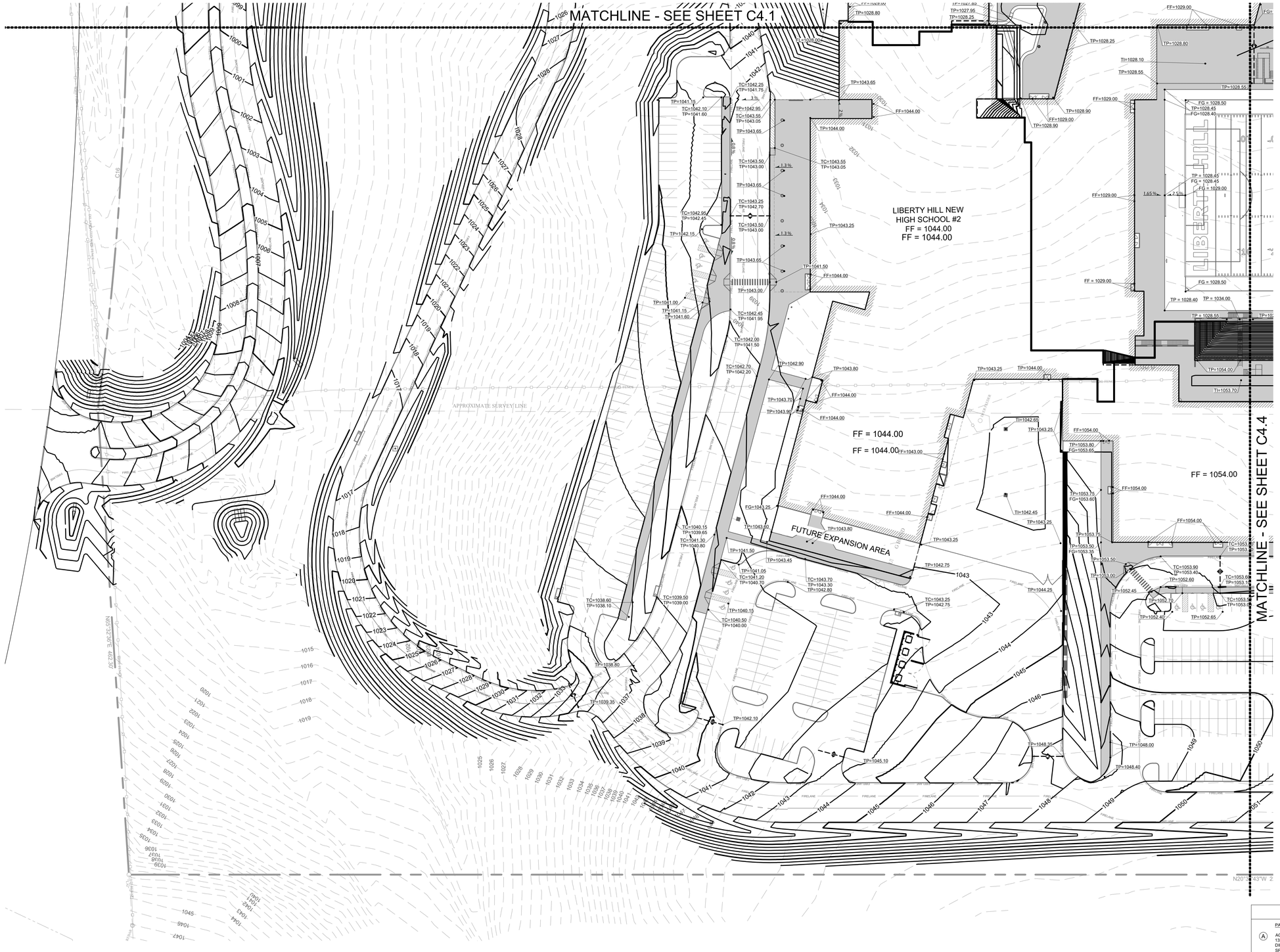
Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.
22-053.00

SHEET TITLE
GRADING PLAN AREA 'B'

SHEET NO.
C4.2

New High School No. 2



GRAPHIC SCALE

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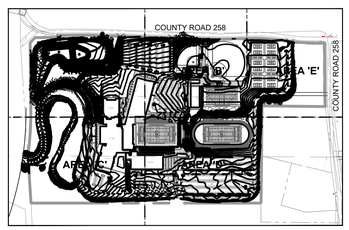

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Director JHG
Designer
Proj. Mgr. MSH
Drawn By
Quality Control LANGAN

PROJECT NO.

22-053.00

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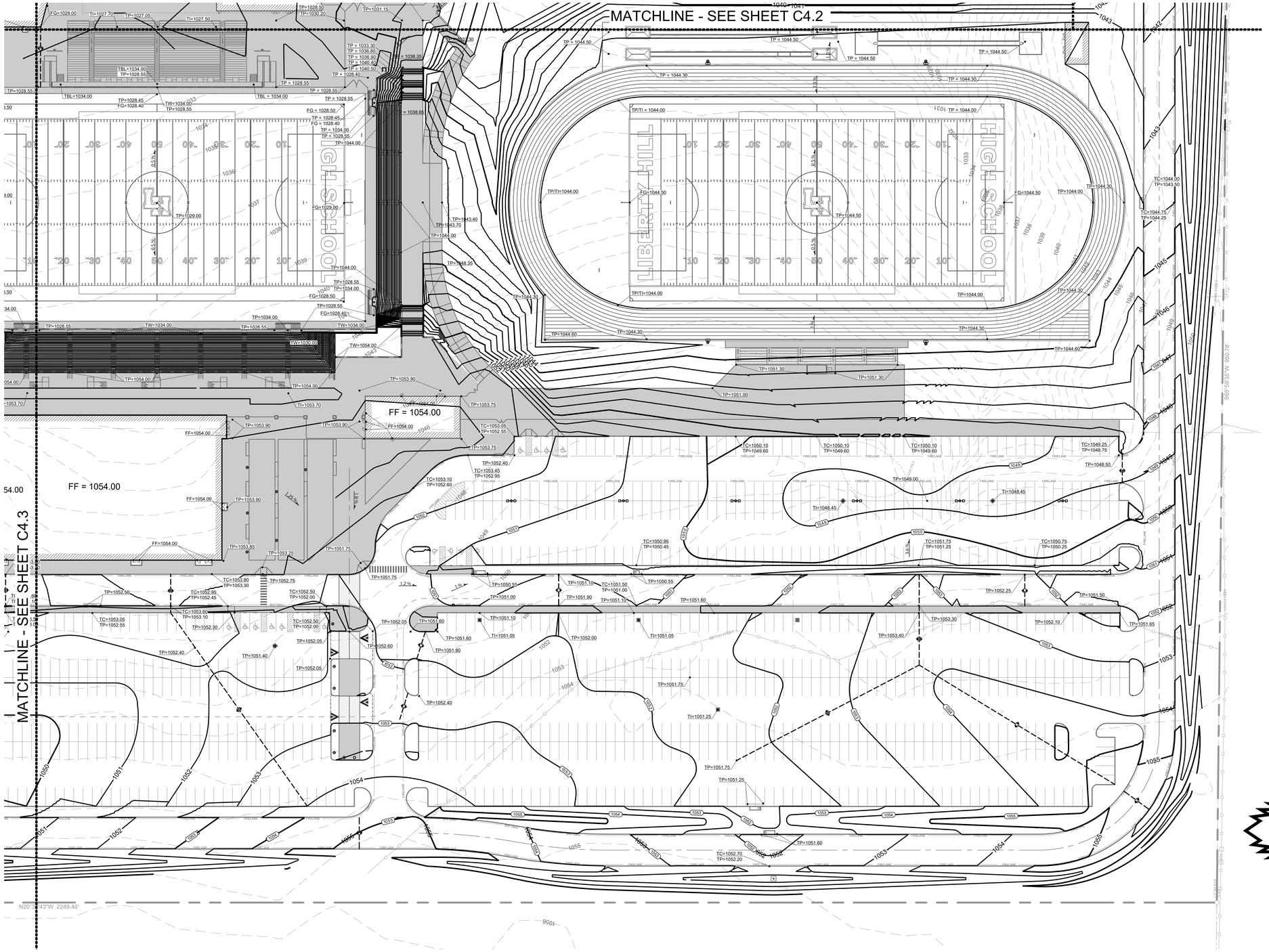
GRADING PLAN AREA 'C'

SHEET NO.

C4.3

New High School No. 2



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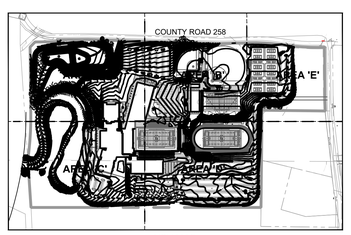

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

Director JHG | Drawn By
Designer | Quality Control LANGAN
Proj. Mgr. MSH

PROJECT NO.
22-053.00

SHEET TITLE
GRADING PLAN AREA 'D'

SHEET NO.
C4.4

New High School No. 2

GRAPHIC SCALE
0 40 80 FEET

STANDARD ACCESSIBILITY REQUIREMENTS

PARKING:

(A) ACCESSIBLE PARKING SPACES SHALL BE AS NOTED TO A MIN. 96" WIDE OR A MIN. 132" WIDE FOR VAN DESIGNATED SPACES WITH A MAXIMUM SLOPE OF 2% (IN ALL DIRECTIONS). ALL BUILDINGS SHALL CONTAIN AT LEAST ONE VAN ACCESSIBLE SPACE FOR NO LESS THAN ONE VAN SPACE FOR EVERY 6 ACCESSIBLE SPACES.

(B) EACH ACCESSIBLE PARKING SPACE SHALL HAVE A VERTICALLY MOUNTED (OR SUSPENDED) SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. APPROPRIATE VAN ACCESSIBLE SPACES MUST INCORPORATE "VAN-ACCESSIBLE" BELOW THE SYMBOL OF ACCESSIBILITY. SIGNS SHALL BE LOCATED AS NOTED TO 80" (MIN.) ABOVE THE ADJACENT PAVED SURFACE TO BOTTOM OF SIGN.

(C) ALL ACCESS AISLES SERVING ACCESSIBLE PARKING SPACES SHALL BE AS NOTED TO A 60" WIDE MINIMUM.

RAMPS:

(D) RAMPS EXCEEDING 6" IN RISE (EXCLUDING CURB RAMPS) SHALL HAVE APPROPRIATE EDGE PROTECTION WITH HANDRAILS ON EACH SIDE AT BETWEEN 34" AND 38", AND EXTEND 12" BEYOND THE TOP AND BOTTOM OF RAMP. HANDRAIL SHALL NOT DIMINISH THE CLEAR AREA REQUIRED FOR TOP AND BOTTOM LANDINGS SERVING THE RAMPS.

(E) RAMPS SHALL HAVE A SURFACE ARRANGED SO THAT WATER WILL NOT ACCUMULATE. COLOR OF RAMP FINISH MATERIAL (INCLUDING CONCRETE) SHALL HAVE A LIGHT AND REFLECTIVE VALUE TO SIGNIFICANTLY CONTRAST FROM ADJACENT SURFACES OR COLORS ONLY IF REQUIRED BY LOCAL OR STATE JURISDICTION

(F) LANDINGS FOR RAMPS SHALL BE AS WIDE AS THE RAMP AND 60" LONG MINIMUM (36" MINIMUM FOR CURB RAMPS)

(G) RAMPS SHALL NOT EXCEED A 1:12 RUNNING SLOPE OR 30" RISE

(H) RAMPS AND LANDINGS SHALL NOT EXCEED 1:48 (2% CROSS SLOPE)

SIDEWALKS AND ACCESSIBLE ROUTES:

(I) SIDEWALKS MUST BE AT LEAST 36" WIDE WITH 5'X5' CLEAR PASSING OPPORTUNITIES IN INCREMENTS LESS THAN 150 LF
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1:48 (2%)

(J) LONGITUDINAL SLOPE OF ANY SIDEWALK (ACCESSIBLE ROUTE) SHALL NOT EXCEED 1:20 (5%)

LEGEND

PROPOSED CONTOUR	100
EXISTING CONTOUR	
FLOWLINE	
GRADE BREAK	
ACCESSIBLE ROUTE	
SPOT GRADE	FG=100.50
PROPOSED FLOW ARROW	
FG	FINISHED GRADE
TP	TOP OF PAVEMENT
TC	TOP OF CURB
FL	FLOWLINE
FF	FINISHED FLOOR

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SITE GRADING - IBC REQUIREMENT (SEC. 1804)

- THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10-FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL.
- IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10-FEET OF HORIZONTAL DISTANCE, A 5-PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2 PERCENT WHERE LOCATED WITHIN 10-FEET OF THE BUILDING FOUNDATION.
- IMPERVIOUS SURFACES WITHIN 10-FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2-PERCENT AWAY FROM THE BUILDING.

NOTE TO BUILDING OFFICIAL

ACCESSIBLE PATHS ADJACENT TO THE BUILDING HAVE BEEN DESIGNED LESS THAN 2% AWAY FROM BUILDING FOUNDATIONS TO ALLOW FOR CONSTRUCTION TOLERANCES WHILE MAINTAINING COMPLIANCE WITH ADA REQUIREMENTS. WE ACKNOWLEDGE THE AUTHORITY AND DISCRETION OF THE BUILDING OFFICIAL TO APPLY MINIMUM SLOPE REQUIREMENTS OF IBC-1804. APPROVAL OF THIS PLAN WILL BE CONSIDERED AS ACCEPTANCE THAT THE INTENT OF THE IBC-1804 REQUIREMENT HAS BEEN MET.

GENERAL SITE GRADING NOTE

- *AS PART OF THE BASE BID THE CONTRACTOR SHALL PROVIDE/IMPORT ALL SELECT FILL AND TOPSOIL MATERIAL NECESSARY TO ACHIEVE FINAL GRADE PER PLAN.*
- *ALL AREAS WITHIN CONSTRUCTION LIMITS NOT COVERED WITH AN IMPERVIOUS MATERIAL SHALL BE COVERED WITH TOPSOIL. THE TOPSOIL SHALL BE IN CONFORMANCE WITH THE TOPSOIL NOTES LISTED IN THE PLAN SET AND SPECIFICATIONS FOR THIS PROJECT.*
- *BASE BID SHALL ALSO INCLUDE HAUL OFF OF EXCESS MATERIAL AS NECESSARY.*
- *ANY FILL PLACED ONSITE SHALL BE TESTED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER AND BE IN CONFORMANCE WITH RECOMMENDATIONS LISTED IN THE SITE GEOTECHNICAL REPORT TITLED ?????? AND DATED ?????????? OR ANY SUPPLEMENTAL ADDENDUMS.*

** NOTICE TO CONTRACTORS - TOPOGRAPHIC SURVEY **

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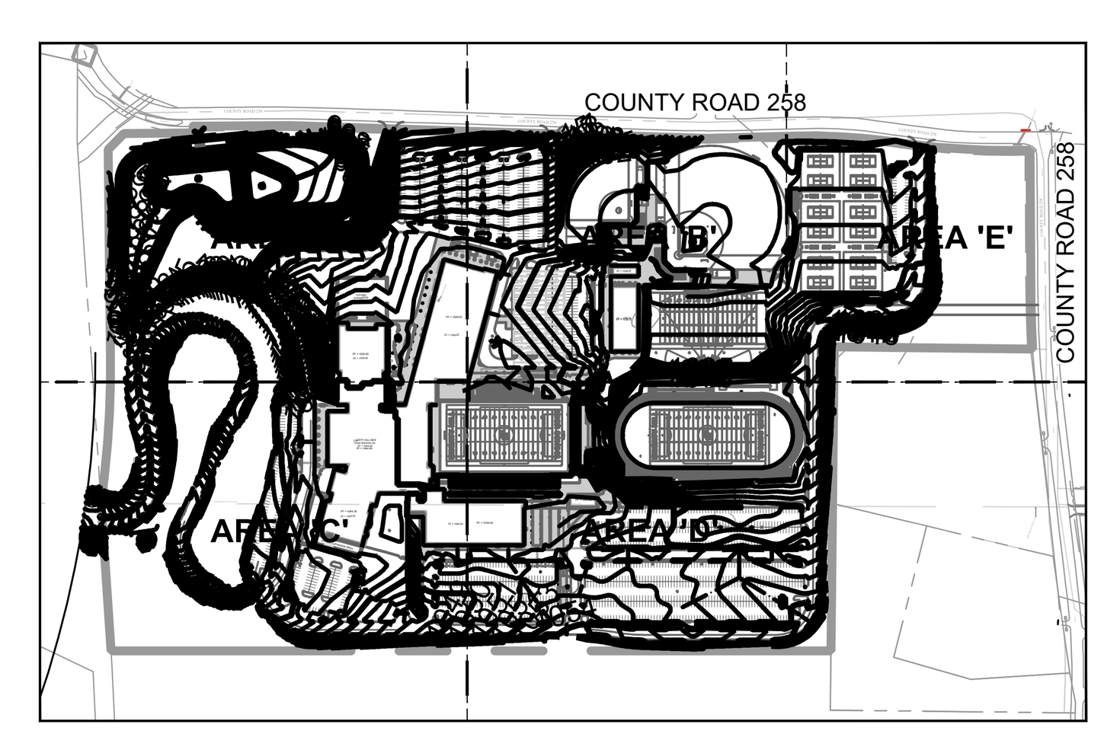

KEY MAP
N.T.S

811
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New High School No. 2

CZP SUBMITTAL

5-8-2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

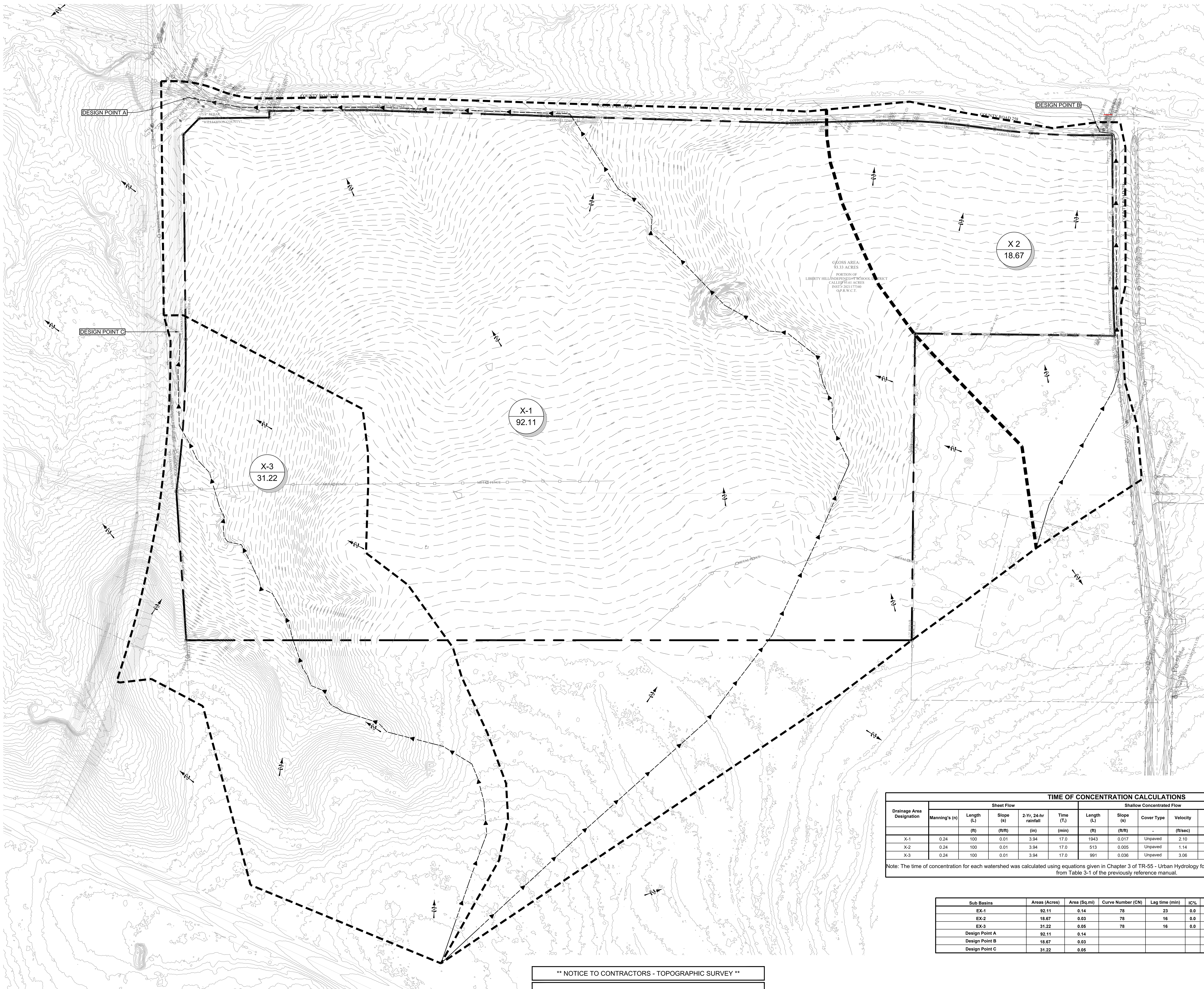
Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.
22-053.00

SHEET TITLE
GRADING PLAN AREA 'E'

SHEET NO.
C4.5

Date: 5/8/2023 Time: 10:13 User: amuhire Style Table: Langan.stb Layout: C4.5 GRADING PLAN AREA 'E' Document Code: 531013308-0601-CG101-0101



GRAPHIC SCALE

0 120 240 FEET

LEGEND

DRAINAGE BASIN	BASIN NAME: DA-00; ACRES: 1.00
DRAINAGE AREA	
TIME OF CONCENTRATION PATH	
EXISTING FLOW ARROW	

TIME OF CONCENTRATION CALCULATIONS

Drainage Area Designation	Sheet Flow				Shallow Concentrated Flow					Channel Flow			Total
	Manning's (n)	Length (L)	Slope (s)	2-Yr, 24-hr rainfall	Time (T_t)	Length (L)	Slope (s)	Cover Type	Velocity	Time (T_t)	Length (L)	Velocity	Time (T_t)	Time (T_c)
		(ft)	(ft/ft)	(in)	(min)	(ft)	(ft/ft)	-	(ft/sec)	(min)	(ft)	(ft/sec)	(min)	(min)
X-1	0.24	100	0.01	3.94	17.0	1943	0.017	Unpaved	2.10	15.4	2650	7.50	5.9	38
X-2	0.24	100	0.01	3.94	17.0	513	0.005	Unpaved	1.14	7.5	783	6.00	2.2	27
X-3	0.24	100	0.01	3.94	17.0	991	0.036	Unpaved	3.06	5.4	1359	6.50	3.5	26

Note: The time of concentration for each watershed was calculated using equations given in Chapter 3 of TR-55 - Urban Hydrology for Small Watersheds. Values for each overland "n" are taken from Table 3-1 of the previously reference manual.

Sub Basins	Areas (Acres)	Area (Sq.mi)	Curve Number (CN)	Lag time (min)	IC%	Q2(cfs)	Q10(cfs)	Q25(cfs)	Q100(cfs)
EX-1	92.11	0.14	78	23	0.0	128.50	252.90	340.20	483.70
EX-2	18.67	0.03	78	16	0.0	31.80	62.30	83.60	118.30
EX-3	31.22	0.05	78	16	0.0	53.10	104.10	139.70	197.70
Design Point A	92.11	0.14				128.50	252.90	340.20	483.70
Design Point B	18.67	0.03				31.80	62.30	83.60	118.30
Design Point C	31.22	0.05				53.10	104.10	139.70	197.70

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CZP SUBMITTAL

STATE OF TEXAS — JACK H. GARNER, JR. — 98447 — LICENSED PROFESSIONAL ENGINEER — 5·8·2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

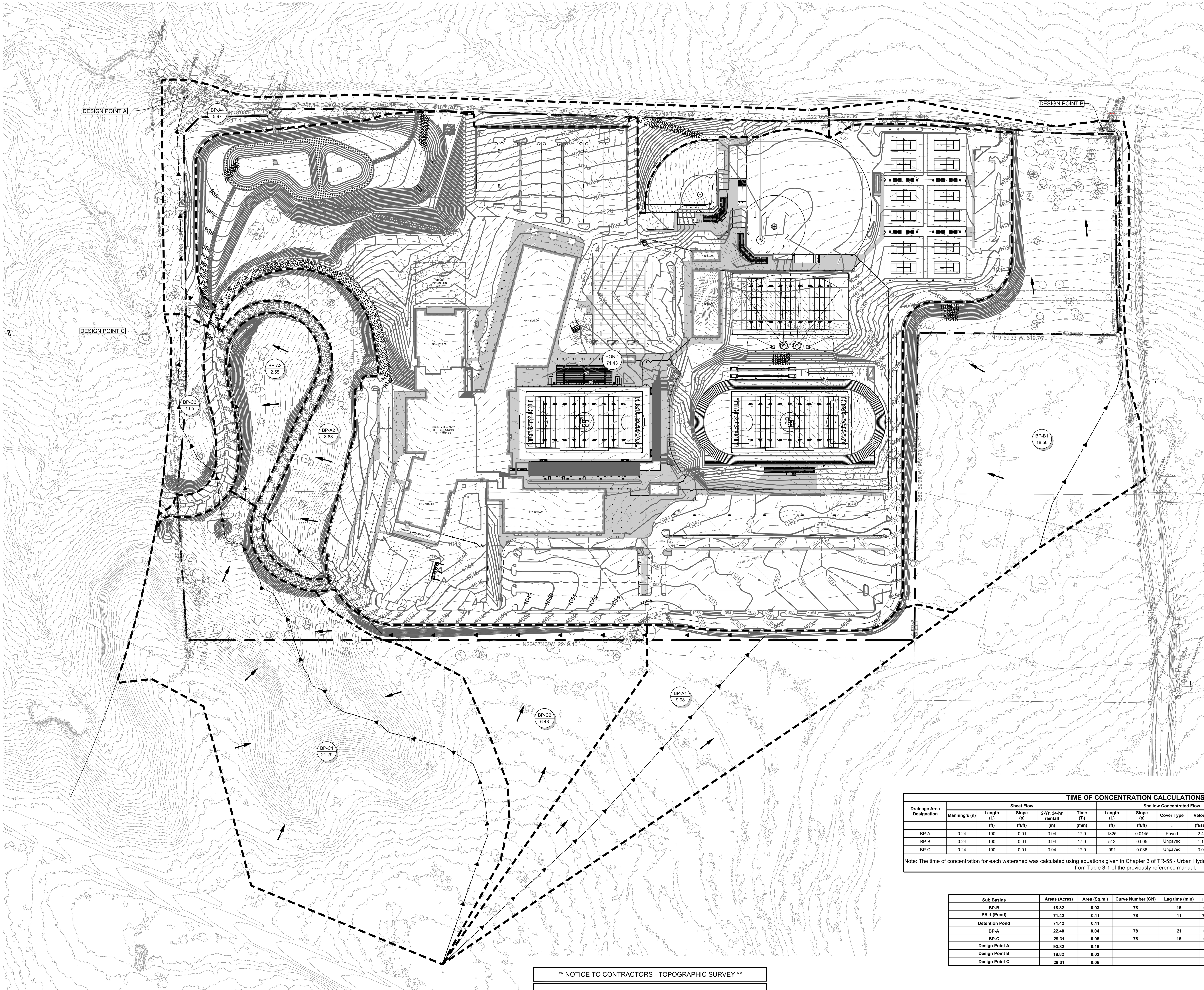
Director: JHG
Drawn By:
Designer:
Quality Control: LANGAN
Proj. Mgr.: MSH

PROJECT NO.
22-053.00

SHEET TITLE
EXISTING DRAINAGE AREA MAP

SHEET NO.
C5.0

New High School No. 2



GRAPHIC SCALE

0 120 240 FEET

LEGEND

DRAINAGE BASIN	BASIN NAME: DA-00; ACRES: 1.00
DRAINAGE AREA	
TIME OF CONCENTRATION PATH	
EXISTING FLOW ARROW	

TIME OF CONCENTRATION CALCULATIONS

Drainage Area Designation	Sheet Flow					Shallow Concentrated Flow					Channel Flow			Total
	Manning's (n)	Length (L)	Slope (s)	2-Yr, 24-hr rainfall	Time (T_t)	Length (L)	Slope (s)	Cover Type	Velocity	Time (T_t)	Length (L)	Velocity	Time (T_t)	Time (T_c)
		(ft)	(ft/ft)	(in)	(min)	(ft)	(ft/ft)	-	(ft/sec)	(min)	(ft)	(ft/sec)	(min)	(min)
BP-A	0.24	100	0.01	3.94	17.0	1325	0.0145	Paved	2.45	9.0	3102	6.00	8.6	35
BP-B	0.24	100	0.01	3.94	17.0	513	0.005	Unpaved	1.14	7.5	783	6.00	2.2	27
BP-C	0.24	100	0.01	3.94	17.0	991	0.036	Unpaved	3.06	5.4	1365	6.50	3.5	26

Note: The time of concentration for each watershed was calculated using equations given in Chapter 3 of TR-55 - Urban Hydrology for Small Watersheds. Values for each overland "n" are taken from Table 3-1 of the previously reference manual.

Sub Basins	Areas (Acres)	Area (Sq.mi)	Curve Number (CN)	Lag time (min)	IC%	Q2(cfs)	Q10(cfs)	Q25(cfs)	Q100(cfs)
BP-B	18.82	0.03	78	16	0.0	32.00	62.70	84.20	119.10
PR-1 (Pond)	71.42	0.11	78	11	70.0	236.70	368.30	457.50	601.90
Detention Pond	71.42	0.11				89.70	162.60	233.10	356.50
BP-A	22.40	0.04	78	21	0.0	32.90	64.70	87.00	123.50
BP-C	29.31	0.05	78	16	0.0	49.80	97.70	131.10	185.60
Design Point A	93.82	0.15				121.10	225.20	319.00	479.80
Design Point B	18.82	0.03				32.00	62.70	84.20	119.10
Design Point C	29.31	0.05				49.80	97.70	131.10	185.60

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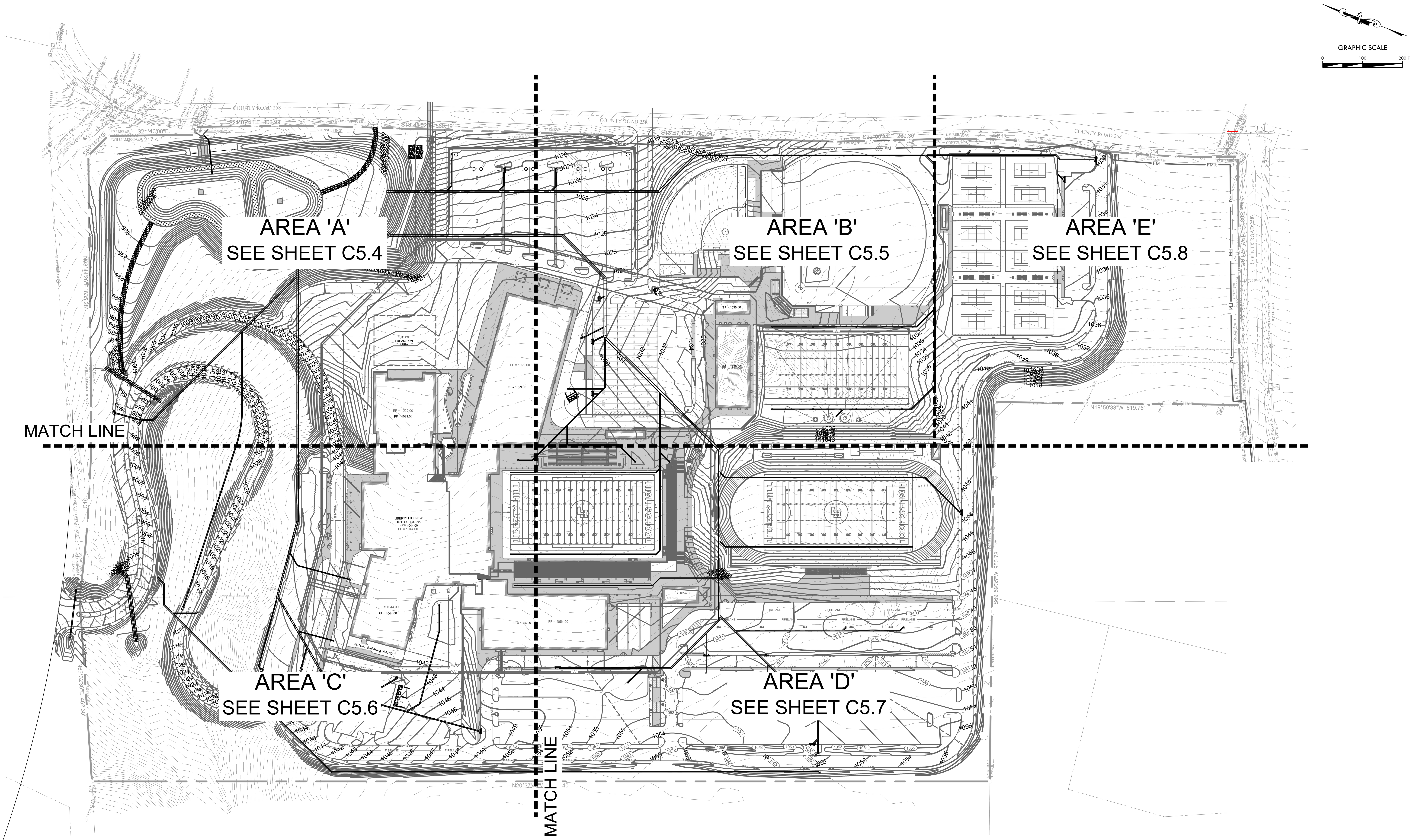
Designer
Quality Control: LANGAN
Proj. Mgr.: MSH

PROJECT NO.
22-053.00

SHEET TITLE
PROPOSED DRAINAGE AREA PLAN

SHEET NO.
C5.1



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LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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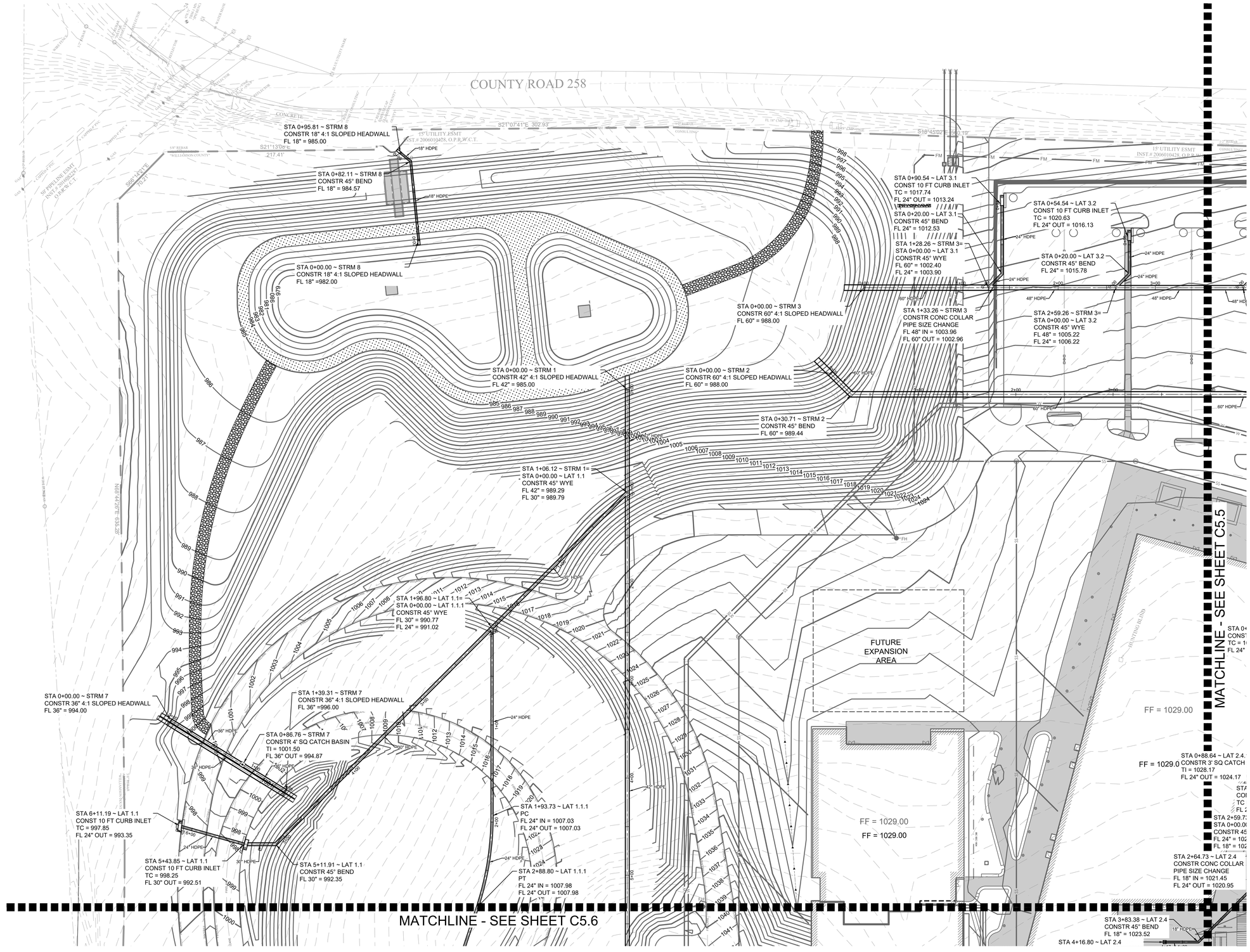
MSH	

PROJECT NO.
22-053.00

SHEET TITLE
OVERALL DRAINAGE PLAN

SHEET NO.
C5.3



LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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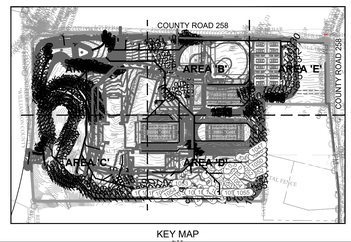

KEY MAP

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CZP SUBMITTAL

STATE OF TEXAS · CASEY H. GARDNER · 98447 · LICENSED · PROFESSIONAL ENGINEER
5-8-2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

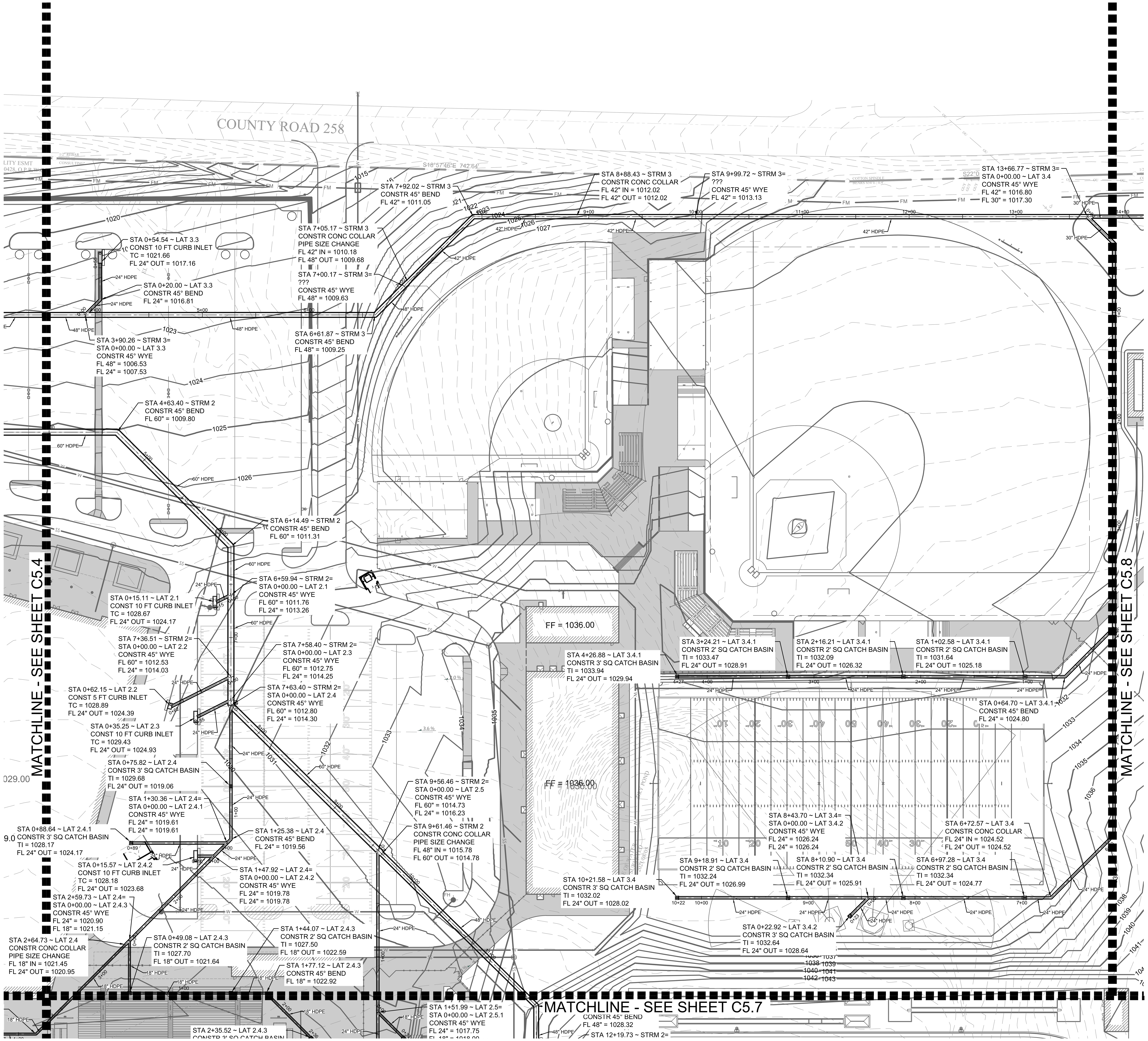
Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.
22-053.00

SHEET TITLE
DRAIANGE PLAN AREA 'A'

SHEET NO.
C5.4

Date: 5/8/2023 Time: 20:55 User: mhardy Style Table: Langan.stb Layout: C5.4 DRAIANGE PLAN AREA 'A' Document Code: 531013308-0601-C5102-0101



GRAPHIC SCALE

0 40 80 FEET

LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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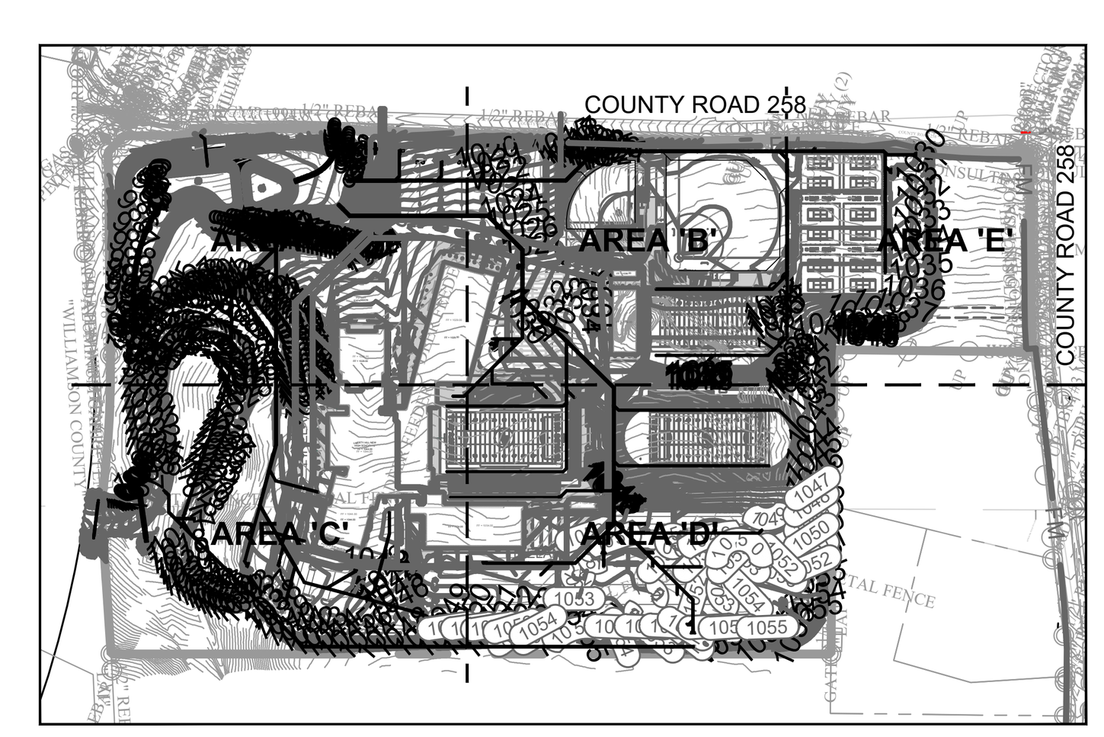

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CZP SUBMITTAL

TBPE Registration #: F- 13,709

5-8-2023

ISSUED: MAY 08, 2023

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Revision No.

Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.

22-053.00

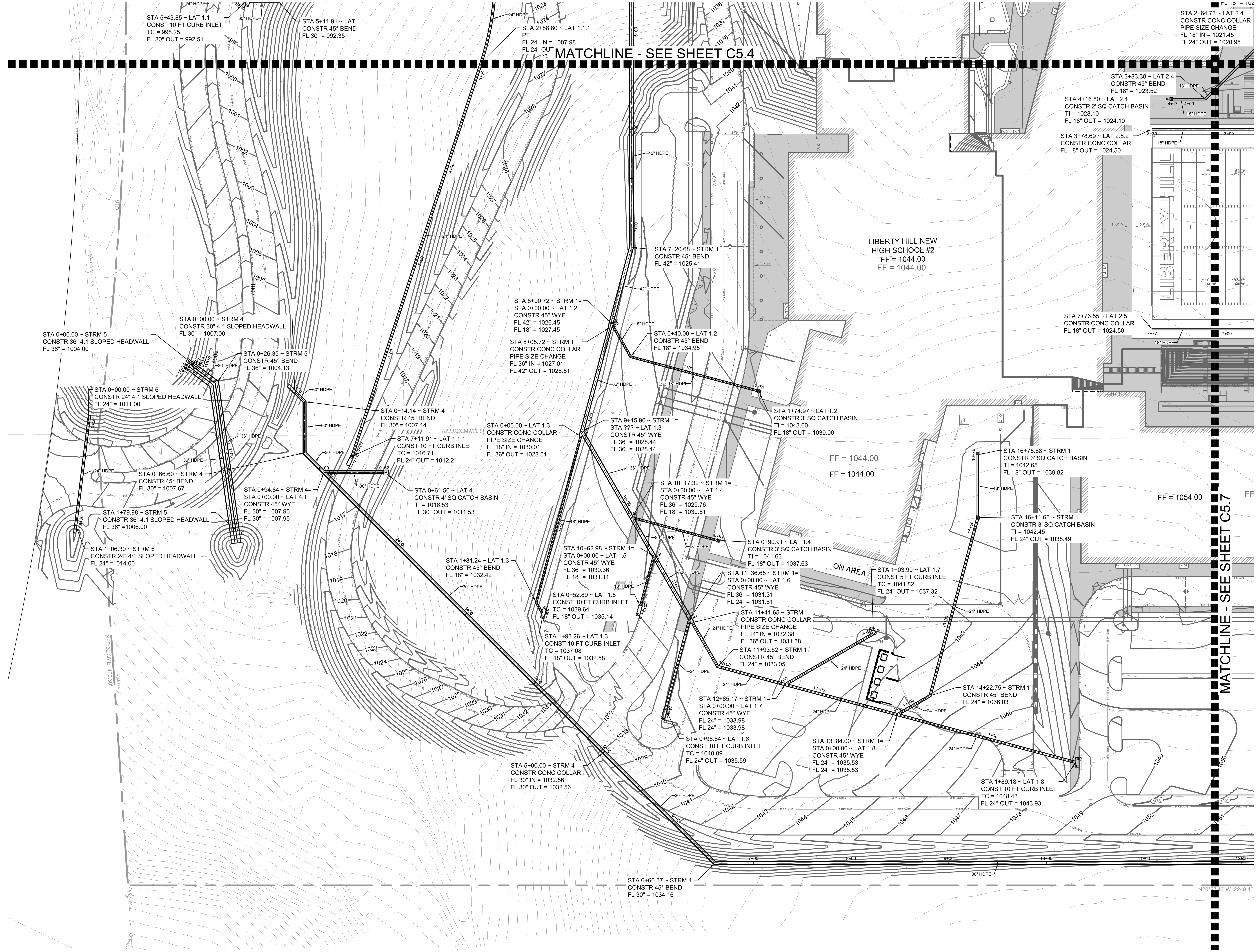
SHEET TITLE

DRAINAGE PLAN AREA 'B'

SHEET NO.

C5.5

Date: 5/8/2023 Time: 20:57 User: mhardy Style Table: Langan.stb Layout: C5.5 DRAINAGE PLAN AREA 'B' Document Code: 531013308-0601-CG102-0101



LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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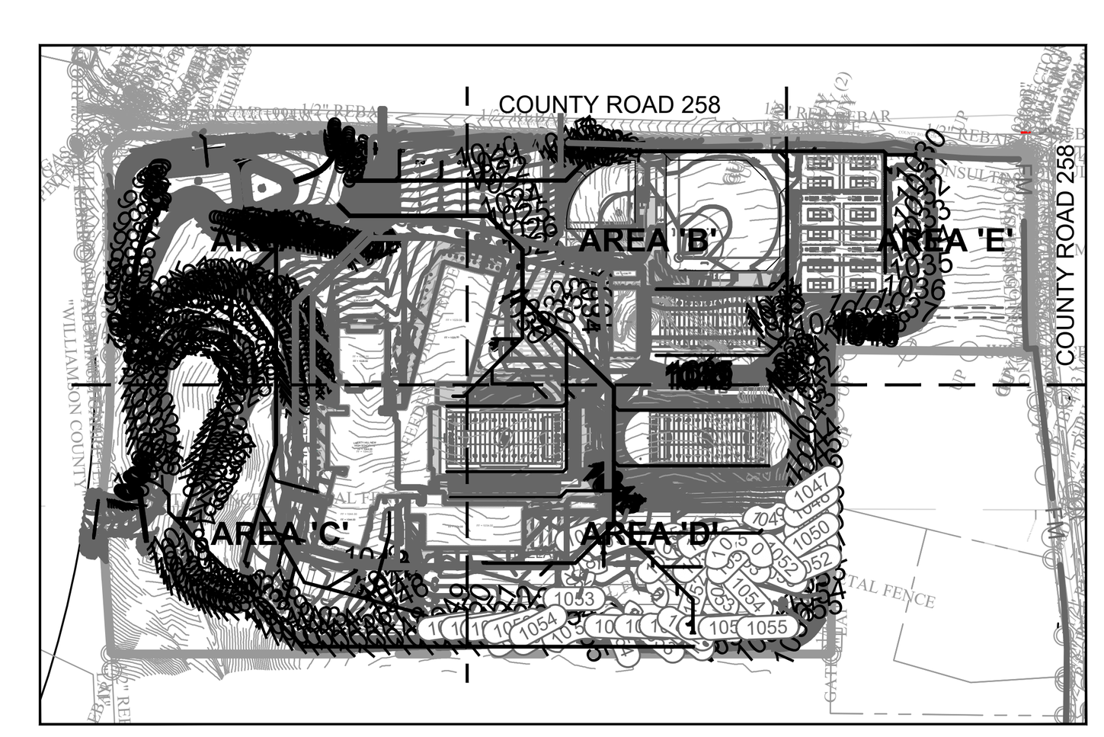

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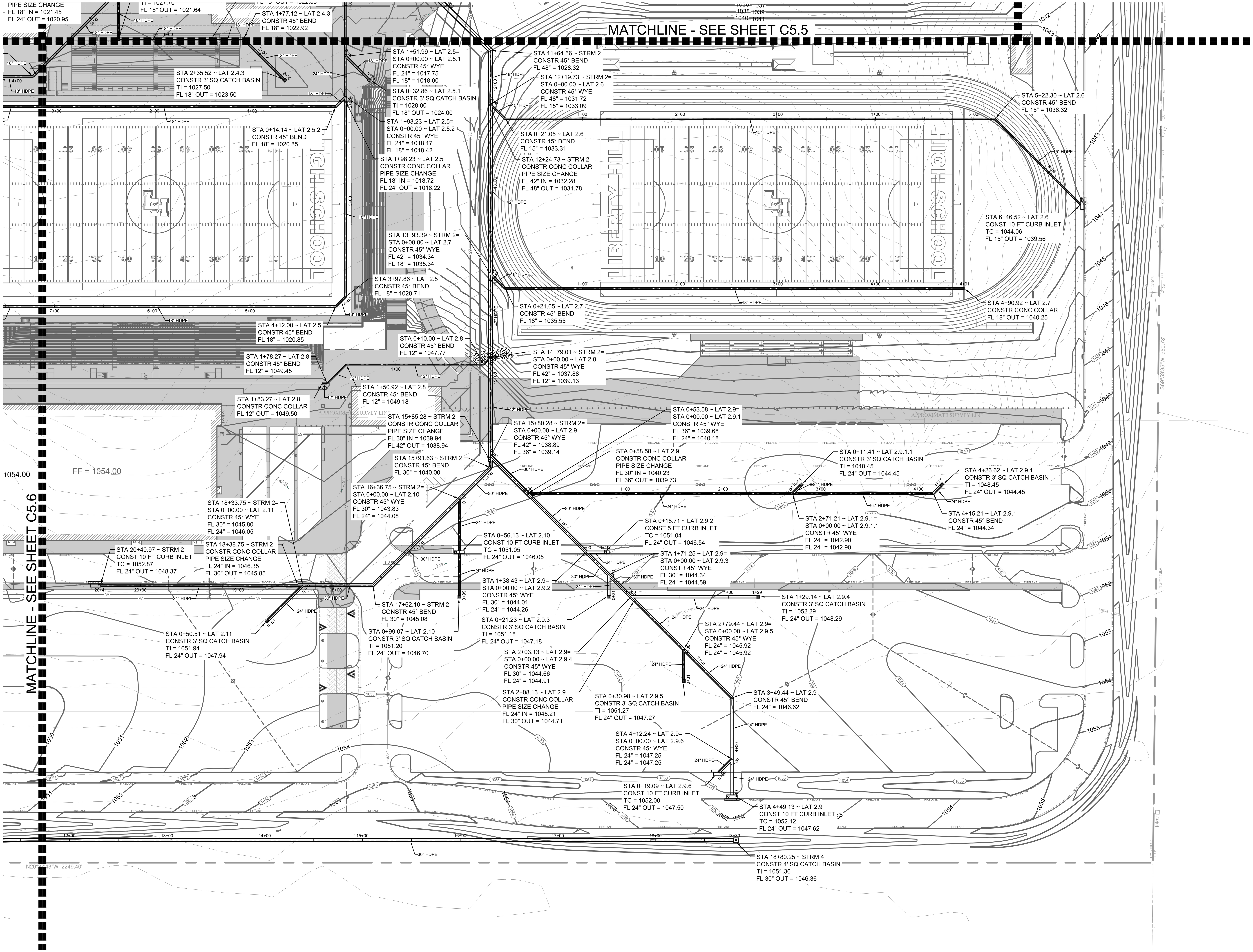
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.
22-053.00

SHEET TITLE
DRAINAGE PLAN AREA 'C'

SHEET NO.
C5.6



LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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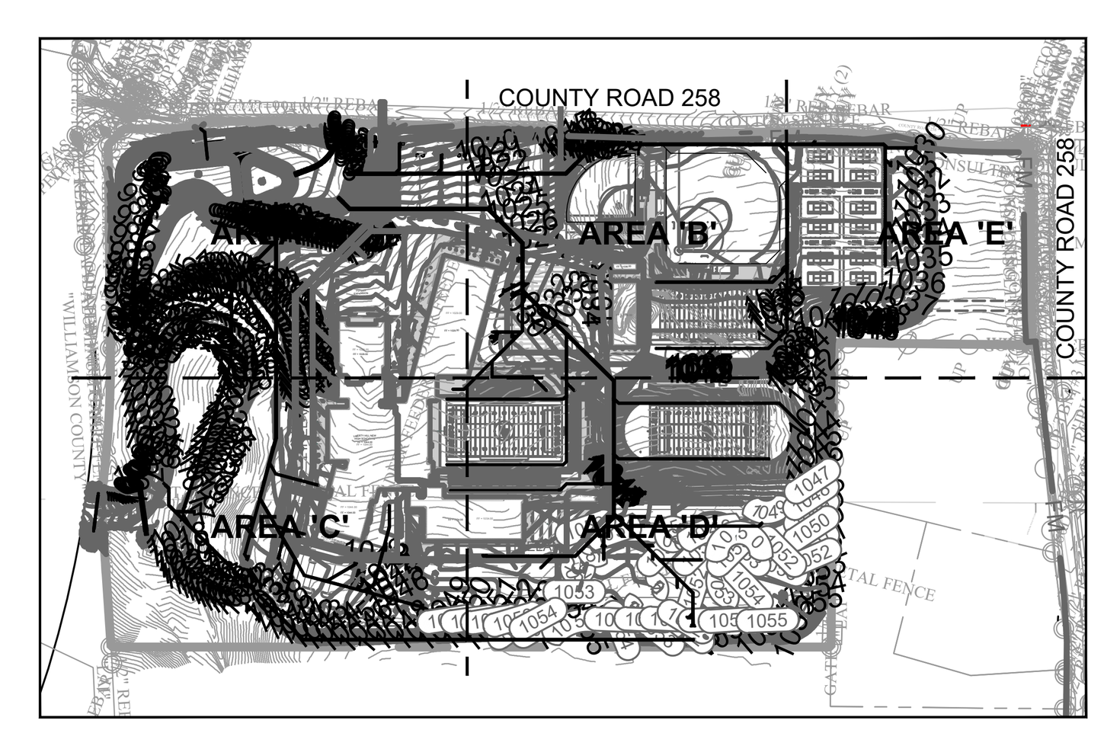

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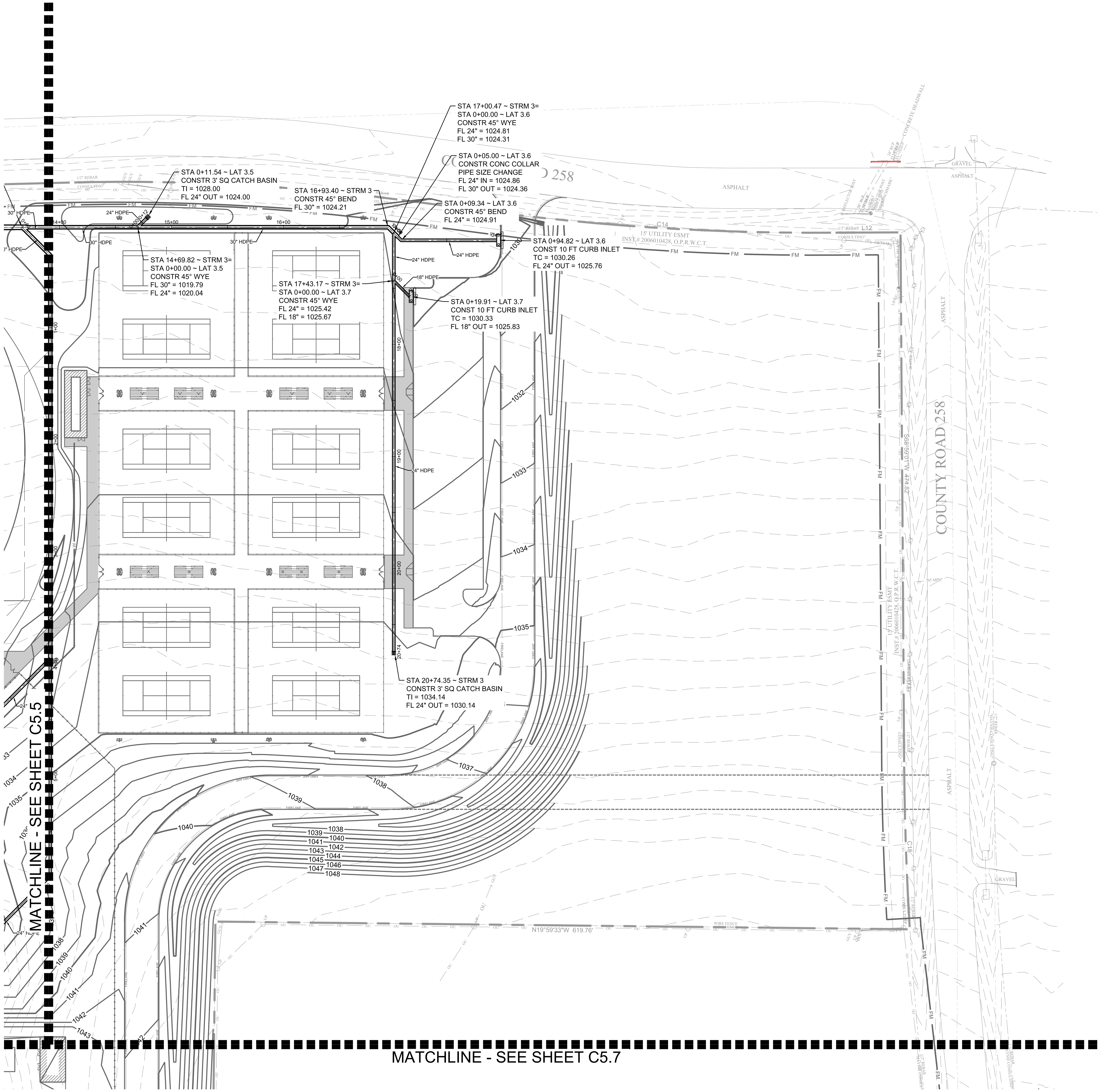
PROJECT NO.
22-053.00

SHEET TITLE
DRAINAGE PLAN AREA 'D'

SHEET NO.
C5.7

Date: 5/8/2023 Time: 21:00 User: mhardy Style Table: Langan.stb Layout: C5.7 DRAINAGE PLAN AREA 'D' Document Code: 531013308-0601-CG102-0101



GRAPHIC SCALE

0 40 80 FEET

LEGEND

PROPOSED CURB INLET	
PROPOSED STORM LINE	
GRATE INLET	
FL	FLOWLINE
TI	TOP OF INLET
TC	TOP OF CURB

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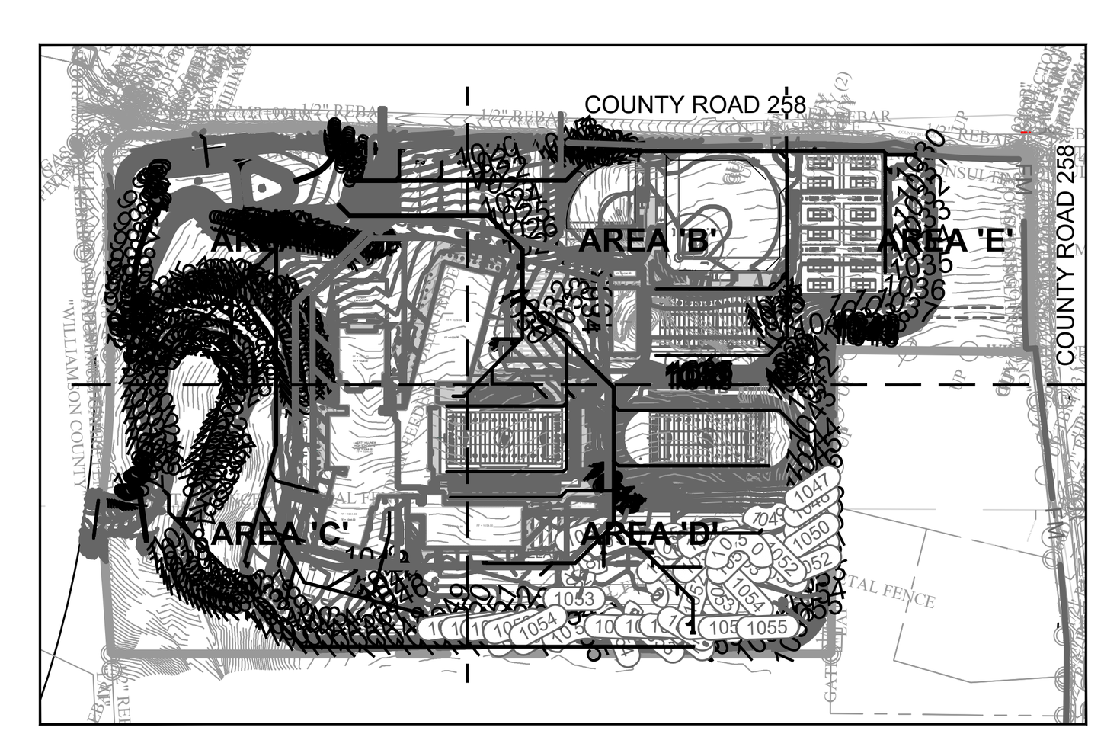

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Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.

22-053.00

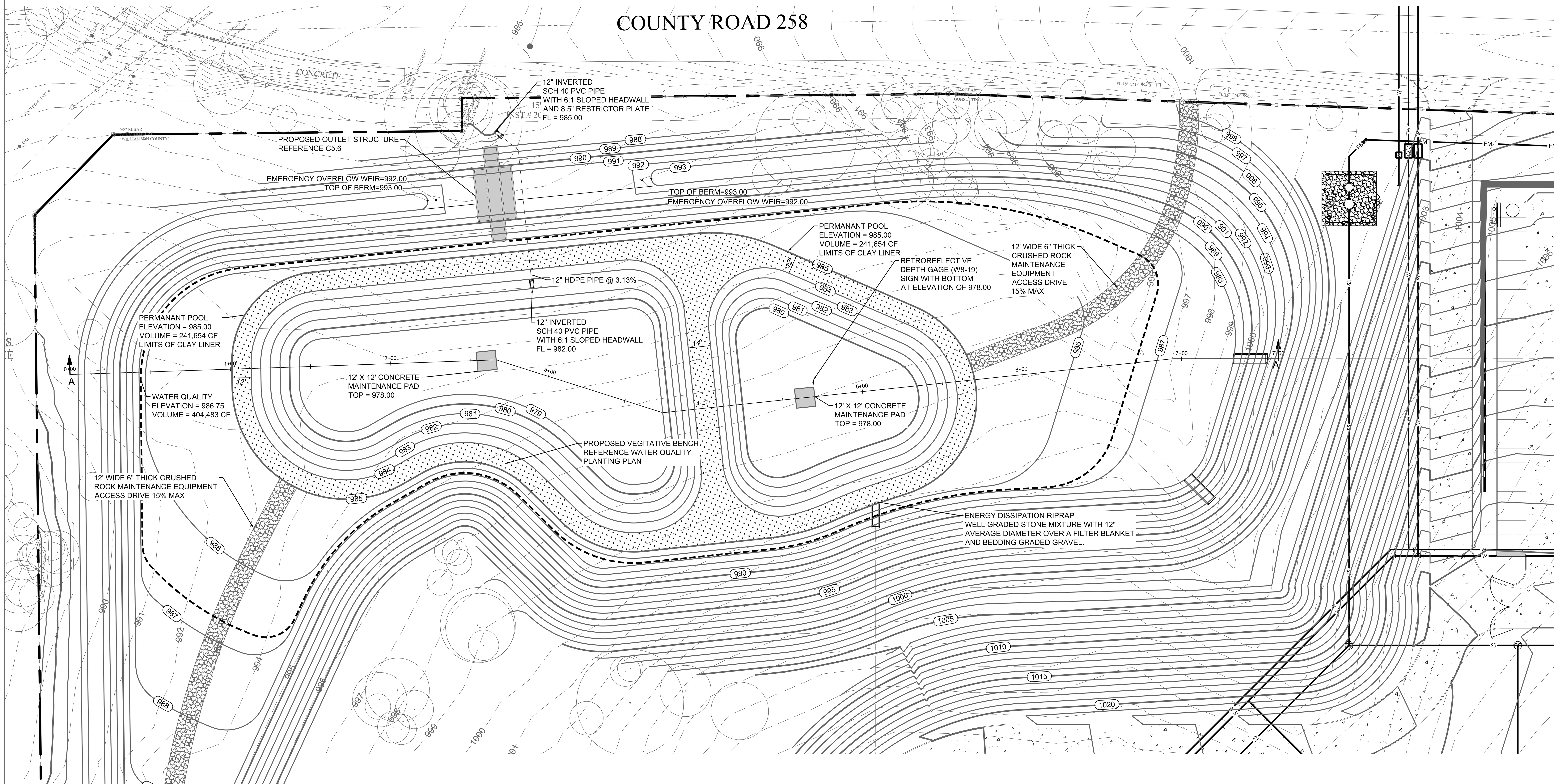
SHEET TITLE

DRAINAGE PLAN AREA 'E'

SHEET NO.

C5.8

Date: 5/8/2023 Time: 21:02 User: mhardy Style Table: Langan.stb Layout: C5.8 DRAINAGE PLAN AREA 'E' Document Code: 531013308-0601-CU201-0101



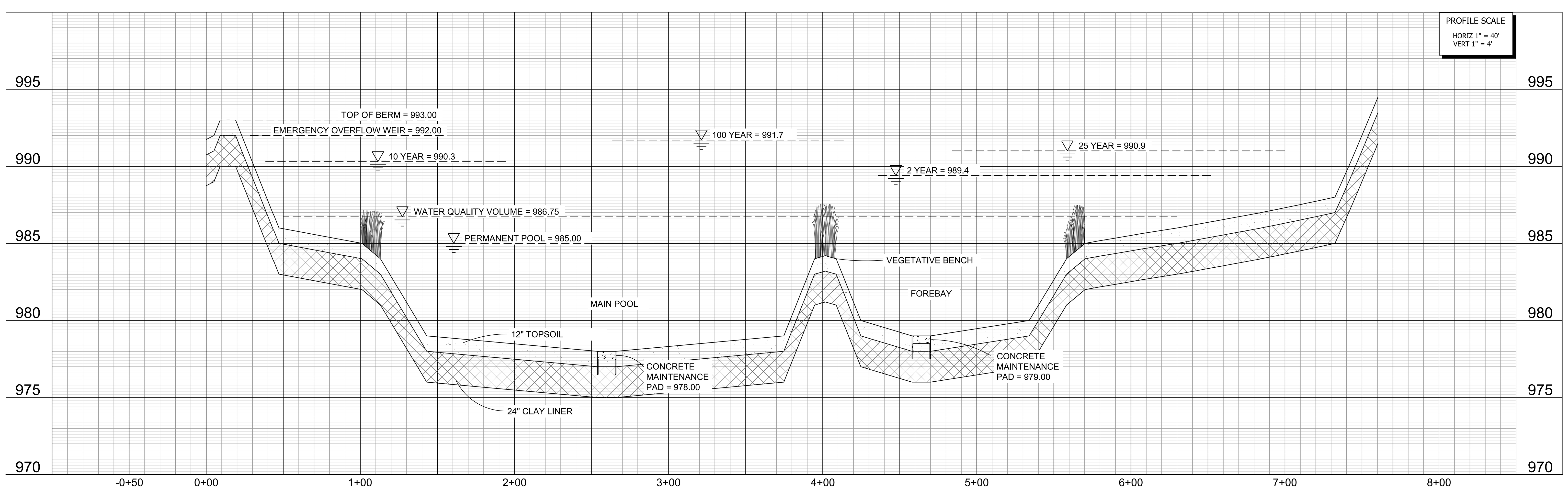
GRAPHIC SCALE

0 30 60 FEET

LEGEND

PROPOSED CONTOUR	
EXISTING CONTOUR	
SPOT GRADE	FG=100.50
FG	FINISHED GRADE
TP	TOP OF PAVEMENT

CROSS SECTION A



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PROJECT NO.
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SHEET TITLE
WATER QUALITY PLAN

SHEET NO.
C5.11

Date: 5/8/2023 Time: 21:13 User: mhardy Style Table: Langan.stb Layout: C5.11 WATER QUALITY PLAN Document Code: 531013308-0601-CG102-0104

CURRENT PROPOSED WATER QUALITY CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Liberty Hill High School
Date Prepared: 5/5/2023

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

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project
County = Williamson
Total project area included in plan * = 71.76 acres
Predevelopment impervious area within the limits of the plan * = 0.00 acres
Total post-development impervious area within the limits of the plan* = 49.96 acres
Total post-development impervious cover fraction * = 0.70
P = 32 inches

$L_{M\ TOTAL\ PROJECT}$ = **43485** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area = 71.76 acres
Predevelopment impervious area within drainage basin/outfall area = 0.00 acres
Post-development impervious area within drainage basin/outfall area = 49.96 acres
Post-development impervious fraction within drainage basin/outfall area = **0.70**
$L_{M\ THIS\ BASIN}$ = **43485** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Wet Basin
Removal efficiency = **93** percent

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

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

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

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

A_C = 71.76 acres
A_I = 49.96 acres
A_P = **21.80** acres
L_R = **51794** lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 43485 lbs.

F = **0.84**

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

Rainfall Depth = **1.26** inches
Post Development Runoff Coefficient = **0.50**
On-site Water Quality Volume = **164729** cubic feet

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

Off-site area draining to BMP = 0.00 acres
Off-site Impervious cover draining to BMP = 0.00 acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **32946**
Total Capture Volume (required water quality volume(s) x 1.20) = **197675** cubic feet

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

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

Required capacity of Permanent Pool = **197675** cubic feet — Permanent Pool Capacity is 1.20 times the WQV
Required capacity at WQV Elevation = **362403** cubic feet — Total Capacity should be the Permanent Pool Capacity plus a second WQV.

WATER QUALITY CALCULATIONS FOR FUTURE IMPROVEMENTS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Liberty Hill High School
Date Prepared: 5/5/2023

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

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project
County = Williamson
Total project area included in plan * = 71.76 acres
Predevelopment impervious area within the limits of the plan * = 0.00 acres
Total post-development impervious area within the limits of the plan* = 53.82 acres
Total post-development impervious cover fraction * = 0.75
P = 32 inches

$L_{M\ TOTAL\ PROJECT}$ = **46845** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area = 71.76 acres
Predevelopment impervious area within drainage basin/outfall area = 0.00 acres
Post-development impervious area within drainage basin/outfall area = 53.82 acres
Post-development impervious fraction within drainage basin/outfall area = **0.75**
$L_{M\ THIS\ BASIN}$ = **46845** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Wet Basin
Removal efficiency = **93** percent

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

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

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

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

A_C = 71.76 acres
A_I = 53.82 acres
A_P = **17.94** acres
L_R = **55707** lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 46845 lbs.

F = **0.84**

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

Rainfall Depth = **1.26** inches
Post Development Runoff Coefficient = **0.56**
On-site Water Quality Volume = **183801** cubic feet

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

Off-site area draining to BMP = 0.00 acres
Off-site Impervious cover draining to BMP = 0.00 acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **36760**
Total Capture Volume (required water quality volume(s) x 1.20) = **220561** cubic feet

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

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

Required capacity of Permanent Pool = **220561** cubic feet — Permanent Pool Capacity is 1.20 times the WQV
Required capacity at WQV Elevation = **404362** cubic feet — Total Capacity should be the Permanent Pool Capacity plus a second WQV.

FOREBAY VOLUME

Elevation	Area (sq. ft.)	Avg. Area (sq. ft.)	Inc. Depth (ft.)	Inc. Volume (cu. Ft.)	Total Volume (cu. ft.)
979	144				0
		4219	1	4219	
980	8293				4,219
		9310	1	9310	
981	10327				13,529
		11444	1	11444	
982	12560				24,972
		13776	1	13776	
983	14992				38,748
		16308	1	16308	
984	17623				55,056
		21121	1	21121	
985	24619				76,177

MAIN POOL VOLUME

Elevation	Area (sq. ft.)	Avg. Area (sq. ft.)	Inc. Depth (ft.)	Inc. Volume (cu. Ft.)	Total Volume (cu. ft.)
978	144				0
		7236	1	7236	
979	14327				7,236
		16112	1	16112	
980	17896				23,347
		19778	1	19778	
981	21660				43,125
		23640	1	23640	
982	25620				66,765
		27697	1	27697	
983	29774				94,462
		31950	1	31950	
984	34125				126,412
		39066	1	39066	
985	44006				165,477

SAFETY LEDGE TO TOP

Elevation	Area (sq. ft.)	Avg. Area (sq. ft.)	Inc. Depth (ft.)	Inc. Volume (cu. Ft.)	Total Volume (cu. ft.)	Comment
985	68626				241,654	Top of Safety Ledge / Permanent Pool
		83000	1	83000		
986	97373				324,653	
		105875	0.754	79830		
986.75	114377				404,483	Water Quality Elevation
		117464	0.246	28896		
987	120551				433,379	Detention Storage
		128980	1	128980		
988	137409				562,359	
		143002	1	143002		
989	148594				705,360	
		153390	1	153390		
990	158186				858,750	
		162964	1	162964		
991	167741				1,021,714	
		172393	1	172393		
992	177045				1,194,107	

Water Quality Volume for Current Proposed = 164,729 cu. Ft.
Required Permanent Pool Volume for Current Proposed = 197,675 cu. Ft.
Water Quality Volume for Future Condition = 183,801 cu. Ft.
Required Permanent Pool Volume for Future Condition = 220,561 cu. Ft.
Proposed Permanent Pool = 985 = 241,654 cu. ft.

Required Capacity at Water Quality Elevation = Permanent Pool + Water Quality Volume
Required Capacity at Water Quality Elevation Current Proposed = 197,675 + 164,729 = 362,404 cu. ft.
Required Capacity at Water Quality Elevation Future Condition = 220,561 +183,801 = 404,362 cu. ft.
Proposed Water Quality Elevation = 986.75 = 404,483 cu. ft.

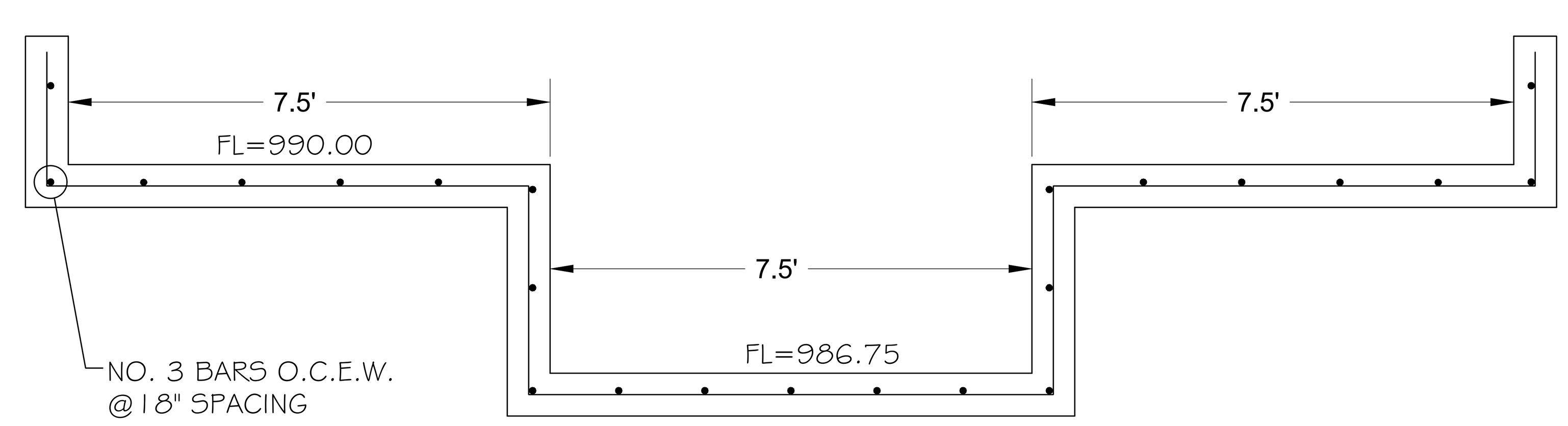
WATER QUALITY DRAWDOWN CALCULATIONS

PERMANENT POOL = 985' = 241,654 CU. FT.
PROPOSED WATER QUALITY ELEVATION = 986.75 = 404,483 CU. FT.
DRAWDOWN TIME = 24 HRS
Q = 162,829 CU. FT. / (24 HR X 3600 S/HR) = 1.88 CFS
AVERAGE HEAD = (986.75 - 985)/2 = 0.875'
$Q = 0.6A(2GH)^{.5} = 1.88\ CFS = 0.6A(2*32.2*0.875)^{.5} = 4.50A$
A = 0.417 SQ. FT.
D = 0.73 FT MAX
USE 8.5" ORIFICE PLATE

Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density

WATER QUALITY CLAY LINER REQUIREMENTS



CONCRETE WEIR DETAIL
N.T.S.

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

New High School No. 2

CZP SUBMITTAL

STATE OF TEXAS — JACK H. GARNER, JR. — 98447 — LICENSED PROFESSIONAL ENGINEER
5·8·2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

Director JHG — Drawn By
Designer — Quality Control LANGAN
Proj. Mgr. MSH

PROJECT NO.
22-053.00

SHEET TITLE
WATER QUALITY CALCULATIONS

SHEET NO.
C5.12

STANDARD NOTES

BASIN LINER (WET POND TO HAVE 24" CLAY LINER)

IMPERMEABLE LINER MUST BE CLAY.
CLAY LINERS SHALL MEET THE FOLLOWING SPECIFICATIONS:

WET POND LINER RECOMMENDATION
1. SELECTION OF FILL MATERIAL SHOULD BE GUIDED BY THE FOLLOWING CRITERIA**:

A. MINIMUM PLASTICITY INDEX: >30
B. MINIMUM LIQUID LIMIT: >50
C. MINIMUM PASSING #200 SIEVE: >60%
D. NO STONES LARGER THAN 1"
E. FREE OF ORGANIC MATERIAL AND DEBRIS, SUCH AS LIMBS, BARKS, LEAVES, ETC.

2. COMPACTION SHOULD BE 95 PERCENT OF MAXIMUM LABORATORY DENSITY DETERMINED IN ACCORDANCE WITH AMERICAN SOCIETY OF TESTING MATERIALS, METHOD ASTM D 698, USING A COMPACTIVE EFFORT OF 7.16 FT.LBS/CU.IN.

3. PLACEMENT SHOULD BE IN LIFTS NOT EXCEEDING EIGHT INCHES AFTER COMPACTION. EACH COMPACTED LIFT SHOULD BE INSPECTED AND TESTED FOR DENSITY COMPLIANCE BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE NEXT LIFT. THE COMPACTED FILL MOISTURE CONTENT SHALL FALL WITHIN A RANGE BETWEEN OPTIMUM AND 4 PERCENT ABOVE OPTIMUM MOISTURE CONTENT DURING COMPACTION.

4. TESTING AND QUALIFICATION OF RAW FILL MATERIAL, PLACEMENT, AND COMPACTION SHALL BE PERFORMED BY THE GEOTECHNICAL ENGINEER. A 110 LB. SAMPLE OF PROPOSED FILL MATERIAL SHOULD BE SUBMITTED TO GEOTECHNICAL ENGINEER FOR APPROVAL AND FOR DETERMINATION OF MOISTURE-DENSITY RELATIONSHIP, IN ADVANCE OF FILLING AND COMPACTION OPERATIONS TO PERMIT INSPECTION AND TESTING AS FILL IS PLACED. NOT LESS THAN ON FIELD DENSITY TEST PER 2000 SQ.FT. OR MINIMUM OF 3 PER LIFT IS REQUIRED. (CALL 873-8208 EXT. 1220 FOR INSPECTION COORDINATION.)

5. DEVIATIONS FROM THE ABOVE CRITERIA MAY BE PERMITTED ONLY UPON APPROVAL OF THE GEOTECHNICAL ENGINEER ON AN INDIVIDUAL BASIS.

GENERAL:

1. MICROBIAL INITIATION – A SUBSTANTIAL PORTION OF THE POLLUTANT REMOVAL IN WET PONDS IS DUE TO BIOLOGICAL PROCESSES. BACTERIA IN THE POND SUBSTRATE REMOVE NUTRIENTS THROUGH A PROCESS OF DENITRIFICATION. THESE MICROBIAL PROCESSES REQUIRE AN ORGANIC FOOD SOURCE, SUCH AS DECAYING PLANT LITTER. BECAUSE IT IS THE SUPPLY OF ORGANIC CARBON THAT DETERMINES NUTRIENT REMOVAL – MORE THAN UPTAKE BY LIVING PLANTS – DENITRIFICATION CAN BE EXPECTED TO CONTINUE EVEN DURING COLD-WEATHER PLANT DORMANCY. IN MATURE PONDS WITH ABUNDANT VEGETATION, AQUATIC PLANTS SUPPLY THE NECESSARY LITTER LAYER AND AEROBIC ZONE FOR MICROBIAL ACTIVITY. HOWEVER, SINCE NEW PONDS LACK A SUFFICIENT SOURCE OF ORGANIC MATTER, AN APPROPRIATE AMOUNT OF CARBON (STRAW, HAY, LEAF CLIPPINGS, SOIL, AND OTHER NON-WOODY MATERIAL) SHALL BE INSTALLED DURING CONSTRUCTION. AFTER THE POND LINER IS IN PLACE, YET PRIOR TO ALLOWING THE POND TO BE FILLED, SPREAD THE PLANT LITTER EVENLY ON THE SIDES OF THE POND (BELOW THE PERMANENT POOL LEVEL). TREAT THE ENTIRE SHALLOW WATER BENCH IN THIS MANNER, AND ALL POND SLOPES (RANGING FROM 3:1 TO 10:1). THE MINIMUM REQUIRED AMOUNT OF PLANT LITTER IS 45 POUNDS PER 1,000 SQUARE FEET OF SLOPE. WHEN USING COASTAL HAY, THIS REQUIREMENT CAN BE EXPRESSED AS 1:5 BALES AT 30 LB./BALE. ENSURE THAT THE PLANT LITTER WILL NOT FLOAT BY ATTACHING THE LITTER TO THE SLOPES (WITH STAPLES OR OTHER APPROPRIATE METHODS). COVER A MINIMUM OF 40 PERCENT OF THE SLOPE SURFACE AREA.

2. INTEGRATED PEST MANAGEMENT – AS WITH ANY LANDSCAPE, THERE IS A NEEDS FOR PEST MANAGEMENT IN WET PONDS. TO THE EXTENT POSSIBLE, THESE CRITERIA ARE DESIGNED TO MINIMIZE THE POTENTIAL FOR PESTS WITHIN A WET POND.

ALGAE – HIGH NUTRIENT LOADS IN WET PONDS MAY CAUSE ALGAE BLOOMS TO OCCUR. PUNGENT ODOR IS OFTEN ASSOCIATED WITH THESE ALGAE BLOOMS, HOWEVER, TREATING WITH AN ALGAECIDE IS NOT RECOMMENDED BECAUSE BLOOMS ARE USUALLY SHORT LIVED AND ARE CONSIDERED DESIRABLE FOR NUTRIENT REMOVAL. THE USE OF SUBMERGENTS AND FLOATING-LEAFED AQUATICS CAN REDUCE THE EXTENT OF ALGAE BLOOMS BY REDUCING NUTRIENT LOADS AND SHADING THE WATER.

WILDLIFE – WILDLIFE SUCH AS NUTRIA AND DEER ARE OCCASIONALLY A PEST OF WET PONDS IN THE AUSTIN AREA. EVALUATION OF THE POTENTIAL OF SUCH WILDLIFE INHABITING OR BEING ATTRACTED TO THE PROPOSED WET POND SITE IS REQUIRED. WHEN THERE IS A POTENTIAL FOR SUCH ACTIVITY, FENCING OR SIMILAR EXCLUSIONARY METHOD MUST BE PROVIDED.

MOSQUITO CONTROL – MOSQUITOES ARE PROBLEMATIC IN URBAN AREAS. THERE IS THE POTENTIAL FOR STANDING WATER IN WET PONDS TO BECOME IDEAL BREEDING LOCALITIES. THE WET POND SHOULD BE STOCKED WITH THE LOCAL NATIVE FISH SPECIES GAMBUSIA AFFINIS TO SERVE AS A BIOLOGICAL CONTROL FOR MOSQUITOES. GAMBUSIA PROVIDE EFFECTIVE CONTROL FOR MOSQUITOES, ELIMINATING THE NEED FOR CHEMICAL CONTROL. GAMBUSIA SHOULD BE STOCKED AT THE INITIAL DENSITY OF 200 INDIVIDUALS PER SURFACE ACRE.

DOMESTIC WATERFOWL – DOMESTIC WATERFOWL, INCLUDING GEESE AND SWANS CAN DESTROY VEGETATION AND INCREASE POLLUTANT LOADING IN WET POND SYSTEMS. IN ADDITION, WATERFOWL CAN BECOME NUISANCES TO PROPERTY OWNERS NEAR THE POND. FOR THESE REASONS, DOMESTIC WATERFOWL SHOULD NOT BE INTRODUCED INTO THESE SYSTEMS.

CARP AND GOLDFISH – CARP AND GOLDFISH ARE BOTTOM-FEEDERS THAT CAN CAUSE TURBIDITY AND OTHER PROBLEMS.THEY SHOULD NOT BE INTRODUCED INTO A WET POND.

3. WATER – AFTER THE POND LINER IS COMPLETED, THE BASIN MUST FILL UP WITH WATER WITHIN A REASONABLE TIME PERIOD, PREFERABLY WITHIN ONE WEEK. SAFETY CONCERNS AND POND LINER INTEGRITY CONCERNS MUST BE PROPERLY ADDRESSED DURING POND CONSTRUCTION.

AERATION AND RECIRCULATION UNIT (OPTIONAL) – PRIVATELY MAINTAINED WET PONDS MAY INCLUDE SOME TYPE OF AERATION DEVICE (SUCH AS A FOUNTAIN) WHICH COULD ENHANCE THE DISSOLVED OXYGEN CONCENTRATION. INCREASED DISSOLVED OXYGEN PREVENTS THE POND FROM BECOMING ANAEROBIC, HENCE MINIMIZING PROBLEMS WITH ODOR FROM BACTERIAL DECOMPOSITION.

MAKE-UP WATER – A NEARBY SOURCE FOR MAKE-UP (SUPPLEMENTAL) WATER IS RECOMMENDED AS A WAY TO MAINTAIN AN ADEQUATE PERMANENT POOL LEVEL SHOULD THE LEVEL DROP TO A SEVERE DROUGHT. THIS COULD INCLUDE A WELL, A HOSE BIB, OR A NEARBY FIRE HYDRANT. DEMONSTRATE THAT THE QUALITY OF THE MAKE-UP WATER IS IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND WILL NOT HARM THE POND BIOLOGY.

4. SOIL LINER MATERIAL MINIMUM PHYSICAL REQUIREMENTS
REPRESENTATIVE SAMPLES OF THE SOILS TO BE USED FOR LINERS MUST FIRST BE TESTED, IN ACCORDANCE WITH THE FOLLOWING STANDARDS, IN A GEOTECHNICAL LABORATORY TO ENSURE THAT THEY MEET THE FOLLOWING MINIMUM REQUIREMENTS SET FORTH IN THE MSWM. TABLE I AT THE END OF THIS HANDBOOK LISTS THE REQUIRED QUALITY CONTROL TESTING AND MINIMUM REQUIREMENTS.
A. SIEVE ANALYSIS – ASTM D 422 OR ASTM D 1140 – AT LEAST 60% PASSING THE #200 MESH SIEVE.
B. ATTERBERG LIMITS – ASTM D 4318 – LIQUID LIMIT (LL) OF GREATER THAN 50 AND PLASTICITY INDEX (PI) OF GREATER THAN 30.
C. COEFFICIENT OF PERMEABILITY – APPENDIX VII OF THE CORPS OF ENGINEERS MANUAL EM 1110-2-1906 OR ASTM D 5084 – 1x10-6CM/SEC, OR LESS.

SOILS FOR CONSTRUCTED LINERS MOISTURE/DENSITY (M/D) TESTING
IN ADDITION TO THE MINIMUM TEST REQUIREMENTS IN 2.2, ABOVE, A MOISTURE/DENSITY RELATIONSHIP MUST BE DETERMINED FOR EACH SOIL BORROW SOURCE TO BE USED IN SOIL LINER CONSTRUCTION. THIS MOISTURE/DENSITY (M/D) COMPACTION CURVE MUST INCLUDE A ZERO-AIR-VOIDS LINE BASED UPON AN ESTIMATED OR MEASURED SPECIFIC GRAVITY OF THE COMPACTED SOIL. THE TWO ACCEPTABLE STANDARD MOISTURE/DENSITY RELATIONSHIP TEST PROCEDURES ARE:
A. ASTM D 698 (STANDARD PROCTOR) --- 12,400 FT-LBF/FT3 (FOR LIGHT-WEIGHT EQUIPMENT), OR
B. ASTM D 1557 (MODIFIED PROCTOR) --- 56,000 FT-LBF/FT3 (FOR HEAVY EQUIPMENT)

SOIL LINER MATERIAL MINIMUM PHYSICAL REQUIREMENTS CONT.

IN ORDER TO DETERMINE THAT THE PROPOSED SOIL IS SUITABLE FOR USE AS LINER MATERIAL, PERMEABILITY TESTS MUST BE CONDUCTED ON SAMPLES COMPACTED UNDER THE ABOVE-LISTED COMPACTIVE-EFFORT TEST PROCEDURES. THESE SOILS SHALL BE PREPARED AND TESTED AS NEXT DESCRIBED.
A. THERE SHOULD BE NO CONSTRUCTED LINERS PARALLEL TO SIDE SLOPES WITH GREATER THAN 3:1 SLOPE ANGLE (3 HORIZONTAL TO 1 VERTICAL) DUE TO BOTH THE INHERENT LACK OF STABILITY OF THE COMPACTION EQUIPMENT ON THESE STEEP SLOPES AS-WELL-AS THE COMPACTION INEFFICIENCY. IT SHOULD BE REALIZED THAT SOIL LINERS CONSTRUCTED PARALLEL TO SIDE SLOPES HAVE INHERENT CONSTRUCTION PROBLEMS BECAUSE THE FULL COMPACTIVE FORCE OF THE COMPACTION EQUIPMENT IS NOT PERPENDICULAR TO THE SLOPE. THE ECCENTRIC WEIGHT OF THE EQUIPMENT (TENDENCY TO SLIDE DOWN THE SLOPE) MAY SHEAR THE UPPER PORTION OF THE LIFT UNDER COMPACTION NEAR ITS SURFACE. THE OVERALL UNIFORMITY OF THE PROCESSING AND COMPACTING EFFORT ON A SLOPE IS USUALLY OF LOWER QUALITY THAN ON AN ESSENTIALLY-FLAT SECTION. ACCORDINGLY, THE LARGE-SCALE HYDRAULIC CONDUCTIVITY TESTS PERFORMED ON A PRIMARILY-HORIZONTAL TEST PAD WILL NOT BE REPRESENTATIVE OF THE PROBABLE WORST-CASE LINER-CONSTRUCTION CONDITIONS WHERE SLOPED LINERS ARE INVOLVED.
B. A KEYWAY FOR CONSTRUCTED SIDEWALLS IS REQUIRED UNLESS ALTERNATE CONSTRUCTION PROCEDURES HAVE PRIOR WRITTEN APPROVAL BY THE EXECUTIVE DIRECTOR. THE CONSTRUCTED KEYWAY AT THE TOE OF THE SIDEWALL MAY BE ELIMINATED FOR THOSE SIDEWALLS CONSTRUCTED ON A SLOPE ANGLE OF 4:1 OR FLATTER; THOSE CONSTRUCTED WITH THE FLOOR AS ONE UNIT (MONOLITHICALLY); OR SIDEWALL PLACES IN HORIZONTAL LIFTS A MINIMUM OF 10 FT. IN WIDTH AND HAVING THE FIRST SIX INCH LIFT OF THE SIDEWALL COMPLETELY BONDED WITH THE TOP OF THE FLOOR LINER.
C. PLACEMENT OF CONSTRUCTED LINERS (CLAY-TYPE MATERIAL) SHOULD BE IN ACCORDANCE WITH THE FOLLOWING:
1. ALL SURFACE AREAS SHOULD BE PROPERLY SCARIFIED A MINIMUM OF SIX INCHES AND PREPARED TO RECEIVE THE LINER.
2. THE TOP OF EACH LIFT SHOULD BE ROUGHENED TO A SHALLOW DEPTH PRIOR TO THE PLACEMENT OF THE NEXT LIFT OF SOIL FOR COMPACTION.
3. NO LOOSE LIFT SHOULD BE THICKER THAN THE PADS OF THE COMPACTOR SO THAT COMPLETE BONDING WITH THE TOP OF THE PREVIOUS LIFT IS ACHIEVED.
4. EQUIPMENT AND SAFETY LIMITATION PROHIBIT FINISHED GRADES WITH SLOPES GREATER THAN 3:1 IF THE LINER IS CONSTRUCTED PARALLEL TO THE SURFACE. FOR AN EXCAVATED WALL WITH STEEPER THAN 3:1 SIDE SLOPES, THE SIDEWALL LINER MUST BE CONSTRUCTED IN SUCCESSIVE HORIZONTAL LIFTS.
5. THE TOP SURFACE OF THE COMPLETED SOIL LINER MUST BE PROOF ROLLED WITH A SMOOTH-WHEEL ROLLER, PRIOR TO FINAL LINER-THICKNESS SURVEYING WHEN PLACEMENT OF A GEOMEMBRANE LINER IS REQUIRED.
6. IT IS RECOMMENDED THAT THE SURFACE OF A SOIL LINER BE PROOF ROLLED WHEN CONSTRUCTION IS SHUT DOWN FOR MORE THAN 24 HOURS TO MITIGATE THE EFFECTS OF DESICCATION. IT IS FURTHER RECOMMENDED THAT IT BE DONE ON A ROUTINE BASIS DURING THE SUMMER MONTHS AT THE END OF EACH DAY'S LINER CONSTRUCTION.

2.3.2 CONSTRUCTED SOIL LINERS
THESE CONSTRUCTED SOIL LINERS INCLUDE THOSE OF OVER-EXCAVATED AND RECOMPACTED IN SITU SOILS AND SOILS FROM A BORROW SOURCE. FOR ADDITIONAL SPECIFIC INFORMATION ON BENTONITE-AMENDED SOILS SEE SECTION 2.5.

CLOD AND ROCK SIZE
THE MAXIMUM CLOD SIZE OF THE COMPACTED LINER SOILS SHALL BE APPROXIMATELY ONE INCH IN DIAMETER BUT IN ALL CASES SOIL CLODS SHALL BE REDUCED TO THE SMALLEST SIZE NECESSARY TO ACHIEVE THE COEFFICIENT OF PERMEABILITY REPORTED BY THE TESTING LABORATORY AND TO DESTROY ANY MACROSTRUCTURE EVIDENCE AFTER THE COMPACTION OF THE CLODS UNDER DENSITY-CONTROLLED CONDITIONS. (§330.205(G), MSWR) THE LINER SOIL MATERIAL SHALL CONTAIN NO ROCKS OR STONES LARGER THAN ONE INCH IN DIAMETER OR THAT TOTAL MORE THAN 10% BY WEIGHT. (§330.205(H), MSWR). ONE-HUNDRED PERCENT OF THE MATERIAL USED IN THE SOIL LINER MUST PASS THE 1-INCH SCREEN. THE FINAL LIFT FOR COMPOSITE LINERS SHOULD NOT CONTAIN ANY ROCKS OR ANY OTHER MATERIALS THAT CAN CAUSE DAMAGE TO THE FML.

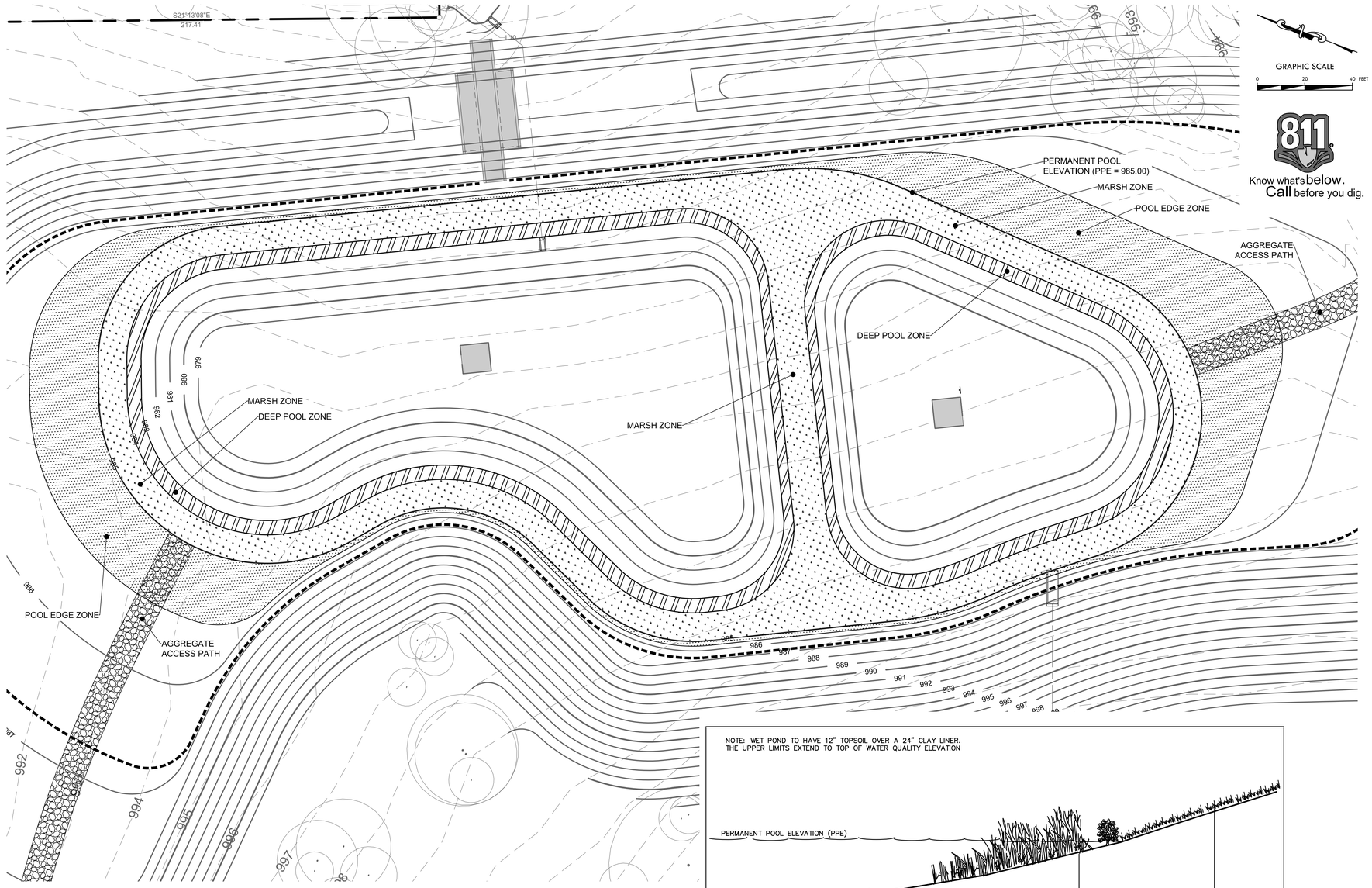
2 IT IS STRONGLY RECOMMENDED THAT THE TAMPING FEET HAVE A FACE AREA NOT LESS THAN SEVEN NOR MORE THAN TEN SQUARE INCHES. SELF-PROPELLED ROLLERS WITH TAMPING FEET SURFACE AREAS GREATER THAN 10 BUT LESS THAN 30 SQUARE INCHES CAN BE UTILIZED PROVIDED THE FEET HAVE TAPERED HEADS THAT ADD TO THE COMPACTIVE EFFORT.

16 COMPACTIVE EFFORT (SOILS COMPACTION)
ALL CONSTRUCTED SOIL LINERS MUST BE COMPACTED WITH A PAD/TAMPING-FOOT (PREFERABLE) OR PRONGFOOT ROLLER (§330.205(G), MSWR). NO OTHER TYPE OF EQUIPMENT IS SUITABLE FOR THE COMPACTION OF CONSTRUCTED SOIL LINERS.
2 THE LIFT THICKNESS SHALL BE CONTROLLED SO THAT THERE IS TOTAL PENETRATION THROUGH THE LOOSE LIFT UNDER COMPACTION INTO THE TOP OF THE PREVIOUSLY COMPACTED LIFT; THEREFORE, THE COMPACTED LIFT THICKNESS MUST NOT BE GREATER THAN THE PAD OR PRONG LENGTH. THIS IS NECESSARY TO ACHIEVE ADEQUATE BONDING BETWEEN LIFTS AND REDUCE SEEPAGE PATHWAYS. ADEQUATE CLEANING DEVICES MUST BE IN PLACE AND MAINTAINED ON THE COMPACTION ROLLER SO THAT THE PRONGS OR PAD FEET DO NOT BECOME CLOGGED WITH CLAY SOILS TO THE POINT THAT THEY CANNOT ACHIEVE FULL PENETRATION DURING INITIAL COMPACTION. THE FOOTED ROLLER IS NECESSARY TO ACHIEVE BONDING AND TO REDUCE THE INDIVIDUAL CLODS AND ACHIEVE A BLENDING OF THE SOIL MATRIX THROUGH ITS KNEADING ACTION. IN ADDITION TO THE KNEADING ACTION, WEIGHT OF THE COMPACTION EQUIPMENT IS IMPORTANT. WHEN USING ASTM TEST METHOD D 698 (STANDARD PROCTOR) DENSITY, THE MINIMUM WEIGHT OF THE COMPACTOR SHOULD BE 1500 POUNDS PER LINEAR FOOT OF DRUM LENGTH, AND A MINIMUM OF EIGHT PASSES IS RECOMMENDED FOR THE COMPACTION PROCESS. COMPACTION EQUIPMENT THAT DEVELOPS A COMPACTIVE EFFORT EQUAL TO ASTM D 1557 (MODIFIED PROCTOR) WILL RESULT IN GREATER COMPACTION, LOWER COEFFICIENT OF PERMEABILITY DUE TO DECREASED VOID SPACE, AND A LOWER OPTIMUM MOISTURE CONTENT NECESSARY TO ACHIEVE THE MAXIMUM DRY DENSITY. THIS LOWER OPTIMUM MOISTURE CONTENT MAY HELP IN CONTROLLING THE DESICCATION CRACKING OF HIGHLY PLASTIC CLAYS FREQUENTLY USED FOR LINER SOIL. ADEQUATE COMPACTION CANNOT BE ACHIEVED BY TRACK-TYPE (BULLDOZER) OR PNEUMATIC COMPACTORS. BULLDOZERS ARE BY THE NATURE OF THEIR WEIGHT DISTRIBUTION DESIGNED TO "FLOAT" ON THE SURFACE, RESULTING IN GREATLY DIMINISHED COMPACTION BY TRACK CONTACT AND THEREFORE SHOULD NOT BE USED TO COMPACT LINER SOILS. IN ADDITION, THE USE OF TRACKS OR RUBBER TIRES FOR COMPACTION DOES NOT ALLOW THE KNEADING ACTION REQUIRED TO REDUCE AND BLEND SOIL CLODS AS IS REALIZED BY PAD-FOOTED ROLLERS.

COMPACTION EQUIPMENT
THE COMPACTION OF SOIL LINERS MUST BE WITH APPROPRIATE EQUIPMENT.
1. PAD/TAMPING-FOOT ROLLERS, OR
2. PRONG-FOOT (SHEEPSFOOT) ROLLERS
THE FOLLOWING EQUIPMENT TYPES ARE EXAMPLES OF THAT WHICH IS NOT PERMITTED OR APPROPRIATE FOR THE COMPACTION OF SOIL LINERS.
1. BULLDOZER
2. RUBBER-TIRED (PNEUMATIC) ROLLERS
3. FLAT-WHEELED ROLLERS
4. RUBBER-TIRED SCRAPERS OR BELLY DUMPS

2.3.2.5 SOIL PLASTICITY
QUALITY CONTROL OF THE SOIL PLASTICITY SHOULD BE CLOSELY ADHERED TO AND MAINTAINED DURING MATERIAL SELECTION FOR LINER CONSTRUCTION. TESTING OF THE ATTERBERG LIMITS AND GRADATION SHOULD BE CONTINUALLY CHECKED SO THAT ANY CHANGES IN EITHER PHYSICAL PROPERTY CAN DETECTED AND ADDITIONAL APPROPRIATE LABORATORY TESTING PERFORMED. ANY TIME THE LL OR PI CHANGES BY MORE THAN 10 POINTS, A NEW COMPACTION SERIES SHOULD BE RUN IN THE LABORATORY TO DETERMINE THE VARIABILITY OF THE SOIL USED FOR LINER CONSTRUCTION. IT IS STRONGLY RECOMMENDED THAT ALL LINER SOIL BORROW SOURCES BE THOROUGHLY TESTED PRIOR TO USE TO ESTABLISH THEIR ATTERBERG LIMITS AND COMPACTIONS PARAMETERS. THIS MAY REQUIRE DRILLING AUGER HOLES AT THE BORROW SOURCE TO RETRIEVE ADEQUATE SAMPLES TO DETERMINE THESE FACTORS. DUE TO THE HIGH SHRINK/SWELL AND DESICCATION CRACKING CHARACTERISTICS OF HIGHLY-PLASTIC CLAYS, THE PI OF CLAY LINER SOILS SHOULD BE GREATER THAN 30.

18 QUALITY ASSURANCE AND TESTING FREQUENCY FOR SOIL LINERS
EACH IN SITU OR CONSTRUCTED LINER SIDEWALL AND FLOOR AREA DEVELOPED AS A SEPARATE SEGMENT (NON-MONOLITHICALLY) MUST BE CONSIDERED AS SEPARATELY EVALUATED AREAS INDEPENDENT OF EACH OTHER FOR THE PURPOSE OF CALCULATING DIMENSIONS TO DETERMINE THE REQUIRED NUMBER OF SAMPLES. THOSE SIDEWALL AND FLOOR AREAS CONSTRUCTED OR EXCAVATED AS A BOWL (MONOLITHICALLY) MAY BE ADDED TOGETHER FOR THE DETERMINATION OF THEIR TESTING FREQUENCY AND LOCATIONS. ALL HOLES DUG OR CREATED DURING ANY SAMPLING AND/OR TESTING SHALL BE BACKFILLED WITH A MIXTURE OF AT LEAST 20% BENTONITE-ENRICHED LINER SOIL AND COMPACTED BY HAND TAMPING OR FILLED WITH AN APPROPRIATE BENTONITE GROUT.



GRAPHIC SCALE
0 20 40 FEET

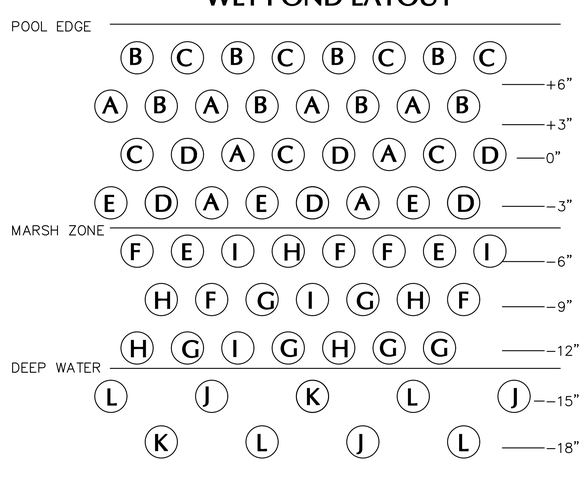
811
Know what's below.
Call before you dig.

NOTE: WET POND TO HAVE 12" TOPSOIL OVER A 24" CLAY LINER.
THE UPPER LIMITS EXTEND TO TOP OF WATER QUALITY ELEVATION

POND PLANT MATERIAL LIST

	COMMON NAME	LATIN NAME	HEIGHT	POOL ELEVATION
POOL EDGE 14,345 SF	BIG MUHLY	MUHLENBERGIA LINDHEIMERI	3'	0" to +6"
QTY.	BURHEAD	ECHINODORUS CORDIFOLIUS	2'	-3" to 0"
2,869	CARDINAL FLOWER	LOBELIA CARDINALIS	3'	-3" to 0"
2,869	SPIKERUSH	ELEOCHARIS MACROSTACHYA	1'	-3" to +3"
2,869	WATER CLOVER	MARSILEA MACROPODA	6"	-3" to +6"
2,869				
TOTAL 14,345 SF				
MARSH 16,880 SF	COMMON NAME	LATIN NAME	HEIGHT	POOL ELEVATION
QTY.	WATER-WILLOW	JUSTICIA AMERICANA	3'	-3" to -12"
4,220	ARROWHEAD	SAGITTARIA PLATYPHYLLA	2'	-3" to -12"
4,220	SPIKERUSH	ELEOCHARIS CELLULOSA	2.5'	-3" to -12"
4,220	PICKERELWEED	PONTEDERIA CORDATA	3'	-6" to -12"
4,220				
TOTAL 16,880 SF				
DEEP WATER 6,981 SF	COMMON NAME	LATIN NAME	HEIGHT	POOL ELEVATION
QTY.	COONTAIL	CERATOPHYLLUM DEMERSUM	6'	-12' to -24'
2,327	PONDWEED	POTAMOGETON PECTINATUS	4'	-12' to -24'
2,327	WATER-NAIAD	NAJAS GUADALUPENSIS	4'	-12' to -24'
2,327				
TOTAL 6,981 SF				

WET POND LAYOUT



LEGEND
A - SPIKERUSH
B - WATER CLOVER
C - BUG MUHLY
D - BUR HEAD
E - CARDINAL FLOWER
F - ARROWHEAD
G - PICKEREL WEED
H- SPIKERUSH
I- AMERICAN WATER WILLOW
J- COONTAIL
K- POND WEED
L- WATER NAIAD

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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

REGISTERED LANDSCAPE ARCHITECT
KEVIN R. REVAY
1826
STATE OF TEXAS

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

Director JHG | Drawn By
Designer | Quality Control LANGAN
Proj. Mgr. MSH

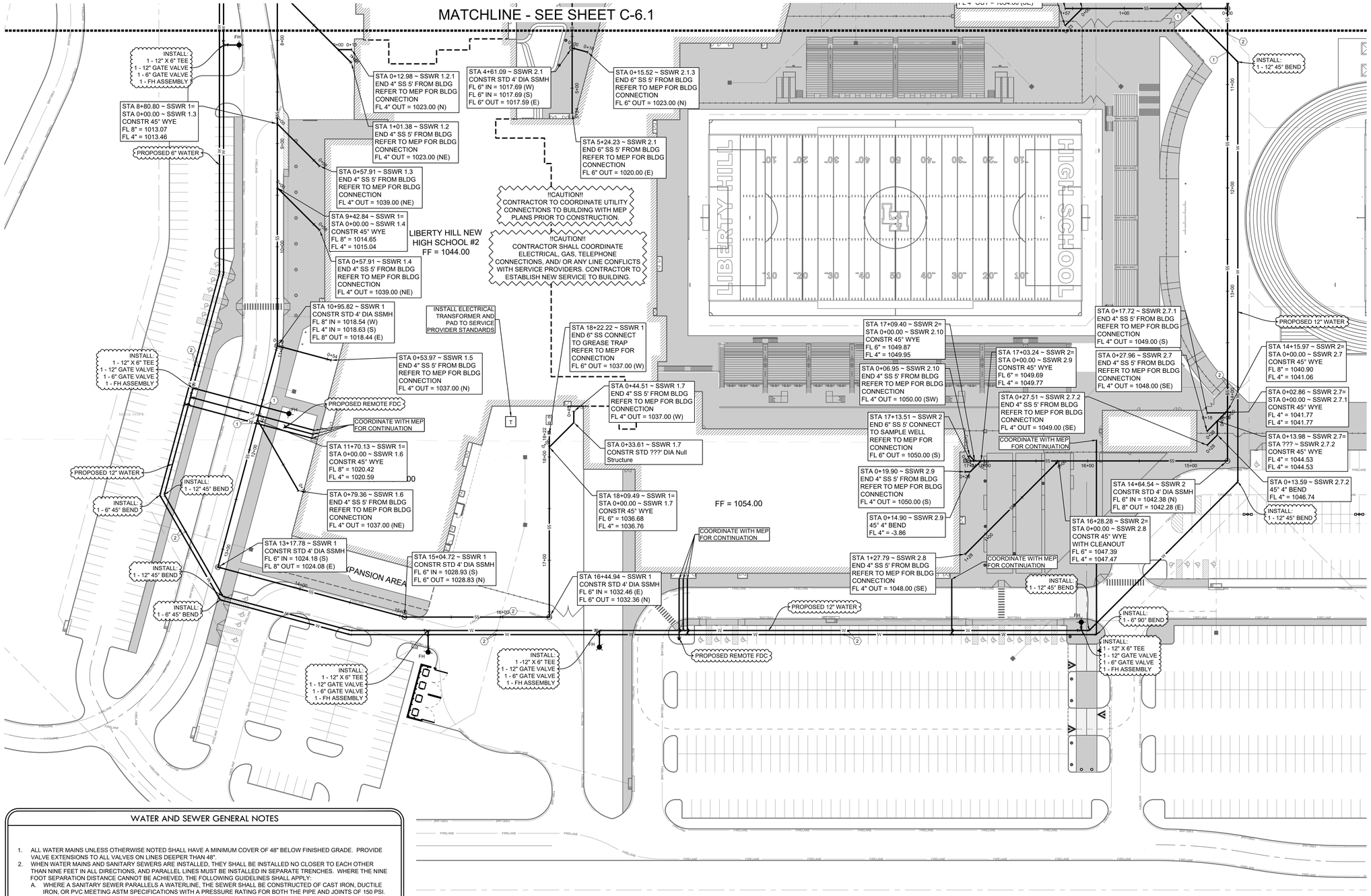
PROJECT NO.
22-053.00

SHEET TITLE
WATER QUALITY PLANTING PLAN

SHEET NO.
C5.13

New High School No. 2

Date: 5/8/2023 Time: 10:38 User: amuhire Style Table: Langan.stb Layout: C5.13 WATER QUALITY PLANTING PLAN Document Code: 531013308-0601-CG102-0106



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   B. WHERE A SANITARY SEWER CROSSES A WATERLINE AND THE SEWER IS CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI, AN ABSOLUTE MINIMUM DISTANCE OF SIX INCHES BETWEEN OUTSIDE DIAMETERS SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.
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LEGEND

PROPOSED UNDERGROUND ELECTRIC	UGE
PROPOSED GAS	G
PROPOSED SANITARY SEWER	SS
PROPOSED FORCE MAIN	FM
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	

SYMBOL KEY

1. WATER-SANITARY SEWER CROSSING PER CITY AND TCEQ STANDARDS
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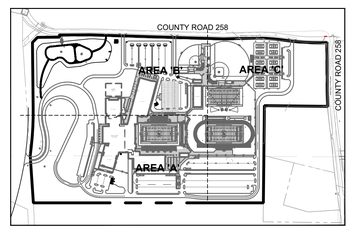

KEY MAP
NTS

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LIBERTY HILL, TEXAS

CZP SUBMITTAL

TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS
Revision No.

Director JHG | Drawn By
Designer | Quality Control LANGAN
Proj. Mgr. MSH

PROJECT NO.
22-053.00

SHEET TITLE
UTILITY PLAN AREA 'A'

SHEET NO.
C6.0

New High School No. 2

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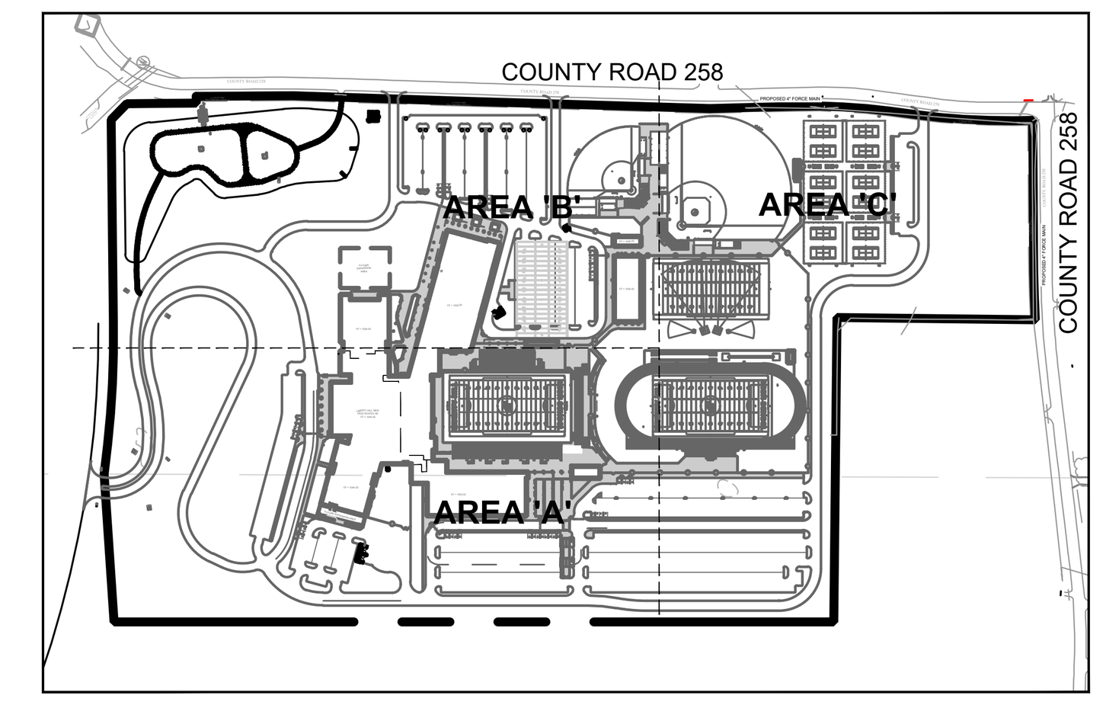
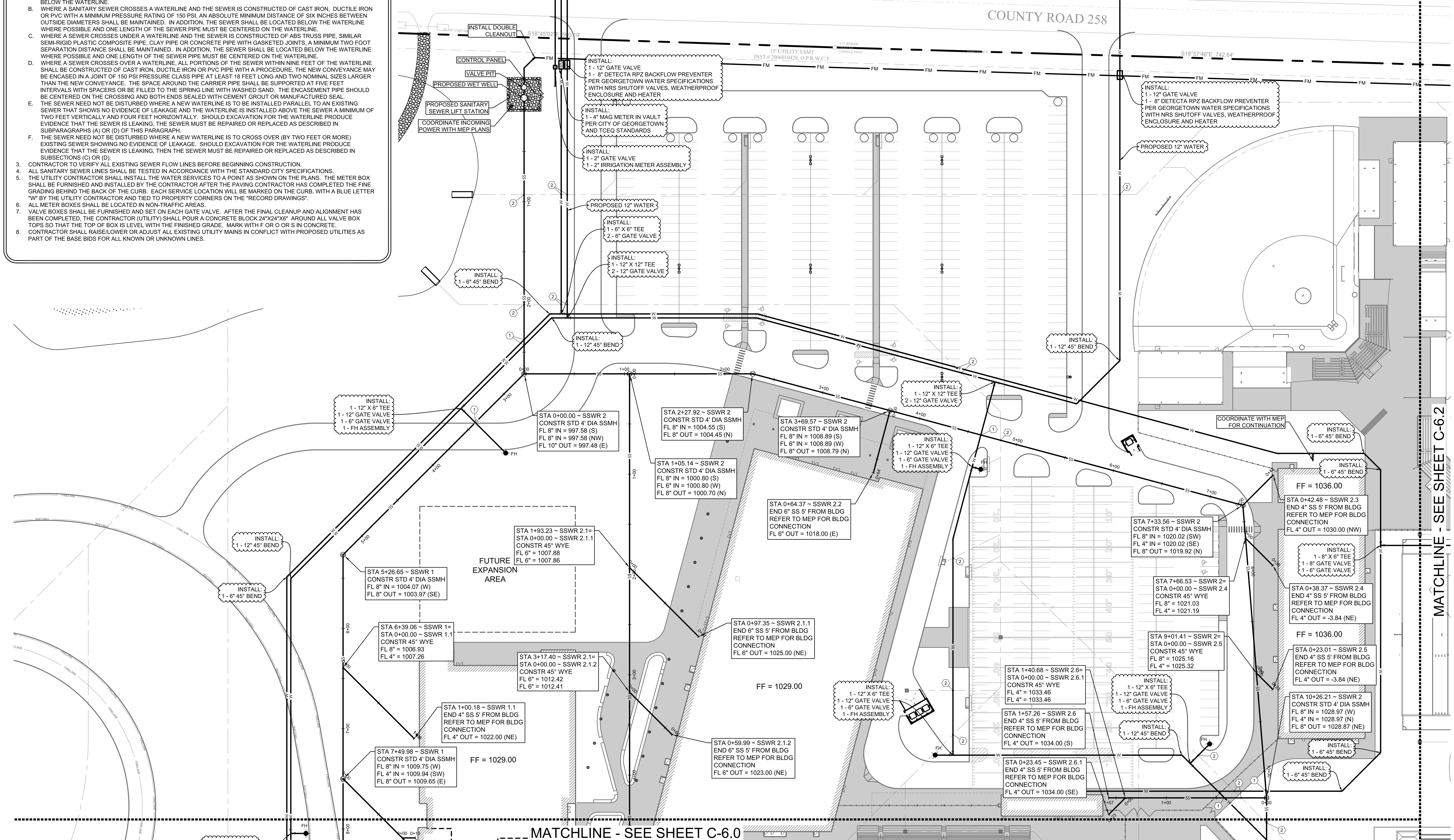


KEY MAP

GRAPHIC SCALE
0 40 80 FEET



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New High School No. 2

CZP SUBMITTAL

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LICENSED PROFESSIONAL ENGINEER
5-8-2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director JHG	Drawn By
Designer	Quality Control LANGAN
Proj. Mgr. MSH	

PROJECT NO.

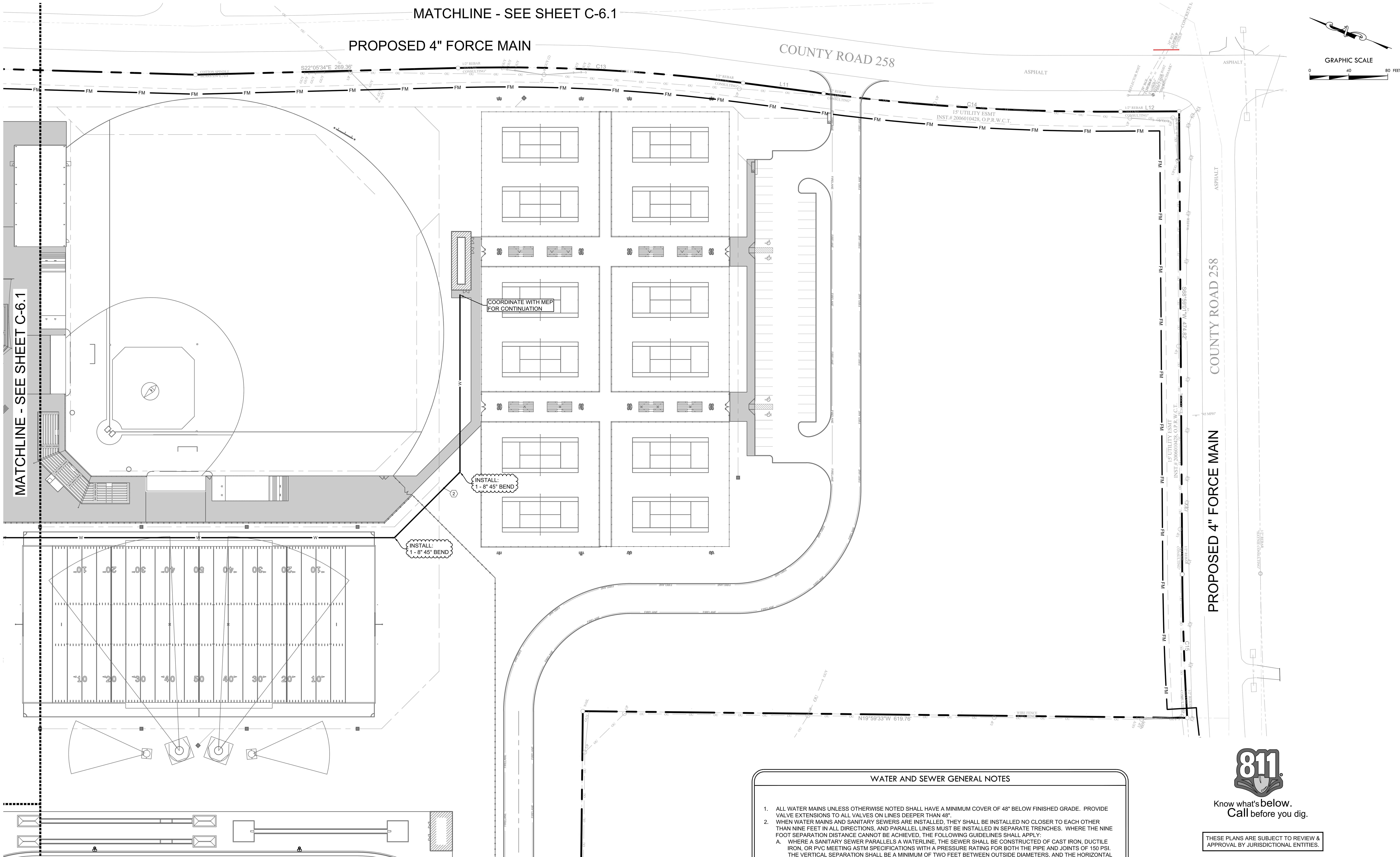
22-053.00

SHEET TITLE

UTILITY PLAN AREA 'B'

SHEET NO.

C6.1



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2. WHEN WATER MAINS AND SANITARY SEWERS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO EACH OTHER THAN NINE FEET IN ALL DIRECTIONS, AND PARALLEL LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES SHALL APPLY:
   A. WHERE A SANITARY SEWER PARALLELS A WATERLINE, THE SEWER SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC MEETING ASTM SPECIFICATIONS WITH A PRESSURE RATING FOR BOTH THE PIPE AND JOINTS OF 150 PSI. THE VERTICAL SEPARATION SHALL BE A MINIMUM OF TWO FEET BETWEEN OUTSIDE DIAMETERS, AND THE HORIZONTAL SEPARATION SHALL BE A MINIMUM OF FOUR FEET BETWEEN OUTSIDE DIAMETERS. THE SEWER SHALL BE LOCATED BELOW THE WATERLINE.
   B. WHERE A SANITARY SEWER CROSSES A WATERLINE AND THE SEWER IS CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI, AN ABSOLUTE MINIMUM DISTANCE OF SIX INCHES BETWEEN OUTSIDE DIAMETERS SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.
   C. WHERE A SEWER CROSSES UNDER A WATERLINE AND THE SEWER IS CONSTRUCTED OF ABS TRUSS PIPE, SIMILAR SEMI-RIGID PLASTIC COMPOSITE PIPE, CLAY PIPE OR CONCRETE PIPE WITH GASKETED JOINTS, A MINIMUM TWO FOOT SEPARATION DISTANCE SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.
   D. WHERE A SEWER CROSSES OVER A WATERLINE, ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATERLINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC PIPE WITH A PROCEDURE, THE NEW CONVEYANCE MAY BE ENCASED IN A JOINT OF 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE FEET INTERVALS WITH SPACERS OR BE FILLED TO THE SPRING LINE WITH WASHED SAND. THE ENCASEMENT PIPE SHOULD BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEAL.
   E. THE SEWER NEED NOT BE DISTURBED WHERE A NEW WATERLINE IS TO BE INSTALLED PARALLEL TO AN EXISTING SEWER THAT SHOWS NO EVIDENCE OF LEAKAGE AND THE WATERLINE IS INSTALLED ABOVE THE SEWER A MINIMUM OF TWO FEET VERTICALLY AND FOUR FEET HORIZONTALLY. SHOULD EXCAVATION FOR THE WATERLINE PRODUCE EVIDENCE THAT THE SEWER IS LEAKING, THE SEWER MUST BE REPAIRED OR REPLACED AS DESCRIBED IN SUBPARAGRAPHS (A) OR (D) OF THIS PARAGRAPH.
   F. THE SEWER NEED NOT BE DISTURBED WHERE A NEW WATERLINE IS TO CROSS OVER (BY TWO FEET OR MORE) EXISTING SEWER SHOWING NO EVIDENCE OF LEAKAGE. SHOULD EXCAVATION FOR THE WATERLINE PRODUCE EVIDENCE THAT THE SEWER IS LEAKING, THEN THE SEWER MUST BE REPAIRED OR REPLACED AS DESCRIBED IN SUBSECTIONS (C) OR (D).
3. CONTRACTOR TO VERIFY ALL EXISTING SEWER FLOW LINES BEFORE BEGINNING CONSTRUCTION.
4. ALL SANITARY SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE STANDARD CITY SPECIFICATIONS.
5. THE UTILITY CONTRACTOR SHALL INSTALL THE WATER SERVICES TO A POINT AS SHOWN ON THE PLANS. THE METER BOX SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AFTER THE PAVING CONTRACTOR HAS COMPLETED THE FINE GRADING BEHIND THE BACK OF THE CURB. EACH SERVICE LOCATION WILL BE MARKED ON THE CURB, WITH A BLUE LETTER "W" BY THE UTILITY CONTRACTOR AND TIED TO PROPERTY CORNERS ON THE "RECORD DRAWINGS".
6. ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS.
7. VALVE BOXES SHALL BE FURNISHED AND SET ON EACH GATE VALVE. AFTER THE FINAL CLEANUP AND ALIGNMENT HAS BEEN COMPLETED, THE CONTRACTOR (UTILITY) SHALL POUR A CONCRETE BLOCK 24"X24"X6" AROUND ALL VALVE BOX TOPS SO THAT THE TOP OF BOX IS LEVEL WITH THE FINISHED GRADE. MARK WITH F OR O OR S IN CONCRETE.
8. CONTRACTOR SHALL RAISE/LOWER OR ADJUST ALL EXISTING UTILITY MAINS IN CONFLICT WITH PROPOSED UTILITIES AS PART OF THE BASE BIDS FOR ALL KNOWN OR UNKNOWN LINES.

NOTICE TO CONTRACTORS - UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF ANY EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, THE GOVERNING MUNICIPALITY, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION PROVIDED IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

** NOTICE TO CONTRACTORS - TOPOGRAPHIC SURVEY **

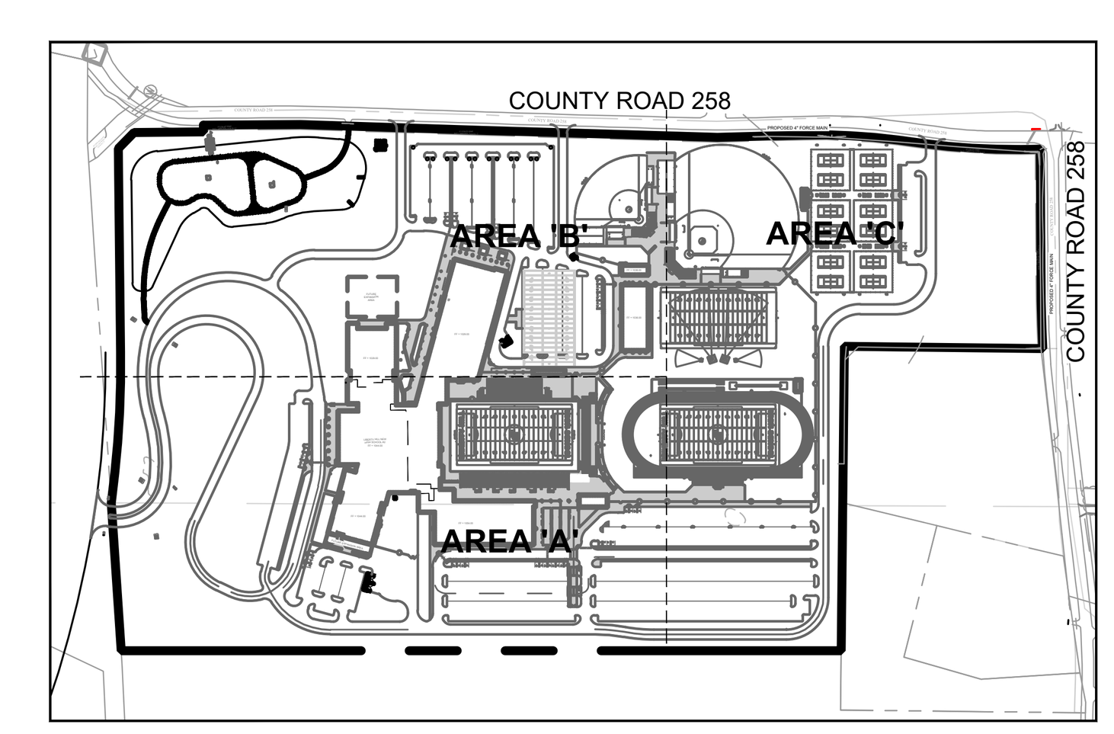
TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PERFORMED BY JPH LAND SURVEYING, INC.. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, IN WRITING, OF ANY DISCREPANCIES OR OMISSIONS TO THE TOPOGRAPHIC INFORMATION. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR CONFIRMING THE LOCATION (HORIZONTAL/VERTICAL) OF ANY BURIED CABLES, CONDUITS, PIPES, AND STRUCTURES (STORM SEWER, SANITARY SEWER, WATER, GAS, TELEVISION, TELEPHONE, ETC.) WHICH IMPACT THE CONSTRUCTION SITE. THE CONTRACTOR(S) SHALL NOTIFY THE OWNER AND ENGINEER IF ANY DISCREPANCIES ARE FOUND BETWEEN THE ACTUAL CONDITIONS VERSUS THE DATA CONTAINED IN THE CONSTRUCTION PLANS. ANY COSTS INCURRED AS THE RESULT OF NOT CONFIRMING THE ACTUAL LOCATION (HORIZONTAL/VERTICAL) OF SAID CABLES, CONDUITS, PIPES, AND STRUCTURES SHALL BE BORNE BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR(S) SHALL NOTIFY THE OWNER AND ENGINEER IF ANY ERRORS OR DISCREPANCIES ARE FOUND ON THE CONSTRUCTION DOCUMENTS (PS&E), WHICH NEGATIVELY IMPACT THE PROJECT. THE ENGINEER AND OWNER SHALL BE INDEMNIFIED OF PROBLEMS AND/OR COST WHICH MAY RESULT FROM CONTRACTOR'S FAILURE TO NOTIFY ENGINEER AND OWNER.

LEGEND

PROPOSED UNDERGROUND ELECTRIC	UGE
PROPOSED GAS	G
PROPOSED SANITARY SEWER	SS
PROPOSED FORCE MAIN	FM
PROPOSED WATER	W
PROPOSED FIRE HYDRANT	FH
PROPOSED MANHOLE	

SYMBOL KEY

1	WATER-SANITARY SEWER CROSSING PER CITY AND TCEQ STANDARDS
2	UTILITY CROSSINGS



KEY MAP

VLK | ARCHITECTS

ARCHITECT
VLK Architects, Inc.
2700 Via Fortuna, Suite 230
Austin, Texas 78746
Main Phone: 512.807.3145
www.vlkarchitects.com

CIVIL / LANDSCAPE
LANGAN
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Main Phone: 737.289.7800
www.langan.com

LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

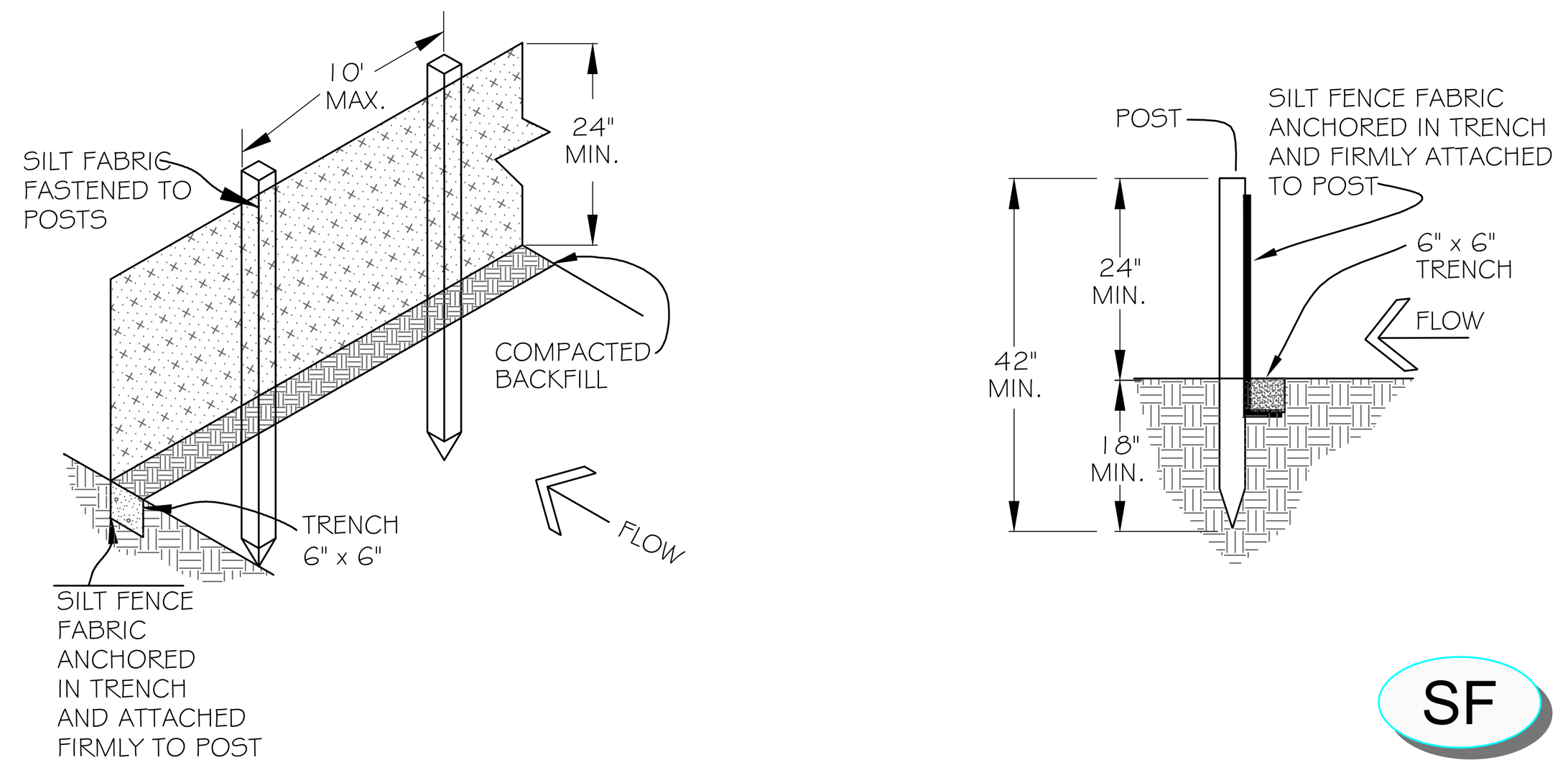
Director: JHG
Drawn By
Designer
Quality Control: LANGAN
Proj. Mgr.: MSH

PROJECT NO.
22-053.00

SHEET TITLE
UTILITY PLAN AREA 'C'

SHEET NO.
C6.2

New High School No. 2

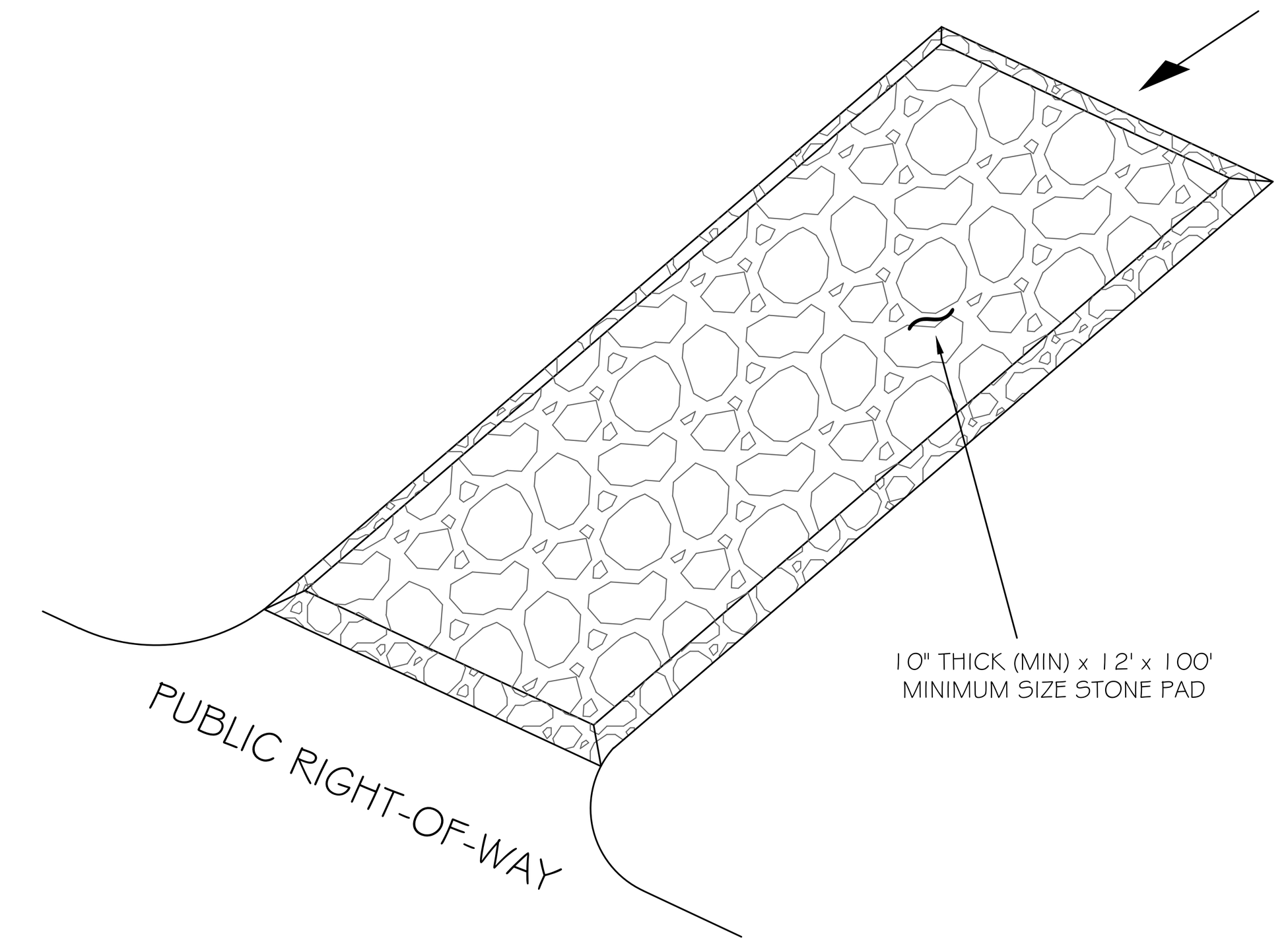


SILT FENCE GENERAL NOTES:

1. STEEL 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 ONE FOOT.
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. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE IN ACCORDANCE WITH PERMIT REQUIREMENTS. 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 WATER FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SILT FENCE

N.T.S.



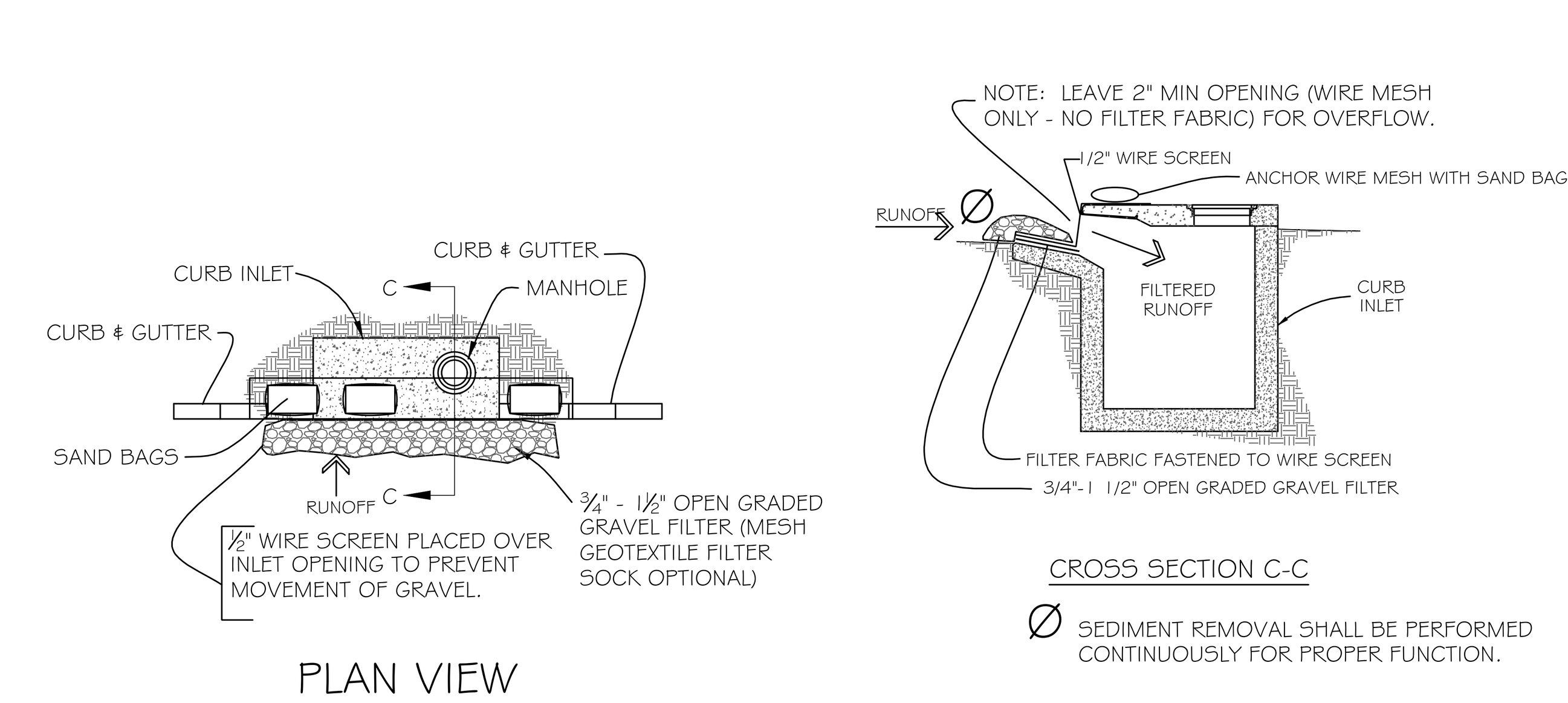
SIZE OF ROCK LBS.	% SMALLER BY WEIGHT
200	100
50	35-65
3	0

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE DRESSING WITH ADDITIONAL STONE AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHT-OF-WAY. WASHING SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT CONTROLLING STRUCTURE. USE SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS TO PREVENT SEDIMENT FROM ENTERING ANY STORM DRAIN, DITCH, OR WATER COURSE.
3. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

TEMPORARY CONSTRUCTION EXIT POINT

N.T.S.



INLET PROTECTION

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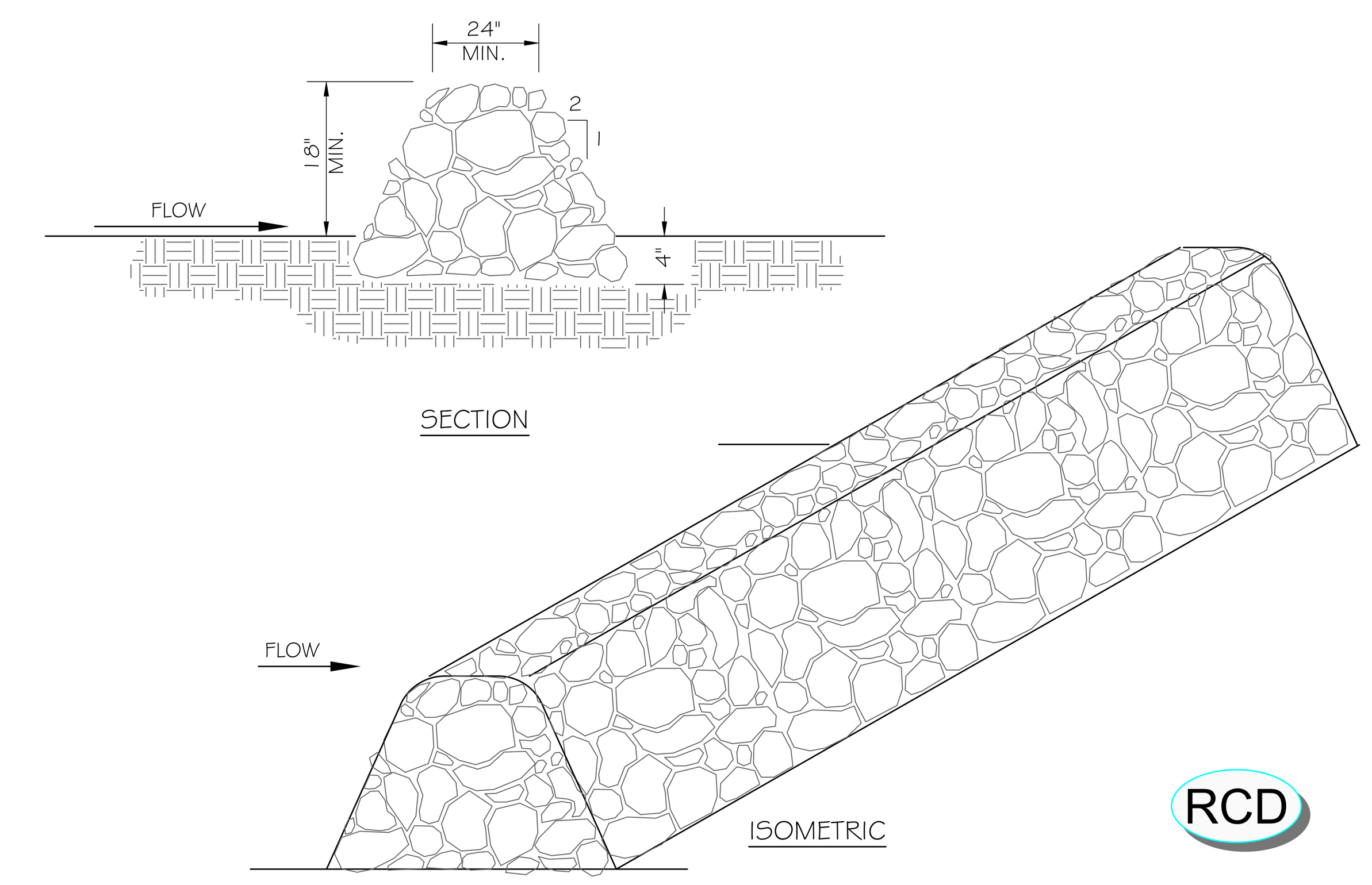
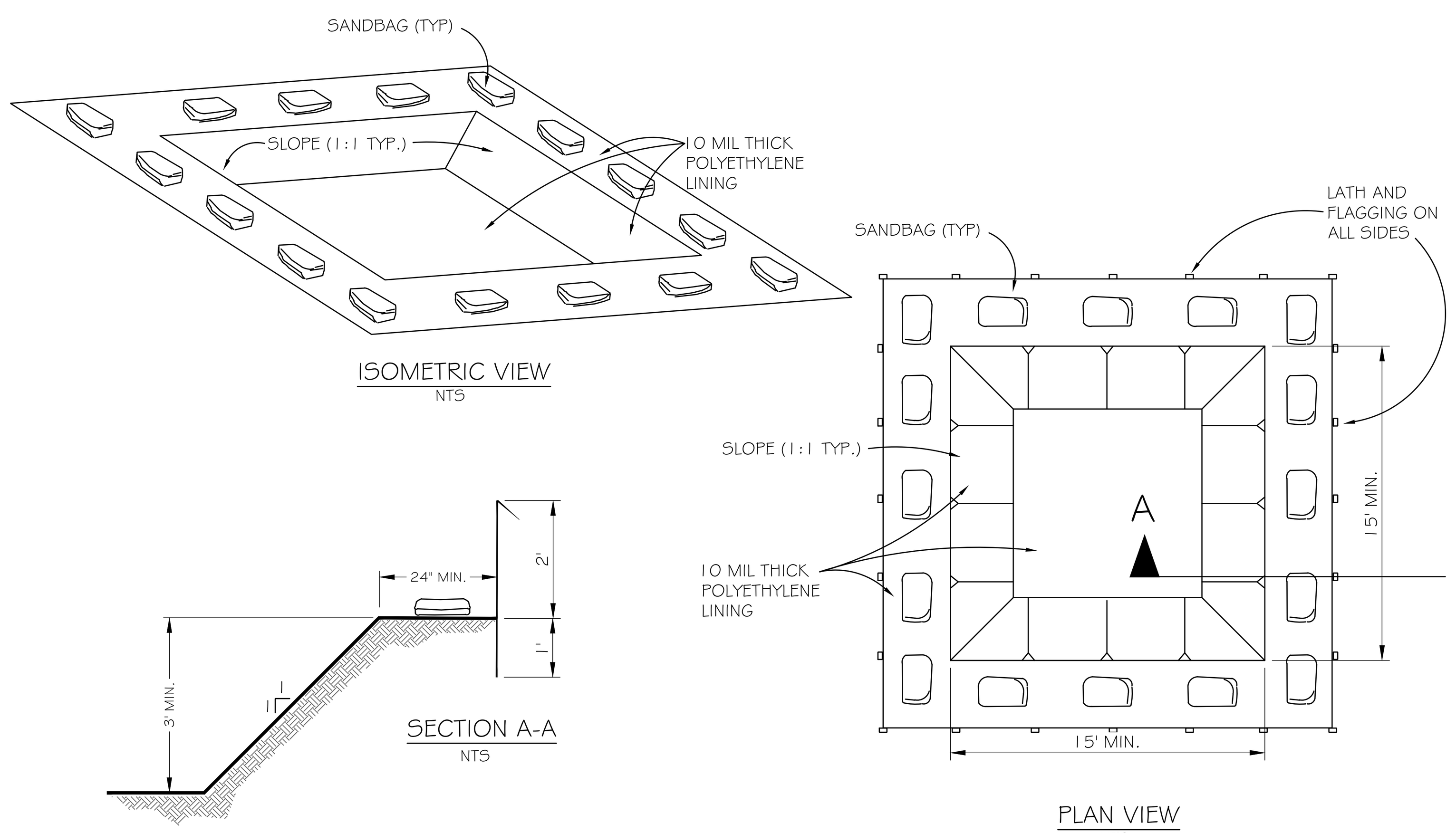


NOTES:

1. USE ONLY OPEN-GRADED ROCK, WITH MOST OF THE FINES REMOVED.
2. STONE SHALL BE CRUSHED, MIN. 3" DIAMETER, MAX. 1 CU. FT. IN VOLUME.
3. THE ROCK BERM SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF 4 INCHES.
4. INSPECT BERM AFTER EACH RAIN. REPLACE STONE WHEN THE STRUCTURE FAILS TO SERVE ITS PURPOSE DUE TO SILT ACCUMULATION, WASHOUT OR DAMAGE.
5. REMOVE SILT WHEN IT REACHES A DEPTH OF 12 INCHES, OR ONE-THIRD OF THE HEIGHT OF THE BERM, WHICHEVER IS LESS. DISPOSE OF SILT IN APPROVED LOCATIONS.
6. REMOVE BERM ONLY WHEN SITE IS COMPLETELY STABILIZED.

ROCK CHECK DAM

N.T.S.

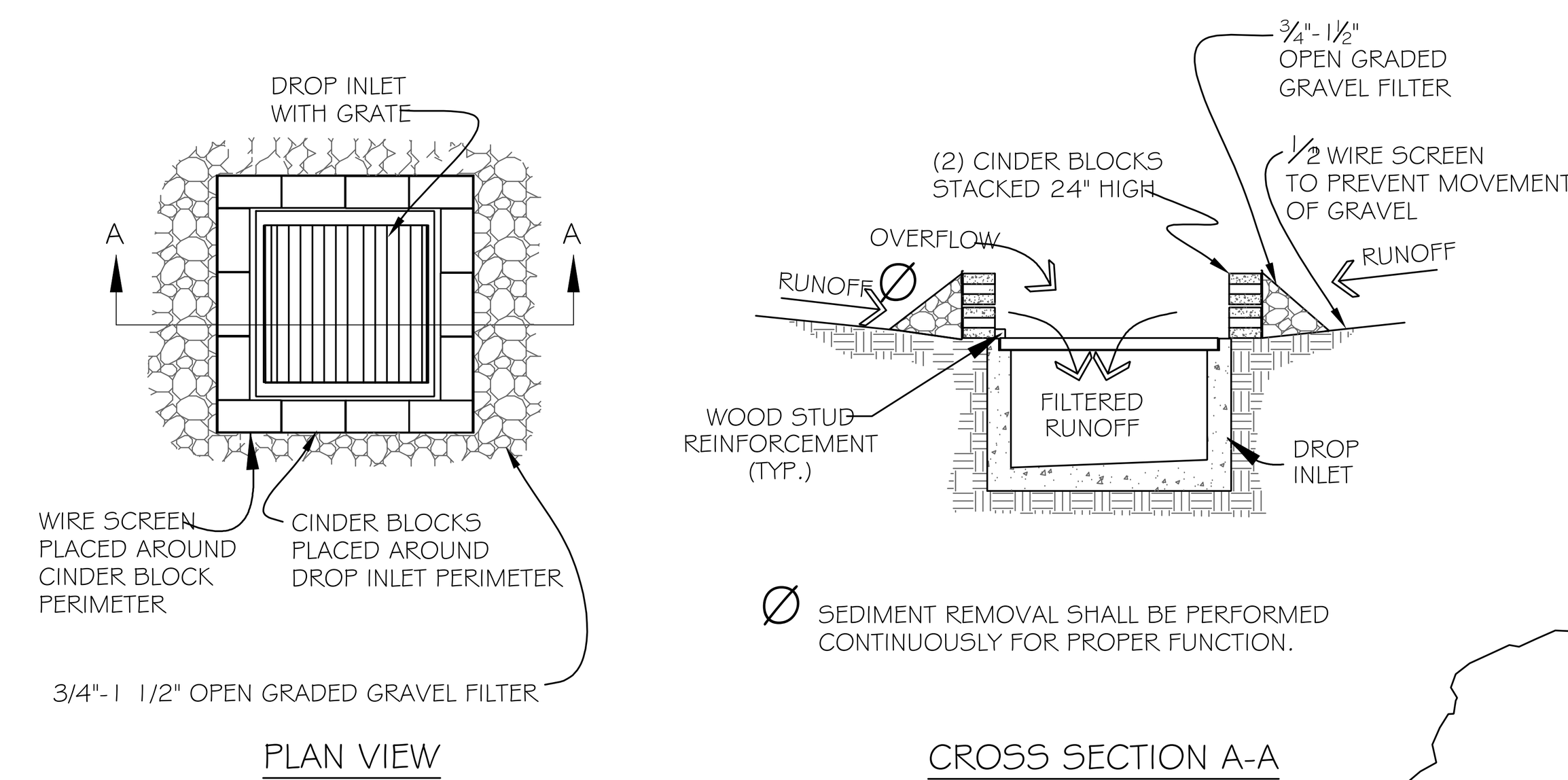


NOTES

1. Actual layout, size and location to be determined by Contractor.
2. The concrete washout sign shall be installed within 30 ft. of the temporary concrete washout facility.
3. Once concrete wastes are allowed to harden, the concrete should be broken up, removed and disposed of properly. dispose of hardened concrete on a regular basis.

TEMPORARY CONCRETE WASHOUT AREA

N.T.S.



GRATE INLET PROTECTION

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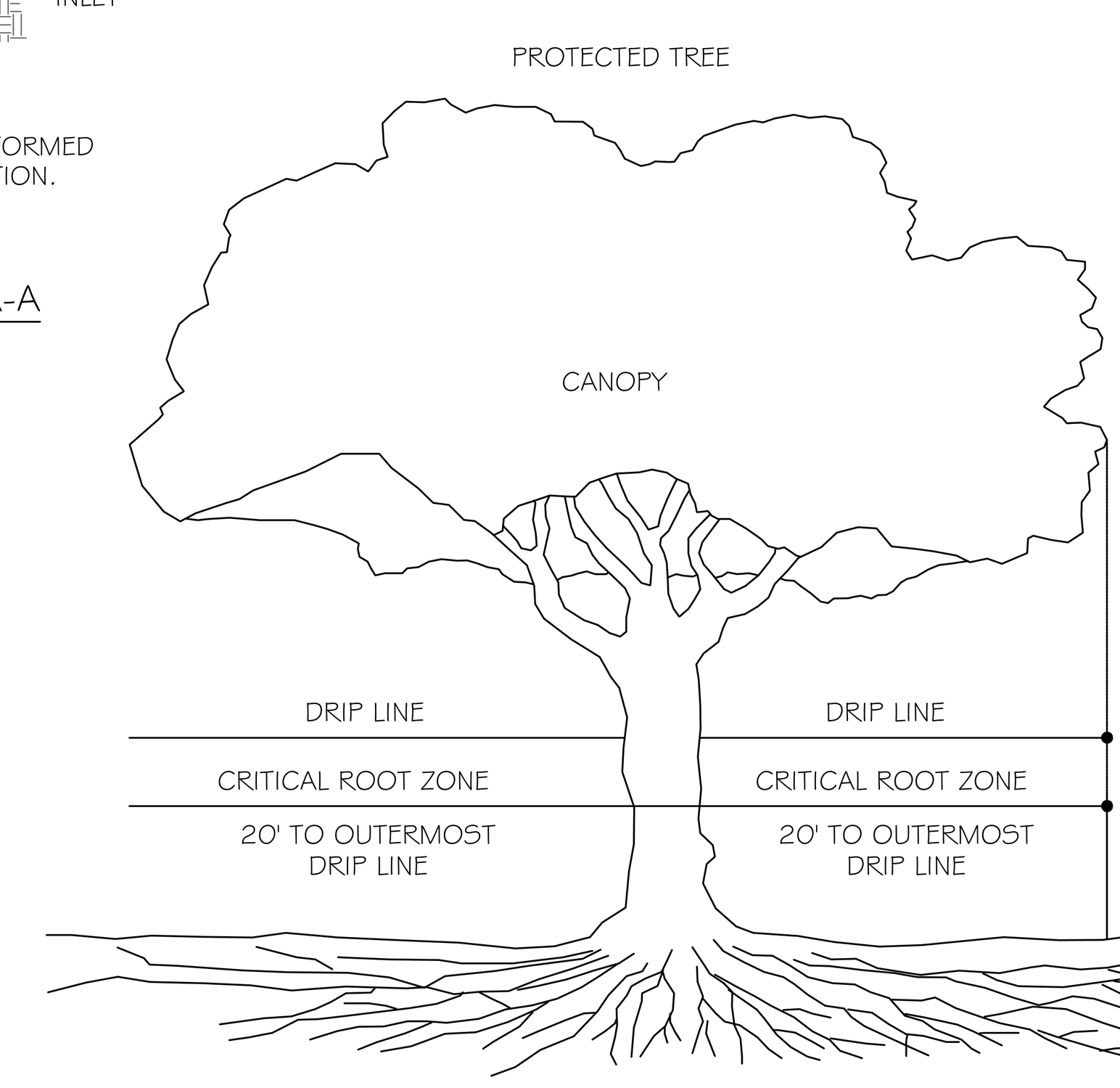

CRITICAL ROOT ZONE AREA

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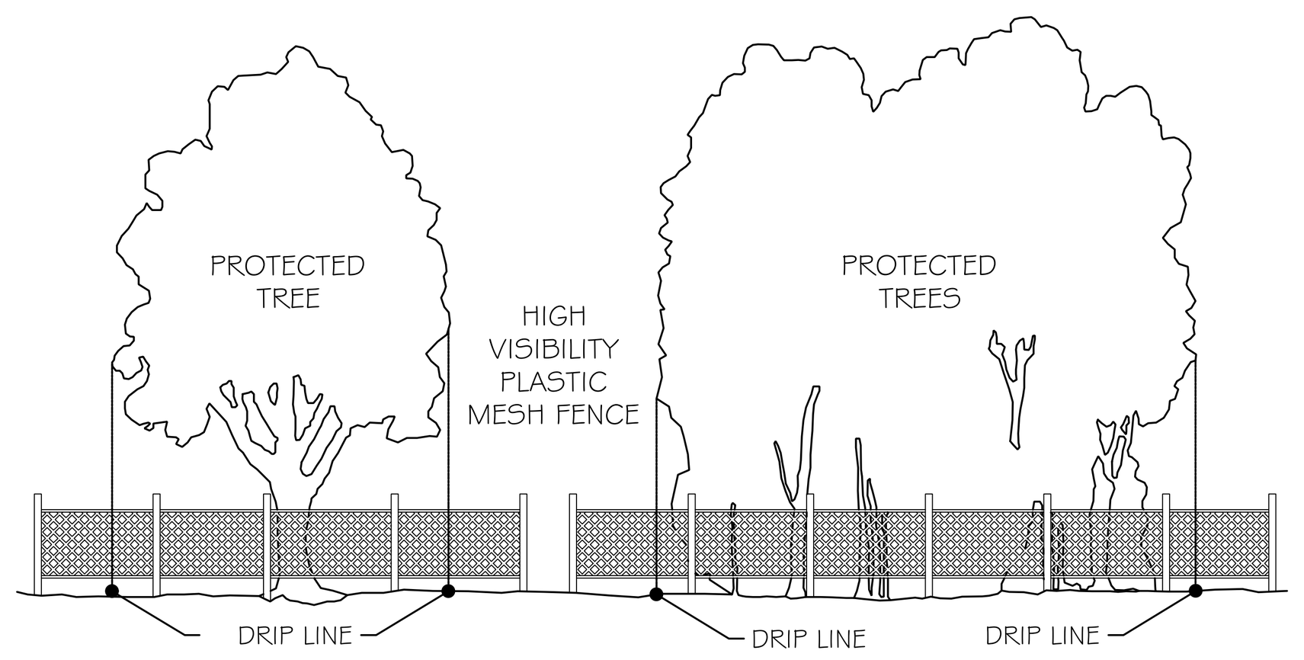


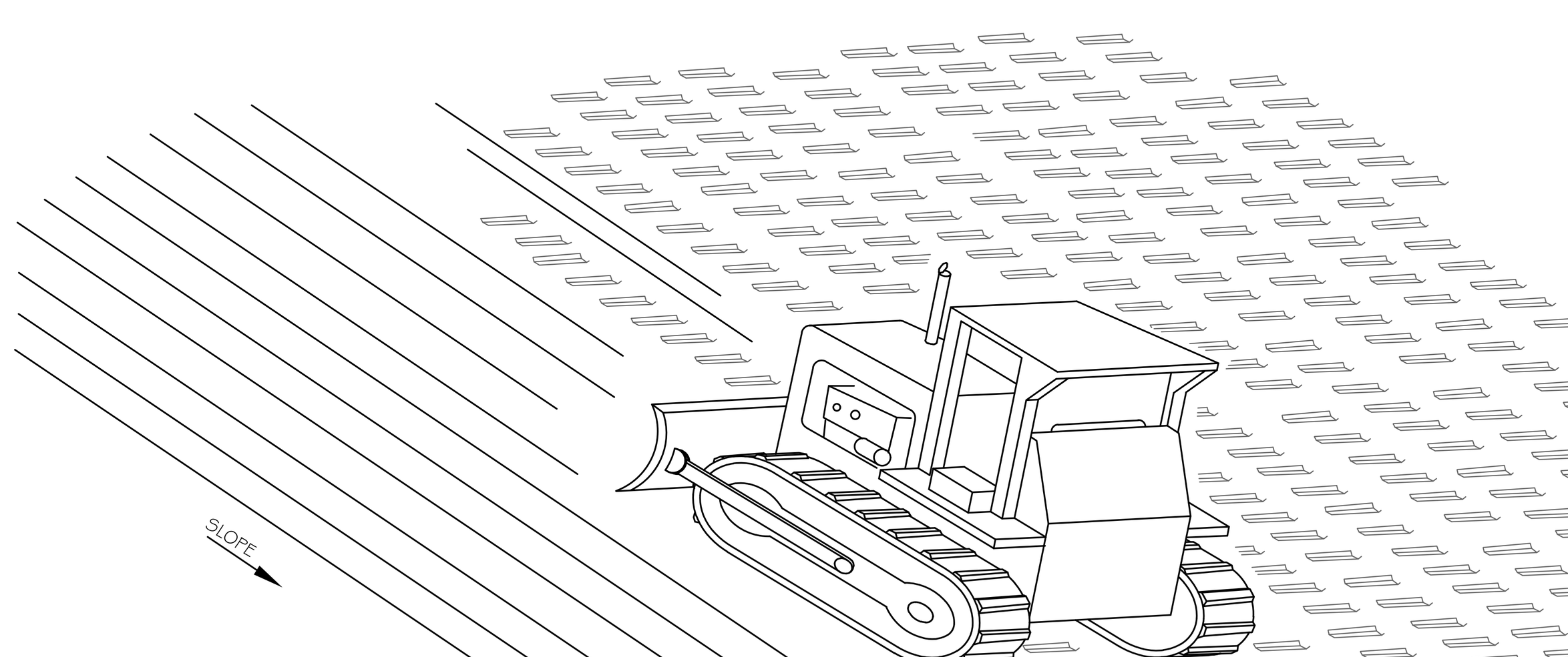
PROTECTIVE FENCING: Orange vinyl construction fencing, chain link fencing, snow fencing, or other similar fencing at least four feet (4') high and supported at a maximum of ten-foot (10') intervals by approved methods sufficient enough to keep the fence upright and in place. The fencing shall be of a highly visible material.

PRIOR TO CONSTRUCTION: The contractor or subcontractor shall construct and maintain, for each protected tree or group of trees on a construction site, a protective fencing which encircles the outer limits of the critical root zone of the trees to protect it from construction activity. All protective fencing shall be in place prior to commencement of any site work and remain in place until all exterior work has been completed.

TP

TREE PROTECTION FENCING

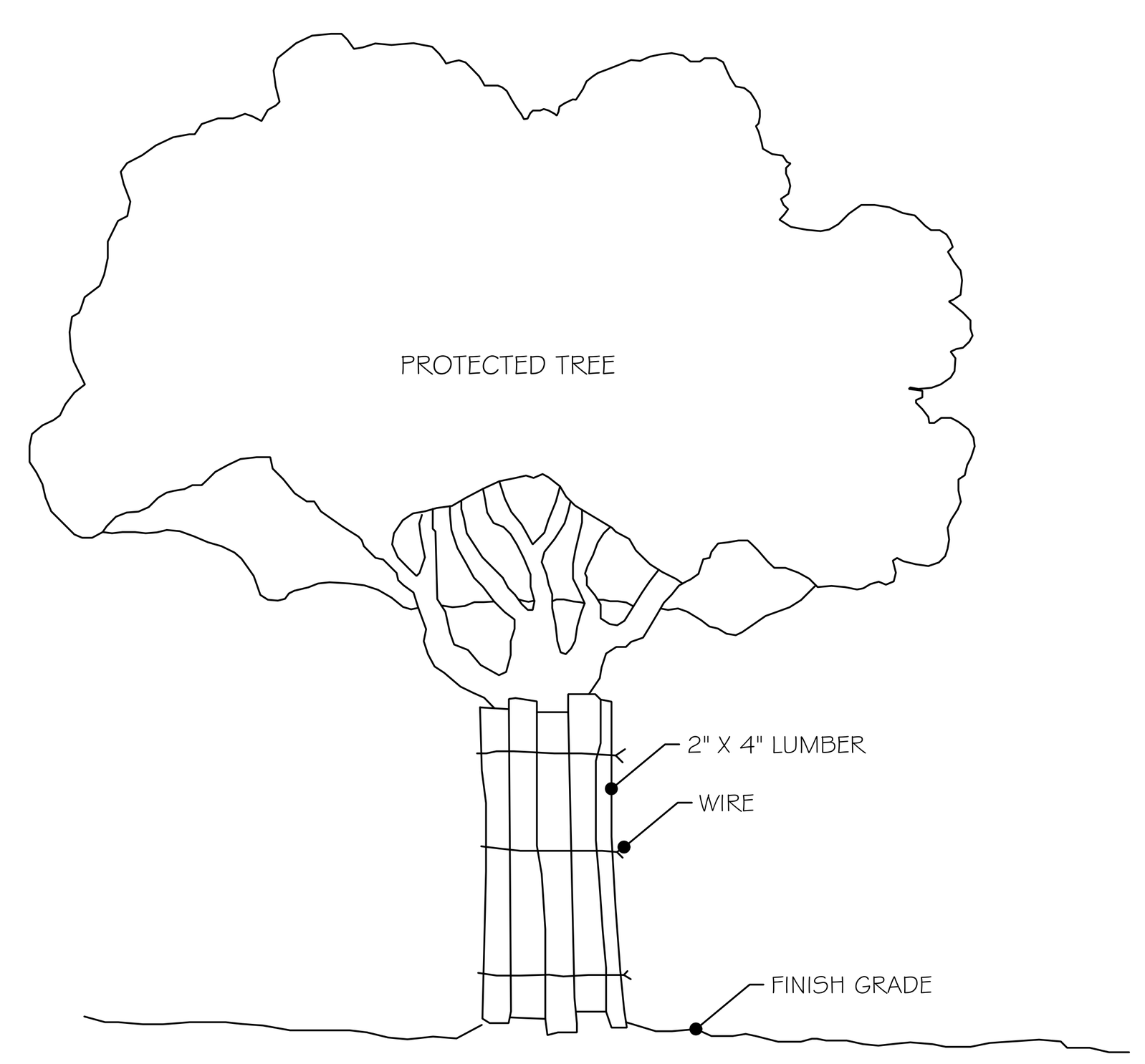
N.T.S.



USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

TRACKING DETAIL

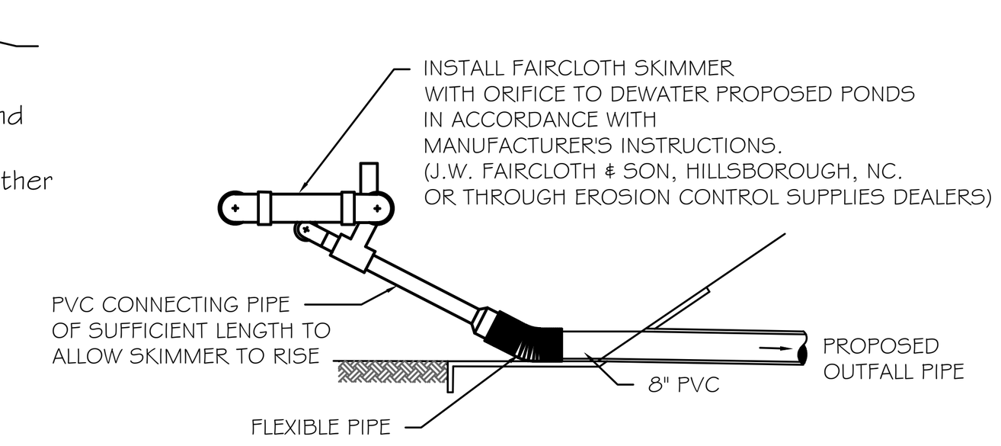
N.T.S.



In situations where a protected tree remains in the immediate area of intended construction and the tree may be in danger of being damaged by construction equipment or other activity, the contractor or subcontractor shall protect the tree with 2" x 4" lumber encircled with wire or other means that do not damage the tree. The intent is to protect the trunk of the tree against incidental contact by large construction equipment.

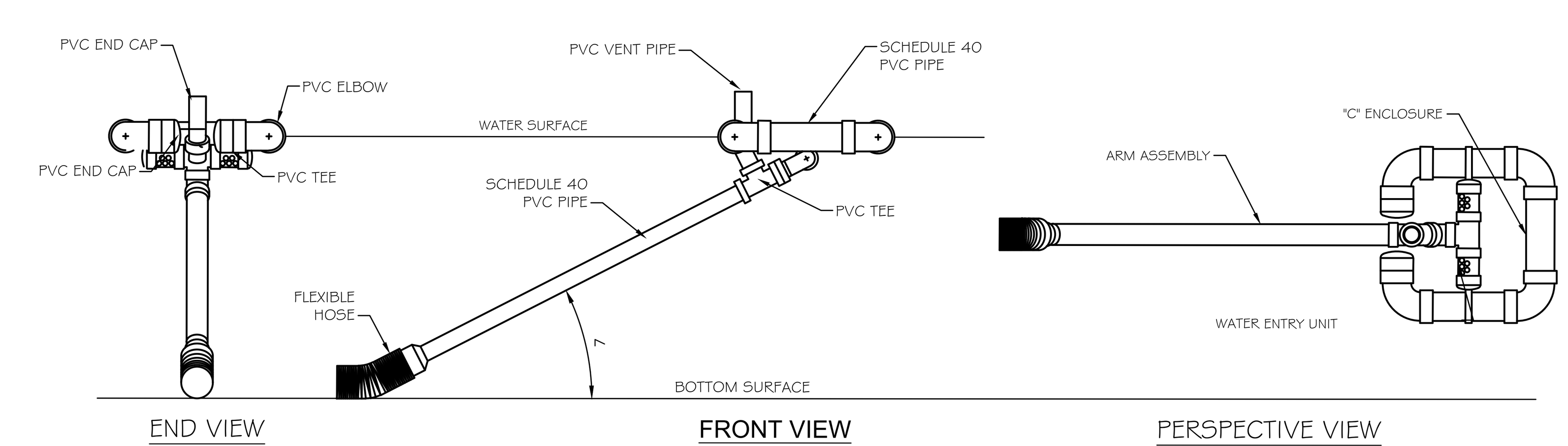
BARK PROTECTION

N.T.S.



TEMPORARY OUTLET STRUCTURE DETAILS

N.T.S.



FAIRCLOTH SKIMMER DETAIL

N.T.S.

VLK | ARCHITECTS

ARCHITECT

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2700 Via Fortuna, Suite 230
Austin, Texas 78746
Main Phone: 512.807.3145
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LIBERTY HILL ISD
LIBERTY HILL, TEXAS

New High School No. 2

CZP SUBMITTAL

5-8-2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.

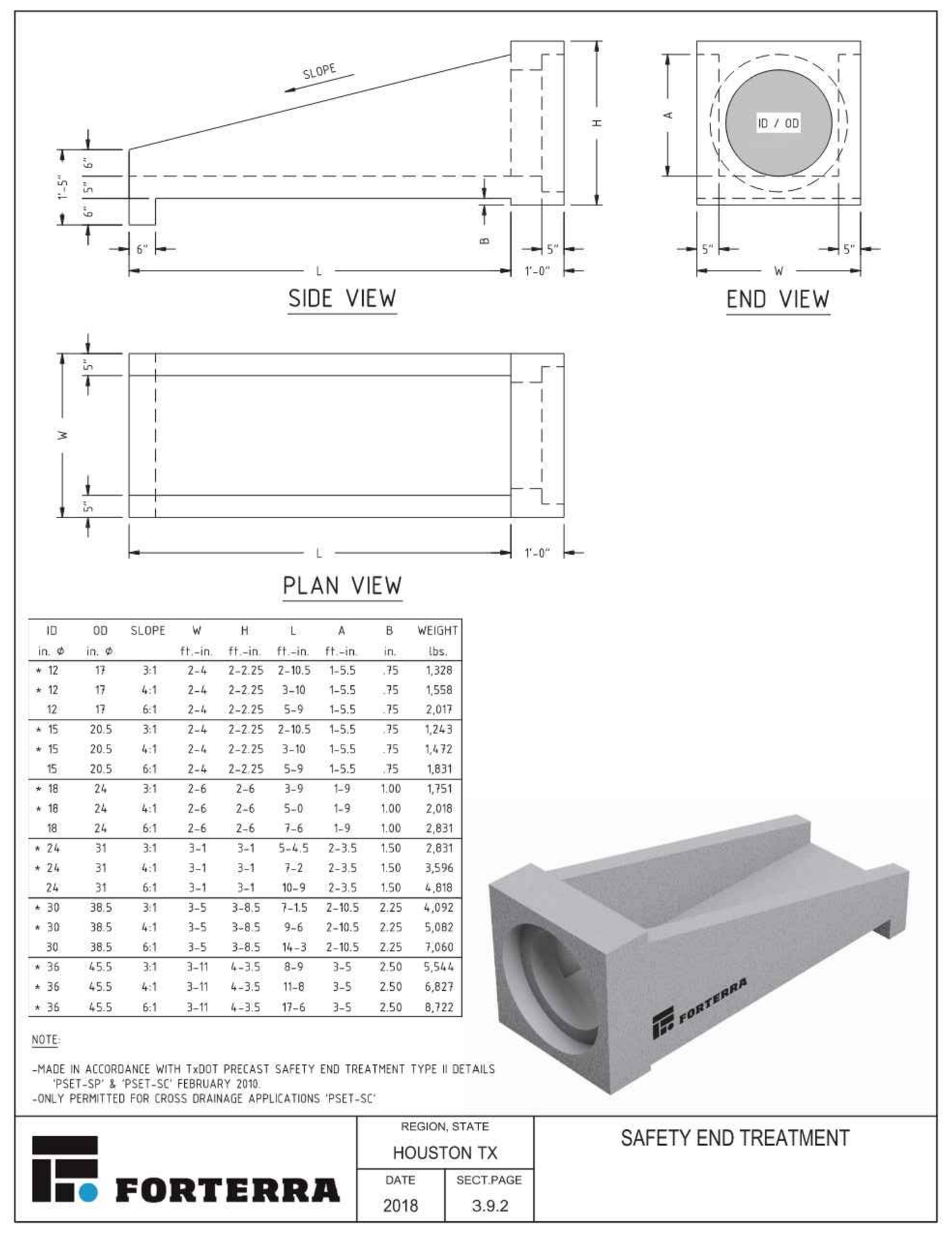
22-053.00

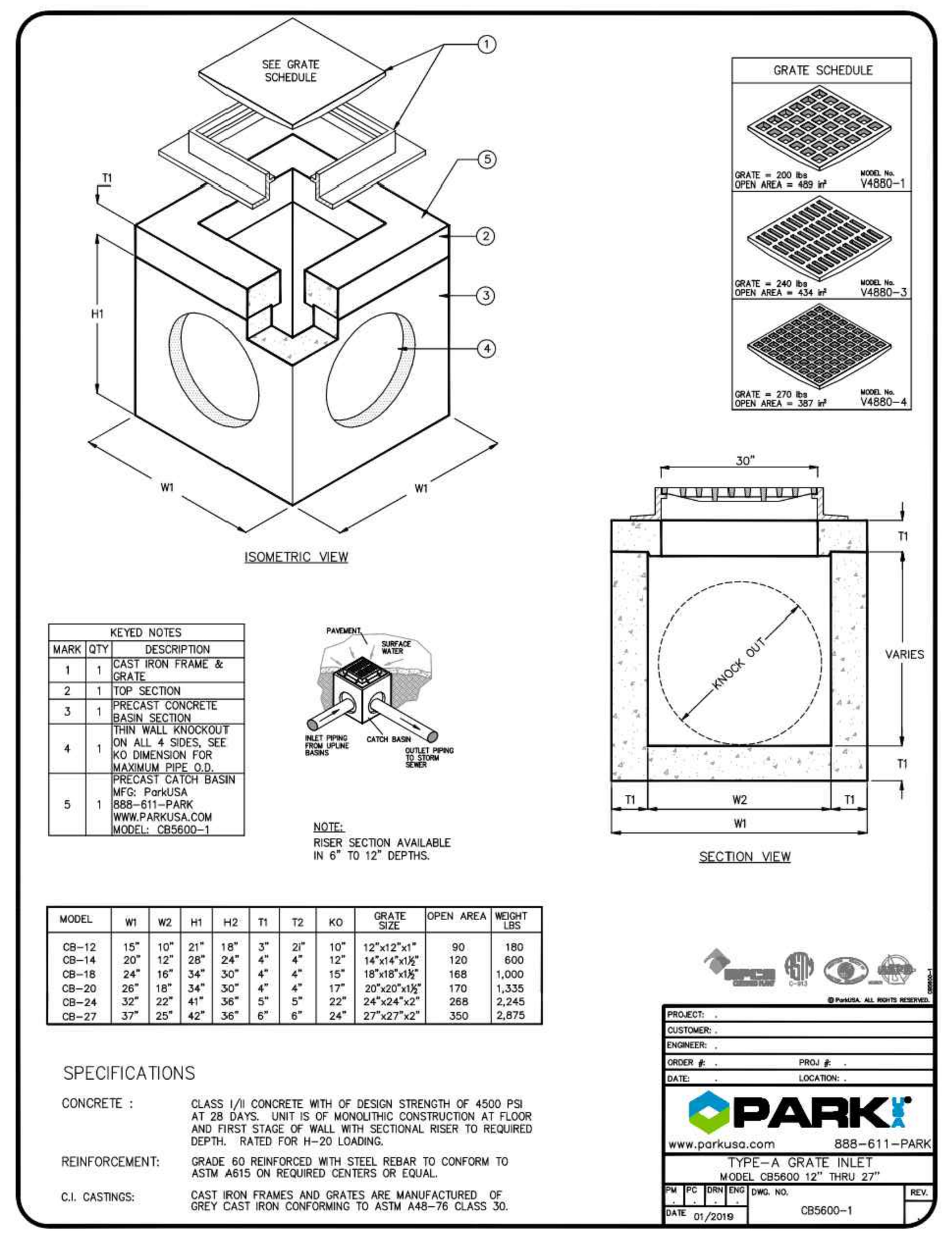
SHEET TITLE

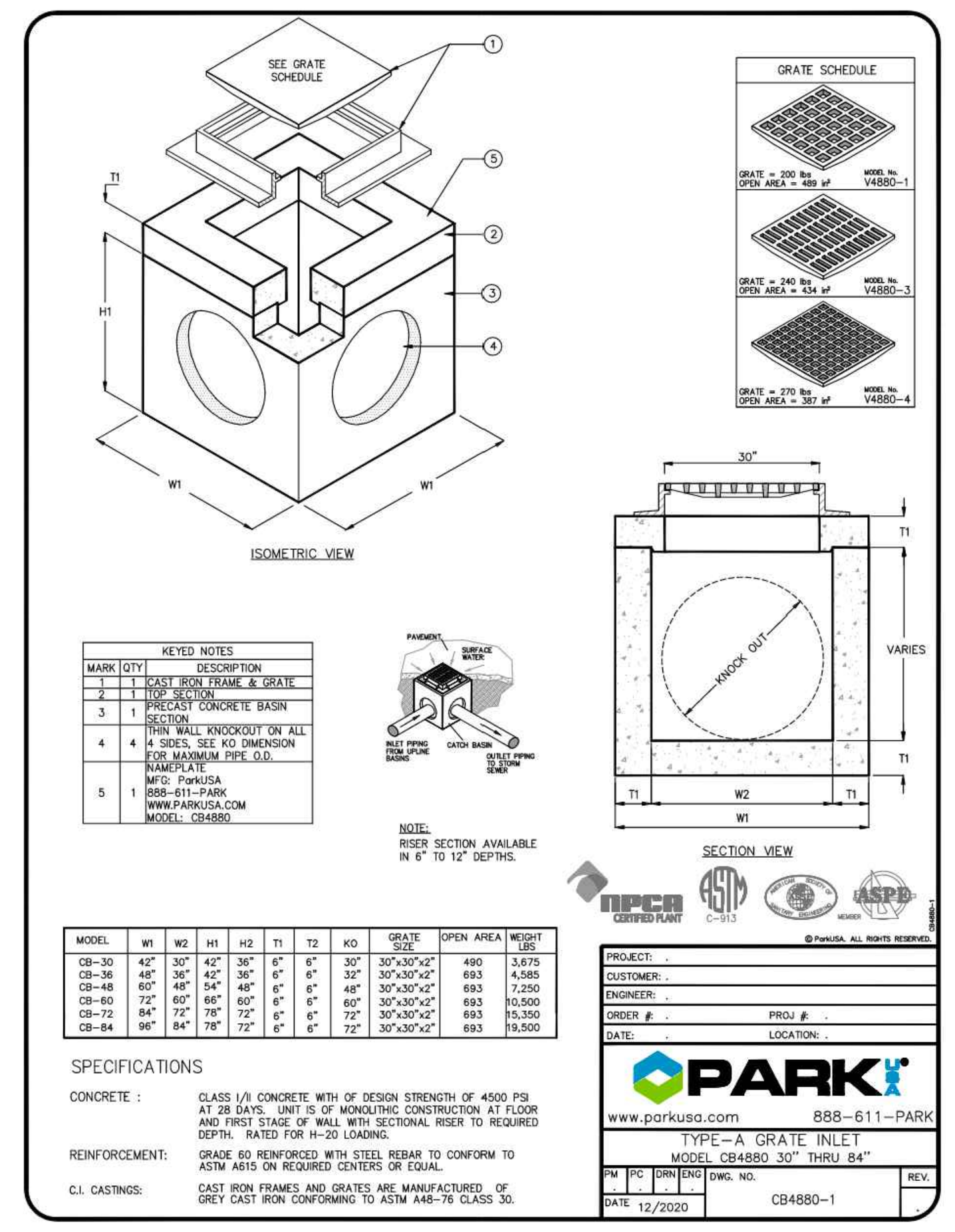
EROSION CONTROL DETAILS

SHEET NO.

C7.0







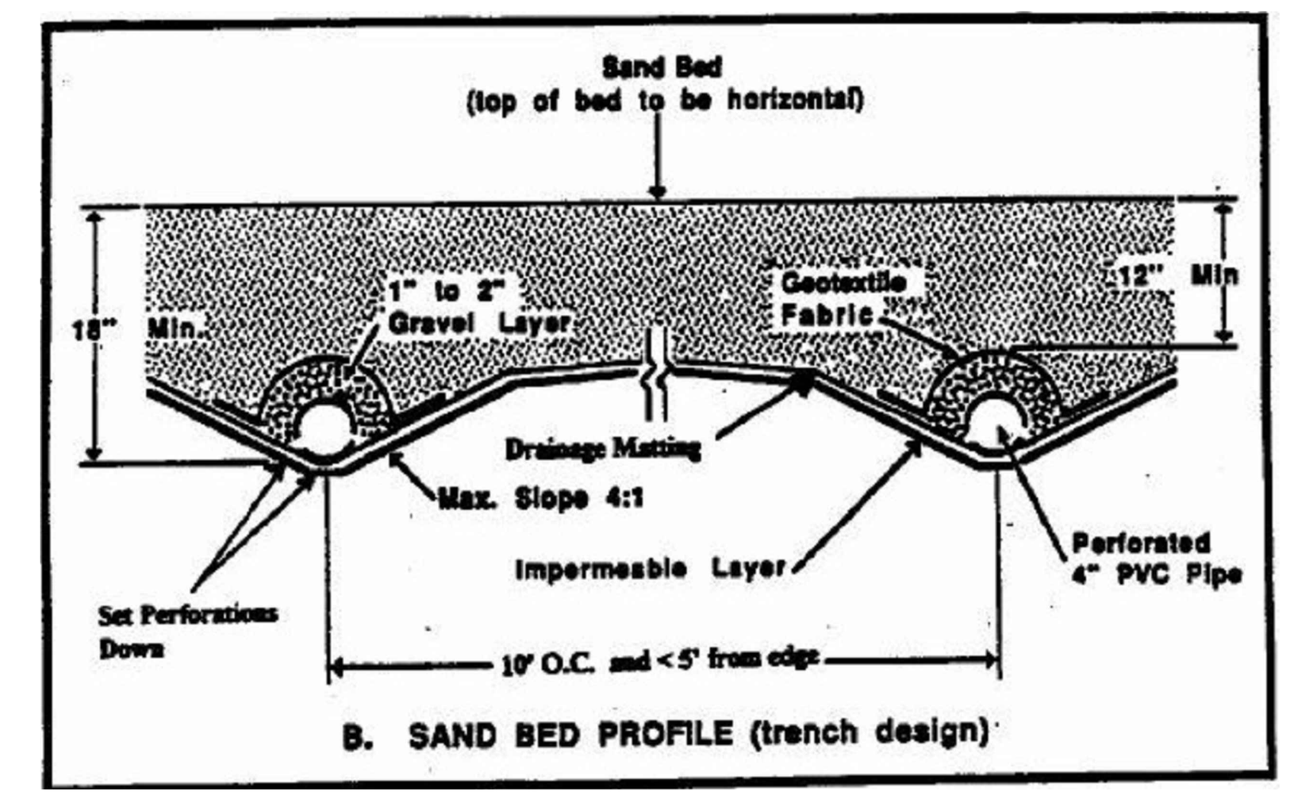
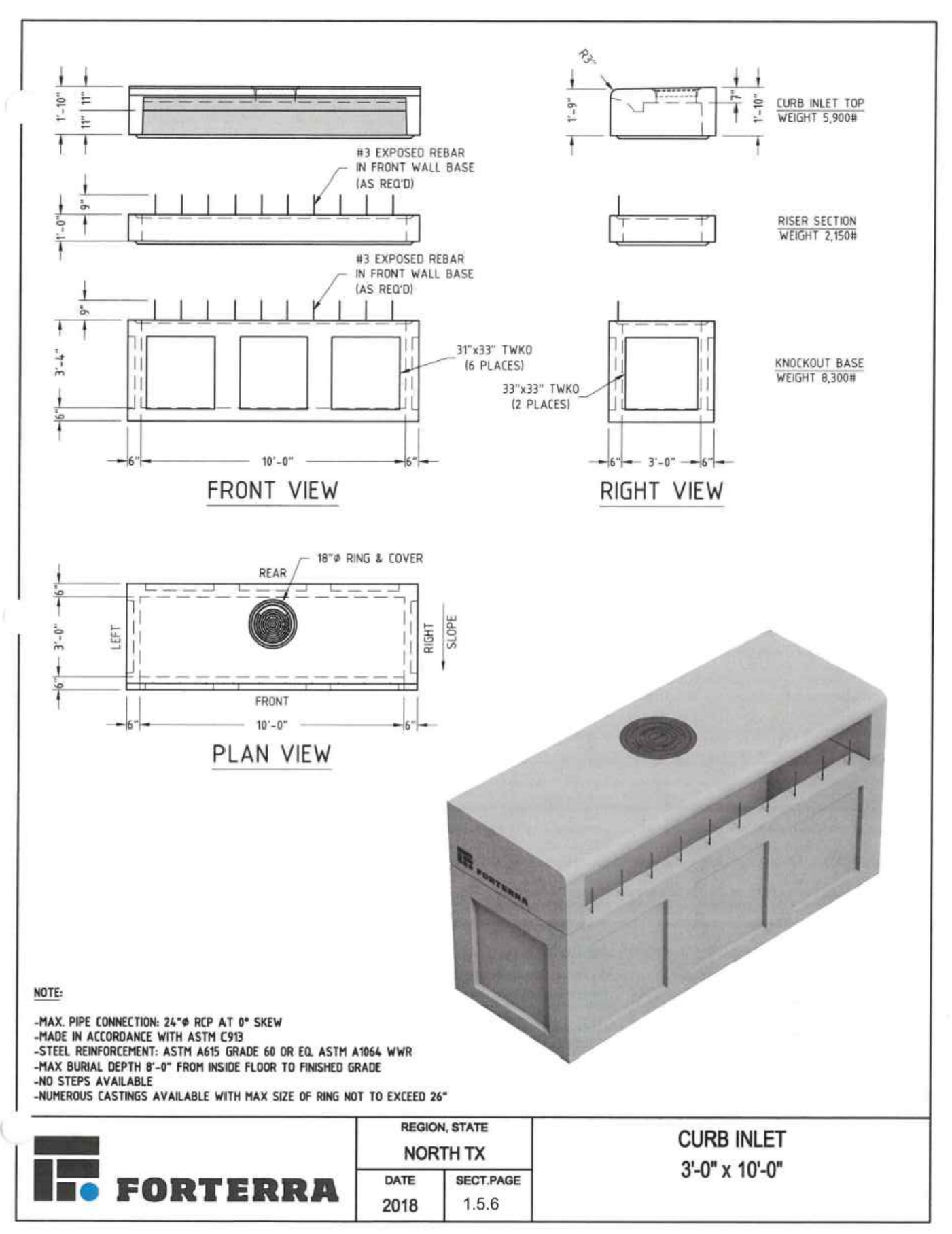
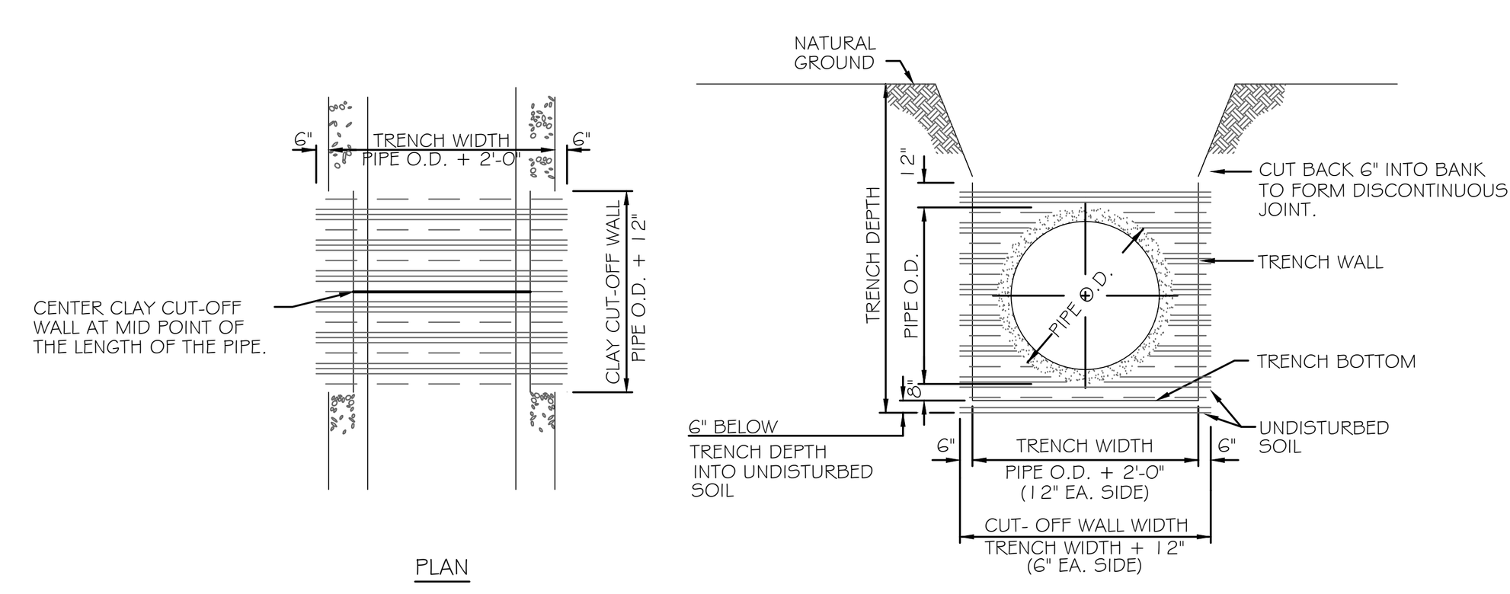


Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1 x 10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density

WATER QUALITY CLAY LINER REQUIREMENTS





CLAY CUT-OFF WALL NOTES:

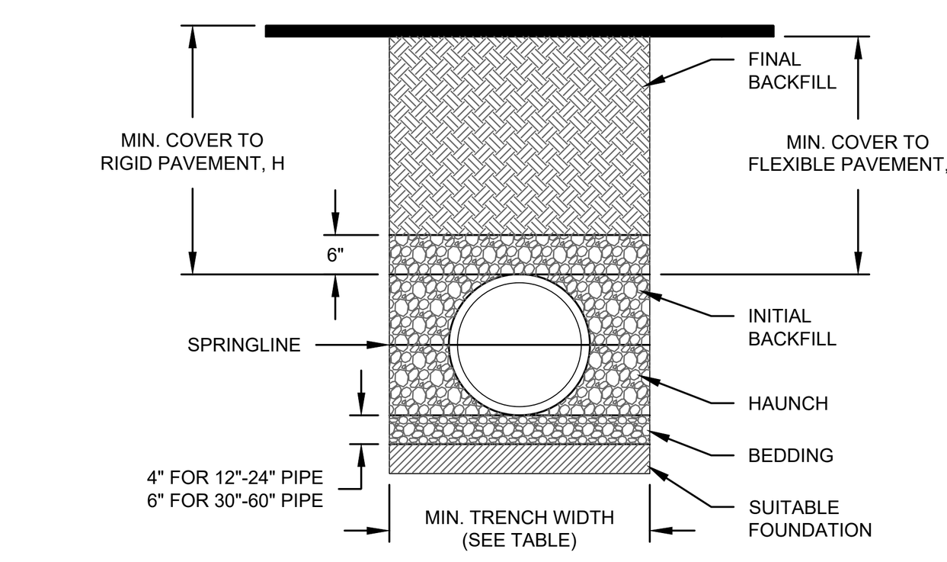
1. CLAY CUT-OFF WALLS SHALL BE CONSTRUCTED AT APPROXIMATELY 250 FOOT INTERVALS ALONG ALL STORM DRAIN CONDUITS HAVING CRUSHED STONE EMBEDMENT.

2. THE CLAY CUT-OFF WALL SHALL BE PLACED AT THE MID POINT OF THE LENGTH OF THE PIPE BEING PLACED, BUT NOT AT A LOCATION WHERE A LATERAL CONNECTS TO THE MAIN. THE MINIMUM CLEARANCE IS 10 FEET.

3. MATERIAL FOR CLAY CUT-OFF WALL TO BE CLEAN MATERIAL WITH NO LUMPS LARGER THAN 3". CLAY TO HAVE P.I. OF 30 TO 40. MATERIAL TO BE PLACED IN 6" LIFTS, MOISTENED TO OPTIMUM MOISTURE CONTENT AND COMPACTED WITH HAND HELD MECHANICAL TAMPERS, WITHOUT DAMAGING THE PIPE.

STORM DRAIN CLAY CUT-OFF WALL

N.T.S.



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I CRUSHED LIMESTONE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I CRUSHED LIMESTONE IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
4	REV. DRAWING NAME OR NUMBER	TJR	01/28/16	

STANDARD TRENCH INSTALLATION DETAIL

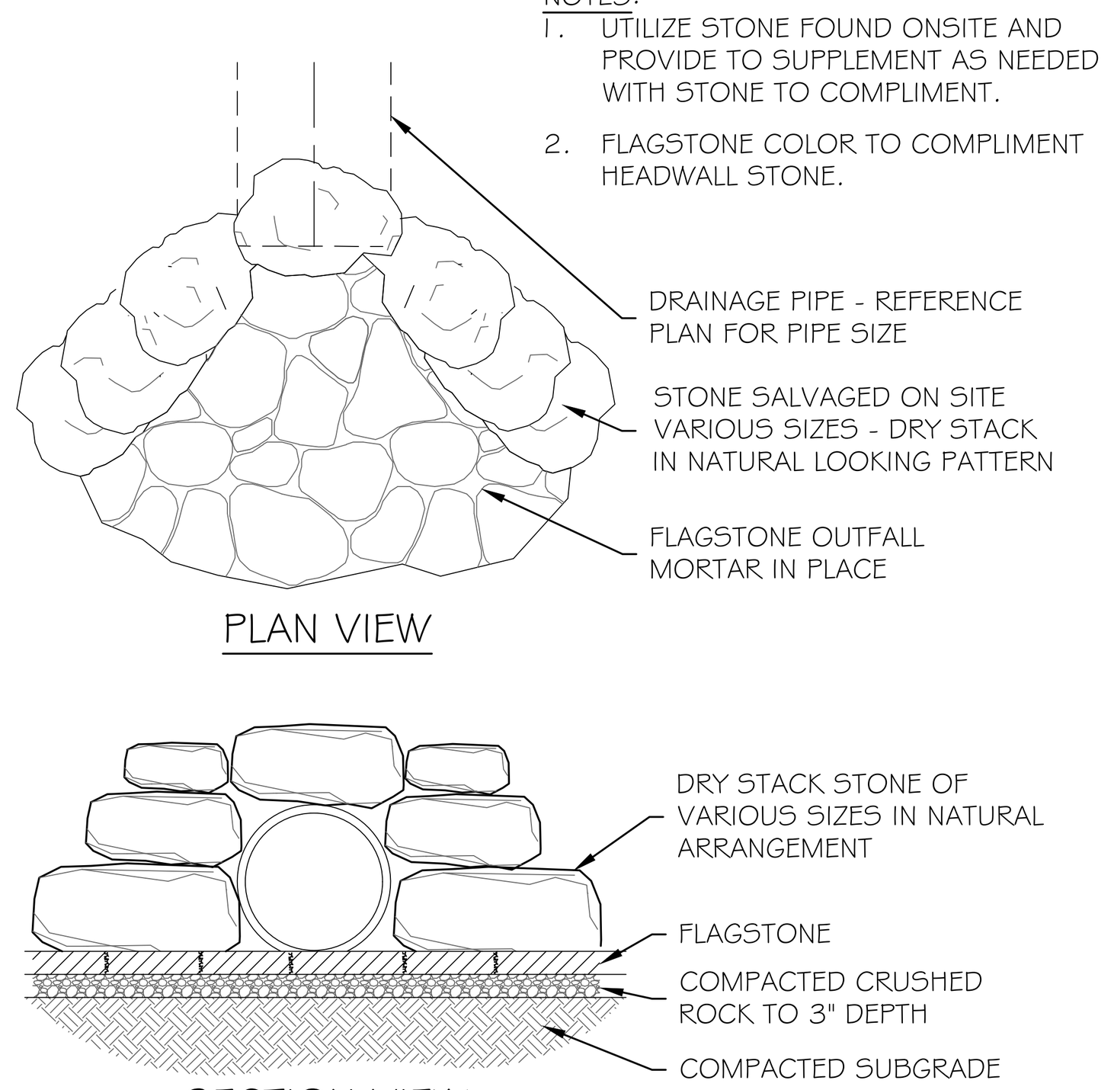
DRAWING NUMBER: STD-101

ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

CKS
10/18/06
NTS
1 OF 1

NOTES:

1. UTILIZE STONE FOUND ONSITE AND PROVIDE TO SUPPLEMENT AS NEEDED WITH STONE TO COMPLIMENT.
2. FLAGSTONE COLOR TO COMPLIMENT HEADWALL STONE.



NATURAL STONE HEADWALL DETAIL

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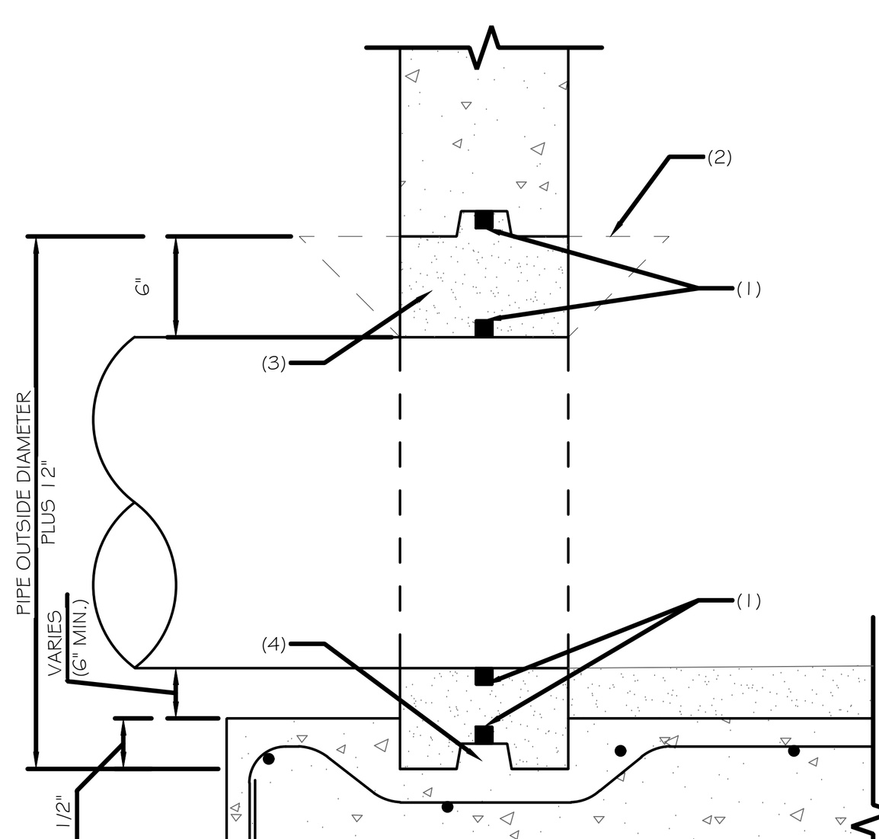


KEY NOTES:

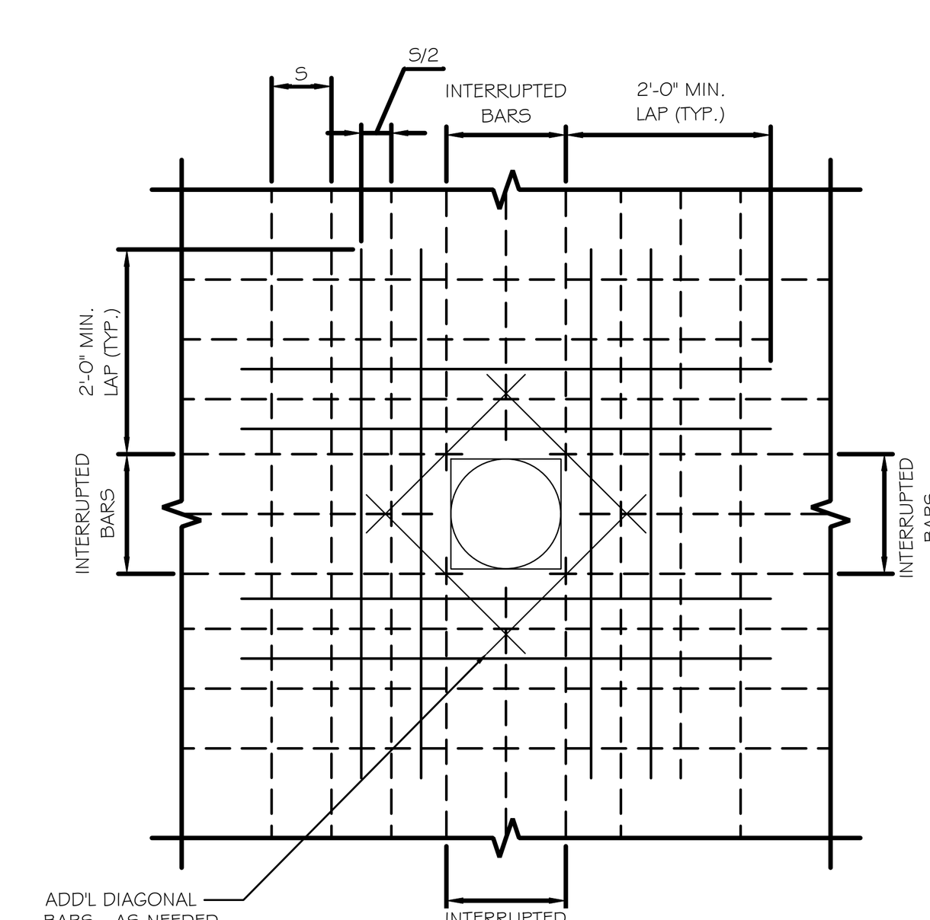
1. CONTINUOUS HYDROPHILIC WATERSTOP
2. PROVIDE TEMPORARY "BIRDMOUTH" AT TOP OF BLOCKOUT FOR CONCRETE PLACEMENT AND CONSOLIDIATION
3. FILL BLOCKOUT WITH CONCRETET AFTER PIPE IS PLACED.
4. INVERTED KEY - REF. TYPICAL WALL KEYWAY DETAIL (SIMILAR)

NOTES:

1. BLOCKOUT TO BE AT CONTRACTOR'S OPTION
2. REFERENCE TYPICAL DETAIL - THIS SHEET - FOR ADD'L WALL REINFORCING AT PIPE PENETRATION.
3. "BIRDMOUTH" SHOWN AT TOP OF BLOCKOUT FOR CONCRETE PLACEMENT. REMOVE "BIRDMOUTH" AFTER FORMS HAVE BEEN REMOVED.
4. WALL REINF. AND ADD'L REINF. NOT SHOWN FOR GRAPHIC CLARITY.

TYPICAL CONCRETE WALL BLOCKOUT AT PIPE PENETRATION

N.T.S.

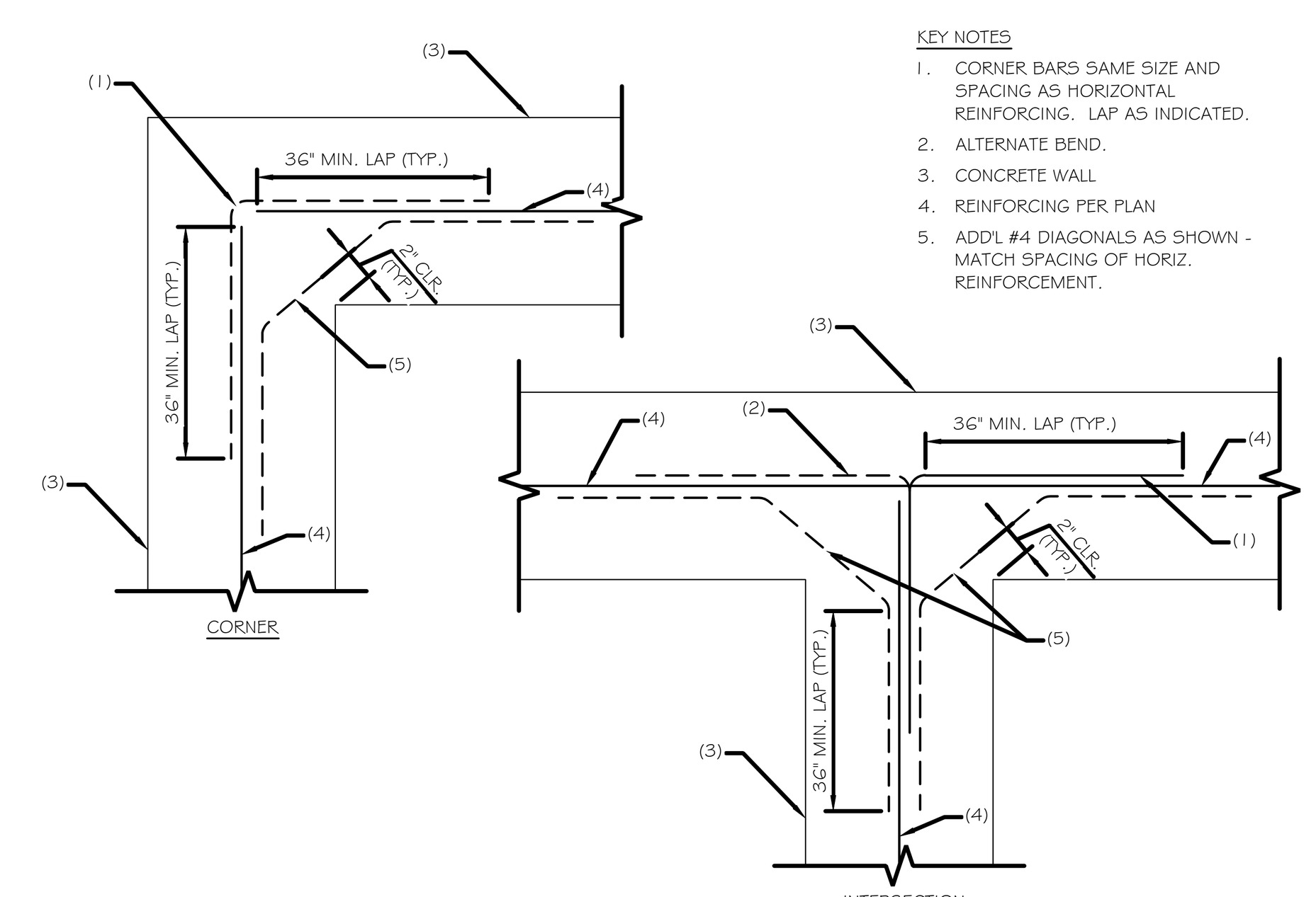


NOTES:

1. ADDITIONAL REINF. ON EACH SIDE SHALL BE 1/2 OF THE AREA OF INTERRUPTED BARS RUNNING PARALLEL TO THE ADDITIONAL BARS.
2. SPACE ADDITIONAL REINF. AT A DISTANCE OF "S/2" FROM WALL REINFORCING BARS WHICH ARE PLACED AT SPACING "S".
3. ADD ADD'L 2-#4 x 2'-6" DIAGONAL BARS AT CORNERS OF RECTANGULAR AND SQUARE OPENINGS.
4. ADDITIONAL BARS TO EXTEND 2'-0" BEYOND BLOCKOUT EA. SIDE - AS SHOWN. EXCEPT PROVIDE ACI STD. 90° HOOKS INTO FOOTING (MATCH FOOTING DOWELS), AND PROVIDE ACI STD. 90° HOOKS WITH MINIMUM 13" EMBEDMENT WHERE STRAIGHT 2'-0" EMBEDMENT DOES NOT FIT.
5. SEE DETAIL - THIS SHEET - FOR BLOCKOUT DETAIL.

TYPICAL ADDITIONAL REINFORCING AT CONCRETE WALL - PIPE PENETRATIONS

N.T.S.



KEY NOTES

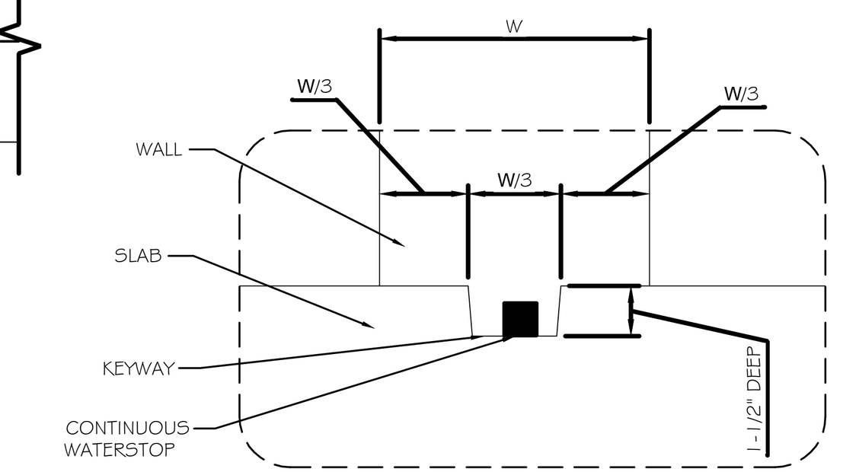
1. CORNER BARS SAME SIZE AND SPACING AS HORIZONTAL REINFORCING. LAP AS INDICATED.
2. ALTERNATE BEND.
3. CONCRETE WALL
4. REINFORCING PER PLAN
5. ADD'L #4 DIAGONALS AS SHOWN - MATCH SPACING OF HORIZ. REINFORCEMENT.

DRAINAGE BOX - CORNER REINFORCING

N.T.S.

NOTES:

1. WALL AND SLAB REINFORCEMENT NOT SHOWN FOR GRAPHIC CLARITY.
2. 1-1/2" DEEP KEY W/ CONTINUOUS SIKA HYDROTITE HYDROPHILIC STRIP TYPE WATERSTOP OR APPROVED EQUAL (TYP.)



TYPICAL WALL KEYWAY

N.T.S.

VLK | ARCHITECTS

ARCHITECT

VLK Architects, Inc.
2700 Via Fortuna, Suite 230
Austin, Texas 78746
Main Phone: 512.807.3145
www.vlkarchitects.com

CIVIL / LANDSCAPE

LANGAN
9606 N. Mopac Expressway, Suite 110
Austin, Texas 78759
Main Phone: 737.289.7800
www.langan.com

LIBERTY HILL ISD
LIBERTY HILL, TEXAS

CZP SUBMITTAL

5-8-2023
TBPE Registration #: F- 13,709

ISSUED: MAY 08, 2023

REVISIONS

Revision No.

Director	Drawn By
JHG	
Designer	Quality Control
	LANGAN
Proj. Mgr.	
MSH	

PROJECT NO.

22-053.00

SHEET TITLE

DRAINAGE DETAILS

SHEET NO.

C7.3

New High School No. 2

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

I Dustin Akin,
Print Name

Director of Construction,
Title - Owner/President/Other

of Liberty Hill Independent School District,
Corporation/Partnership/Entity Name

have authorized Jack Garner, PE
Print Name of Agent/Engineer

of Langan Engineering
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:

Dustin Akin
4/24/2023

Applicant's Signature Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Dustin Akin 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 24th day of April, 2023

Melanie Perkins
NOTARY PUBLIC

Melanie D Perkins
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10-14-2025

MELANIE D. PERKINS
MY COMMISSION EXPIRES
OCTOBER 14, 2025
NOTARY ID: 133392540

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Liberty Hill High School #2
Regulated Entity Location: 30.670951 -97872238
Name of Customer: Liberty Hill ISD
Contact Person: Dustin Akin Phone: 512-260-5580
Customer Reference Number (if issued):CN 600788483
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	93 Acres	$ 8,000
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: _____ Date: 5/8/2023

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 600788483		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:*

Liberty Hill Independent School District

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

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☒ Other ☐ Sole Proprietorship ☒ Other: ISD

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 ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:

301 Forrest Street							
City	Liberty Hill	**State**	TX	**ZIP**	78642	**ZIP + 4**	

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 260-5580		(512) 260-5581

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.)*

Liberty Hill High School #2

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	1277 CR 258							
	City	Liberty Hill	**State**	TX	**ZIP**	78642	**ZIP + 4**	
24. County	Williamson							

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

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

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

27. Latitude (N) In Decimal:			30.670951	**28. Longitude (W) In Decimal:**		-97.872238
Degrees	Minutes	Seconds		Degrees	Minutes	Seconds
30	40	15.43		97	52	20.06

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)
8211		611110	

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

34. Mailing Address:	**301 Forrest St.**							
	City	**Liberty Hill**	**State**	**TX**	**ZIP**	**78642**	**ZIP + 4**	

35. E-Mail Address:	**dakin@libertyhill.txed.net**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 260-5580		**(512) 260-5581**

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

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

SECTION IV: Preparer Information

40. Name:	Jack Garner, PE	**41. Title:**	Consulting Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(737) 289-7810		( ) -	jgarner@langan.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:	Langan Engineering	**Job Title:**	Associate Principal
Name *(In Print):*	Jack Garner, PE	**Phone:**	(737) 289- **7810**
Signature:		**Date:**	5/8/2023